AUSTRALIAN
ENVIRONMENTAL AUDITORS

Environmental Audit Report (53X)

47 Progress Drive, Nightcliff, Northern Territory – Lot C and Road Reserve

Prepared for:
Department of Infrastructure, Planning and Logistics

Prepared by:
Australian Environmental Auditors Pty Ltd

Date:
16/09/2022

Project Number:
EA0729

EPA Service Order No.:
PRL8565 (NTEPA2019/0099-199)

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Prepared for:
Department of Infrastructure, Planning and Logistics
Level 5, Energy House
18-20 Cavenagh Street, Darwin, NT 0801

Prepared by:
Australian Environmental Auditors Pty Ltd
Suite 21, 1 Ricketts Road
Mount Waverley, VIC 3149

Date of Report:
16/09/2022

Author:

Jean Paul Pearce
Environmental Auditor (Contaminated Land)
(Appointed pursuant to section 53S (1) of the *Environment Protection Act 197*0)

Version Control Record

DATE ISSUED	DOCUMENT VERSION	SUBMITTED TO	Authors/Reviewers
16/09/2022	Final	NT EPA, Environmental Audit Unit – Attention Christopher Coombes Department of Infrastructure, Planning and Logistics	Auditor: JPP Principal Assistant: BR Internal Auditor Reviewer: PH

ENVIRONMENT PROTECTION ACT 1970 (Vic)

STATEMENT OF ENVIRONMENTAL AUDIT

I, Jean Paul Pearce of Australian Environmental Auditors Pty Ltd, a person appointed by the Victorian Environment Protection Authority ('the Authority') under the Environment Protection Act 1970 ('the Act') as an environmental auditor for the purposes of the Act, having

1. been requested by Ms Sinead Redmond of HK Solutions on behalf of Department of Infrastructure, Planning and Logistics (DIPL) to issue a Certificate of Environmental Audit in relation to the site located at 47 Progress Drive, Nightcliff, Northern Territory – Lot C and Road Reserve ('the site' shown in Figure 1), owned by the Northern Territory Government as a Department of Territory Families, Housing and Communities asset,
2. had regard to, among other things,
    i. guidelines issued by the Authority for the purposes of Part IXD of the Act,
    ii. the beneficial uses that may be made of the site,
    iii. relevant State environment protection policies/industrial waste management policies, namely,
        - SEPP (Air Quality Management)
        - SEPP (Ambient Air Quality)
        - SEPP (Waters)
        - SEPP (Prevention and Management of Contamination of Land)
        - Victorian Environment Protection (Industrial Waste Resource) Regulations 2009
3. in making a total assessment of the nature and extent of any harm or detriment caused to, or the risk of any possible harm or detriment which may be caused to, any beneficial use made of the site by any industrial processes or activity, waste or substance (including any chemical substance), and
4. completed an environmental audit report in accordance with section 53X of the Act, a copy of which has been sent to the Authority and the relevant planning and responsible authority.

HEREBY STATE that I am of the opinion that

the site is suitable for the beneficial uses associated with:

- Sensitive use –Low density;
- Sensitive use – High density;
- Public open space;
- Commercial use; and
- Industrial use,

subject to the following condition attached thereto:

1. Asbestos containing materials (ACM) have been identified in fill materials beyond the external site boundaries. Excavation crossing the site boundaries must not result in ACM contaminated fill being imported to the audit site.

The condition of the site is detrimental or potentially detrimental to any (one or more) beneficial uses of the site due to the need for an audit condition. Accordingly, I have not issued a Certificate of Environmental

Audit for the site in its current condition, the reasons for which are presented in the environmental audit report. The terms and conditions that need to be complied with before a Certificate of Environmental Audit may be issued are set out as follows:

- Boundary asbestos contamination in soil would need to be cleaned up such that all relevant beneficial uses of soil are restored without conditions.

Other related information:

- ACM were found on the audit site and have been removed as far as reasonably practicable. No known ACM remains on the audit site. However, small quantities of ACM may remain within the soil and be uncovered during excavation works. These ACM fragments are not anticipated to represent a health risk to workers or occupiers of the completed development. If encountered during future development or use of the audit site, any fragments must be handled and disposed in accordance with the Code of Practice How to Safely Remove Asbestos 2011 (or its relevant future revisions);
- Groundwater at the site contains naturally elevated concentrations of pH, cobalt, copper, nickel, lead, manganese and zinc. The levels are considered typical of the natural groundwater quality surrounding the site and do not constitute pollution in accordance with clause 10(2)(c) of State environment protection policy (Waters) 2018;
- If groundwater is to be extracted from the site advice, including testing, should be sought from a suitably qualified professional to ensure the groundwater is suitable for the intended use;
- Any material excavated from the site and disposed of off site should be classified and managed in accordance with IWRG 621 (or its relevant future revisions) or NT EPA equivalent. Analysis of fill materials should include asbestos and PFAS due to the previous on-site asbestos contamination and importation of fill materials from a Defence site;
- Not all land uses for which the land is considered suitable by this audit may be allowed under the existing zoning;
- Audit reports have already been submitted for Lot A and Lot B (B1, B2, B3); and
- In accordance with Section 53ZE of the Act, the owner/occupier of the site must provide a copy of this Statement to any person who becomes or proposes to become an occupier of the site.

This statement forms part of an Environmental Audit Report (Australian Environmental Auditors Pty Ltd, Environmental Audit Report (53X), *47 Progress Drive, Nightcliff, Northern Territory – Lot C and Road Reserve*, AEA Ref: EA0729, Service Order No. PRL8565 (NTEPA2019/0099-199, 16 September 2022).

Further details regarding the condition of the site may be found in the environmental audit report.

DATED: 16 September 2022

Signed:

Jean Paul Pearce

ENVIRONMENTAL AUDITOR
(Appointed pursuant to the *Environment Protection Act 1970)*

N

PROGRESS DRIVE

LOT 1227

LOT A

ROAD 1

ROAD 2A

LOT 9017

Steps

Steps

NOTE:
REFER TO DRAWINGS B20-6291, B20-6292 AND B20-6301 FOR WORKS WITHIN LOT 9017

Road Reserve
(northern portion)

LOT B3

EXISTING KERB

TURF

LEGEND

- 50mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm FCR SUBBASE COMPACTED TO 98% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm FCR SUBBASE COMPACTED TO 98% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- DEEP LIFT
  50mm ASPHALT WEARING COURSE AC14-TYPE 5 A15E
  150mm ASPHALT AC20-TYPE 4 A15E (2x75mm LAYERS)
- 150mm REINFORCED CONCRETE DRIVEWAY
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
  REFER DRG R20-1730
- 150mm REINFORCED CONCRETE DRIVEWAY
  REFER CoD STD DRG DCC-103
- 125mm REINFORCED CONCRETE SHARED PATH
  REFER TO LANDSCAPE DRAWINGS FOR CONCRETE FINISHES AND COLOUR
  REFER CoD STD DRG DCC-104 FOR OTHER DETAILS
- 100mm REINFORCED CONCRETE
  INFILL
  REFER DRG R20-1730
- LANDSCAPING
  REFER LANDSCAPE WORKS
  DRAWING SET
- BUS STOP
  REFER DIPL STD DRG CS3709 AND DRG R20-1731
- EXELOO
  REFER MANUFACTURER SPECIFICATION
- VERGE TO BE CONSTRUCTED BY OTHERS

FOR CONTINUATION REFER TO DRG R20-1733

WARNING:
DRAWINGS MUST BE REPRODUCED IN COLOUR

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site
No guarantee is given that all existing services are shown

Figure 1a: Site Plan - Road Reserve (northern portion)

2.5 0 2.5 5.0 7.5 10 12.5m
0 1:250-A1 1:500-A3

AS CONSTRUCTED

No.	DESCRIPTION	DATE	INIT.	DEPT/COMPANY.
1	AS CONSTRUCTED	15/03/2022	AS	THE MINING
0	CONTRACT DRAWING	02/12/2020	PM	BYRNE

AMENDMENTS

byrne CONSULTANTS
ABN 78 124 388 192
P.O.Box 43420 Casuarina NT 0811
Ph. 08 89472476 Fax: 08 89475098
Byrne Consultants Project No. NT19012

DRAWN	CHECKED
YB	MDW
DATE	DATE
DESIGNED	CHECKED
MDW	GM
DATE	DATE
DESIGN PROJECT LEADER	NTG PROJECT MANAGER
-	-
DATE	DATE

Northern Territory Government

DARWIN
NIGHTCLIFF
JOHN STOKES SQUARE REDEVELOPMENT

SURFACE FINISHES LAYOUT PLAN AND LEGEND SHEET 1 OF 2

NTG PROJECT No.	NTG ASSET No.	SHEET No.	NTG DRAWING No.	AMENDMENT	SHEET SIZE
HOD35032	-	15 OF 42	R20-1732	1	A1

N

LEGEND

- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm FCR SUBBASE COMPACTED TO 98% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
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  REFER LANDSCAPE WORKS
  DRAWING SET
- BUS STOP
  REFER DIPL STD DRG CS3709 AND DRG R20-1731
- EXELOO
  REFER MANUFACTURER SPECIFICATION

FOR CONTINUATION REFER TO DRG R20-1732

LOT B1

ROAD 2

LOT B2

LOT C

Road Reserve
(southern portion)

LOT 12279

LOT 12277

Lot C

NOTE:
REFER TO DRAWINGS B20-6302 AND B20-6311
FOR WORKS WITHIN LOT 12279

Figure 1b: Site Plan - Lot C and Road Reserve (southern portion)

WARNING
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The locations of underground services are approximate only
and their exact position should be proven on site
No guarantee is given that all existing services are shown

WARNING:
DRAWINGS MUST BE
REPRODUCED IN COLOUR

2.5 0 2.5 5.0 7.5 10 12.5m
0 1:250-A1 1:500-A3

AS CONSTRUCTED

No.	DESCRIPTION	DATE	INIT.	DEPT/COMPANY.
2	AS CONSTRUCTED	15/03/2022	AS	THE MINING
1	LOT 12279 INTERFACE UPDATED	06/08/2021	AI	BYRNE
0	CONTRACT DRAWING	02/12/2020	PM	BYRNE

AMENDMENTS

byrne CONSULTANTS
ABN 78 124 388 192
P.O.Box 43420 Casuarina NT 0811
Ph. 08 89472476 Fax: 08 89475098
Byrne Consultants Project No. NT19012

DRAWN	CHECKED
YB	MDW
DATE	DATE
DESIGNED	CHECKED
MDW	GM
DATE	DATE
DESIGN PROJECT LEADER	NTG PROJECT MANAGER
-	-
DATE	DATE

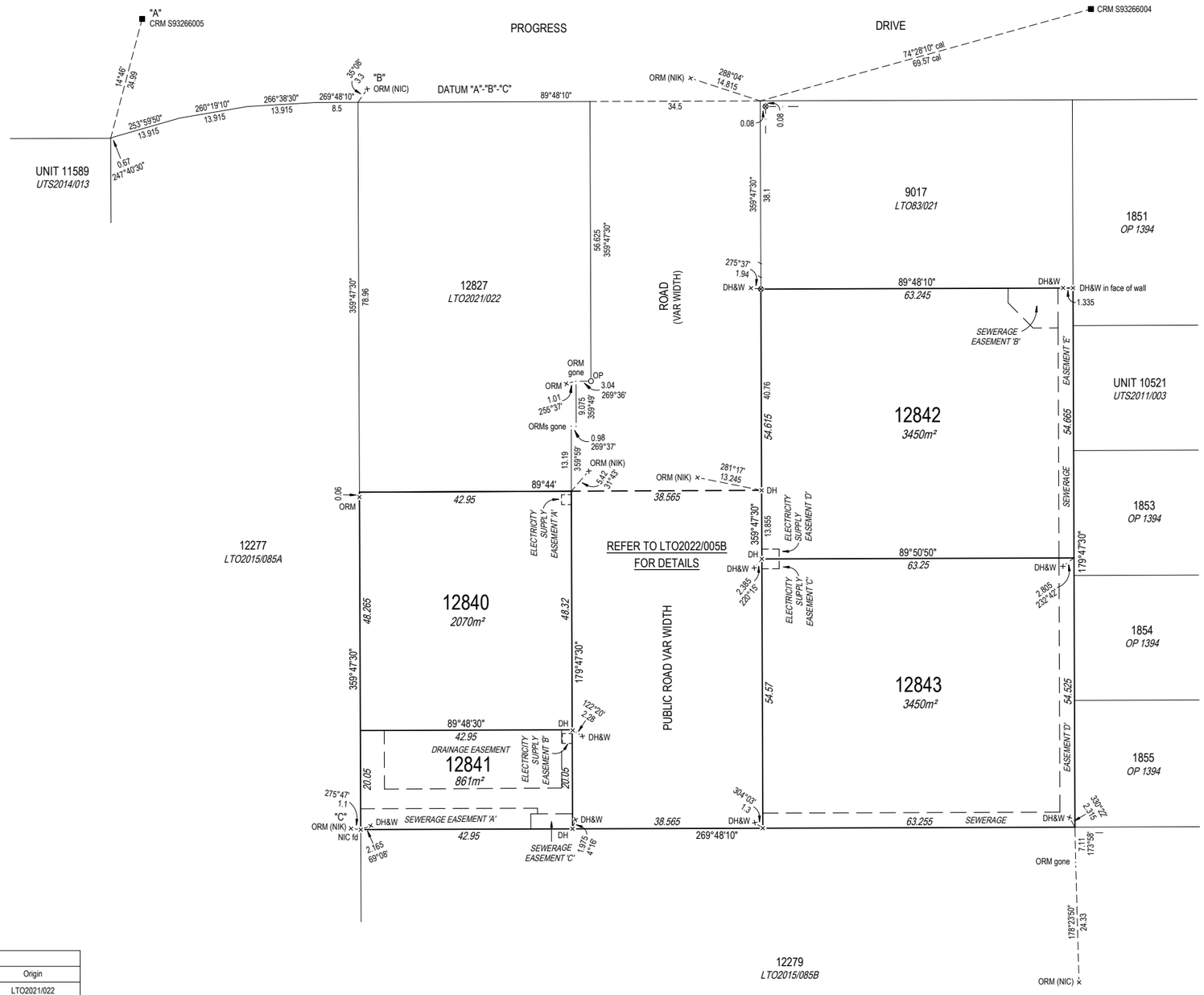
Northern Territory Government

DARWIN
NIGHTCLIFF
JOHN STOKES SQUARE REDEVELOPMENT

SURFACE FINISHES LAYOUT PLAN AND LEGEND SHEET 2 OF 2

NTG PROJECT No.	NTG ASSET No.	SHEET No.	NTG DRAWING No.	AMENDMENT	SHEET SIZE
HOD35032	-	16 OF 42	R20-1733	2	A1

Supersedes Part of LTO2021/022



Easements to be created by registration of this plan		
Description	Affects	In favour of
Drainage Easement	Lot 12841	Northern Territory of Australia
Electricity Supply Easement 'A'	Lot 12840	Power and Water Corporation
Electricity Supply Easement 'B'	Lot 12841	Power and Water Corporation
Sewerage Easement 'A'	Lot 12841	Power and Water Corporation
Sewerage Easement 'B'	Lot 12842	Power and Water Corporation

Existing Easements			
Description	Affects	In favour of	Origin
Electricity Supply Easement 'C'	Lot 12843	Power and Water Corporation	LTO2021/022
Electricity Supply Easement 'D'	Lot 12842	Power and Water Corporation	LTO2021/022
Sewerage Easement 'C'	Lot 12841	Power and Water Corporation	LTO83/010
Sewerage Easement 'D'	Lot 12843	Power and Water Corporation	LTO83/010
Sewerage Easement 'E'	Lot 12842	Power and Water Corporation	LTO83/010

Figure 1c: Site Plan - Lot C and Road Reserve

10 0 10 20 30 40 50
metres

SURVEYOR'S CERTIFICATE

I, Simon John Lewis
hereby certify that the survey represented on this plan was carried out by me or under my immediate supervision and was completed on 28/6/2022, and that this survey has been executed in accordance with the Licensed Surveyor's Act and the directions thereunder.

Licensed Surveyor — Date 25/08/2022

L.T.O. REGISTRATION

Lodged on . . . . . at . . . . .
Instrument Number . . . . . .
Registered on . . . . . at . . . . .
by me . . . . . .
Registrar-General

SURVEY APPROVAL

I, Robert Ian Sarib, the Surveyor-General, being satisfied that Part 5 of the Planning Act has been complied with:

(i) approve the survey under section 49 of the Licensed Surveyors Act;
(ii) acknowledge, on behalf of the Service Authorities designated, the vesting of the Service Easements shown hereon; and
(iii) accept on behalf of the Service Authorities specified, the land designated as roads or reserves hereon vested pursuant to section 64 of the Planning Act and section 7 of the Control of Roads Act

Surveyor-General — Date

Note
Dimensions of unmarked boundaries and connections are original unless otherwise shown
Public Road is vested in the City of Darwin
NIC denotes Nail in Concrete
NIK denotes Nail in Kerb

Version 1 - survey plan as lodged

LOTS 12840 TO 12843
SUBDIVISION OF LOT 12828
TOWN OF NIGHTCLIFF

Drawn by	Map Reference	SCALE 1:1000 (A3)
Earl James & Associates (12209) 20/7/2022		
Examined by: Earl James & Associates 22/08/2022	AZIMUTH Assumed from LTO2021/022, Observed at	LTO2022/005A
		SHEET 1 OF 2

Executive Summary

This report is in response to a request for a Certificate of Environmental Audit in accordance with Part IXD of the *Victorian Environment Protection Act 1970*. In accordance with EPA Victoria Publication 1147, summary information on this audit is presented in the following two tables.

Table 1: Summary of Audit Information

Item	Detail
Auditor	Jean Paul Pearce
Auditor account number	289162
Auditor appointment end date	26 November 2022
Audit type	53X
Date EPA notified of audit	21 November 2019
Audit service order number	PRL8565 (NTEPA2019/01099-199)
Name of person requesting audit	Ms Sinead Redmond Project Management Lead Northern Territory Department of Infrastructure, Planning and Logistics Land Development Unit
Relationship of person requesting audit to site	Authorised representative of the site owner
Name of premises owner	Department of Territory Families, Housing and Communities
Date of auditor engagement	20 November 2019
Completion date of the audit	16 September 2022
Reason for audit	Due to the identified pesticides and asbestos contamination, we understand EPA has required an Auditor to determine the site is suitable for use
Audit categorisation	Risk
Environmental segments	Air, Land, Groundwater, Surface water
If the audit was required by an EPA notice, licence or other, please provide EPA reference number	Not applicable
Current land use zoning	Zone MR (medium density residential), recently changed to Specific Use (SU) Zone SD49.
EPA region	Darwin
Municipality	Nightcliff
Dominant - Lot on plan	Lot 9077 Town of Nightcliff Lot 9077 has since been subdivided creating Lot 12841 for Lot C and the road reserve (refer to Attachment 1).
Additional - Lot on plan(s)	The project area has been split into three audit areas based on the proposed development. This audit is the third audit area (Stage 3 of 3 stages) and comprises Lot C and the road reserve, refer to Attachment 1.
Site/premises name:	John Stokes Square Nightcliff Development
▪ Building/complex sub-unit No	-

Item	Detail	
▪ Street/Lot – Lower No.	47	
▪ Street/Lot – Upper No.	-	
▪ Street Name	Progress	
▪ Street type (road, court, etc.)	Drive	
▪ Street suffix (North, South etc.)	-	
▪ Suburb	Nightcliff	
▪ Postcode	0810	
GIS coordinate of site centroid:		
▪ Latitude (GDA94)	-12.388587	
▪ Longitude (GDA94)	130.850751	
Site area (in square metres)	860 m^2 (Lot C) 5,448 m^2 (Road Reserve)	
Plan of site/premises showing the audit site boundary attached	Yes, refer to survey plan, Attachment 1.	
Plan of site/premises showing the audit site boundary attached in a spatial data format	No	
Members and categories of support team utilised	Shandel Coleman (AEA) for technical audit support Bridget Roder (AEA) for technical audit support	
Further works or requirements	No	
Nature and extent of continuing risk	Risks in groundwater have not been found to be significant, however the condition of the groundwater should be tested by an appropriately qualified environmental consultant (to determine the suitability thereof) prior to being utilised for extractive use. Risks in soil vapour have not been found to be significant. Risks in soils have not been found to be significant with all known on-site ACM having been removed from site. ACM has been encountered beyond the site boundary and is not a risk to this site provided excavation works do not drag it back on to this site.	
Outcome of the audit	Statement of Environmental Audit with condition	
Has EPA determined CUTEP at this site?	No	
Has the auditor determined CUTEP at this site?	No	
Has a GQRUZ been identified at the site/beyond the site by EPA?	No	
Does NAPL remain at the site?	No – never encountered	
Please indicate which of the Protected Beneficial Uses of groundwater are precluded due to pollution	**Protected Use (Segment A1)**	**Precluded?**
	Water Dependent Ecosystems and Species	No
	Potable Water Supply (Desirable)	No
	Potable Water Supply (Acceptable)	No
	Potable Mineral Water Supply	n/a
	Agriculture and Irrigation (Irrigation)	No
	Agriculture and Irrigation (Stock Watering)	No
	Water-based Recreation (Primary Contact Recreation)	No

Item	Detail	
	Industrial and Commercial	No
	Traditional Owners Cultural Values (on-site)	n/a
	Cultural and Spiritual Values (on-site)	n/a
	Geothermal Properties	n/a
	Buildings and Structures	No

Table 2: Physical Site Information

Item	Detail
Historical land use	Residential
Current land use	Recently redeveloped for a road corridor and open space
Proposed future land use	Road corridor and open space
Surrounding land use – north	Progress Drive then commercial, with low density residential beyond A service station is located to the north-east of the site
Surrounding land use – south	Child care centre and tyre retailer then commercial
Surrounding land use – east	Recently developed residential (Lot B3), residential properties, then Dick Ward Drive A service station is located south-east of the site
Surrounding land use – west	Vacant land and laneway then commercial
Proposed land use zoning	Specific Use (SU) Zone SD49
Nearest surface water receptor – name	Outer Estuary of Darwin Harbour
Nearest surface water receptor – direction	West
Likely point of groundwater discharge	Outer Estuary of Darwin Harbour, 160 m west of the site
Site aquifer formation	Unconsolidated soils
Groundwater flow direction	West
Groundwater TDS range (mg/L)	120 to 430 mg/L
Groundwater segment	Segment A1
Are there multiple aquifers impacted by pollution at the site?	No
Perched groundwater depth – upper (metres below ground level (mbgl))	n/a
Perched groundwater depth – lower (mbgl)	n/a
Regional groundwater depth – upper (mbgl)	6
Regional groundwater depth – lower (mbgl)	10
Number of bores within 2 km	46
Closest extractive use (distance in m)	Bore RN000130 (300 m from the site).
Zone of groundwater plume influence (m from site boundary)	Not applicable – non-source site
Year groundwater last monitored	2020
Have you attached electronic copies of Current Groundwater Analytical Results presented as a summary table?	Yes, refer to Appendix A

Read in Conjunction with Audit Report

This Executive Summary summarises the key points of the Audit Report. The Executive Summary must be read in conjunction with the full Audit Report (Service Order No. PRL8565 (NTEPA2019/0099-199); Australian Environmental Auditors Pty Ltd, ref. EA0729, *Environmental Audit Report (53X), 47 Progress Drive, Nightcliff* – Lot C and Road Reserve.

Table of Contents

Executive Summary i
1 Introduction 1
1.1 Background 1
1.2 Site Definition 1
1.3 Proposed Development 1
1.4 Reason for the Environmental Audit 1
1.5 Independence of the Environmental Auditor 2
2 Audit Framework and Scope of Works 3
2.1 General 3
2.2 Legislation, Regulations and Guidelines 3
2.3 Audit Scope 5
2.3.1 Previous Environmental Audits 5
2.3.2 Reports Reviewed 5
2.4 Correspondence with Client and their Consultants 6
2.5 Correspondence and Liaison with EPA 6
2.6 Audit Team and Expert Support 6
2.6.1 Site Inspections 6
2.7 Auditor's Verification of Site Conditions 7
2.8 Uncertainties of the Audit Process 7
3 Site History and Characterisation 8
3.1 Site History Summary 8
3.2 Potential Contamination Sources and Contaminants of Concern 8
3.3 Adequacy of Site History Information 9
4 Site Characterisation 11
4.1 Site Description and Observations from AEA Site Inspections 11
4.2 Surrounding Land Uses 12
4.3 Council Planning Scheme 12
4.4 Topography and Surface Waters 12
4.5 Geology and Hydrogeology 12
4.5.1 Regional Geology 12
4.5.2 Site Geology 12
4.5.3 Regional Hydrogeology 12
4.5.4 Registered Bore Search and Current Extractive Uses 13
4.5.5 Site-specific Hydrogeology 13
4.6 Conceptual Site Model 13
4.6.1 General 13
4.6.2 Known and Potential Sources of Contamination 13
4.6.3 Contaminants of Potential Concern 13
4.6.4 Potential Mechanisms of Contamination 13
4.6.5 Potentially Affected Media 14
4.6.6 Human and Ecological Receptors 14

4.6.7 Potential and Complete Exposure Pathways 14
4.6.8 Post Remediation Conceptual Site Model 15
5 Assessment of Beneficial Uses 16
5.1 Beneficial Uses of Land 16
5.2 Adopted Soil Assessment Criteria 17
5.2.1 Maintenance of Ecosystems 18
5.2.2 Protection of Human Health 19
5.2.3 Buildings and Structures 21
5.2.4 Aesthetics 21
5.2.5 Production of Food, Flora and Fibre 21
5.3 Beneficial Uses of Groundwater 22
5.4 Adopted Groundwater Assessment Criteria 23
5.4.1 Water Dependent Ecosystems and Species (WDES), Traditional Owner Cultural Values (TOCV) and Cultural and Spiritual Values (CSV) 23
5.4.2 Potable Water Supply 23
5.4.3 Agriculture and Irrigation (Irrigation) 23
5.4.4 Agriculture and Irrigation (Stock Watering) 24
5.4.5 Industrial and Commercial 24
5.4.6 Water-Based Recreation (Primary Contact Recreation) 24
5.4.7 Buildings and Structures 24
5.5 Beneficial Uses of Surface Water 25
5.6 Beneficial Uses of Ambient Air 26
6 Summary of Investigation Process and Findings 28
6.1 Soil Investigations 28
6.1.1 Site-Wide Data 29
6.1.2 Area-Specific Data (Lot C and road reserve) 29
6.2 Groundwater Investigations 30
6.3 Potential for Vapour Intrusion 31
6.4 Auditor's Opinion on Investigations – Lot C and Road Reserve 31
7 Remediation 32
7.1 Remediation and Validation of Asbestos Impacts 32
7.1.1 Off-site Soil Disposal and Importation of Fill Material 32
7.2 Sewer Easement 33
7.2.1 Off-site Soil Disposal and Importation of Fill Material 33
7.3 Auditor's Opinion on Remediation Data 34
8 Beneficial Use Assessment – Land 35
8.1 Final Soil Condition 35
8.1.1 Maintenance of Ecosystems (MoE) 37
8.1.2 Human Health 37
8.1.3 Aesthetics 37
8.1.4 Production of Food, Flora and Fibre 37
8.1.5 Buildings and Structures 37
8.2 Consideration of Whether a Certificate or Statement Should be Issued 38

8.3 Determination of Whether the Condition of the Site is Detrimental to the Proposed Development 38
9 Beneficial Use Assessment – Groundwater 39
9.1 Groundwater Pollution Assessment Process 39
9.1.1 Is Groundwater Likely to be Polluted? 39
9.1.2 Is Groundwater Polluted? 39
9.1.3 Are Precluded Beneficial Uses Relevant or is the Site the Source? 39
9.2 Final Groundwater Condition 40
9.3 Source and Extent of Groundwater Pollution 41
9.3.1 Background/Regional Pollution 41
9.4 Significance (Risk) of Groundwater Pollution 42
9.4.1 Extractive Groundwater Uses 42
9.4.2 Water Dependent Ecosystems and Species, Traditional Owner Cultural Values, Cultural and Spiritual Values 42
9.4.3 Other Non-Extractive Groundwater Uses 43
9.4.4 Consideration of Potential NAPL 43
9.4.5 Consideration of Potential Vapour Risks 43
9.5 Summary of Precluded Beneficial Uses of Groundwater 43
9.6 Determination of Whether a Certificate or Statement Should be Issued 44
9.7 Determination of Whether the Condition of the Site is Detrimental to the Proposed Development (Statement of Environmental Audit) 44
10 Beneficial Use Assessment – Surface Water 45
11 Beneficial Use Assessment – Ambient Air 46
12 Other Factors Affecting Use of the Site 47
13 Conclusions 48
13.1 Audit Requirement 48
13.2 Verification of Assessor's Conclusions 48
13.3 Auditor's Conclusions 48
14 References 50

List of Tables

Title **Page**

Table 1: Summary of Audit Information i
Table 2: Physical Site Information iv
Table 3: Adequacy of Site History Information 9
Table 4: Summary of Auditor Inspections 11
Table 5: Initial Source – Pathway – Receptor Assessment 14
Table 6: Final Source – Pathway – Receptor Assessment 15
Table 7: Beneficial Uses of Land to be Protected 17
Table 8: Indicators and Objectives for Beneficial Uses of Land 17
Table 9: Beneficial Uses of Groundwater to be Protected 22
Table 10: Beneficial Uses to be Protected (Inland Waters) 25
Table 11: Summary of Soil Investigations at the Site 28
Table 12: Summary of Groundwater Investigations at the Site 30
Table 13: Residual Soil Analytes Comparison with Ecological/Human Health Direct Contact Criteria (mg/kg) 35
Table 14: Validation Soil Analytes Comparison with Ecological/Human Health Direct Contact Criteria (mg/kg) 36
Table 15: Stockpile Soil Analytes Comparison with Ecological/Human Health Direct Contact Criteria (mg/kg) 36
Table 16: Groundwater Results Exceeding Adopted Tier 1 Criteria 40
Table 17: Summary of groundwater contaminant exceedances 42
Table 18: Precluded Beneficial Use Summary Table 43

List of Attachments

Attachment 1: Site Location Plan 53
Attachment 2: Development Plan 54
Attachment 3: Historical Site Layout 55
Attachment 4: Soil Investigation Locations 56
Attachment 5: Groundwater Investigation Locations 57
Attachment 6: Conceptual Site Model 58
Attachment 7: SLR Stockpile Locations 59
Attachment 8: Validation Locations 60
Attachment 9: Sewer Easement 61

Appendices

Title **Appendix**

EPA Summary Information ..... A
Certificate of Title ..... B
Consultant's Reports C
Client and Consultant Correspondence ..... D

Abbreviations

Abbreviation	Description
ACM	Asbestos-containing materials
AF/FA	Asbestos fines/fibrous asbestos
ANZECC	Australian and New Zealand Environment and Conservation Council
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
ASS	Acid sulfate soils
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene
CCME	Canadian Council of the Ministers of the Environment
CEA	Certificate of Environmental Audit
CSM	Conceptual Site Model
CSV	Cultural and Spiritual Values
DIPL	Department of Infrastructure, Planning and Logistics
DQO	Data Quality Objectives
DSI	Detailed site investigation
EAR	Environmental Audit Report
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
ESL	Ecological Screening Level
GME	Groundwater Monitoring Event
HEPA	Heads of Environmental Protection Agencies
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
IWRG	Industrial Waste Resource Guidelines
LOR	Limit of Reporting
mbgl	Metres below ground level
mbtoc	Metres below top of casing
NAPL	Non-aqueous phase liquid
NATA	National Association of Testing Authorities
NHMRC	National Health and Medical Research Council
NT EPA	NT Environment Protection Authority
OCP/OPP	Organochlorine pesticides/Organophosphate pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per- and poly-fluoroalkyl substances
SBWMF	Shoal Bay Waste Management Facility
SEA	Statement of Environmental Audit
SEPP	State Environmental Protection Policy
TDS	Total Dissolved Solids
TOCV	Traditional Owners Cultural Values
TRH	Total Recoverable Hydrocarbons
VOC	Volatile Organic Compounds
WA DoH	WA Department of Health
WDES	Water Dependent Ecosystems and Species

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1 Introduction

1.1 Background

This Environmental Audit Report (EAR) and accompanying Statement of Environmental Audit (SEA) were prepared by Jean Paul Pearce, an employee of Australian Environmental Auditors Pty Ltd (AEA) and Environmental Auditor (Contaminated Land) appointed pursuant to the *Environment Protection Act 1970* (*Victorian EP Act*).

This EAR was prepared in response to a request from Ms Sinead Redmond, a project manager for Department of Infrastructure, Planning and Logistics (DIPL) to conduct an environmental audit of the site under section 53X of the *Victorian EP Act* to satisfy an NT EPA requirement.

DIPL contracted Greencap Pty Ltd (Greencap), Agon Environmental Pty Ltd (Agon) and SLR Consulting Australia Pty Ltd (SLR) to undertake environmental site investigations and remediation for the purpose of providing sufficient information to allow this audit to be completed.

This EAR has been prepared in accordance with Section 53X of the *Victorian EP Act* and relevant Victorian and Northern Territory EPA guidance (particularly EPA Victoria Publications 759 and 1147). The SEA has been prepared in accordance with Section 53Z of the *Victorian Environment Protection Act 1970* and relevant Victorian and Northern Territory EPA guidance (particularly EPA Victoria Publication 759).

1.2 Site Definition

The site subject to this environmental audit is identified as 47 Progress Drive, Nightcliff, Northern Territory – Lot C and Road Reserve (the site), and is 0.63 hectares in area. Further details are provided in Table 1.

The project area has been split into three audit areas based on the proposed development. The third audit area (Stage 3 of 3 stages) is covered by this audit report for Lot C and Road Reserve. The boundaries are shown in Attachments 1 and 2.

A separate audit report has been prepared for Lot A (police station) which has been constructed (audit report dated 31 March 2022). The remainder of the project area comprises the residential area (Lots, B1, B2 and B3) which is under construction and has been documented in a separate audit report (8 September 2022).

The site is located approximately 8 km north of the Darwin central business district, Northern Territory. The site location is shown in Attachment 1, the certificate of title is included in Appendix B and a plan showing the boundaries of the site and the audit areas is provided as Attachment 2. Note that the certificate of title reflects the original Lot boundaries, as the certificates of title for the new allotment (Lot C and the road reserve) are not available at this time.

1.3 Proposed Development

The site is currently being developed as a road reserve (incorporating road corridor and open space areas) and Lot C (public car parking). A copy of the proposed lot development plan is provided in Attachment 2.

The proposed development is consistent with *Commercial* and *Public Open Space* under the Land SEPP. Surrounding uses are a mix of sensitive use, commercial and industrial.

1.4 Reason for the Environmental Audit

The audit of the site was completed to meet NT EPA requirements. Due to the identified pesticides and asbestos contamination, we understand EPA has required an auditor determine the site is suitable for use. The audit included assessing the site with regard to historical activities potentially impacting on beneficial uses. The Auditor considered the site conditions relative to the proposed use and assessed the suitability

of the site for the proposed use, as well as all potential protected beneficial uses, as required by EPA guidelines.

1.5 Independence of the Environmental Auditor

The environmental audit system depends on the Auditor undertaking an independent assessment of the site condition and risks to beneficial uses. EPA guidelines provide guidance on the auditor maintaining their independence and avoiding potential conflicts of interest.

To the best of the Auditor's knowledge, the Auditor and his support team have had no involvement with this site prior to this audit. The Auditor and his support team have no financial association with the consultant or client beyond the payment for audit services by the client. Based on EPA guidance, the Auditor is therefore not aware of any real or perceived conflicts of interest which should prevent the audit from being completed.

2 Audit Framework and Scope of Works

2.1 General

The *Victorian EP Act* defines an environmental audit as a *'total assessment of the nature and extent of any harm or detriment caused to, or the risk of any possible harm or detriment which may be caused to, any beneficial use made of any segment of the environment by any industrial process or activity, waste, substance (including any chemical substance) or noise'.*

The segment of environment for the purposes of an environmental audit (contaminated land) is the audit site which is defined in terms of *'a parcel of land and all other elements (i.e. land, groundwater, surface water, air) of the environment associated with the land within the boundary of the parcel of land'* (Victorian EPA Publication 759).

A beneficial use is defined in the *Victorian EP Act* as '*a use of the environment or any element or segment of the environment which –*

(a) is conducive to public benefit, welfare, safety, health or aesthetic enjoyment and which requires protection from the effects of waste discharges, emissions or deposits or of the emission of noise; or

(b) is declared in State Environment Protection Policy to be a beneficial use;'

Furthermore, a beneficial use is considered relevant *'if the beneficial use is existing or is likely to be realised at the site'* (Victorian EPA Publication 759).

The assessment of whether a specific beneficial use is precluded or not is undertaken using an assessment of site condition against published qualitative and quantitative assessment criteria.

If the contamination status of the site is not detrimental to any beneficial use, then the outcome of the environmental audit will be a Certificate of Environmental Audit (CEA), in which case there is no restriction on the use of the site due to its contamination status.

If the contamination status of the site is detrimental to any beneficial use, then the outcome of the environmental audit will be an SEA, which indicates that the site is either:

- Not suitable for any use;
- Suitable for specific uses (that is, not detrimental to the beneficial uses associated with the nominated land use) without conditions or limitations; or
- Suitable for specific uses (that is, not detrimental to the beneficial uses associated with the nominated land use) subject to conditions and/or limitations relating to its use and management.

2.2 Legislation, Regulations and Guidelines

Section 68 of the Northern Territory Waste Management and Pollution Control Act 1998 (WMPC Act), Register of qualified persons, specifies that:

(1) The NT EPA must cause to be established and maintained a register of:

(a) persons qualified to perform environmental Audits for the purposes of an environmental Audit program…

It is understood that in early 2011 persons accredited under the NSW Site Auditor Scheme or the Victorian Environmental Auditor Scheme were approved as a class of person suitable to undertake environmental Audits in the Northern Territory.

The Audit was undertaken in accordance with Section 47d of the WMPC Act which states in part that:

An environmental Audit is an evaluation of any of the following:

(d) the likelihood of waste management problems or pollution resulting in environmental harm occurring and the adequacy of safeguards in place to prevent their occurrence or limit their impact on the environment;

(f) the types, amount, distribution or mobility of contaminants or waste present in the environment.

When conducting this environmental audit, the following key pieces of legislation (and subordinate legislation) were considered:

- *Environment Protection Act 1970* (Act No. 8056/1970) Victoria;
- SEPP (State Environment Protection Policy) (1999) *Ambient Air Quality*. Victorian Government Gazette, S19, 9 February 1999;
- SEPP (State Environment Protection Policy) (2001) *Air Quality Management*. Victorian Government Gazette, S240, 21 December 2001;
- SEPP (State Environmental Protection Policy) (2002) *Prevention and Management of Contamination of Land*. Victorian Government Gazette, S95, 4 June 2002; and
- SEPP (State Environmental Protection Policy) (2018) *Waters.* Victorian Government Gazette, S499, 23 October 2018.

Key guidance documents for environmental auditing include, but are not limited to, the following:

- NT EPA, *Guideline for the Preparation of an Environmental Management Plan*, May 2015;
- NT EPA, *Northern Territory Contaminated Land Guideline,* June 2017;
- EPA Victoria Publication 865.12, *Environmental Auditor Guidelines for Appointment and Conduct*, December 2016;
- EPA Victoria Publication 952.5, *Preparation of Environmental Audit Reports on Risk to the Environment*, December 2015;
- EPA Victoria Publication 953.2, *Environmental Auditor Guidelines for Conducting Environmental Audits*, August 2007; and
- EPA Victoria Publication 1147.2, *Environmental Auditor Guidelines – Provision of Environmental Audit Reports, Certificates and Statements*, December 2015 and its replacement Publication 2022, *Environmental Auditor Guidelines – Provision of Statements and Reports for Environmental Audits and Preliminary Risk Screen Assessment*, August 2021.

Additional guidance documents include, but not limited to, the following:

- ASC NEPM (2013) *National Environment Protection (Assessment of Site Contamination) Measure 1999* (ASC NEPM), as amended May 2013, National Environment Protection Council. Australian Government;
- WA DoH (2021) Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, Department of Health;
- HEPA (2020) PFAS National Environmental Management Plan (NEMP), Heads of EPAs Australia and New Zealand;
- CRC CARE 'Technical Report 16: Safe onsite retention of contaminants Part 2: A risk based approach' (2013); and
- ANZECC (Australian and New Zealand Environment and Conservation Council), *Guidelines for the Assessment of On-Site Containment of Contaminated Soil*, September 1999.

The NT EPA requirements for summary information are provided in the Executive Summary.

The EPA requirements for summary information are provided in Appendix A, including:

- A completed Pro Forma for the Completion and Issue of Statement or Certificate of Environmental Audit, as per Appendix 9 of EPA Publication 759;
- A site survey plan; and
- A summary of current groundwater analytical results as per Attachment C of EPA Publication 840.

The Victorian *Environment Protection Act 2017* commenced on 1 July 2021, replacing the *Environment Protection Act 1970* and Vic EPA publications have been in a state of preparation and revision since then to help industry comply with the new Act. Victorian EPA Publication 1978 *Transition guidance for environmental auditors*, June 2021 provides guidance to Auditors on how to manage the transition of the new Act for their audits. An email from the Victorian Environmental Audit Unit on 26 October 2021 noted the extension of transition arrangement until October 2022. Effectively, audits commenced under the 1970 Act can be completed in accordance with that Act at any time (preferably by October 2022) or can be completed under the new Action from 1 July 2021. The site investigations were largely completed prior to 1 July 2021 and following discussions with NT EPA, it was agreed to complete the audit under the old Act. It is noted that science and technical publications upon which the auditor determines site suitability have not changed.

2.3 Audit Scope

2.3.1 Previous Environmental Audits

The project area has been split into three audit areas based on the proposed development. This audit is the third and final audit area (Stage 3 of 3 stages) and comprises Lot C and the road reserve. A separate audit report has been prepared for Lot A (dated 31 March 2022), and Lot B (B1, B2 and B3; dated 8 September 2022).

2.3.2 Reports Reviewed

The following documents were finalised prior to commencement of the audit, and were reviewed primarily for background purposes:

- Greencap, *Limited Soil Investigation, John Stokes Square, 47 Progress Drive, Nightcliff,* 14 July 2019;
- Greencap, *Detailed Site Investigation, John Stokes Square, 47 Progress Drive, Nightcliff,* draft 2 September 2019;
- Greencap, *Additional Soil Investigation, John Stokes Square, 47 Progress Drive, Nightcliff,* October 2019;
- Greencap, *Asbestos Management Plan, John Stokes Square, 47 Progress Drive, Nightcliff,* October 2019;
- WANT Geotechnics Pty Ltd, *Geotechnical Investigation, Proposed Redevelopment of John Stokes Square, Lot 9077 Progress Drive, Nightcliff,* 23 October 2019; and
- Agon Environmental, *RE: John Stokes Square – Environmental Summary,* 25 October 2019

The following documents were provided to the Auditor for review and comment during the audit period, and were subsequently revised to meet auditor requirements (only the final versions are listed below):

- Agon Environmental (2020a), *Detailed Site Investigation, John Stokes Square, 47 Progress Drive, Nightcliff, NT* (Ref JF1006.DSI/Final, 21 April 2020;

- SLR (2020a) *Memorandum: Remediation Strategy, John Stokes Square – Lot A* (Ref.680.30002.00000 Remediation Strategy 20200422, 22 April 2020)
- SLR (2020b) Sampling, Analysis and Quality Plan, Detailed Site Investigation, John Stokes Square (ref. 680.10679-R01-v1.0, 3 June 2020)
- SLR (2020c) *Memorandum: Remediation Strategy, John Stokes Square – Residential Lots (Lots B1, B2 and B3)* (Ref. Appendix J - DRAFT Remediation Strategy.docx, 14 May 2020)
- Halikos (2020), *Construction Environmental Management Plan Revision 2.0, John Stokes Square, Broad Scale Site Remediation and Construction Preparation Works* (Ref PMP-3.03 Rev3, June 2020).
- Greenspace Group (2020) Construction Environmental Management Plan (Ref. T20-1056 V1, 5 July 2020)
- SLR (2021) *Sewer Easement Remediation and Validation Report – John Stokes Square Redevelopment, Road Reserve* and *Lot C* (ref. 680.10679.00200-R12v.1.0, 5 December 2021)
- SLR (2022) *Validation Report – John Stokes Square Redevelopment, Road Reserve and Lot C* (ref. 680.10679-R06v4.0, 12 May 2022)

A copy of the Validation Reports are provided in Appendix C.

A review of the above reports did not identify reference to any relevant reports that have not been provided for review by the auditor.

2.4 Correspondence with Client and their Consultants

During the audit, the Auditor issued a series of formal review letters to the client and their consultant. These letters typically document the outcome of the Auditor's review of work plans and draft reports. A copy of the Auditor's letters is provided in Appendix D.

In addition, the Auditor also provided numerous e-mails to the client and consultant. Copies of these documents are held with AEA.

2.5 Correspondence and Liaison with EPA

The Auditor submitted a *Notification of Request to Issue a Certificate of Environmental Audit* to the EPA on 22 November 2019. A copy is provided in Appendix D.

The Auditor corresponded with NT EPA regarding the use and reporting against the 1970 Victorian EP Act as per e-mail dated 8 November 2021.

A copy of the draft audit report and statement were provided to EPA on 30 August 2022 and EPA comments provided on 1 September 20122 were taken into consideration when finalising this audit report.

2.6 Audit Team and Expert Support

The Auditor consulted with the following expert support team:

- Shandel Coleman, Principal Environmental Scientist – project management, review of assessor's reports and sampling plans and draft audit reporting; and
- Bridget Roder, Senior Environmental Engineer – project management, review of assessor's reports and sampling plans and draft audit reporting.

2.6.1 Site Inspections

A summary of the site inspections and pertinent observations is provided in Section 4.

2.7 Auditor's Verification of Site Conditions

The Auditor has undertaken work to verify that the environmental activities and quality of the site is as reported by the various reports reviewed.

The Auditor and/or his assistant undertook site inspections via video conference and physically to:

- familiarise with the site and surrounding area;
- verify observations noted by the consultant;
- observe a portion of the remediation work; and
- confirm final site condition.

A number of site inspections were undertaken via video conference due to COVID-19 travel restrictions which were in place during the majority of the project, and the final site inspection was undertaken by the Auditor in person on 28 October 2021 and the Auditor's Assistant in person on 24 July 2022.

The Auditor considered that verification sampling was not necessary to complete the audit. This determination was made based upon:

- the lack of unexpected or unexplained pollution;
- the competency of the consultant who conducted the sampling and the laboratories which conducted the analysis;
- the quality of the documentation provided by the consultant and laboratories; and
- the verification between consultant's documentation and site observations by the audit team.

2.8 Uncertainties of the Audit Process

This audit report has been prepared for the client for the purposes described in the audit report. This document may not be suitable for other purposes.

The Auditor has prepared this document in good faith, but is unable to provide certification outside of areas over which he had some control or is reasonably able to check.

It is not possible in an Environmental Audit Report to present all data, which could be of interest to all readers of this report. Readers are referred to the referenced investigation reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice with respect to, their situation.

The Auditor notes that any comments and conclusions provided in this document regarding the suitability of the site for the proposed land use are implicitly limited to consideration of contamination related issues as defined under the *Victorian EP Act*.

3 Site History and Characterisation

3.1 Site History Summary

Site history information was provided primarily from Agon DSI (2020a). Aerial photography showed that until between approximately 1944 and 1969 the site was native bushland which was subsequently cleared. In 1969 the site had been cleared of vegetation but remained undeveloped, however significant residential development and road infrastructure had occurred to the north of the site. From 1969 land surrounding the site continued to be developed for residential and commercial use. The site was most recently (from the 1980s until 2019) used for high density residential use. Demolition occurred in late 2019.

In December 1974 Cyclone Tracy devastated the city of Darwin destroying buildings and infrastructure across the city (and greater Darwin region). The destruction of buildings resulted in the spread of asbestos debris, resulting in its presence within surface soils across Darwin. Based on the timing of development of the site, it is possible that legacy asbestos debris is present in fill on site associated with Cyclone Tracy.

Based on historical aerial photographs, the Auditor considers that the structures visible in 1974 were potentially constructed using asbestos cement and the bonded asbestos identified in soils may also have originated from the demolition of structures prior to 1990 or importation of asbestos contaminated fill.

No other evidence of point sources of contamination or significant contaminating activities were identified at the audit site, such as underground fuel storage tanks or industrial activities.

The site history identified the following off-site land uses that have potential relevance to the audit:

- Service stations located to the north-east, east and south-east of the site; and
- Other surrounding properties comprised a mix of residential and commercial purposes, and mostly low risk of being a source of significant contamination (uses included supermarket, newsagency, post office, hairdresser, restaurants).

3.2 Potential Contamination Sources and Contaminants of Concern

The Auditor considers that the key on-site potential contaminants of concern and likely location for the site include:

- Historical application of pesticides/herbicides such as termiticides;
- Historical use of ACM construction materials; and
- Imported fill across the site (heavy metals, total recoverable hydrocarbons [TRHs], polycyclic aromatic hydrocarbons [PAHs], asbestos, pesticides).

Attachment 3 shows the former site layout.

The Auditor considers that the key potential contaminants of concern from the off-site sources include:

- Service stations with underground fuel storage tanks (USTs), located to the north-east, east and south-west of the site (TRHs, benzene, toluene, ethylbenzene and xylenes [BTEX], PAHs); and
- Urbanisation, sewage disposal and management (nitrate and ammonia).

The results of the site history investigation indicate that the site is a potential source of contamination, particularly in shallow soil/fill. The site history also determined there are potential off-site sources of contamination which may be impacting on the site, particularly groundwater.

3.3 Adequacy of Site History Information

Table 3: provides information on the site history information sources investigated and adequacy for the audit purpose.

Table 3: Adequacy of Site History Information

Information Requirements	Undertaken	Auditor's Comments
Land uses (previous and current)	Yes	Historical certificates of titles, historical aerial photographs and other sources were reviewed to obtain this information and were documented in the consultant's reports.
Owners, occupiers and users (previous and current)	Yes	Historical certificates of title were reviewed to obtain this information and were documented in the consultant's reports.
Current and historical title search	Yes	Reviewed back to 1986 (original title).
Historical aerial photographs for the Site and adjacent properties	Yes	Historical aerial photographs (1944, 1969, 1974, 1985, 1990, 2001, 2012 and 2019) reviewed by Agon.
Environmental Audit Reports and Statements and Certificates for site and surrounding area	Yes	A search of the NT EPA's Contamination Register was documented in the consultant's reports.
Landfill Register	Yes	There is no NT EPA register. The Auditor undertook a review of landfills in the area. No landfills were identified within 500 m of the site.
Unexploded Ordnance (UXO)	Yes	The Auditor undertook a review on the Department of Defence online UXO map and the site and surrounds were not identified as having a potential for UXO.
Groundwater database review	Yes	Agon undertook a search for groundwater data near the site using Northern Territory Groundwater Data Portal, documented in the consultant's reports.
Local planning scheme and environmental overlays	Yes	Documented in consultant's report.
Search of dangerous goods register	No	Formerly residential land use, no storage of dangerous goods expected.
Review of asbestos register (if applicable)	No	No asbestos register available. Asbestos identified in soils and remediation undertaken.
Interviews with person knowledgeable with the site	No	Formerly residential land use, no notable activities expected.
Detailed site inspection	Yes	Numerous site inspections undertaken.
Chemical inventory and storage details (including USTs)	No	Formerly residential land use, no storage of chemicals expected.
Review of previous investigations and critique on adequateness of data	Yes	Documented in consultant's DSI report and undertaken by the auditor.
Chronological list of land use activities including potential information gaps and uncertainties	Yes	Documented in the consultant's report.
List of potential contaminating activities, likely contaminants and locations	Yes	Documented in the consultant's report.
Potential off-site sources of contamination identified	Yes	Documented in the consultant's reports.

Information Requirements	Undertaken	Auditor's Comments
Site plan showing historical site layout (if relevant)	Yes	Documented in the consultant's report.
Environmental setting (i.e. nearby ecological receptors)	Yes	Documented in the consultant's report.
Local geology and hydrogeology	Yes	Documented in the consultant's report.
Potential for acid sulfate soils	Yes	Documented in the consultant's report.

Based on the information provided, the Auditor considers that the site history investigations have been generally undertaken with regard to relevant legislations and guidelines. The Auditor notes that the data gaps identified in the above table and those inherent within site history investigations have been adequately addressed through broad screen analysis of both soil and groundwater, and excavation of surface soils across the entire site.

The Auditor considers that there is sufficient site history information to provide a suitable level of confidence regarding the historical uses of the site as they relate to the potential for contamination and to inform the requirements for detailed site investigations. The Auditor therefore considers the site history investigations as adequate.

4 Site Characterisation

4.1 Site Description and Observations from AEA Site Inspections

At the time of the Auditor's initial site inspection on 28 January 2020, the site had been cleared of structures with crushed concrete present on Lot A. The former site layout is shown in Attachment 3.

At the final site inspection on 24 July 2022, the construction of the police station on Lot A was completed and the police station in use. The residential properties on Lots B1, B2 and B3 were under construction with the superstructure commenced and the landscaping pending. The construction of the road, car park and landscaping on the verge and open space areas (Lot C and Road Reserve) was complete.

The Auditor undertook several site inspections over the course of the audit. Due to the travel restrictions from COVID 19, a number of the site inspections were undertaken via video conference or using a local representative. A summary of the key observations is provided in Table 4: below.

Table 4: Summary of Auditor Inspections

Date	Reason for Inspection	Observations
28 January 2020	Initial inspection and meeting with client and consultant to observe site condition	Site vacant and structures demolished. Isolated fragment of potential bonded ACM in good condition. Crushed concrete evident on Lot A with no surface ACM observed. No visual or olfactory indicators of staining. Groundwater wells in situ with no hydrocarbon odours evident. Inspection of surrounding area did not identify groundwater monitoring wells on public land. With the exception of potential ACM, no other indicators of contamination identified.
11 June, 6 August, 14 and 19 October 2020	Video inspections to observe civil/remediation works in progress	Observe remediation works across the general area associated with civil works, including removal of redundant underground services across the wider site and boundary asbestos to the north-east (Lot B). Observations consistent with SLR reporting.
12 August 2021	Video inspection and in person by Chris Gamble of Agon to observe management of unexpected finds	Wider site under construction with civil works and ad hoc asbestos removal occurring within Road Reserve via unexpected finds protocols. Police station structure completed and Lot A fully covered by concrete. Inspection report provided in Appendix D.
28 October 2021	Final site inspection – in person by the Auditor	Construction of the police station (Lot A) is complete with Lot A fully covered by concrete. Construction of the residential apartments with slab installed and awaiting fit-out and landscaping. Boundary works completed. Construction of road partially completed with landscaping in the verge underway. No potential ACM or other visual or olfactory indicators of contamination observed.
24 July 2022	Final site inspection – in person by the Auditor's Assistant	Construction of the police station (Lot A) was complete with Lot A fully covered by concrete. Construction of the residential apartments with superstructure commenced and landscaping pending (Lots B1, B2 and B3). Boundary works completed. Construction of the road, car park, public open space areas and landscaping in the verge complete (Lot C and Road Reserve). No potential ACM or other visual or olfactory indicators of contamination observed.

4.2 Surrounding Land Uses

The surrounding land uses are as follows:

- North: Progress Drive then commercial with residential properties north-east. A service station is located to the north-east of the site
- East: residential properties under development, residential properties and a Coles Express service station then Dick Ward Drive.
- South: Existing childcare centre and tyre retailer, then commercial.
- West: vacant land, laneway then commercial.

4.3 Council Planning Scheme

The site was located within a medium density residential zone (SD – Single Dwelling) under the Northern Territory Planning Scheme. During development of the site the zoning was changed to Specific Use (SU) SD49, the purpose of this zone is to facilitate development of the land for a complementary mix of commercial, community and residential uses in mixed use multistorey buildings with high amenity public areas.

4.4 Topography and Surface Waters

The site surface elevation drops approximately 3 m from the north-east corner to the south-west corner towards Darwin Harbour.

There are no on-site surface water bodies. Significant surface water is not expected to enter the site from neighbouring properties or streets.

The site is located approximately 160 m from the edge of a mangrove community and the Outer Estuary of Darwin Harbour to the west of the site.

4.5 Geology and Hydrogeology

4.5.1 Regional Geology

A review of the 2.5 m Geological Map indicates the local geology at the site comprises Cretaceous Aged Sedimentary mudstone and shale deposits and is indicated to be underlain by pisolitic and nodular laterite gravel.

4.5.2 Site Geology

Intrusive investigations indicated the soil at the site consisted of a heterogeneous fill layer up to 0.8 m deep, comprising sandy clay, sandy gravelly silts and clayey silty sand. Natural lateritic soils consisted of red brown and yellow clayey sandy gravel overlying stiff to very stiff red brown sandy clay with trace gravels, underlain by highly weathered siltstone to a maximum of 3.8 mbgl with very low strength siltstone to the maximum depth of investigation (5.6 mbgl).

A review of the *Atlas of Australian Acid Sulfate Soils* (CSIRO) indicates the south-western corner of the site, closest to the marine environment, has a greater probability of encountering Acid Sulfate Soils (ASS) than the remainder of the site (high probability compared to extremely low probability). Test pitting did not encounter any soils typically associated with lowland coastal environments.

4.5.3 Regional Hydrogeology

No water quality data was available within proximity to the site. Regional groundwater flow is likely to be to the west to south-west, towards Darwin Harbour (Beagle Gulf).

4.5.4 Registered Bore Search and Current Extractive Uses

A 2 km radius bore search was undertaken by Agon using *Northern Territory Government Water Data Portal*, and this was cross-checked by AEA. The Agon search identified 46 registered bores, with seven bores within a 500 m radius. One bore was listed as being used for production and the remainder for investigation or unknown purposes.

The nearest production bore (RN000130) was located approximately 300 m east of the site, likely up-gradient to cross-gradient. None of the bores were inferred to be located down-gradient of the site.

Based on the available information, it is possible that groundwater is being used for domestic purposes, such as watering gardens, in the vicinity of the site, however the Auditor considers potential use to be limited, due to the availability of mains water and highly urbanised land use.

4.5.5 Site-specific Hydrogeology

The TDS concentration of groundwater recovered on the site ranged from 120 to 430 mg/L, classifying the groundwater as Segment A1.

Stabilised depths to groundwater were approximately 2.7 to 3.8 m below top of casing (mbtoc). Groundwater flow direction was not determined as the groundwater monitoring wells were not surveyed.

The regional flow direction is expected to be towards the nearest potential discharge point at Outer Estuary of Darwin Harbour (approximately 160 m from the site).

4.6 Conceptual Site Model

4.6.1 General

A written preliminary conceptual site model (CSM) was prepared by Agon (2020a), which provided an assessment of preliminary site conditions against the essential elements of a CSM, as stated in Section 4.3 of Schedule B2 to the ASC NEPM. A diagrammatic representation of the CSM was also provided by Agon (reproduced as Attachment 6). The following sections provide the Auditor's summary and interpretation of the CSM.

The CSM was updated throughout the investigation and remediation phases of work by SLR. The post remediation CSM is detailed in Section 4.6.8.

4.6.2 Known and Potential Sources of Contamination

The primary potential sources of contamination are the historical application of pesticides/herbicides, use of asbestos containing building materials and the presence of imported fill material. The primary off-site potential sources of contamination are from three local service stations in the area.

4.6.3 Contaminants of Potential Concern

Based on the former use of the site and surrounding areas, the contaminants of potential concern are heavy metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury), TRHs, BTEX, PAHs, pesticides and asbestos.

4.6.4 Potential Mechanisms of Contamination

The most likely mechanism of contamination for both fill and former on-site activities is '*top down*' spills.

The mechanisms of contamination associated with off-site sources is primarily lateral migration in groundwater.

4.6.5 Potentially Affected Media

The potentially affected media are primarily soil and groundwater. If volatile contaminants are observed in soil or groundwater, then further consideration of soil vapour and air (ambient and indoor air once development has been completed) will be necessary.

4.6.6 Human and Ecological Receptors

The Auditor considers that the human receptors of most concern are future site residents, workers and visitors (following redevelopment), construction workers associated with the development, and intrusive maintenance workers on the site. Risk to off-site human receptors, such as maintenance workers in the road, will need consideration if the site is a source of contamination that could migrate off site.

The Auditor considers that the ecological receptor of most concern is the nearest surface water receptor which receives groundwater discharge. This is likely to be Outer Estuary of Darwin Harbour (160 m to the west). There are unlikely to be any significant ecological receptors on the site itself following redevelopment, as the proposed building footprint and associated car parks will cover the entirety of the site.

4.6.7 Potential and Complete Exposure Pathways

Table 5: presents a summary of the Auditor's assessment regarding the potential and complete exposure pathways which are of most concern. These are generally consistent with Agon's determinations for on-site receptors.

Table 5: Initial Source – Pathway – Receptor Assessment

Source	Pathway/s	Receptor/s	Complete Linkage
On-site soil	Dermal contact and incidental ingestion	• Users of proposed development (maintenance workers); and • Users of proposed development (workers, visitors)	Limited Unlikely
	Inhalation of dust and potential asbestos fibres	• Users of proposed development (maintenance workers); and • Users of proposed development (workers, visitors)	Limited Unlikely
	Inhalation of vapours	• Users of proposed development (residents, maintenance workers)	Possible
Groundwater underlying the site	Discharge into surface water	Nearby surface water bodies	Possible, although unlikely given distance
	Inhalation of vapours	• Users of proposed development (workers, visitors, maintenance workers); and • Off-site intrusive maintenance workers, residents or workers	Possible Possible
	Dermal contact and ingestion by humans	Persons extracting groundwater for use in domestic supply (drinking and cooking water, washing etc), irrigation or for filling swimming pools	Not proposed on site, unlikely down-gradient due to presence of high quality reticulated water supply
	Extraction for stock watering	Ingestion by stock in down-gradient locations (off site)	Unlikely due to urban location
	Extraction for irrigation	Plants (gardens and crops)	Unlikely due to presence of high quality reticulated water supply

Source	Pathway/s	Receptor/s	Complete Linkage
	Underground structures intersecting groundwater	Concrete or steel piles or deep basements following redevelopment	Unlikely given no intrusive structures are proposed as part of the development of the site (road reserve and open space) and the sewer main has been upgraded/replaced as part of these works.

4.6.8 Post Remediation Conceptual Site Model

The CSM was updated on the basis of environmental investigations and remediation activities documented by SLR. A final CSM was provided in SLR's Validation Report (2021a).

Table 6: Final Source – Pathway – Receptor Assessment

Source	Pathway/s	Receptor/s	Complete Linkage
On-site soil	Dermal contact and incidental ingestion	• Users of proposed development (maintenance workers); and • Users of proposed development (workers, visitors)	Remediation and validation of site soils. No soil contamination remains on site.
	Inhalation of dust and potential asbestos fibres	• Users of proposed development (maintenance workers); and • Users of proposed development (workers, visitors)	
	Inhalation of vapours	• Users of proposed development (residents, maintenance workers)	No volatile contaminants were identified at the site.
Groundwater underlying the site	Discharge into surface water	Nearby surface water bodies	No site-derived impacts were identified in the groundwater. Elevated concentrations of metals identified in the water were attributed to background conditions associated with naturally occurring aquifer conditions. Refer to Section 9.
	Inhalation of vapours	• Users of proposed development (workers, visitors, maintenance workers); and • Off-site intrusive maintenance workers, residents or workers	
	Dermal contact and ingestion by humans	Persons extracting groundwater for use in domestic supply (drinking and cooking water, washing etc), irrigation or for filling swimming pools	
	Extraction for stock watering	Ingestion by stock in down-gradient locations (off site)	
	Extraction for irrigation	Plants (gardens and crops)	
	Underground structures intersecting groundwater	Concrete or steel piles or deep basements following redevelopment	

5 Assessment of Beneficial Uses

The Environment Protection Act 1970 (Vic) defines an environmental audit as:

"… a total assessment of the nature and extent of any harm or detriment caused to, or the risk of any possible harm or detriment which may be caused to, any beneficial use made of any segment of the environment by any industrial process or activity, waste, substance (including any chemical substance) or noise".

All potential beneficial uses of land, groundwater and surface water have been considered for the site, in accordance with the relevant SEPPs as follows:

- Land SEPP;
- Waters SEPP; and
- Air Management/Air Quality SEPP.

5.1 Beneficial Uses of Land

The Land SEPP states that the beneficial uses of land protected by the policy are:

'(a) maintenance of natural ecosystems, modified ecosystems and highly modified ecosystems;

(b) human health;

(c) buildings and structures;

(d) aesthetics; and

(e) production of food, flora and fibre.'

Table 1 from the Land SEPP, which is reproduced below as Table 7: , defines the beneficial uses which require protection for the different land use categories. Based on the proposed development (Lot C and Road Reserve only), the land use is as follows:

- Commercial – with regard to both direct contact and vapour intrusion pathway; and
- Public Open Space – with regard to both direct contact and vapour intrusion pathway

It is noted that EPA Publication 759 notes that *'… all beneficial uses of land are relevant for the purpose of determining whether to issue a Certificate, irrespective of whether they are protected for the current or proposed land use.'* As such, all beneficial uses defined in SEPP (Land) still require consideration in the audit.

Table 7: Beneficial Uses of Land to be Protected

Beneficial use	Land use						
	Parks and Reserves	Agriculture	Sensitive use		Recreation /Open Space	Commercial	Industrial
			High density	Other			
Maintenance of Ecosystems:							
Natural	✓	N/A	N/A	N/A	**N/A**	**N/A**	N/A
Modified	✓	✓	N/A	✓	✓	**N/A**	N/A
Highly Modified Ecosystems	N/A	✓	✓	✓	✓	✓	✓
Protection of Human Health	✓	✓	✓	✓	✓	✓	✓
Buildings and Structures	✓	✓	✓	✓	✓	✓	✓
Aesthetics	✓	N/A	✓	✓	✓	✓	✓
Production of Food Flora and Fibre	✓	✓	N/A	✓	**N/A**	**N/A**	N/A

Note: N/A = not applicable.

5.2 Adopted Soil Assessment Criteria

The following table provides the indicators and objectives which are to be used to determine whether the level of any contaminant poses an unacceptable risk to protected beneficial uses of land.

Table 8: Indicators and Objectives for Beneficial Uses of Land

Beneficial Land Use	Indicators	Objectives
Maintenance of Ecosystems	Chemical substances or waste identified through application of the ASC NEPM (Schedule B2, Appendix A) or any other chemical substance of waste.	Contamination must not adversely affect the maintenance of relevant ecosystems and the level of any indicator must not be greater than – (a) any regional Ecological Investigation Level developed in accordance with the ASC NEPM and published by the Authority for a region in which the site is located. Until such time that regional Ecological Investigation Levels applicable to the site are published, the Interim Urban Ecological Investigation Levels nominated in the ASC NEPM shall be used in its place; or (b) levels derived using the risk assessment methodology described in the ASC NEPM; or (c) levels approved by the Authority.
Protection of Human Health	Chemical substances or waste identified through application of the ASC NEPM (Schedule B2, Appendix A) or any other chemical substance or waste.	Contamination must not cause an adverse effect on human health and the level of any indicator must not be greater than – (a) the screening level specified for human health in the ASC NEPM; or (b) levels derived using a risk assessment methodology described in the ASC NEPM; or (c) levels approved by the Authority.
Buildings and Structures	pH, sulfate, redox potential, salinity or any chemical substance or waste that may have a detrimental impact on the structural integrity of buildings or other structures.	Contamination must not cause the land to be corrosive to, or adversely affect the integrity of, structures or building materials.

Beneficial Land Use	Indicators	Objectives
Aesthetics	Any chemical substance or waste that may be offensive to the senses.	Contamination is not to cause the land to be offensive to the senses of human beings.

5.2.1 Maintenance of Ecosystems

The ASC NEPM provides two types of soil criteria which are based upon protection of the environment, namely Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs). Both the EILs and ESLs are to be applied to assess risks to terrestrial ecosystems and apply to the upper 2 m of the soil profile. The EILs and ESLs differ with respect to the contaminants considered and the methodologies used when applying the screening levels.

The EILs cover zinc, arsenic, naphthalene, DDT, chromium (III), copper, lead and nickel. The EILs allow for the consideration of a range of factors which are critical when assessing ecological risks, including:

- The period of time which the contaminant has been in the environment:
    - Fresh is <2 years; and
    - Aged is >2 years.
- Three soil characteristics:
    - Cation exchange capacity (CEC);
    - pH; and
    - Organic carbon content.
- Ambient background concentration (ABC);
- The iron content of the soil (fresh ABC only);
- The state and traffic volume (aged ABC only); and
- Three land use settings:
    - Area of ecological significance;
    - Urban residential/public open space;
    - Commercial and industrial.

An EIL calculator has been provided as part of the '*ASC NEPM Toolbox*' which allows for the derivation of EILs.

Depending on site conditions, such as different soil layers having significantly different properties, more than one set of EILs may need to be derived.

The ESLs are based upon two documents prepared by Dr Michael Warne[1,2], which in broad terms provide a review of guidance provided by the Canadian Council of the Ministers of the Environment (CCME). The ESLs cover the following chemicals:

- Four petroleum hydrocarbon groups:

[1] Warne, M (2010) Review of the appropriateness of the Canadian petroleum hydrocarbon country-wide standards in soil, for incorporation into the Australian National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, Australia.

[2] Warne, M (2010) Review of the appropriateness of selected Canadian Soil Quality Guidelines (benzene, benzo(a)pyrene, ethylbenzene, toluene and xylenes), for incorporation into the Australian National Environment Protection (Assessment of Site Contamination) Measure, and recommended ecological investigation levels, National Environment Protection Council, Australia.

- F1: C_6-C_{10} minus BTEX;
- F2: >C_{10}-C_{16} minus naphthalene;
- F3: >C_{16}-C_{34}; and
- F4: >C_{34}-C_{40}.

- BTEX; and
- The PAH benzo(a)pyrene (BaP);

It is noted that the ASC NEPM refers to the above-mentioned criteria as ESLs, whereas the Warne (2010) documents refer to the criteria as low reliability EILs.

5.2.2 Protection of Human Health

The ASC NEPM provides Health Investigation Levels (HILs) for four different generic land use settings:

- *'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.'*

The ASC NEPM states the HILs generally apply to the top 3 m of soil for residential use and site-specific conditions should determine the depth to which other HILs apply.

Schedule B1 of the ASC NEPM states that when comparing results to Tier 1 screening levels, where it is appropriate for the exposure being evaluated, consideration should be given to:

- The maximum concentrations detected in relation to the screening levels;
- The 95% upper confidence limit (UCL) of the arithmetic mean concentrations in relation to the screening levels;
- The implications of localised hotspots;
- The standard deviation of the data (i.e. should be <50% of screening level); and
- The magnitude of any screening level exceedances (i.e. should be <250% of screening level).

The ASC NEPM makes reference to direct contact (i.e. dermal contact, incidental ingestion, dust inhalation exposure) HSLs provided for petroleum hydrocarbons in Friebel & Nadebaum (2011). It is understood that these criteria were not presented in the ASC NEPM as the vapour intrusion pathway drives risks for petroleum hydrocarbon exposure. Friebel & Nadebaum (2011) provides direct contact criteria which consider:

- The petroleum hydrocarbon compounds BTEX and naphthalene, as well as the petroleum hydrocarbon groups C_6-C_{10}, >C_{10}-C_{16}, >C_{16}-C_{34} and >C_{34}-C_{40}; and
- Four land use settings which are directly comparable to the ASC NEPM (i.e. HSL A, HSL B, HSL C and HSL D) as well as an additional land use setting (i.e. intrusive maintenance worker).

The ASC NEPM highlights that the direct contact HSLs are likely to represent unacceptable aesthetic characteristics and may also represent unacceptable short-term vapour inhalation risks.

The ASC NEPM also provides management limits which are to be applied after the HILs/HSLs/EILs/ESLs have been considered.

Asbestos

The ASC NEPM provides Health Screening Levels (HSLs) for asbestos in soil, including bonded asbestos containing material (ACM), friable asbestos (inclusive of asbestos fines and fibrous asbestos) and 'all forms of asbestos'. The criteria provided cover exposure scenarios which are comparable to the HILs (i.e. HSL A, HSL B, HSL C and HSL D). The criteria are both quantitative (i.e. % w/w) and qualitative (i.e. no visible asbestos). The ASC NEPM also refers to the WA Department of Health (DoH) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia provides further details on the assessment and remediation of asbestos. In addition to the screening levels provided in the ASC NEPM for different land uses, the accessible ground surface (as designated by suite investigations or the 10 cm default) should be free from visible bonded ACM and fibrous asbestos at the end of the remedial site works.

The WA Asbestos Guidelines provide details for determining soil asbestos concentrations and interpreting results (Appendix Two) based on the weight of asbestos for a given weight of soil. The methodology looks at estimating asbestos concentrations for a given strata/material.

Soil Vapour

The ASC NEPM provides HSLs for vapour intrusion (i.e. migration of contaminants in subsurface indoor air in the vapour phase) based directly upon Friebel & Nadebaum (2011). HSLs are provided for:

- The following chemicals in soil, groundwater and soil vapour
    - Two petroleum hydrocarbon groups
        - F1: TRH C_6-C_{10} minus BTEX; and
        - F2: TRH >C_{10}-C_{16} minus naphthalene.
    - BTEX; and
    - Naphthalene.
- Four land use settings which are generally comparable to the ASC NEPM (i.e. HSL A, HSL B, HSL C and HSL D). It is noted that buildings with a basement or ground floor car park covering the entire footprint (and no residences within the lowest floor level) are assessed as HSL D for the vapour intrusion pathway.
- Three soil types
    - Sand;
    - Silt; and
    - Clay.
- Four different source to receptor distances
    - 0 m to <1 m;
    - 1 m to <2 m;
    - 2 m to <4 m; and
    - >4 m.

For some soil types and depths, the HSL is higher than the theoretical vapour phase saturation limit. In these instances, no HSL is provided and it is assumed to be not limiting (NL).

Before the HSLs for vapour intrusion can be used, they must be shown to be applicable using the applicability checklist provided in Friebel & Nadebaum (2011).

The vapour intrusion based HSLs do not take aerobic biodegradation of vapours into account, with this degradation process known to be significant under certain conditions. The vapour intrusion based HSLs may be modified by factors of 10 (2 m – <4 m source depths) or 100 (source depths 4 m and greater) if the following conditions are met:

- The scenario is based on a slab-on-ground or ventilated crawl space building;
- There is direct measurement of oxygen at a depth of 1 m or greater;
- The vapour source is no closer than 2 m from a current or proposed building foundation;
- The current or proposed building foundation has a width no greater than 15 m (oxygen penetration limited at greater widths); and
- The source concentration is less than 100 mg/m^3.

The ASC NEPM includes interim vapour intrusion HSLs for trichloroethene (TCE), 1,1,1 trichloroethane (1,1,1 TCA), tetrachloroethene (PCE), cis 1,2 dichloroethene (cis 1,2 DCE) and vinyl chloride (VC). In the absence of more applicable criteria these HSLs are considered to be applicable.

Where criteria are not provided in Friebel & Nadebaum (2011) or the ASC NEPM, reference is made to other reputable guidance sources on a case by case basis.

5.2.3 Buildings and Structures

Australian Standard AS2159 (2009) *Piling – Design and Installation* provides exposure classification values for concrete and steel piles in soil (non-aggressive to severely aggressive) based upon chlorides, sulfates and pH. In the absence of a directly applicable EPA endorsed criteria, these guidelines are considered to be appropriate in assessing the potential for detrimental impacts of site soils to buildings and structures. In addition, the presence of other aggressive chemical compounds (e.g. acids) may be potentially detrimental to buildings or structures.

The ASC NEPM states that the management limits are relevant for '*operating sites where significant sub-surface leakage of petroleum compounds has occurred and when decommissioning industrial and commercial sites'*. The ASC NEPM states that the intent of the management limits is to minimise the potential for petroleum hydrocarbons to cause the formation of light non-aqueous phase liquid (LNAPL), fire/explosive hazards and effects on buried infrastructure.

5.2.4 Aesthetics

The SEPP (Land) states that *Contamination must not cause the land to be offensive to the senses of human beings*.

The aesthetic condition of soil is assessed with respect to the guidance provided in Schedule B1 of the ASC NEPM (Section 3.6). In general terms, consideration is given to the presence of non-hazardous foreign materials, discoloration and odorous soils.

5.2.5 Production of Food, Flora and Fibre

SEPP (Land) states that *'Contamination of land must not ... (b) affect the level of any indicator in food, flora and fibre produced at the site (or that may be produced) such that the level of that indicator is greater than that specified by the Australia New Zealand Food Authority, Food Standards Code.'*

The Food Standards Code provides maximum levels (MLs) for various organic and inorganic chemicals in various foods, with the MLs for each chemical varying dependent on the food type. The Food Standards Code does not provide threshold criteria for contaminant levels in soils. The correlation between contaminant levels in soils and resulting contaminant levels in food, flora and fibre produced in soils is complex and related to the bioavailability of the contaminant, the rate at which the contaminant is taken up by the crop/stock and the ability of various crop/stock to regulate the contaminant.

As a conservative measure and in the absence of directly applicable criteria, it is assumed that the site has been polluted at potentially unacceptable levels with respect to the production of food, flora and fibre if the contaminants of concern are present at levels above that which can reasonably be considered to represent background levels. It is noted that a site may not be suitable to produce food, flora and fibre due to natural background levels of a range of contaminants (i.e. arsenic).

5.3 Beneficial Uses of Groundwater

SEPP (Waters) divides groundwater into seven segments based on total dissolved solids (TDS) concentration ranges. The following table, which is based on Table 1 of SEPP (Waters), defines the beneficial uses of groundwater which require protection for each segment. Based upon the available TDS data for the on-site bores (range 120 to 430 mg/L), the water table aquifer at the site is classified as Segment A1.

The Auditor considered Segment A1 to be appropriate to the audit site.

Table 9: Beneficial Uses of Groundwater to be Protected

Beneficial use	Segments (mg/L TDS)						
	A1 (0–600)	A2 (601–1200)	B (1201–3100)	C (3101–5400)	D (5401–7100)	E (7101–10,000)	F (>10,001)
Water dependent ecosystems and species	✓	✓	✓	✓	✓	✓	✓
Potable Water Supply (desirable)	✓	N/A	N/A	N/A	N/A	N/A	N/A
Potable Water Supply (acceptable)	**N/A**	✓	N/A	N/A	N/A	N/A	N/A
Potable Mineral Water supply #	✓	✓	✓	✓	N/A	N/A	N/A
Agriculture and irrigation (irrigation)	✓	✓	✓	N/A	N/A	N/A	N/A
Agriculture and irrigation (Stock Watering)	✓	✓	✓	✓	✓	✓	N/A
Industrial and commercial	✓	✓	✓	✓	✓	N/A	N/A
Water-based recreation (Primary Contact Recreation)	✓	✓	✓	✓	✓	✓	✓
Traditional Owner cultural values	✓	✓	✓	✓	✓	✓	✓
Cultural and spiritual values	✓	✓	✓	✓	✓	✓	✓
Building and Structures^	✓	✓	✓	✓	✓	✓	✓
Geothermal properties *	✓	✓	✓	✓	✓	✓	✓

The site is not within a declared mineral water resource area and this beneficial use is not considered relevant.

^ The proposed development of the site is understood to have no proposed basements, but has been included in the case of deep underground services.
* Groundwater at the site was not found to have geothermal properties (described in the Waters SEPP as a natural thermal capacity which corresponds to a temperature between 30 and 70 degrees Celsius), and therefore this beneficial use was not considered relevant at this site.

5.4 Adopted Groundwater Assessment Criteria

5.4.1 Water Dependent Ecosystems and Species (WDES), Traditional Owner Cultural Values (TOCV) and Cultural and Spiritual Values (CSV)

In accordance with the Waters SEPP, groundwater must not cause receiving waters to be affected to the extent that the level of any environmental quality indicator is greater than the level of that indicator specified for surface waters in the SEPP. This means that the likely receiving water body should be identified and that the WDES criteria for the receiving water body be applied at the point of groundwater discharge.

For screening purposes, the relevant WDES criteria are initially applied to assess the condition of groundwater underlying the site. If there are analyte concentrations in groundwater which exceed the adopted WDES criteria, then further consideration should be given as to whether elevated concentrations are likely to reach the point of discharge, and impact on the receiving water body.

The likely receiving water body for groundwater underlying the site is Outer Estuary of Darwin Harbour. The water body is considered to be a slightly-moderately modified aquatic ecosystem, with environmental quality objectives for protection generally corresponding to 95% species protection as defined in ANZG (2018).

Unless specific objectives are described in the SEPP, the environmental quality objectives for the WDES are those values specified in:

- ANZG (2018), *Guidelines for Fresh and Marine Water Quality*, 2018 – 95% level of protection.

For beneficial uses that do not have specific environmental quality indicators or objectives provided in the Waters SEPP, the objectives for WDES can be adopted. This is based on the assumption that water-based ecosystems and species are typically the most sensitive beneficial use to pollution. Consistent with the Waters SEPP and in the absence of contrary regulatory advice, the Auditor has also adopted the WDES objectives for TOCV and for CSV.

5.4.2 Potable Water Supply

Reference is made to the current version of the *Australian Drinking Water Guidelines* when assessing drinking water use, which is currently National Health and Medical Research Council (NHMRC) version 3.7 (2022).

The NHMRC drinking water criteria are largely based upon the World Health Organisation (WHO) drinking water criteria. However, there are some compounds where NHMRC has drawn a different conclusion to WHO and a number of other compounds where WHO provides some criteria but NHMRC has not adopted any criteria. Consideration to WHO criteria is given on a case by case basis, as deemed appropriate by the Auditor. In the absence of more applicable criteria, WHO (2008)[3] criteria have been adopted to assess TRH.

5.4.3 Agriculture and Irrigation (Irrigation)

To assess risks from use of groundwater for irrigation of agriculture, parks and gardens, reference has been made to the water quality objectives for irrigation waters in Section 4.2 of the ANZECC (2000), as these are retained under ANZG (2018).

[3] WHO (2008) *Petroleum Products in Drinking Water*, Background Document for Development of WHO Guidelines for Drinking-Water Quality.

5.4.4 Agriculture and Irrigation (Stock Watering)

To assess risks to livestock consuming groundwater, reference has been made to Sections 4.3 and 9.3 of ANZECC (2000), as ANZG (2018) has not yet been updated for stock watering. It is assumed that livestock could consume metals which are dissolved, complexed within an organic compound or bound to sediments (i.e. non-filtered total concentrations).

ANZECC (2000) does not provide livestock drinking water guidance for organic contaminants. ANZECC (2000) recommends that human drinking water criteria are adopted for pesticides. In the absence of more applicable data, the Auditor adopts the same approach for other organics.

5.4.5 Industrial and Commercial

The earlier version of the ANZECC (2000) Guideline (i.e. 1992) provided criteria for a range of contaminants and industrial processes, however, ANZECC (2000) states that:

> *'After extensive consultation with representative industrial groups, the current guidelines provide no specific guidance for industrial water use, because industrial water requirements are so varied (both within and between industries) and sources of water for industry have other coincidental environmental values that tend to drive management of the resource. Industrial water use continues to be a recognised environmental value that has high economic benefit to the community. It must be given adequate consideration during the planning and management of water resources.'*

It is understood that the current informal EPA Victoria policy is to also consider the appropriateness of industrial water use based upon a qualitative approach (i.e. related elevated concentrations of a contaminant). For the purpose of the audit, groundwater objectives for other uses are expected to be protective of this beneficial use.

5.4.6 Water-Based Recreation (Primary Contact Recreation)

The Waters SEPP specifies that E. coli count must be less than 10 per 100 mL, or zero per 100 mL if human faecal sources of contamination have been identified (such as septic tanks or sewerage infrastructure).

Environmental quality objectives and indicators for long-term chemical hazards are based on National Health and Medical Research Council (NHMRC 2008) *Guidelines for Managing Risks in Recreational Water*, which in turn reference the *Australian Drinking Water Guidelines* (NHMRC, latest version 3.7 dated January 2022).

Where inhalation of vapours and dermal contact are not a concern, the relevant health based drinking water criteria is multiplied by 10 to represent incidental ingestion. Where inhalation of vapours and/or dermal contact are a concern, the relevant health-based drinking water criteria are adopted without modification. In some instances, it is important to consider the foundation of the drinking water criteria value and determine whether it is logical to multiply the criteria by 10 (e.g. nitrate drinking water criteria is based upon protecting bottle fed infants, which is not relevant for primary contact recreation exposure).

5.4.7 Buildings and Structures

For the protection of buildings and structures, SEPP (Waters) specifies that the following indicators should be considered: pH, sulfate chloride, redox potential, salinity and any chemical substance or waste that may have a detrimental impact on the structural integrity of buildings or other structures. Australian Standard AS2159-2009 *Piling – Design and Installation* provides values for pH, sulfate and chloride for building and structures, and reference should also be made to the ASC NEPM (2013).

It is noted that the AS2159 criteria for sulfate in water is provided as sulfate-SO_3. A conversion to sulfate-SO_4 (i.e. 100 ppm S-SO_4 = 80 ppm S-SO_3) results in a sulfate-SO_4 criteria for non-aggressive conditions of 375 mg/L.

5.5 Beneficial Uses of Surface Water

Surface water has been considered as part of this audit in accordance with the SEPP (Waters). Table 10 below, which is based on Table 3 of SEPP (Waters), defines the beneficial uses of surface waters which require protection based upon geographical location[4].

No surface water bodies exist on site. The nearest surface water body is the mangrove of the Outer Estuary of Darwin Harbour, located 160 m to the west, therefore the Urban segment is applicable for this site. Given the proposed commercial and public open space development, and subsequent management of surface water through stormwater drains, the site is not deemed likely to have any potential impact on surrounding surface water bodies.

Table 10: Beneficial Uses to be Protected (Inland Waters)

	Water	Aquatic Reserves	Rivers & Streams						Wetlands
Beneficial Uses	**Segment**	**Aquatic Reserves**	**Highlands**	**Uplands A**	**Uplands B**	**Coastal Foothills and Coastal**	**Urban**	**Murray and Western Plains**	**Lakes & Swamps**
Water dependent ecosystems and species that are:	Largely unmodified	✓	✓	✓	✓	N/A	N/A	N/A	N/A
	Slightly to moderately modified	N/A	N/A	N/A	N/A	✓	N/A	✓	✓
	Highly modified	N/A	N/A	N/A	N/A	N/A	✓	N/A	N/A
Human consumption after appropriate treatment		✓ where water is sourced for supply in accordance with the special water supply catchments area set out in Schedule 5 of the Catchment and Land Protection Act 1994 or the Safe Drinking Water Act 2003.							
Agriculture and Irrigation		N/A	✓	✓	✓	✓	✓	✓	✓
Human consumption of aquatic foods		✓	✓	✓	✓	✓	✓	✓	✓
Aquaculture		✓ where the environmental quality is suitable and an aquaculture licence has issued under the *Fisheries Act 1995*							
Industrial and commercial		N/A	N/A	✓	✓	✓	✓	✓	N/A
Water-based recreation (primary contact)		✓*	✓	✓	✓	✓	✓	✓	✓
Water-based recreation (secondary contact)		✓*	✓	✓	✓	✓	✓	✓	✓
Water-based recreation (aesthetic enjoyment)		✓*	✓	✓	✓	✓	✓	✓	✓
Traditional Owner cultural values		✓	✓	✓	✓	✓	✓	✓	✓
Cultural and spiritual values		✓	✓	✓	✓	✓	✓	✓	✓
Navigation and shipping		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: If a segment is marked with a tick that is asterisked there is an exclusion identified in Table 5 (see clause 1(4) of Schedule 2 SEPP (Waters)).

SEPP (Waters) recommends that ANZECC (2000) is used as the source of assessment criteria, unless SEPP (Waters) provides alternative criteria.

[4] Figure 1 of SEPP (Waters) defines the policy area and segments.

5.6 Beneficial Uses of Ambient Air

The 1999 Ambient Air Quality SEPP and the 2001 Air Quality Management SEPP, are the relevant SEPPs that provide the framework for ambient air management in Victoria (air being defined as "*the external air environment, it does not include the air environment inside buildings or structures"*). The SEPP (Ambient Air Quality) was prepared to adopt the requirements of the National Environmental Protection Council (Ambient Air Quality). SEPP (Air Quality Management) was prepared in part to ensure that the objectives of SEPP (Ambient Air Quality) are met.

Section 9 of SEPP (Air Quality Management) states that the following beneficial uses of ambient air are protected throughout Victoria:

'(a) life, health and well-being of humans;

(b) life, health and well-being of other forms of life, including the protection of ecosystems and biodiversity;

(c) local amenity and aesthetic enjoyment;

(d) visibility;

(e) the useful life and aesthetic appearance of buildings, structures, property and materials; and

(f) climate systems that are consistent with human development, the life, health and well-being of humans, and the protection of ecosystems and biodiversity.'

The Auditor has assessed whether or not ambient air is likely to be polluted on the basis of:

- Land pollution (including soil, soil gas and soil vapour);
- Groundwater pollution; and
- Surface water pollution.

Where ambient air pollution is considered to be likely, ambient air sampling/analysis is conducted and quantitative criteria are considered.

SEPP (Air Quality Management) does not provide indicators and objectives for the majority of contaminants which can be of concern at a typical contaminated site.

Section 10 of SEPP (Air Quality Management) defines four classes of ambient air quality indicators, namely:

a) 'Class 1 indicators: common or widely distributed air pollutants which are established as environmental indicators in the State Environment Protection Policy (Ambient Air Quality) and may threaten the beneficial uses of both local and regional air environments;

b) Class 2 indicators: hazardous substances that may threaten the beneficial uses of the air environment by virtue of their toxicity, bio-accumulation or odorous characteristics;

c) Class 3 indicators: extremely hazardous substances that are carcinogenic, mutagenic, teratogenic, highly toxic or highly persistent, and which may threaten the beneficial uses of the air environment; and

d) Unclassified indicators: indicators of the beneficial uses of local amenity and aesthetic enjoyment, namely odour and total suspended particles (nuisance dust).'

SEPP (Ambient Air Quality) provides environmental quality objectives and goals for carbon monoxide, nitrogen dioxide, photochemical oxidants, sulfur dioxide, lead, particles as PM10 and visibility reducing particles.

SEPP (Air Quality Management) provides:

- design criteria for new or expanded emission sources (Schedule A);
- intervention levels for the substances noted in Schedule A (Schedule B);
- emission limits for existing stationary sources (Schedule D); and
- emission limits for new stationary sources (Schedule E).

For scenarios where the above-mentioned indicators/objectives are not relevant, impacts to air quality are assessed on a case by case basis.

6 Summary of Investigation Process and Findings

The following section provides a summary of the detailed site investigations undertaken at the site, split into the separate segments of the environment.

6.1 Soil Investigations

A summary of the soil investigations and soil sampling undertaken for the entire site (including Lot C and Road Reserve) is provided in the following table.

Table 11: Summary of Soil Investigations at the Site

Date (Consultant)	Sample Locations	Lot C Locations	Sampling Methodology and Depth
June and August 2019 (Greencap)	Boreholes SS01-1 to SS01-4, SS02-1 to SS02-4, SS01 to SS44 Test pits: TP01 to TP29	TP03, TP06, TP09, TP12, TP15, TP20, TP23, TP26, TP29	Surface soil locations (n=12). Soil samples collected from the surface around the perimeter of buildings. Analysis for contaminants of concern (CoC) heavy metals, organochlorine pesticides (OCP). Grid test pits (n=11) sampling up to 0.9 mbgl. Soil samples recovered directly from the centre of the excavator bucket. Analysis for asbestos.
September 2019 (Greencap)	Boreholes SS53 to SS64, SS65_N, SS65-E, SS65-S, SS65-W, SS66-N, SS66-E, SS66-S, SS67-N, SS67-E, SS67-S, SS68-N, SS68-E, SS68-S, SS68-W, SS69-N, SS69-E, SS69-S, SS69-W Test pits: TP36 to TP57	TP50, TP52 - TP55	Test pits (n=5) delineation of previously identified ACM impacts. Analysis for asbestos.
November 2019 (Agon)	Test pits: TP01 to TP20	TP10, TP12, TP15	In-fill grid sampling (n=3) to between 0.7-1.2 mbgl, collected from the centre of excavator bucket. Analysis for CoC and selected samples for a broader analytical suite.
December 2019 (Agon)	Boreholes MW01 to MW04	MW01	Soil samples recovered during drilling for groundwater wells (n=10), sample collection methodology was not documented by Agon. Analysis for TRH, BTEXN, lead, select samples for PAH
June / July 2020 (SLR)	Test pits: TP01 to TP40	All locations specific to Lot C and Road Reserve	Test pits (n=40) delineation of previously identified ACM impacts. Analysis for asbestos in soils – presence/absence and/or FA/AF.
October – November 2020 (SLR)	Validation samples: RR-Wall-01 to 57 RR-Val-01 to 34	All locations specific to Lot C and Road Reserve	Validation samples were collected from the base of the excavation. Analysis for asbestos in soils – presence/ absence and/or FA/AF.
August 2021 (SLR)	Validation samples: Val-N-01 to 10 Val-B-01 to 09 Val-S-01 to 10	All locations specific to Lot C and Road Reserve sewer easement	Validation samples were collected from the base and walls of the excavation. Analysis for asbestos in soils – presence/absence and/or FA/AF.
September 2021 (SLR and Greencap)	Stockpile (imported soil) samples: STP-A.1 to A.3, STP-B.1 to B.3, STP-C.1 to C.7	Specific to backfill of the sewer trench in Lots B and C.	Analysis for TRH, BTEXN, pesticides, herbicides, PCBs, PAHs, metals, asbestos and AF/FA.

The soil and groundwater investigation sampling locations are shown on Attachments 4 and 5 respectively.

The results of the soil investigations are summarised below.

6.1.1 Site-Wide Data

Fill materials were encountered across the site consisting of sandy silt and sandy gravelly silt varying in depth from 0.2 mbgl to a maximum depth of 1.3 mbgl. The assessor reported no visual or olfactory indication of contamination in the general fill material, other than fragments of ACM.

Natural soils consisted of red brown silty clay soil. Natural soil conditions comprise weathered rock or rock across the site.

ACM was observed in fill at the site and on the site surface during sampling and site inspections by Greencap, Agon and SLR.

The fill materials across the site also contained concentrations of aldrin+dieldrin exceeding HIL A to HIL D criteria (up to 369 mg/kg, SS30 within Lot B3). The highest aldrin+dieldrin concentration reported was considered to be an anomaly as this concentration could not be replicated in any additional sampling undertaken and was collected prior to commencement of the audit. The next highest concentration was 23.4 mg/kg (surface sample SS69_S(5)_0.0) exceeding HIL A to HIL C, but below HIL D criteria. This location (and other OCP hotspots) were removed and validated as part of remediation works detailed in Section 7.

All other analytes were below laboratory detection limits or assessment criteria.

The natural soils across the site contained elevated concentrations of nickel with respect to the ecosystem criteria adopted by Agon for these analytes; these analytes were considered to be naturally occurring. All other natural soil concentrations were below either laboratory detection limits or adopted assessment criteria.

No volatile contaminants were detected in soil at levels above the vapour intrusion screening levels.

6.1.2 Area-Specific Data (Lot C and road reserve)

The average depth of fill encountered was 0.53 mbgl. Further to the asbestos related impacts observed in the fill, anthropogenic inclusions were observed in some test pits relating to construction and demolition materials such as concrete, plastic conduit and bricks. Asbestos impacts were mainly present along the eastern portion of the road reserve.

During the assessment phase of works, asbestos impacted soils were observed to be present along the eastern portion of the site within the fill material. The initial assessment by Greencap tested 18 samples for ACM, of which two samples reported a concentration of FA above the criteria (TP20 and TP54 between 0 – 0.5 mbgl).

Initially the asbestos observed on site was considered to be randomly distributed, however as additional high density sampling by SLR and remediation works confirmed, the majority of the asbestos impacts were isolated to the ‘Known Asbestos Impact Area’, with a low probability (but not zero) of ACM being present outside of this area. Of the 40 test pits excavated across Lot C and the road reserve, eight locations reported the presence of asbestos (between 0 and 0.2 mbgl) at concentrations exceeding either the bonded ACM criteria for public open space or AF/FA criteria (applicable to all land uses). These locations were all concentrated along the eastern portion of the road reserve.

During remediation all visible asbestos was removed, and the final exposed surfaces visually inspected (and cleared) of visible ACM. In addition to the visual validation, validation samples were collected and analysed for asbestos (bonded ACM and FA/AF). Of the 61 samples analysed, none of the samples tested reported the presence of asbestos.

As part of the assessment works by Agon and SLR, a number of samples were also analysed for pesticides (55 samples). Of the samples tested 12 reported detectable concentrations of aldrin and dieldrin. All results were less than the most conservative criteria, for residential land use.

6.2 Groundwater Investigations

A summary of the groundwater investigations undertaken for the greater site (encompassing Lots A, B and C) is provided in the following table.

Table 12: Summary of Groundwater Investigations at the Site

Date (Field Work)	Sample Locations	Sampling Methodology and Depth
GME1 December 2019 and January 2020 (Agon)	MW01 to MW04 (install and sample)	Installation and gauging of MW01 to MW04. Low flow purging and sampling. Analysis of samples for TRHs, BTEX, PAHs, chlorinated hydrocarbons, pesticides, herbicides, 14 metals, phenolics, halogenated benzenes, halogenated hydrocarbons, solvents, chloride and sulfate.

The groundwater well locations are shown in Attachment 5.

The findings of the groundwater investigations are summarised as follows:

- Although the groundwater monitoring wells were not surveyed, it is expected that the groundwater flow direction underlying the site would be to the west, consistent with expected regional flow toward the Darwin Harbour. Standing water levels ranged from 2.7 to 3.8 mbtoc;
- Field readings recorded redox potential in the range 123 to 318 mV, electric conductivity ranged between 166 and 880 µS/cm and dissolved oxygen levels ranging from 2.68 to 5.77 mg/L). Groundwater was acidic (4.4 to 5.6 pH units);
- No measurable separate phase hydrocarbons (NAPL) or sheen was reported in groundwater from on-site or off-site wells, and no odours were reported;
- Low levels of TRHs (max. 0.28 mg/L) were detected in on-site wells MW01 and MW02, at concentrations well below the Dutch intervention criteria. Agon conducted silica gel clean-up on the MW01 groundwater sample to determine if the low-level hydrocarbons were petroleum based or naturally occurring. The results of the silica gel clean-up were all below the laboratory limit of reporting indicating they were naturally occurring hydrocarbons or highly degraded fuel;
- Low levels of the chlorinated hydrocarbon chloroform was detected in two on-site wells, at concentrations well below adopted criteria for human health and ecosystem protection;
- Cobalt exceeded WDES criteria in all wells;
- Concentrations of copper and nickel exceeded the WDES criteria in one or more wells but were considered naturally occurring. The maximum nickel concentration also exceeded the recreational and irrigation water criteria;
- Lead exceeded the WDES criteria in three wells and the drinking water criteria in one well;
- Manganese exceeded the recreational water criteria in three wells, with the maximum also exceeding the irrigation criteria; and
- Concentrations of other metals (arsenic, beryllium, boron, cadmium, mercury, and selenium), PAHs, BTEX, halogenated benzenes, halogenated hydrocarbons, solvents, pesticides, herbicides, chloride, sulfate and phenols were not detected above the adopted assessment criteria for any beneficial uses.

6.3 Potential for Vapour Intrusion

The groundwater and soil results did not identify that a vapour intrusion risk required assessment. Refer to details regarding low level concentrations of TRH (in soil and groundwater) and chloroform (in groundwater), detailed in Sections 8 and 9.

6.4 Auditor's Opinion on Investigations – Lot C and Road Reserve

When preparing this section of the EAR, the Auditor has given particular attention to Appendix 3 of EPA Publication 759 which states that an EAR should provide *'… an opinion on the quality and completeness of prior assessment(s) of the site, including details of investigator, laboratory, sampling and analytical methods and type of assessment undertaken …'*

The Auditor considers as a whole, the data collected is within acceptable error margins as determined through the assessor's Data Quality Objectives (DQO) (refer to Section 4.5 of SLR's (2021) Validation Report). As such, the Auditor considers that the data collected is sufficient to adequately characterise the site for the audit purposes, given:

- The lack of significant systematic errors with the data collection process;
- Absence of major gaps in understanding of the site use over time;
- All identified point sources of contamination were investigated with the soil investigation undertaken including 178 grid and targeted (including validation) locations, which exceeds the AS4482.1 recommended number of sampling locations for an approximately 0.63 hectare site (16 locations);
- The groundwater investigations undertaken across the site included a total of four on-site groundwater wells which were monitored. The groundwater investigations did not identify site-derived groundwater contamination, which supports the adequacy of the soil investigations across the site;
- The large number of samples collected across the site and the comprehensive suite of analysis undertaken, which addresses inherent data gaps in site histories;
- The laboratory analysis was undertaken by NATA accredited laboratories;
- The site-specific geology and hydrogeology is consistent with anticipated regional conditions;
- The analytical results are consistent with expectations based on the site history and field observations; and
- The excavation of the site to natural soils.

The Auditor considers the quantity and quality of the site investigations undertaken are adequate to characterise the nature and extent of contamination at the site. The Auditor considers the data collected is sufficient for the purposes of this environmental audit. The Auditor is of the view that the site has been assessed and characterised adequately within the means and information available to the Auditor at the time of preparing this EAR.

7 Remediation

The following section provides a summary of the remediation works undertaken at the site.

7.1 Remediation and Validation of Asbestos Impacts

Soil investigations undertaken by Greencap and Agon identified the presence of asbestos at multiple locations across the site. Agon undertook hotspot removal works at two locations, which reported the presence of bonded and friable asbestos (TP20 and TP54). The fill at these locations was excavated to natural over a 5 m^2 area around each hotspot. The soil was disposed as asbestos contaminated waste. The resultant excavation was visually inspected by an Agon representative; validation samples were not collected.

Further investigations were undertaken by SLR across Lot C and the road reserve. The additional high density sampling confirmed that the asbestos was not randomly distributed as initially thought, but the majority of impacts were isolated to the 'Known Asbestos Impact Area', with a low probability (but not zero) of ACM being present outside of this area.

The remediation strategy outlined by SLR targeted the removal of surface fill (excavation to inferred natural) within the predefined 'Asbestos Area Excavation' (which is the same as the 'Known Asbestos Impact Area'), with the final extent guided by visual assessment (supervision undertaken by SLR). The spoil excavated from the 'Known Asbestos Impact Area' was placed directly into lined skip bins before being disposed of off site by a licenced asbestos removal contractor. During earthworks redundant infrastructure was removed. Underground services identified as being constructed out of ACM were removed along with the bedding soils and disposed of off site to a licensed facility. The lateral extent was guided by visual assessment (supervision undertaken by SLR). Spoil generated during the removal of the underground services were placed adjacent the trench and visually inspected for asbestos (supervision undertaken by SLR). Spoil containing visual asbestos was placed in lined skip bins and validation samples collected from the surface where the material had been stockpiled. All visual/known asbestos was removed during excavation works, when placed into stockpiles and during backfill.

The remaining portion of the site (i.e. outside the nominated 'Asbestos Area Excavation') was excavated under an unexpected finds process by the Contractor (an Asbestos Management Plan was included in the Construction Environmental Management Plan) due to the low probability of asbestos. SLR did not supervise earthworks outside the 'Known Asbestos Impact Area'. When potential asbestos was identified, the area was cordoned off, asbestos and associated soils removed and chased out under the supervision of an asbestos consultant (typically Mark Kondakov) for off-site disposal and clearance certificate issued. A summary of asbestos finds and clearances was provided by NTG.

It is noted that during the initial stage of remediation works, the main sewer which runs through the centre of the road reserve (north to south) and along the southern boundary (east to west) was 'live' and therefore excavation did not extend into the deeper fill material surrounding live sewer main.

The final excavation extended from ground surface to inferred natural soils and laterally to the site boundaries and the beyond the site boundary in some cases at the Lots A and B boundaries. As a result, all of the road reserve and Lot C have been excavated either under SLR supervision or under an unexpected finds process by the Contractor on behalf of NTG. The only portion of unexcavated soil remains around the 'live' sewer main. The sewer and surrounding fill was replaced as part of later construction works detailed in Section 7.3. The validation samples are shown in Attachment 8.

7.1.1 Off-site Soil Disposal and Importation of Fill Material

The fill material excavated from the 'Known Asbestos Impact Area' was excavated and loaded directly into designated skip bins for off-site disposal as "Special Waste – Asbestos" to the Shoal Bay Waste Management Facility (SBWMF). Outside the area of the 'Known Asbestos Impact Area' one service trench

reported observed asbestos impact. The ACM and approximately 2 m^3 of surrounding soil was removed and placed into lined skip bins for appropriate off-site disposal by the licensed asbestos removal contractor.

Approximately 1,600 tonnes of ACM and ACM contaminated soil was disposed of to SBWMF. The waste dockets are provided in the Validation reports (SLR 2021, 2022). In addition to the ACM and ACM impacted soil, bitumen sealed surfaces were scrapped and stockpiled (approximately 2 m^3) before being disposed of to SBWMF.

No soil was imported to site as part of these works.

7.2 Sewer Easement

The site area includes a sewer easement which runs through the centre of the road reserve and along the southern site boundary (refer to Attachment 9). During the main remediation works, this sewer was "live" and works within 3 m of the sewer were limited to some topsoil stripping (maximum depth of 0.3 mbgl) and targeted removal of soil where asbestos impact was visually determined.

As part of development the sewer was upgraded, at which time the following remediation works were able to be completed within the sewer easement:

- Removal of surface fill. This fill material and any associated ACM debris was placed directly into skip bins and removed off site under asbestos conditions.
- The final extent was visually assessed and validation samples collected from the base and walls of the excavation. Further excavation, reinspection and validation was undertaken at locations where ACM debris was identified.
- Following removal of the surface fill, the deeper reworked natural soil and bedding sands used to backfill the sewer were removed, along with the removal of the sewer and related infrastructure. This spoil was placed to the side of the trench and inspected for asbestos; where ACM debris was observed the ACM and surrounding soil was placed directly into skip bins and removed off site under asbestos conditions. The remaining spoil once cleared as not being impacted with ACM debris, was used to backfill the trench.
- The resultant excavation was visually inspected for the presence of asbestos debris. No validation samples were collected as the excavation trench extended into natural.
- Imported soil was used to backfill the resultant trench to the surface.

The final clearance certificates for the surface clearance and backfill works are provided in Appendix B of the Sewer Easement Validation Report (SLR, 2022). No ACM debris was found during the clearance inspections.

7.2.1 Off-site Soil Disposal and Importation of Fill Material

During removal of the sewer main, fragments of bonded ACM were noted in the spoil material at two locations: underneath the sewer manhole and an old sewer pipe. The fragments and surrounding spoil were removed and placed directly into lined skip bins for disposal off site. Approximately 2.64 tonnes of ACM pipe and potentially asbestos impacted spoil were removed from site and disposed of to SBWMF.

Fill material was imported to site to backfill the excavation above the re-instated spoil. The material was characterised by SLR prior to importation:

- Virgin excavated natural material (VENM) from the extractive mining pits operating under licences MA24585 and MA24642 (approximately 39 m^3); and
- Screened stockpiled soil that had been excavated from other construction worksites in Darwin (approximately 56 m^3). Based on information the soil was not sourced from sites operated by the Department of Defence, Airports and/or other sites where current and historical use of fire-fighting foam had occurred.

A visual inspection of the stockpiles did not find any evidence of visible ACM, odours or stains. A third party (Greencap) collected samples for the purpose of investigating asbestos impacts; no asbestos was detected at or above the limit of reporting. Based on the analytical results, SLR was of the opinion that the contamination status of the stockpiles sampled would not present them being used as backfill for the sewer headworks project and the site.

7.3 Auditor's Opinion on Remediation Data

The remediation works are likely to have resulted in the removal of the known contaminated soils at the site.

The Auditor considers that as a whole, the remediation data collected are within acceptable error margins as determined through the assessor's quality assurance program (refer to Section 4.5 of SLR Validation Report). As such, the Auditor considers that the data collected is sufficient to adequately characterise the site for the audit purposes, given:

- The lack of significant systematic errors with the validation data collection process;
- Soil contamination was visually identified by SLR during excavation works;
- Removal of all fill material down to natural soil, screening and inspection of stockpiled material prior to re-use;
- Collection of validation samples from the final excavation extent and laboratory analysis was undertaken by NATA accredited laboratories;
- The analytical results are consistent with expectations based on the site history and field observations; and
- Removal of ACM off site as "asbestos waste".

The Auditor considers the quantity and quality of the remediation validation undertaken is adequate to characterise the nature and extent of contamination at the site. The Auditor considers the data collected are sufficient for the purposes of this environmental audit.

8 Beneficial Use Assessment – Land

8.1 Final Soil Condition

The final soil condition at the site is characterised by the soil samples collected that remain on site, which includes both the residual soils within Lot C and the road reserve, the spoil which was re-used on site and imported fill. The data has been separated into:

- Table 13: in situ results representative of natural conditions and fill outside the remediation area (fill within the 'Known Asbestos Impact Area' and hotspots TP20 and TP54 have been removed as part of the remediation). Note that pesticides, PAHs, phenols, VOCs and TRH/BTEXN were analysed but reported below LORs, and therefore not included in the table below:
  - Greencap (June and August 2019) n=5
  - Greencap (September 2019) n=28
  - Agon (November and December 2019) n=13
  - SLR (June/July 2020) n=61
- Table 14: validation results from the surface and walls of the excavation and trenches (resulting from the removal of underground services). Only validation samples are included in this table (i.e. no historical results) as the surface soils on site have been excavated, and therefore the validation results are considered representative of final site conditions. Note that OPPs, PAHs and TRH/BTEXN were analysed but reported below LORs, and therefore not included in the table below:
  - Lot C and road reserve – Validation sampling by SLR (October/November 2021), 91 samples collected of which 61 were analysed
  - Lot C and road reserve easement – Validation sampling by SLR (August 2021), 29 samples collected of which 29 were analysed
- Table 15: Stockpile results for soils imported to site STP-A to C (95 m^3). Note that OPPs, herbicides, PAHs, PCBs and TRH/BTEXN were analysed but reported below LORs, and therefore not included in the table below:
  - STP-A (n=3, 14 m^3)
  - STP-B (n=3, 25 m^3)
  - STP-C (n=5, 56 m^3)

Table 13: Residual Soil Analytes Comparison with Ecological/Human Health Direct Contact Criteria (mg/kg)

Analyte	n	n > PQL	Max.	Number of Samples > Criteria					
				EIL/ESL Urban Res.	EIL/ESL Com/Ind	HIL/ *HSL A*	HIL/ *HSL B*	HIL/ *HSL C*	HIL/ *HSL D*
Arsenic	65	65	35	0 >100	0>160	0 >100	0 >500	0 >300	0 >3,000
Cadmium	65	0	-	0 >10#	0 >21#	0 >20	0 >150	0 >90	0 >900
Chromium (total)	65	65	320	0>390**	0>630**	0>120,000*	0>120,000*	0>120,000*	n/a
Copper	64	61	15	0 >80	0 >110	0 >6,000	0 >30,000	0 >17,000	0 >240,000
Lead	69	67	62	0 >1,100	0 >1,800	0 >300	0 >1,200	0 >600	0 >1,500
Mercury	65	0	-	0 >6.6#	0 >24#	0 >40	0 >120	0 >80	0 >730
Nickel	65	65	26	0 >180	0 >310	0 >400	0 >1,200	0 >1,200	0 >6,000
Zinc	64	64	82	0 >400	0 >590	0 >7,400	0 >60,000	0 >30,000	0 >400,000
Carcinogenic PAHs (as B(a)P TEQ)	4	4	0.6	-	-	0>3	0 >4	0>3	0 >40

Analyte	n	n > PQL	Max.	Number of Samples > Criteria					
				EIL/ESL Urban Res.	EIL/ESL Com/Ind	HIL/ *HSL A*	HIL/ *HSL B*	HIL/ *HSL C*	HIL/ *HSL D*
DDT+DDE+DDD	61	0	0.08	0 >180 (DDT only)	0 >640 (DDT only)	0 >240	0 >600	0 >400	0 >3,600
Chlordane	61	12	2	-	-	0>50	0>90	0>70	0>530
Aldrin + Dieldrin	61	7	1.5	-	-	10>6	2>10	2>10	0>45
Asbestos ACM	14	1	0.0041%	-	-	0>0.01%	0>0.04%	0>0.02%	0>0.05%
Asbestos AF/FA	14	0	-	-	-	0>0.001%	0>0.001%	0>0.001%	0>0.001%

Notes:
EILs were calculated on the basis of site-specific soil parameters.
* Criteria from USEPA Regional Screening Level table (April 2019 version); ** Criteria based on CrIII; # Criteria from CCME (1999 & 1991).

Table 14: Validation Soil Analytes Comparison with Ecological/Human Health Direct Contact Criteria (mg/kg)

Analyte	n	n > PQL	Max.	Number of Samples > Criteria					
				EIL/ESL Urban Res.	EIL/ESL Com/Ind	HIL/ *HSL A*	HIL/ *HSL B*	HIL/ *HSL C*	HIL/ *HSL D*
Asbestos (presence /absence)	120	0	-	-	-	0	0	0	0

Table 15: Stockpile Soil Analytes Comparison with Ecological/Human Health Direct Contact Criteria (mg/kg)

Analyte	n	n > PQL	Max.	Number of Samples > Criteria					
				EIL/ESL Urban Res.	EIL/ESL Com/Ind	HIL/ *HSL A*	HIL/ *HSL B*	HIL/ *HSL C*	HIL/ *HSL D*
Arsenic	13	12	8	0 >100	0>160	0 >100	0 >500	0 >300	0 >3,000
Cadmium	13	0	-	0 >10#	0 >21#	0 >20	0 >150	0 >90	0 >900
Chromium (total)	13	13	67	0>390**	0>630**	0>120,000*	0>120,000*	0>120,000*	n/a
Copper	13	11	17	0 >80	0 >110	0 >6,000	0 >30,000	0 >17,000	0 >240,000
Lead	13	13	19	0 >1,100	0 >1,800	0 >300	0 >1,200	0 >600	0 >1,500
Mercury	13	0	-	0 >6.6#	0 >24#	0 >40	0 >120	0 >80	0 >730
Nickel	13	10	6	0 >180	0 >310	0 >400	0 >1,200	0 >1,200	0 >6,000
Zinc	13	9	29	0 >400	0 >590	0 >7,400	0 >60,000	0 >30,000	0 >400,000
Aldrin + Dieldrin	13	2	0.05	-	-	0>6	0>10	0>10	0>45
Asbestos (presence / absence)	16	0	-	-	-	0	0	0	0

Notes:
EILs were calculated on the basis of site-specific soil parameters.
* Criteria from USEPA Regional Screening Level table (April 2019 version); ** Criteria based on CrIII; # Criteria from CCME (1999 & 1991).

The asbestos assessment works was described in Sections 6.1 and 7.3 of this EAR. In summary, bonded ACM and friable asbestos was identified in fill soils predominately in the eastern portion of the road reserve. As part of the earthworks within Lot C and the road reserve the fill within the 'Known Asbestos Impact Area' was excavated and loaded directly into skips. Spoil generated during removal of the sewer (i.e. bedding sands and (reworked) natural) was side cast and once cleared of asbestos was used to backfill the trench. The excavation generally extended to natural or inferred (reworked) natural (maximum depth of 0.3 m). Asbestos was not observed at the excavation surfaces, or where it was observed it was removed and validated.

8.1.1 Maintenance of Ecosystems (MoE)

No residual soil concentrations were reported above ecosystem guidelines. Therefore, the current soil condition is not considered detrimental to the MoE beneficial use, under an unrestricted land use.

8.1.2 Human Health

Following the remediation works, all visible asbestos was removed. The surface of the site, hotspots and stockpiles were chemically validated for asbestos, all asbestos results were reported below criteria. Excavation works beyond the external site boundaries encountered ACM (which was removed when encountered) and this material would only present a risk if brought onto the audit site.

All other chemicals reported concentrations below the adopted human health criteria for residential land use.

On the basis of the Tier 1 screening results, the Auditor considers that the condition of the site is not detrimental to the objectives of this beneficial use provided off-site contaminated soils are not brought onto the audit site.

8.1.3 Aesthetics

Various inclusions of building rubble (concrete, PVC, plastics, glass bottles, and aluminium cans) were observed during remediation of the south-west portion of Lot C, and the north-west portion of the road reserve. Excavated soils and stockpiles were visually inspected for evidence of ACM.

Burnt wooden logs and a layer of bitumen were encountered in reworked soils within the southern portion of the main excavation. This material was removed as part of the remediation works. These soils were excavated to approximately 0.3 m (and up to 2 m in places), and the geotechnically unsuitable construction and demolition rubble was screened from the stockpiled soil. Stockpiles were visually inspected for evidence of ACM.

No hydrocarbon odours or staining was identified in the sample locations, with field screening of soil samples for volatile organic compounds recording low concentrations.

Given the removal of the fill, and screening of geotechnically unsuitable materials, the current condition of the site is not considered detrimental to the objectives of this beneficial use.

8.1.4 Production of Food, Flora and Fibre

As the residual fill material contains TRH which exceeds criteria for protection of urban ecosystems, the Auditor considers that the current condition of the site is detrimental to the objectives of the beneficial use of *Production of Food, Fibre and Flora*.

8.1.5 Buildings and Structures

Overall, the soil condition for the beneficial use of buildings and structures was considered to be 'non-aggressive to mild' in accordance with AS2159-2009, based on the following results:

- pH results ranging from 5.8-9.2 pH units; and
- the site is located in an area of potential acid sulfate soil.

There is potential that Acid Sulfate Soils (ASS) may impact on deep building footings due to its natural salinity, acidity, sulfate content, corrosiveness and/or encrustation potential, but is not considered a risk to the development.

The Auditor therefore considers that the condition of the site is potentially detrimental to the objectives of this beneficial use for deep structure.

8.2 Consideration of Whether a Certificate or Statement Should be Issued

Groundwater pollution has not been identified at the site and therefore groundwater does not prevent the issuing of a Certificate of Environmental Audit. However, the final soil condition is considered to be detrimental to some beneficial uses of land if the audit condition is not complied with. Therefore a Certificate of Environmental Audit cannot be issued.

8.3 Determination of Whether the Condition of the Site is Detrimental to the Proposed Development

The Auditor considers that the condition of the site soil is not detrimental to the proposed development (or more sensitive land uses), provided excavation crossing the site boundaries does not result in ACM contaminated fill being imported to the audit site. This is considered an unavoidable situation as the contamination is off site and does not unreasonably constrain the site use. This can be reasonably managed post-development via compliance with Statement condition.

The condition of groundwater is not considered detrimental to the proposed development, provided groundwater is not extracted for use.

9 Beneficial Use Assessment – Groundwater

9.1 Groundwater Pollution Assessment Process

The Auditor has followed the process for assessing groundwater pollution provided in Section 13 of EPA Publication 759, whereby the Auditor must answer the following questions:

- Is groundwater likely to be polluted?
- Is groundwater polluted?
- Are the beneficial uses of the groundwater precluded by the pollution relevant or, is the site the source of pollution?

9.1.1 Is Groundwater Likely to be Polluted?

The site was formerly used for residential purposes. Imported fill was a potential source of groundwater pollution. In addition, a number of nearby properties were potential or known sources of groundwater pollution, including multiple service stations, as detailed in Section 3.2. Based on these considerations, pollution of groundwater was considered a possibility and intrusive groundwater investigation was warranted.

9.1.2 Is Groundwater Polluted?

The discussion in the following section presents the Auditor's assessment of whether the groundwater is polluted or not. That is, do elevated concentrations in groundwater (above naturally occurring levels) exceed allowable levels for the protected beneficial uses of groundwater?

The aquifer is classified as Segment A1, with the following beneficial uses of groundwater to be protected:

- Water Dependent Ecosystems and Species;
- Potable Water Supply (Desirable);
- Potable Mineral Water Supply (considered not relevant as the site is not within a designated mineral water area);
- Agriculture and Irrigation (Irrigation);
- Agriculture and Irrigation (Stock Watering);
- Water-based Recreation (Primary Contact Recreation);
- Industrial and Commercial;
- Traditional Owner Cultural Values;
- Cultural and Spiritual Values;
- Geothermal Properties (considered not relevant as the groundwater in this area was not found to have geothermal properties); and
- Buildings and Structures.

Based on the groundwater investigations undertaken, concentrations exceed screening criteria for some of these beneficial uses. Although some of the analytes are considered naturally occurring (cobalt, copper, nickel, lead, manganese and zinc). This is further discussed in Section 9.2.

9.1.3 Are Precluded Beneficial Uses Relevant or is the Site the Source?

The site is not considered a source of groundwater pollution, as discussed in Section 9.3.

The risk the groundwater pollution presents to the beneficial uses and the relevancy of those beneficial uses are discussed in Section 9.4.

A summary of the precluded beneficial uses of groundwater due to the groundwater pollution is discussed in Section 9.5.

9.2 Final Groundwater Condition

The most recent groundwater monitoring event (GME) was undertaken in January 2020. Given the soil contamination was not related to the elevated groundwater concentrations (i.e. different contaminants) and active groundwater remediation was not undertaken (off-site source), rebound or long term monitoring of groundwater was not necessary.

Concentrations present in groundwater exceeding the adopted assessment criteria for the protected beneficial uses are summarised in the following table and based on the latest sampling event, where data was available.

It is noted that some low level concentrations of TRH and chloroform were reported in MW01 and MW02 (closest to the off-site service station). MW01 was re-tested using silica gel clean up methodologies. The silica gel clean up results were reported to be below limit of reporting (LOR). The chloroform results were compared to WHO drinking water guidelines, and found to be below this criteria (6 and 10 µg/L for MW01 and MW02 respectively, compared to a criteria of 300 µg/L); the chloroforms are likely a result of leaking mains water.

Table 16: Groundwater Results Exceeding Adopted Tier 1 Criteria

Location	Contaminant (mg/L)	Tier 1 Criteria exceeded* (mg/L)
MW1	Cobalt (0.006)	MWG (0.001)
	Copper (0.017)	MWG (0.0013)
	Lead (0.035)	DWG (0.01) MWG (0.0044) FWG (0.0034)
	Manganese (0.21)	RWG (0.1) LIWG (0.2)
	Nickel (0.12)	DWG (0.02) MWG (0.07) FWG (0.011) RWG (0.1)
	Zinc (0.26)	MWG (0.015) FWG (0.008)
	pH (6.1)	RWG (6.5-8.5)
MW2	Cobalt (0.002)	MWG (0.001)
	Lead (0.009)	MWG (0.0044) FWG (0.0034)
	Manganese (0.19)	RWG (0.1)
	Nickel (0.009)	FWG (0.011)
	Zinc (0.044)	MWG (0.015) FWG (0.008)
	pH (6.2)	RWG (6.5-8.5)

Location	Contaminant (mg/L)	Tier 1 Criteria exceeded* (mg/L)
MW3	Cobalt (0.005)	MWG (0.001)
	Copper (0.006)	MWG (0.0013)
	Lead (0.005)	MWG (0.0044) FWG (0.0034)
	Manganese (0.14)	RWG (0.1)
	Nickel (0.025)	DWG (0.02) FWG (0.011)
	Zinc (0.093)	MWG (0.015) FWG (0.008)
	pH (4.5)	RWG (6.5-8.5)
MW4	Cobalt (0.002)	MWG (0.001)
	Copper (0.004)	MWG (0.0013)
	Lead (0.002)	FWG (0.0034)
	Nickel (0.016)	FWG (0.011)
	Zinc (0.034)	MWG (0.015) FWG (0.008)
	pH (4.9)	RWG (6.5-8.5)

*Adopted Criteria detailed in Section 5.4
MWG – marine water guidelines – 95% protection
FWG – freshwater guidelines – 95% protection
DWG – drinking water guidelines
RWG – recreational water guidelines
LIWG – Livestock/Irrigation water guidelines

9.3 Source and Extent of Groundwater Pollution

The assessor did not present a quantitative comparison of elevated groundwater analytes on site with regional data, and therefore this comparison was undertaken by the Auditor.

9.3.1 Background/Regional Pollution

The concentrations of pH, cobalt, copper, nickel, zinc, lead and manganese were above one or more assessment criteria during the GME. A comparison of the up-gradient and down-gradient groundwater exceedances are summarised in the table below. These analytes are not considered site-derived pollution for the following reasons:

- The concentrations of metals and pH were present at levels which may be attributed to naturally occurring aquifer conditions;
- These analytes were not identified as key site-sourced contaminants of concern within the site history; and
- Concentrations of these analytes in soil during site investigation, excavation and remediation/validation works were not indicative of an obvious on-site source.

Therefore, the Auditor considers that the site is not a source or co-source of pH, cobalt, copper, nickel, zinc, lead and manganese pollution in groundwater but indicative of the natural groundwater conditions surrounding the site.

The groundwater investigation was undertaken to understand if there was contamination present beneath the site from up-gradient off-site sources. Concentrations of petroleum hydrocarbon and volatile were not identified at concentrations indicative of a risk to site users.

Table 17: Summary of groundwater contaminant exceedances

Analyte	On-site concentration range (µg/L)		Guidelines values for protected beneficial uses* (µg/L)					Bore/s Exceeding Criteria
	Up-gradient (MW01 to MW03)	Down-gradient (MW04)	MWG	FWG	DWG	RWG	IWRG	
Analytes considered by the Auditor to be natural and hence not pollution								
Cobalt	**6**	**2**	**1**	**-**	-	-	**10**	MW01, MW02, MW03, MW04
Copper	**17**	**4**	**1.3**	**1.4**	2,000	1,000	200	MW01, MW03, MW04
Lead	**35**	2	**4.4**	**3.4**	**10**	50	2,000	MW01, MW02, MW03
Manganese	**210**	32	-	1,900	500	**100**	**200**	MW01, MW02, MW03
Nickel	**120**	**16**	**70**	**11**	**20**	**100**	200	MW01, MW02, MW03, MW04
Zinc	**260**	**34**	**15**	**8**	3,000	5,000	2,000	MW01, MW02, MW03, MW04
pH	**4.5**	**4.9**	-	**-**	**6.5 – 8.5**	**6.5 – 8.5**	**6 – 8.5**	MW01, MW02, MW03, MW04

*Adopted Criteria detailed in Section 5.4
MWG – marine water guidelines – 95% protection
FWG – freshwater guidelines – 95% protection
DWG – drinking water guidelines
RWG – recreational water guidelines
LIWG – Livestock/Irrigation water guidelines

9.4 Significance (Risk) of Groundwater Pollution

9.4.1 Extractive Groundwater Uses

Based on Segment A1, protected extractive uses of groundwater include potable water supply, primary contact recreation, irrigation, stock watering and commercial and industrial use. As per Section 13.7 of EPA Publication 759, the relevancy of beneficial uses only needs to be considered at the site, for non-source sites.

The proposed development will not include any extractive use of groundwater. It is also noted that extractive use on site in the future is unlikely, based on the natural aquifer characteristics (relatively low yield and concentrations of inorganics and metals), availability of mains water, highly urbanised site location and the building footprint (covering the majority of the site).

9.4.2 Water Dependent Ecosystems and Species, Traditional Owner Cultural Values, Cultural and Spiritual Values

Concentrations of cobalt, copper, nickel, zinc and lead exceeded the WDES criteria on site. Concentrations were considered naturally occurring and do not represent pollution.

The groundwater quality objectives for WDES apply at the point of discharge to surface water and no surface water bodies exist on site. The Auditor considers that in the case where groundwater is not proposed to be extracted, TOCV and CSV should also be applied at the point of discharge. Furthermore for non-source sites, as per Section 13.7 of EPA Bulletin 759, off-site beneficial uses do not need to be

considered when evaluating potential impacts of groundwater pollution, and therefore these beneficial uses are not relevant at this site.

9.4.3 Other Non-Extractive Groundwater Uses

Based on the depth to groundwater, the only relevant on-site non-extractive groundwater use relates to building foundations that may extend into groundwater, that is Buildings and Structures. As per Section 13.7 of EPA Bulletin 759, for non-source sites the relevancy of beneficial uses only needs to be considered at the site.

Groundwater is classified as 'non-aggressive to mild' based on AS2159-2009 and therefore Buildings and Structures is not a precluded beneficial use, based on the following:

- pH in groundwater ranged from 4.5 to 6.1 pH units and is considered slightly acidic;
- Chloride in groundwater ranged from 16 to 190 mg/L and was considered to be naturally occurring; and
- Sulfate (as SO_4) concentrations in groundwater ranged from 17 to 56 mg/L and were considered to be naturally occurring.

9.4.4 Consideration of Potential NAPL

No measurable NAPL or sheen has been reported for groundwater from on-site or off-site wells.

9.4.5 Consideration of Potential Vapour Risks

There were no detectable concentrations of volatile contaminants.

9.5 Summary of Precluded Beneficial Uses of Groundwater

A summary table of the currently precluded beneficial uses is provided in Table 18: below and is consistent with Attachment 3 of EPA Publication 840. As the concentrations of potential contaminants in groundwater are considered to be natural, uses of groundwater therefore can not be precluded, but should still be proven to be safe for that proposed use as concentrations exceed some adopted criterion.

Table 18: Precluded Beneficial Use Summary Table

Precluded Beneficial Use	Contaminants
Water Dependent Ecosystems and Species[1]	Cobalt (n), copper (n), lead (n), nickel (n), zinc (n).
Potable Water Supply	Lead (n)and nickel (n)
Potable Mineral Water Supply	Not Applicable at this site.
Agriculture and Irrigation (Irrigation)	Manganese
Agriculture and Irrigation (Stock Watering)	None
Water-based Recreation (Primary Contact Recreation)	Manganese (n) and pH (n)
Industrial and Commercial[2]	None
Traditional Owner cultural values[1]	Refer to WDES – not applicable on site.
Cultural and spiritual values[1]	Refer to WDES – not applicable on site.
Geothermal Properties	Not applicable at this site.

Precluded Beneficial Use	Contaminants
Buildings and Structures	Not precluded.

(n) naturally occurring; (b) = background/regional pollution; (a) = aesthetic.
1 Based on concentrations in the vicinity of the site, whilst criteria apply at the point of exposure/receptor.
2 No chromium criteria are available for commercial or industrial use, as suitability for these uses are highly dependent on the specific use proposed. It is recommended that suitability for a specific commercial or industrial use is evaluated on an individual basis.

9.6 Determination of Whether a Certificate or Statement Should be Issued

Groundwater pollution has not been identified at the site and therefore groundwater does not prevent the issuing of a Certificate of Environmental Audit. However, soil contamination is detrimental to some beneficial uses of land and therefore a Certificate of Environmental Audit cannot be issued.

9.7 Determination of Whether the Condition of the Site is Detrimental to the Proposed Development (Statement of Environmental Audit)

The proposed development does not propose extractive use of groundwater and groundwater pollution has not been identified, therefore, the condition of groundwater is not considered detrimental to the proposed development.

10 Beneficial Use Assessment – Surface Water

The Auditor considers that the current condition of the site is not detrimental to the relevant beneficial uses of surface water on the basis that:

- There are no surface water bodies located within the boundaries of the site;
- Erosion of surface soils is unlikely due to the effective capping of the site once the proposed development is constructed; and
- The potential receiving waters (mangrove community of the Outer Estuary of Darwin Harbour) are located approximately 160 m away, and the processes of dispersion and sorption would act to reduce the contaminant levels.

Based on the above, the Auditor considers that the condition of the site is not detrimental to the beneficial uses of surface water defined in SEPP (Waters).

11 Beneficial Use Assessment – Ambient Air

The Auditor has assessed whether or not the site is detrimental to ambient air (defined as air outside a building) on the basis of:

- Land pollution, specifically vapour emissions from polluted soils (i.e. volatile hydrocarbons in soil and soil vapours) and landfills;
- Groundwater pollution, specifically vapour emissions from polluted groundwater (i.e. volatile hydrocarbons dissolved in groundwater and NAPL); and
- Surface water pollution, specifically vapour emissions from polluted surface waters.

The risks to on-site receptors from vapour emissions into ambient and indoor air is within acceptable levels for the proposed development based on the results of soil and groundwater investigations.

In accordance with EPA Publication 788, the Auditor is required to consider the presence of open and closed landfills within 500 m of the site and assess the risk of any resultant landfill gas impacts. No landfills were identified within 500 m of the site.

Based on the above, the Auditor considers that the condition of the site is not detrimental to the beneficial uses of air defined in SEPP (Air Quality Management) and SEPP (Ambient Air Quality).

12 Other Factors Affecting Use of the Site

EPA Publication 759 notes that a range of other factors (other than land, groundwater, surface water and air) may be identified that do not affect a beneficial use of the site, but may be relevant to the development of, or activities at, the site. Such factors are noted below and repeated in the Statement of Environment Audit in the section titled "Other Related Information":

- ACM were found on the audit site and have been removed as far as reasonably practicable. No known ACM remains on the audit site. However, small quantities of ACM may remain within the soil and be uncovered during excavation works. These ACM fragments are not anticipated to represent a health risk to workers or occupiers of the completed development. If encountered during future development or use of the audit site, any fragments must be handled and disposed in accordance with the *Code of Practice How to Safely Remove Asbestos 2011* (or its relevant future revision).
- Groundwater at the site contains naturally elevated concentrations of pH, cobalt, copper, nickel, lead, manganese and zinc. The levels are considered typical of the natural groundwater quality surrounding the site and do not constitute pollution in accordance with clause 10(2)(c) of State environment protection policy (Waters) 2018.
- If groundwater is to be extracted from the site, advice including testing, should be sought from a suitably qualified professional to ensure the groundwater is suitable for the intended use.
- Any material excavated from the site and disposed of off site should be classified and managed in accordance with IWRG 621 (or its relevant future revisions) or NT EPA equivalent. Analysis of fill materials should include asbestos and PFAS due to the previous on-site asbestos contamination and importation of fill materials from a Defence site;
- Not all land uses for which the land is considered suitable by this audit may be allowed under the existing zoning;
- A separate Environmental Audit Report and Statement of Environmental Audit has been issued for Lot A (dated 31 March 2022) and another report will be issued for the residential lots (B1-B3) (dated 8 September 2022); and
- In accordance with Section 53ZE of the Act, the owner/occupier of the site must provide a copy of this Statement to any person who becomes or proposes to become an occupier of the site.

13 Conclusions

13.1 Audit Requirement

This audit was requested by the NT EPA to assess the suitability of the site for the proposed use. The proposed development is for a road corridor and open space, refer to Attachment 2 for the development plan.

13.2 Verification of Assessor's Conclusions

Appendix 3 of EPA Publication 759 states that, '*Where another person has undertaken the site assessment, the audit report should include the auditor's verification of the assessor's conclusions in relation to these issues.*' Among SLR And Agon's conclusions are the following:

- *DIPL commenced demolition of former public housing buildings in mid-2019. The majority of the demolition waste was removed and a portion of crushed concrete rubble was screened and spread across the site as general fill.*
- *Fill was observed to approximately 0.5 mbgl, with deeper pockets of reworked natural overlying natural weathered rock or rock. At the completion of works all fill within the 'Known Asbestos Impact Area' was removed and validated, with natural or reworked natural soils remaining.*
- *Investigations of the site identified contamination in the form of asbestos (bonded fragments and fibres) and pesticides (aldrin and dieldrin) in soils.*
- *SLR developed a remediation strategy for the site. Asbestos impacted soils were removed, and the excavated surfaces and stockpiles were visually inspected for bonded fragments of asbestos. ACM debris was removed for off-site disposal.*
- *SLR supervised the removal of fill across the site, and consider that all known asbestos impact has been removed from the site.*
- *SLR consider that the site has been suitably remediated and validated for the proposed commercial and public open space use.*
- *Agon found that the soil investigations identified fill up to 1 m, consistent with reworked natural soils. Bonded ACM fragments and fibres where identified in the soil. The 'Known Asbestos Impact Area' was removed. Visually inspected spoil was used to backfill the trenches and fill was imported to site to bring the site up to level within Lot C and the Road Reserve.*
- *Agon reported concentrations of TRH, ether oxygenates, BTEX and halogenated volatile organics within groundwater were below the adopted assessment criteria, minor concentrations of chloroform were detected in groundwater. Some metals were reported to exceed site-specific criteria.*

The Auditor generally concurs with the above findings.

13.3 Auditor's Conclusions

The Auditor considers that the final condition of the site is detrimental to some of the relevant beneficial uses defined in SEPP (Land), i.e. *Protection of Human Health*, due to asbestos risks potentially present in near boundary fill. As such, a CEA cannot be issued.

However, an SEA has been issued which states that the condition of the site is acceptable for the beneficial uses of '*Sensitive use – Low to High Density*, '*Public Open Space*', *'Commercial' and 'Industrial*' uses subject to a SEA condition.

The Auditor considers that the condition of the site is not detrimental to the relevant beneficial uses defined in SEPP (Waters) for groundwater and surface water, SEPP (Air Quality Management) and SEPP (Ambient Air Quality).

14 References

Legislation and Regulations

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EPA Victoria Publications and Industrial Waste Resource Guidelines

EPA Victoria Publication 759.3. *Environmental Auditor (Contaminated Land): Guidelines for Issue of Certificates and Statements of Environmental Audit*. December 2015.

EPA Victoria Publication 840.2. *The Cleanup and Management of Polluted Groundwater*, April 2016.

EPA Victoria Publication 865.12, *Environmental Auditor Guidelines for Appointment and Conduct*, December 2016.

EPA Victoria Publication 953.2. *Environmental Auditor Guidelines for Conducting Environmental Audits*. August 2007.

EPA Victoria Publication 1147.2. *Environmental Auditor Guidelines – Provision of Environmental Audit Reports, Certificates and Statements*. December 2015.

EPA Victoria IWRG 621. *Soil Hazard Categorisation and Management*. June 2009.

Victorian Environment Protection (Industrial Waste Resource) Regulations 2009

Attachments

Attachment 1: Site Location Plan
Attachment 2: Development Plan
Attachment 3: Historical Site Layout
Attachment 4: Soil Investigstion Locations
Attachment 5: Groundwater Investigation Locations
Attachment 6: Conceptual Site Model
Attachment 7: SLR Stockpile Locations
Attachment 8: Validation Locations
Attachment 9: Sewer Easement

Attachment 1: Site Location Plan

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Project No.:	680.10679
Date:	24-Jun-2020
Drawn by:	Sarah Doherty
Scale:	1:4,000
Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 52

LEGEND

Project Area

Site Area

N
W E
S

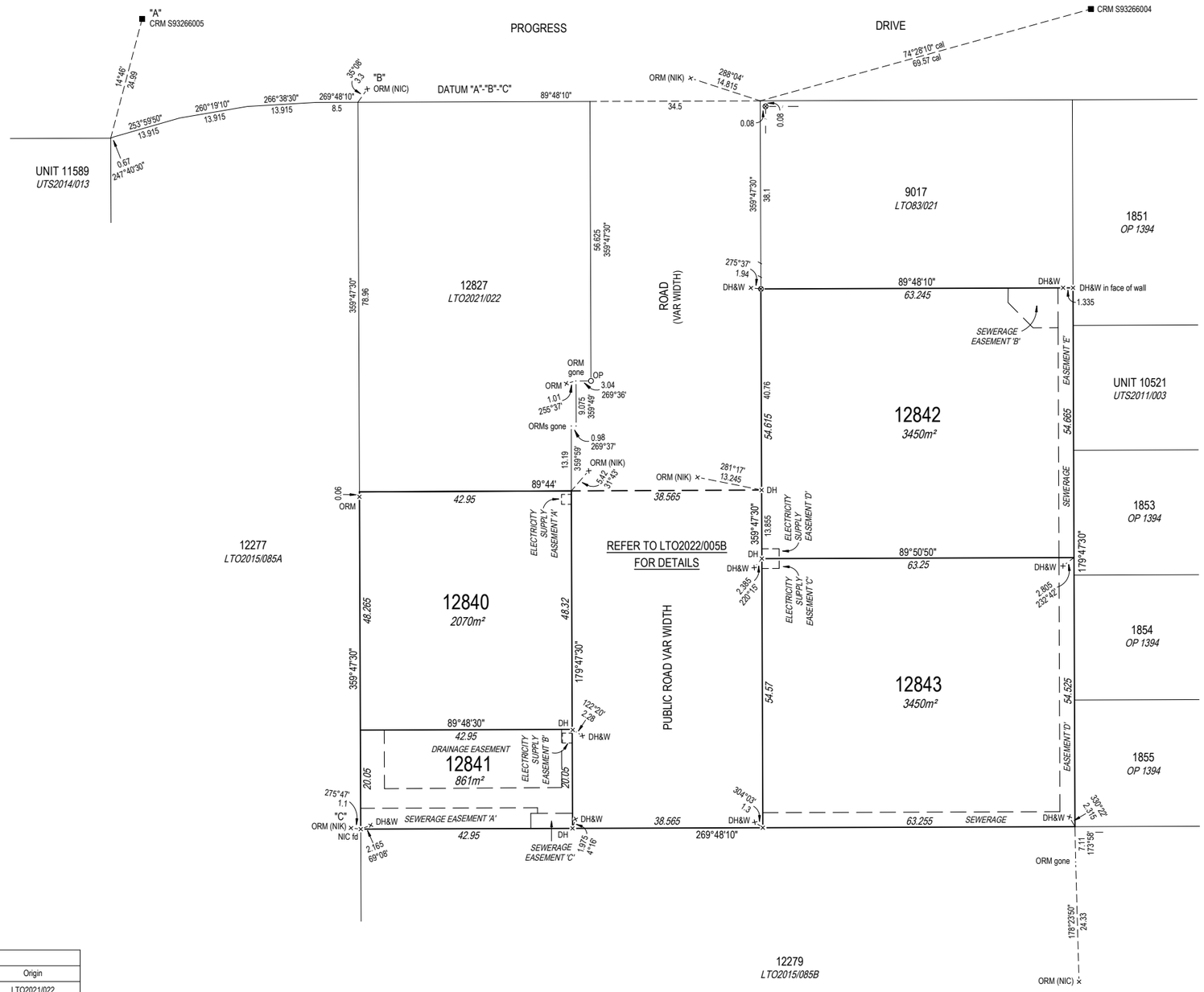
Imagery sourced from Nearmaps June 2020

Figure 1

0 35 70 140 Metres

John Stokes Square - Project Area Locality

Supersedes Part of LTO2021/022



Easements to be created by registration of this plan		
Description	Affects	In favour of
Drainage Easement	Lot 12841	Northern Territory of Australia
Electricity Supply Easement 'A'	Lot 12840	Power and Water Corporation
Electricity Supply Easement 'B'	Lot 12841	Power and Water Corporation
Sewerage Easement 'A'	Lot 12841	Power and Water Corporation
Sewerage Easement 'B'	Lot 12842	Power and Water Corporation

Existing Easements			
Description	Affects	In favour of	Origin
Electricity Supply Easement 'C'	Lot 12843	Power and Water Corporation	LTO2021/022
Electricity Supply Easement 'D'	Lot 12842	Power and Water Corporation	LTO2021/022
Sewerage Easement 'C'	Lot 12841	Power and Water Corporation	LTO83/010
Sewerage Easement 'D'	Lot 12843	Power and Water Corporation	LTO83/010
Sewerage Easement 'E'	Lot 12842	Power and Water Corporation	LTO83/010

SURVEYOR'S CERTIFICATE

I, Simon John Lewis
hereby certify that the survey represented on this plan was carried out by me or under my immediate supervision and was completed on 28/6/2022, and that this survey has been executed in accordance with the Licensed Surveyor's Act and the directions thereunder.

Licensed Surveyor — Date 25/08/2022

L.T.O. REGISTRATION

Lodged on . . . . . at . . . . .
Instrument Number . . . . . .
Registered on . . . . . at . . . . .
by me . . . . . .
Registrar-General

SURVEY APPROVAL

I, Robert Ian Sarib, the Surveyor-General, being satisfied that Part 5 of the Planning Act has been complied with:

(i) approve the survey under section 49 of the Licensed Surveyors Act;
(ii) acknowledge, on behalf of the Service Authorities designated, the vesting of the Service Easements shown hereon; and
(iii) accept on behalf of the Service Authorities specified, the land designated as roads or reserves hereon vested pursuant to section 64 of the Planning Act and section 7 of the Control of Roads Act

Surveyor-General — Date

Note
Dimensions of unmarked boundaries and connections are original unless otherwise shown
Public Road is vested in the City of Darwin
NIC denotes Nail in Concrete
NIK denotes Nail in Kerb

Version 1 - survey plan as lodged

LOTS 12840 TO 12843
SUBDIVISION OF LOT 12828
TOWN OF NIGHTCLIFF

Drawn by: Earl James & Associates (12209) 20/7/2022
Examined by: Earl James & Associates 22/08/2022
Map Reference
AZIMUTH Assumed from LTO2021/022 Observed at
SCALE 1:1000 (A3)

LTO2022/005A
SHEET 1 OF 2

Attachment 2: Development Plan

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Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 52

N
W
E
S

Imagery sourced from Nearmaps June 2020

Figure 2

0 5 10 20
Metres

Future Land Use Classifications

N

PROGRESS DRIVE

LOT 12227

LOT A

ROAD 1

ROAD 2A

LOT 9017

Steps

Steps

NOTE:
REFER TO DRAWINGS B20-6291, B20-6292 AND B20-6301 FOR WORKS WITHIN LOT 9017

LOT B3

25mm ASPHALT AC10 MIX TYPE 2 (AZ80) 150mm WITH FCR BASE COURSE COMPACTED TO 100% MMDD PREPARE SUBGRADE TO 150mm DEPTH AND COMPACT TO 95% MMDD.

EXISTING KERB

TURF

LEGEND

- 50mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm FCR SUBBASE COMPACTED TO 98% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm FCR SUBBASE COMPACTED TO 98% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- DEEP LIFT
  50mm ASPHALT WEARING COURSE AC14-TYPE 5 A15E
  150mm ASPHALT AC20-TYPE 4 A15E (2x75mm LAYERS)
- 150mm REINFORCED CONCRETE DRIVEWAY
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
  REFER DRG R20-1730
- 150mm REINFORCED CONCRETE DRIVEWAY
  REFER CoD STD DRG DCC-103
- 125mm REINFORCED CONCRETE SHARED PATH
  REFER TO LANDSCAPE DRAWINGS FOR CONCRETE FINISHES AND COLOUR
  REFER CoD STD DRG DCC-104 FOR OTHER DETAILS
- 100mm REINFORCED CONCRETE
  INFILL
  REFER DRG R20-1730
- LANDSCAPING
  REFER LANDSCAPE WORKS
  DRAWING SET
- BUS STOP
  REFER DIPL STD DRG CS3709 AND DRG R20-1731
- EXELOO
  REFER MANUFACTURER SPECIFICATION
- VERGE TO BE CONSTRUCTED BY OTHERS

FOR CONTINUATION REFER TO DRG R20-1733

WARNING:
DRAWINGS MUST BE REPRODUCED IN COLOUR

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site
No guarantee is given that all existing services are shown

2.5 0 2.5 5.0 7.5 10 12.5m
0 1:250-A1 1:500-A3

AS CONSTRUCTED

No.	DESCRIPTION	DATE	INIT.	DEPT/COMPANY.
1	AS CONSTRUCTED	15/03/2022	AS	THE MINING
0	CONTRACT DRAWING	02/12/2020	PM	BYRNE

AMENDMENTS

byrne CONSULTANTS
ABN 78 124 388 192
P.O.Box 43420 Casuarina NT 0811
Ph. 08 89472476 Fax: 08 89475098
Byrne Consultants Project No. NT19012

DRAWN YB DATE		CHECKED MDW DATE	
DESIGNED MDW DATE		CHECKED GM DATE	
DESIGN PROJECT LEADER - DATE		NTG PROJECT MANAGER - DATE	

Northern Territory Government

DARWIN
NIGHTCLIFF
JOHN STOKES SQUARE REDEVELOPMENT

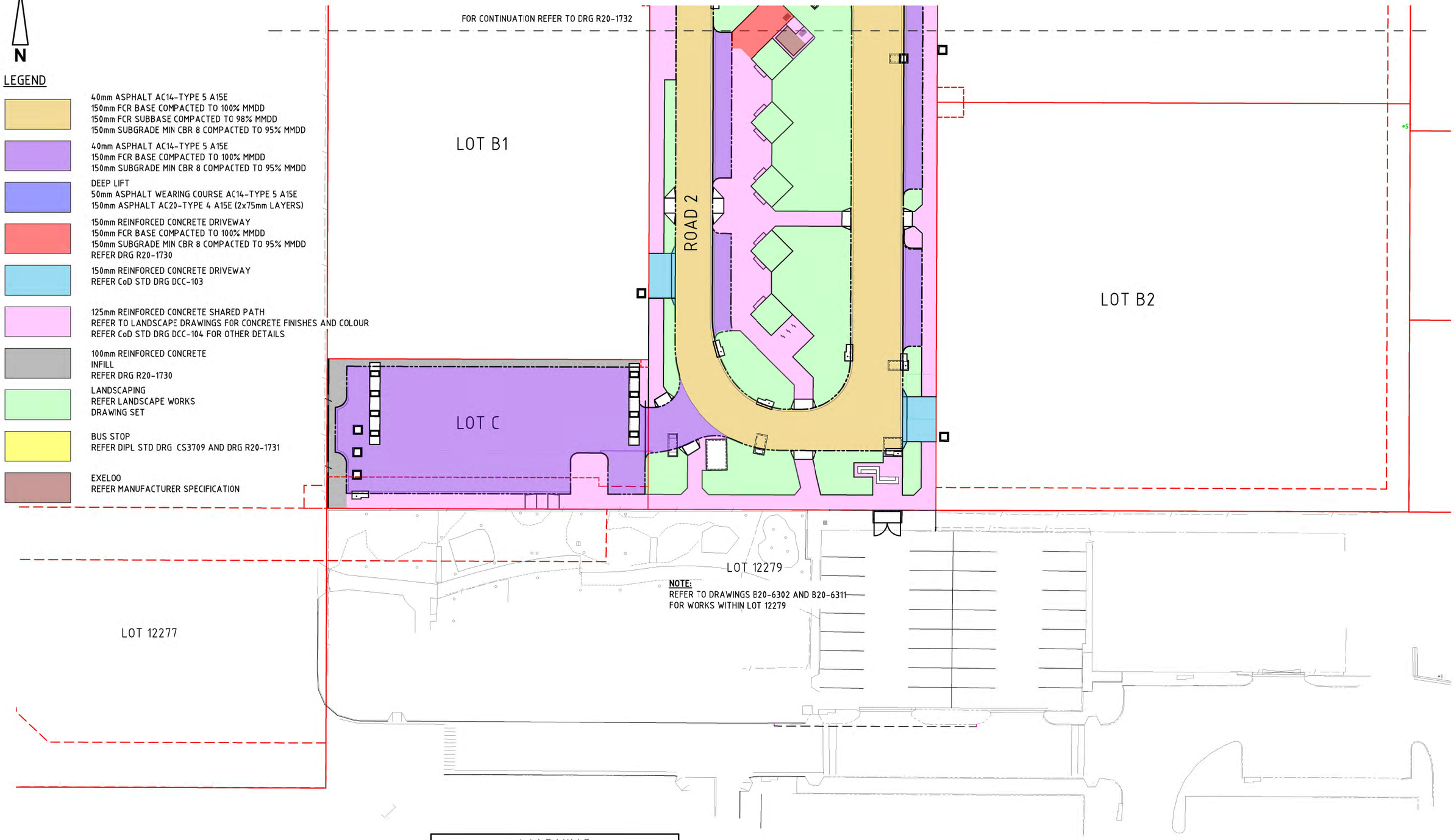
SURFACE FINISHES LAYOUT PLAN AND LEGEND SHEET 1 OF 2

NTG PROJECT No.	NTG ASSET No.	SHEET No.	NTG DRAWING No.	AMENDMENT	SHEET SIZE
HOD35032	-	15 OF 42	R20-1732	1	A1

N

LEGEND

- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm FCR SUBBASE COMPACTED TO 98% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- 40mm ASPHALT AC14-TYPE 5 A15E
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
- DEEP LIFT
  50mm ASPHALT WEARING COURSE AC14-TYPE 5 A15E
  150mm ASPHALT AC20-TYPE 4 A15E (2x75mm LAYERS)
- 150mm REINFORCED CONCRETE DRIVEWAY
  150mm FCR BASE COMPACTED TO 100% MMDD
  150mm SUBGRADE MIN CBR 8 COMPACTED TO 95% MMDD
  REFER DRG R20-1730
- 150mm REINFORCED CONCRETE DRIVEWAY
  REFER CoD STD DRG DCC-103
- 125mm REINFORCED CONCRETE SHARED PATH
  REFER TO LANDSCAPE DRAWINGS FOR CONCRETE FINISHES AND COLOUR
  REFER CoD STD DRG DCC-104 FOR OTHER DETAILS
- 100mm REINFORCED CONCRETE
  INFILL
  REFER DRG R20-1730
- LANDSCAPING
  REFER LANDSCAPE WORKS
  DRAWING SET
- BUS STOP
  REFER DIPL STD DRG CS3709 AND DRG R20-1731
- EXELOO
  REFER MANUFACTURER SPECIFICATION



NOTE:
REFER TO DRAWINGS B20-6302 AND B20-6311
FOR WORKS WITHIN LOT 12279

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only
and their exact position should be proven on site
No guarantee is given that all existing services are shown

WARNING:
DRAWINGS MUST BE REPRODUCED IN COLOUR

2.5 0 2.5 5.0 7.5 10 12.5m
0 1:250-A1 1:500-A3

AS CONSTRUCTED

No.	DESCRIPTION	DATE	INIT.	DEPT/COMPANY.
	AMENDMENTS			
2	AS CONSTRUCTED	15/03/2022	AS	THE MINING
1	LOT 12279 INTERFACE UPDATED	06/08/2021	AI	BYRNE
0	CONTRACT DRAWING	02/12/2020	PM	BYRNE

byrne CONSULTANTS
ABN 78 124 388 192
P.O.Box 43420 Casuarina NT 0811
Ph. 08 89472476 Fax: 08 89475098
Byrne Consultants Project No. NT19012

DRAWN YB DATE	CHECKED MDW DATE
DESIGNED MDW DATE	CHECKED GM DATE
DESIGN PROJECT LEADER - DATE	NTG PROJECT MANAGER - DATE

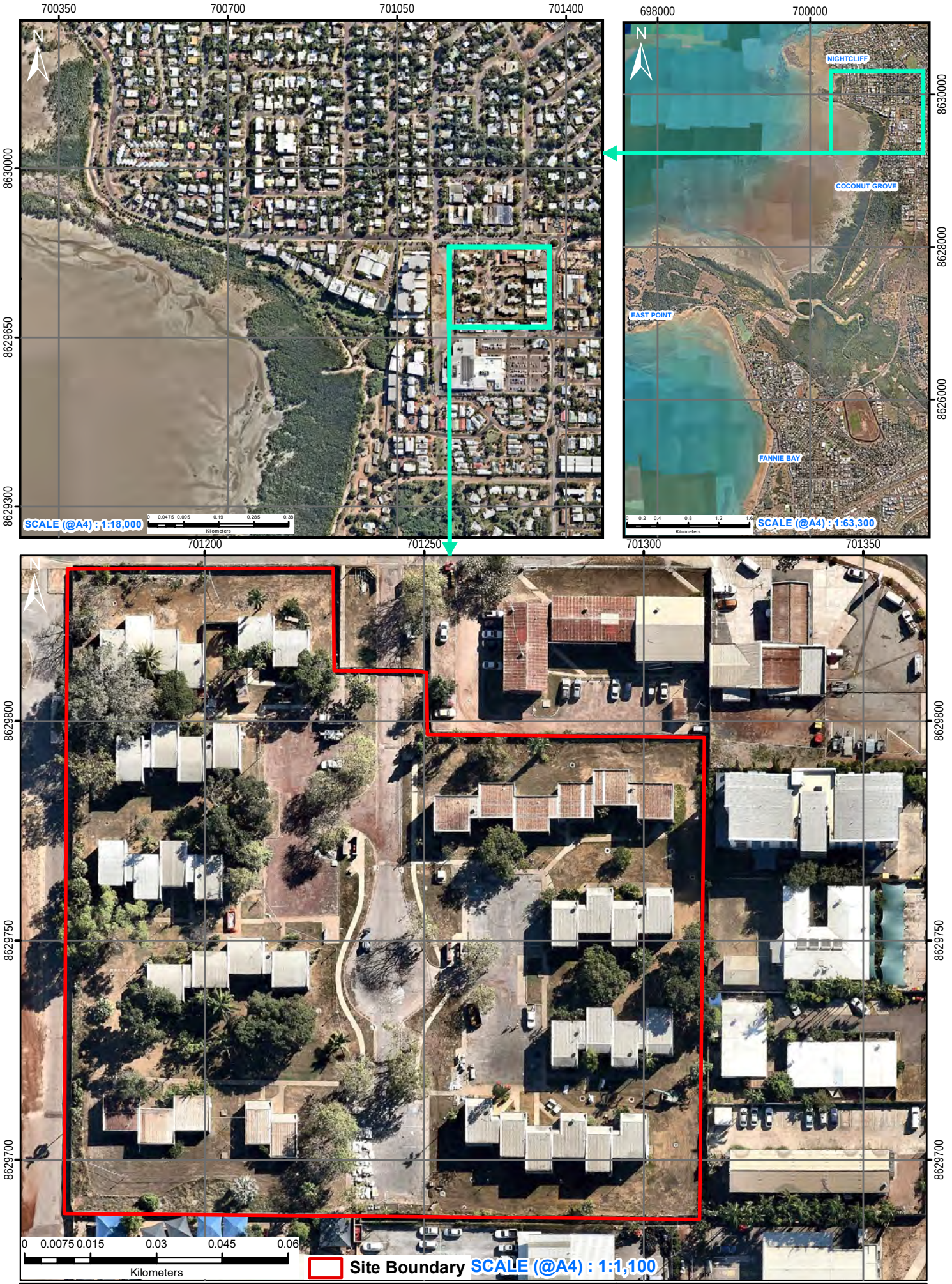
Northern Territory Government

DARWIN
NIGHTCLIFF
JOHN STOKES SQUARE REDEVELOPMENT

SURFACE FINISHES LAYOUT PLAN AND LEGEND SHEET 2 OF 2

NTG PROJECT No.	NTG ASSET No.	SHEET No.	NTG DRAWING No.	AMENDMENT	SHEET SIZE
HOD35032	-	16 OF 42	R20-1733	2	A1

Attachment 3: Historical Site Layout



Project: Soil Contamination Investigation – John Stokes Square, 47 Progress Drive, Nightcliff NT			Coordinate System: GDA_1994_MGA_Zone_52	GREENCAP
Figure1: Site Location	Job Ref: J163803	Date: Sep. 2019	Author: Sam.K.	Checked: Stuart C.

No warranty is given in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of or reliance upon the data.Data must not be used for direct marketing or be used in breach of privacy laws, Nearmap imagery 13th June 2019.

Attachment 4: Soil Investigation Locations

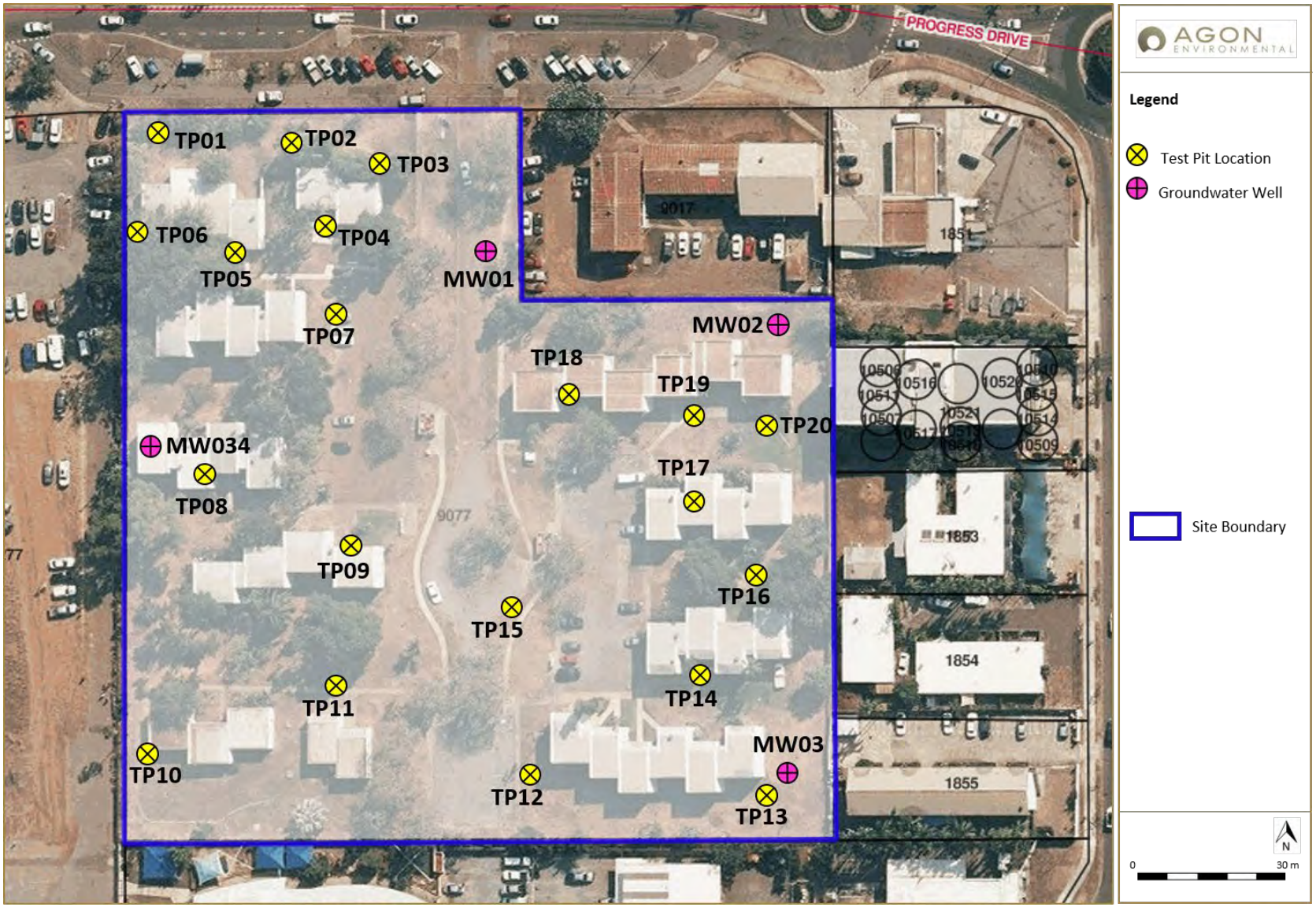


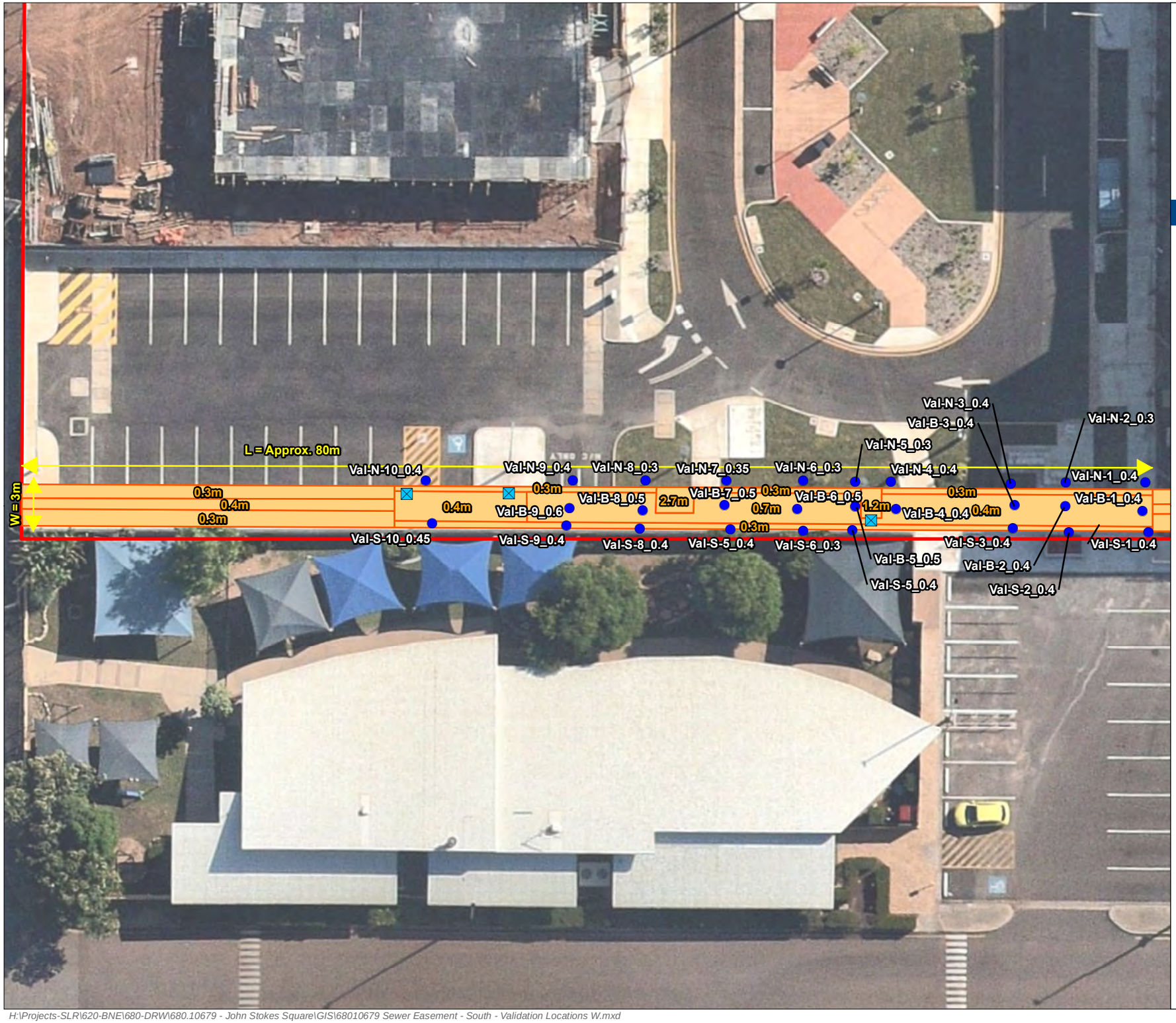
Figure 9: Agon Sample Locations

Source: NR Maps

JOHN STOKES SQUARE

Validation Locations (West)

FIGURE 3



- Manhole
- Vent
- Validation Locations
- Sewer Easement
- Project Area

0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:360 at A4
Project Number:	680.10679
Date:	18-May-2022
Drawn by:	JG

SLR

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\68010679 Sewer Easement - South - Validation Locations W.mxd

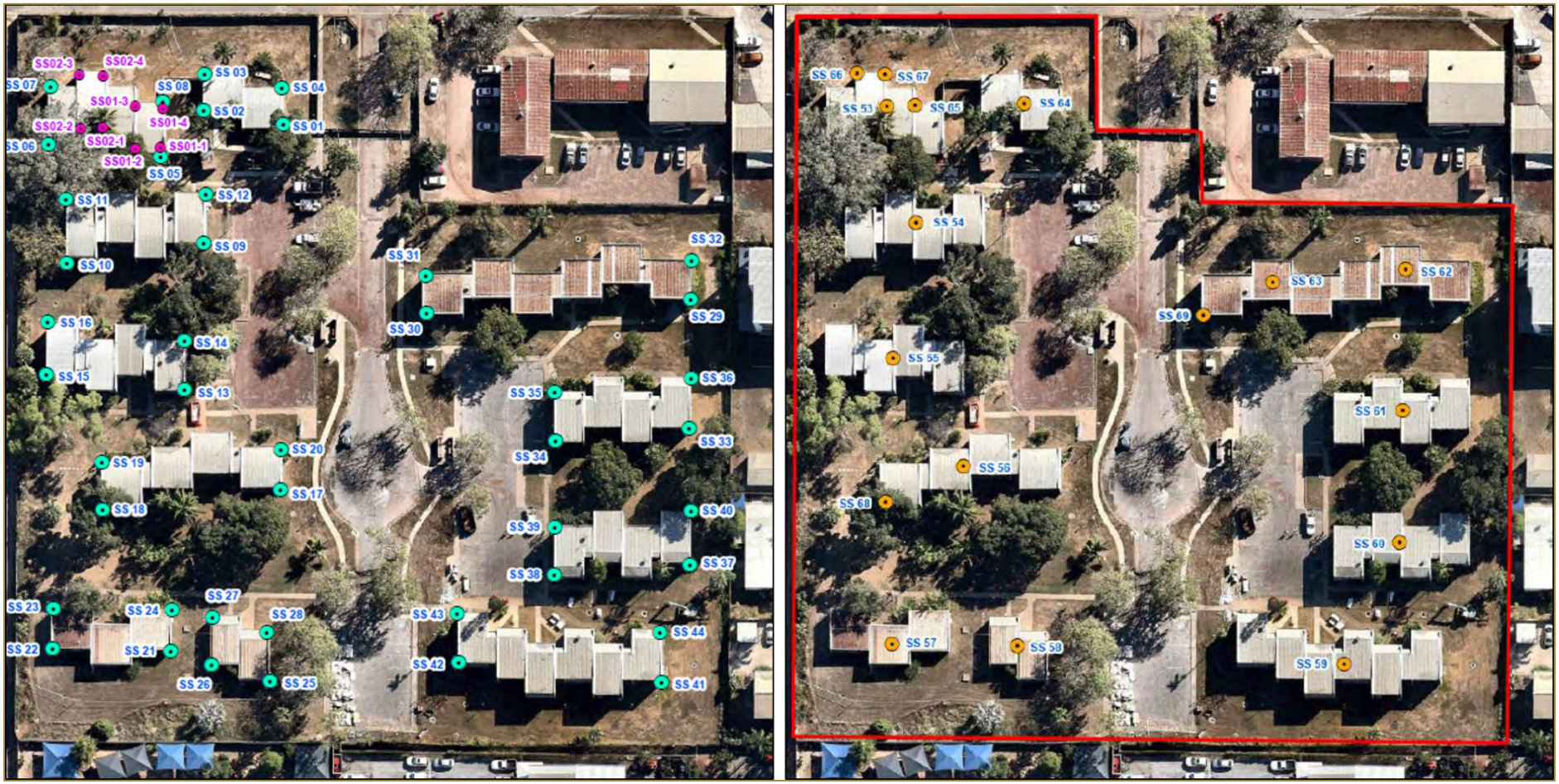


Figure 6: Previous Surface Sample Locations

Source: Greencap 2019a and 2019b (left) and Greencap 2019c (right)

Figure 7: Previous Test Pit Sample Locations

Source: Greencap 2019a and 2019b (left) and Greencap 2019c (right)

Attachment 5: Groundwater Investigation Locations

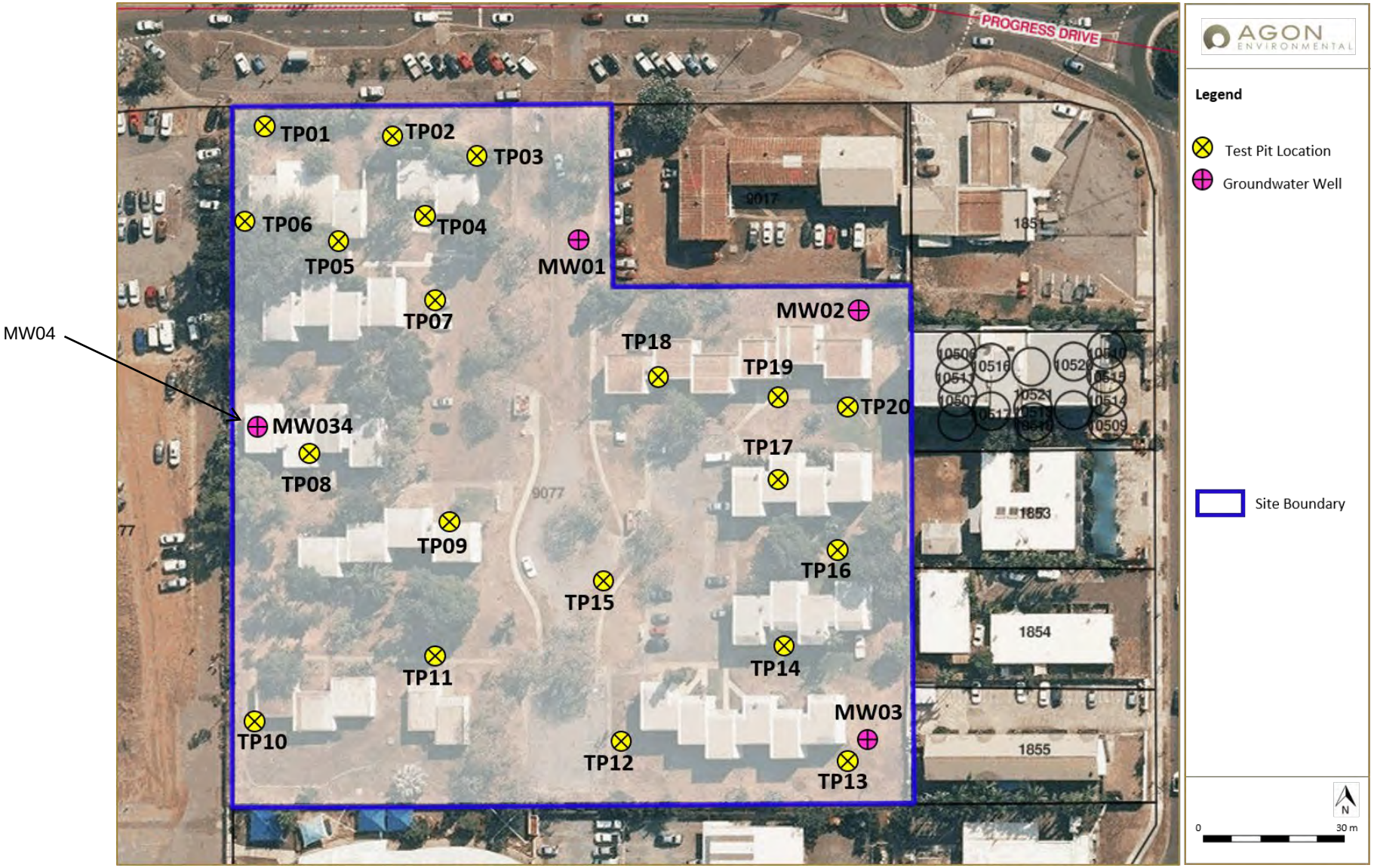


Figure 9: Agon Sample Locations

Source: NR Maps

Attachment 6: Conceptual Site Model

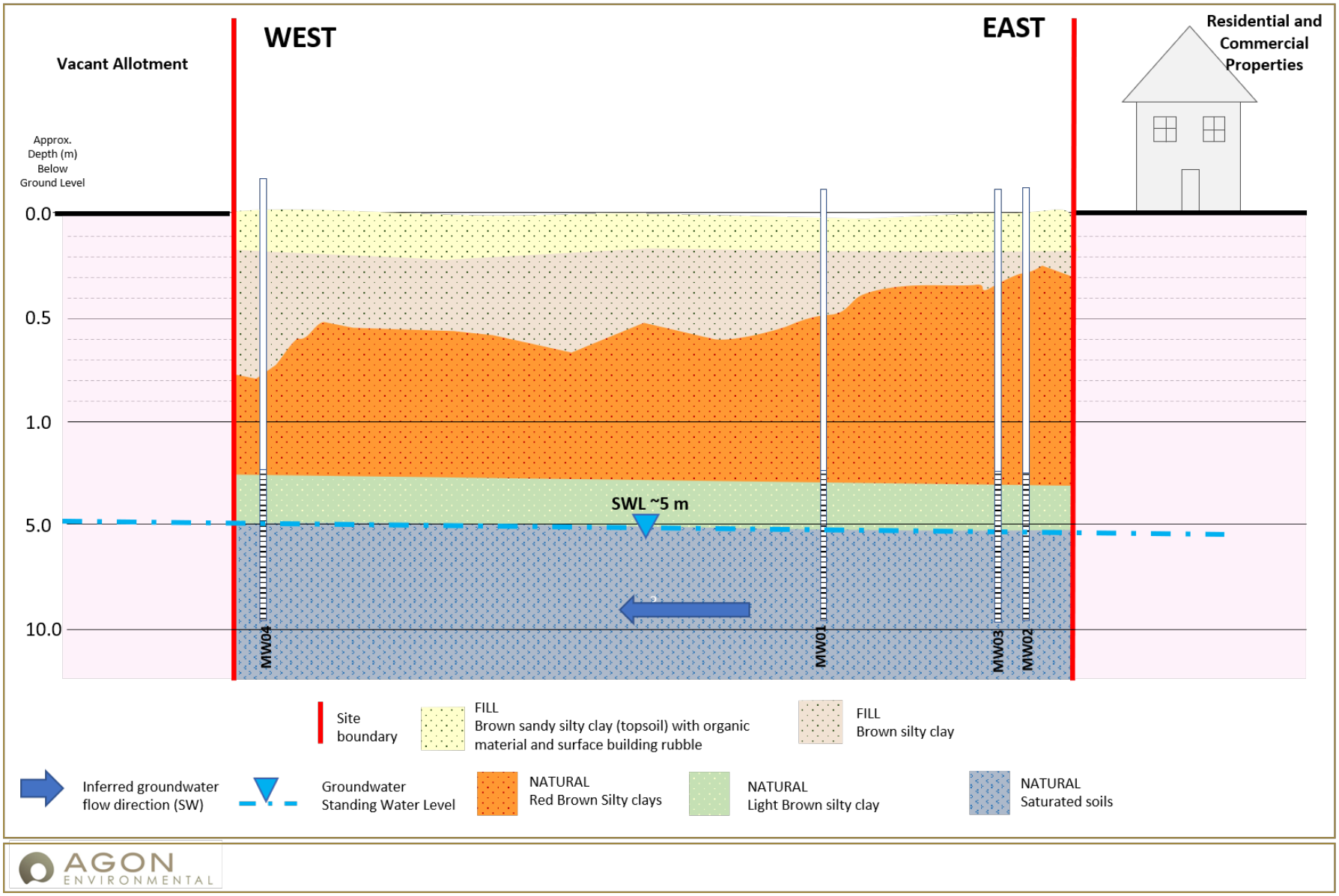


Figure 11: Graphical Conceptual Site Model

Attachment 7: SLR Stockpile Locations

Scale: 1:1,000 at A4
GDA 1994 MGA Zone 52

06-May-2020
680.10679

SLR
www.slrconsulting.com

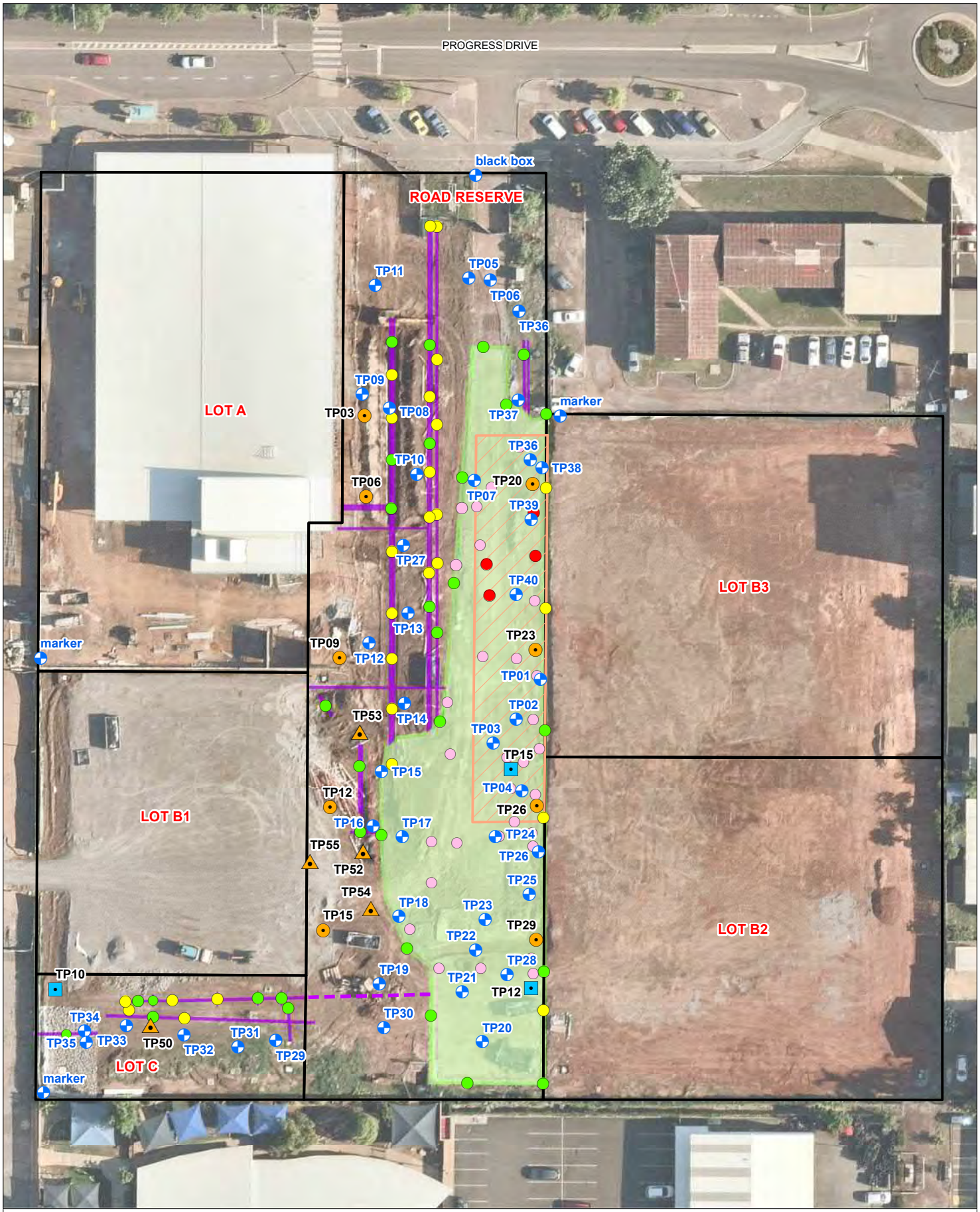
Data Source: © Nearmap 2020
Imagery Date: 3rd Nov 2019

John Stokes Square Redevelopment Headworks
Environmental Risk Assessment
Stockpile Locations and Sampling Regime

FIGURE 1

H:\Projects-SLR\610-SrvSYD\680-DRW\680.10679\68010679 Stockpiles.mxd

Attachment 8: Validation Locations



0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:800 at A4
Project Number:	680.10679
Date:	25-Nov-2021
Drawn by:	JG

SLR

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

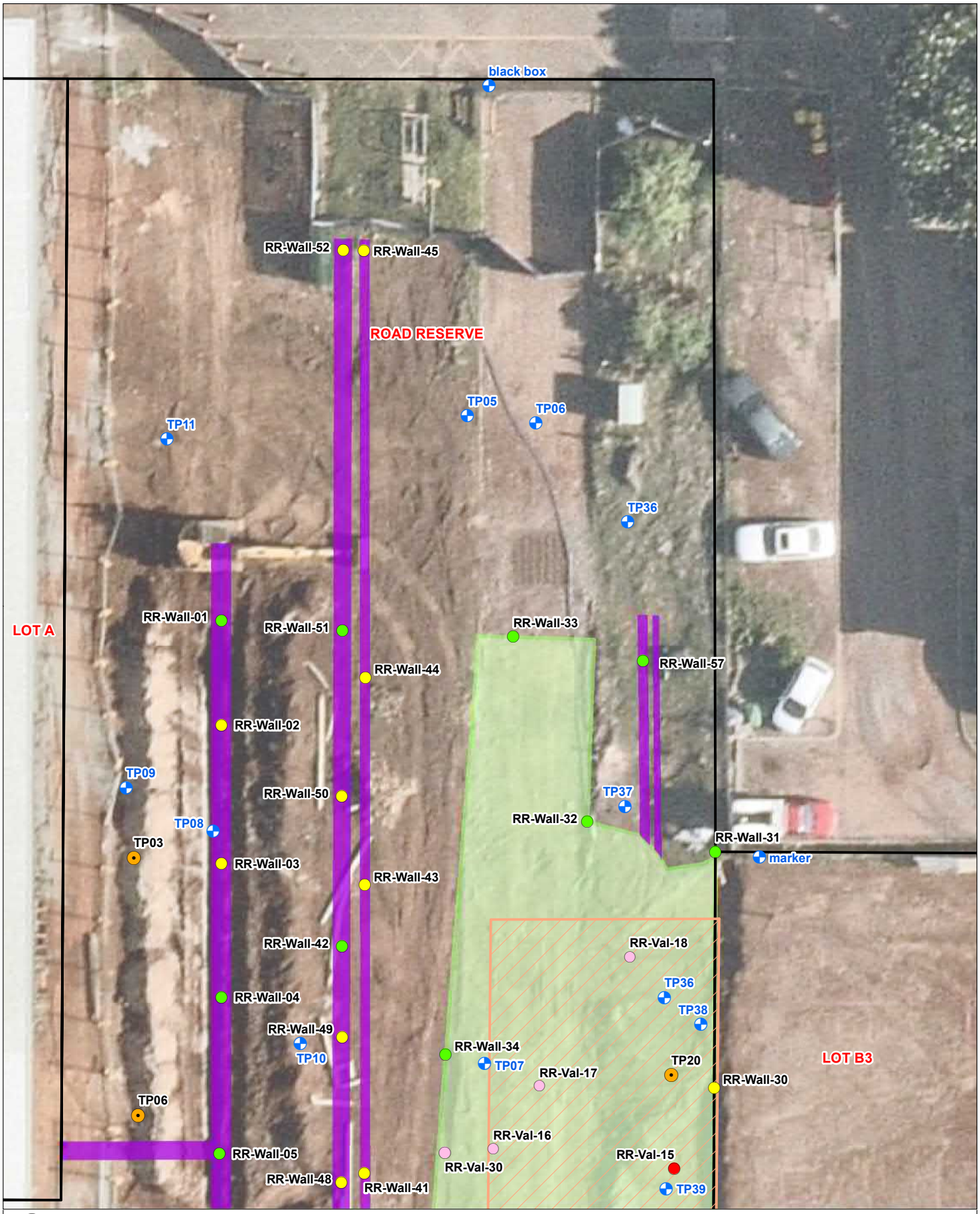
- RR-Val (Base Samples)
- RR-Val (Base Samples On Hold)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 1 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Validation Sampling Locations.mxd



0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:250 at A4
Project Number:	680.10679
Date:	25-Nov-2021
Drawn by:	JG

SLR

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

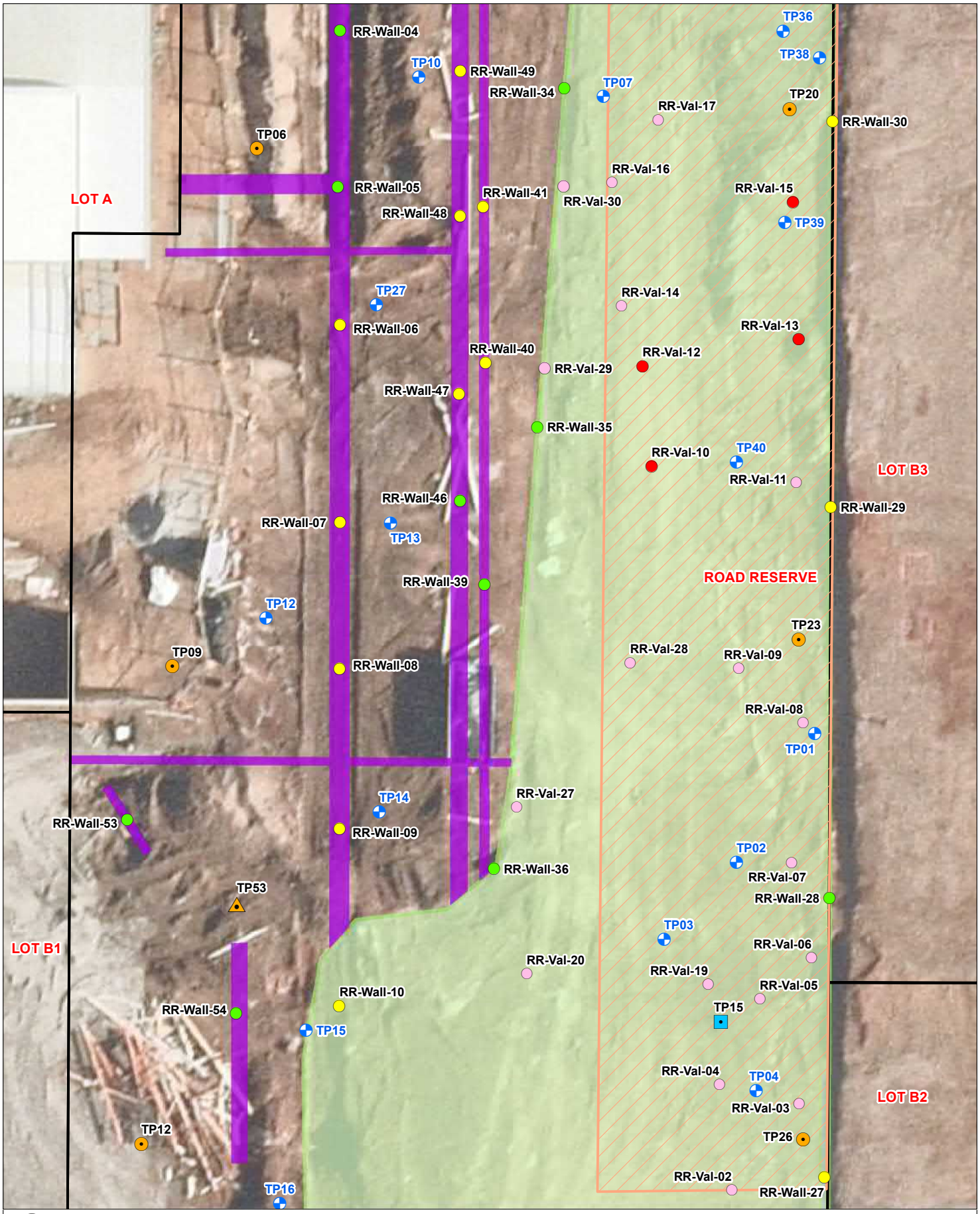
- RR-Val (Base Samples)
- RR-Val (Base Samples On Hold)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 2 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Validation Sampling Locations.mxd



0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:250 at A4
Project Number:	680.10679
Date:	25-Nov-2021
Drawn by:	JG

SLR

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

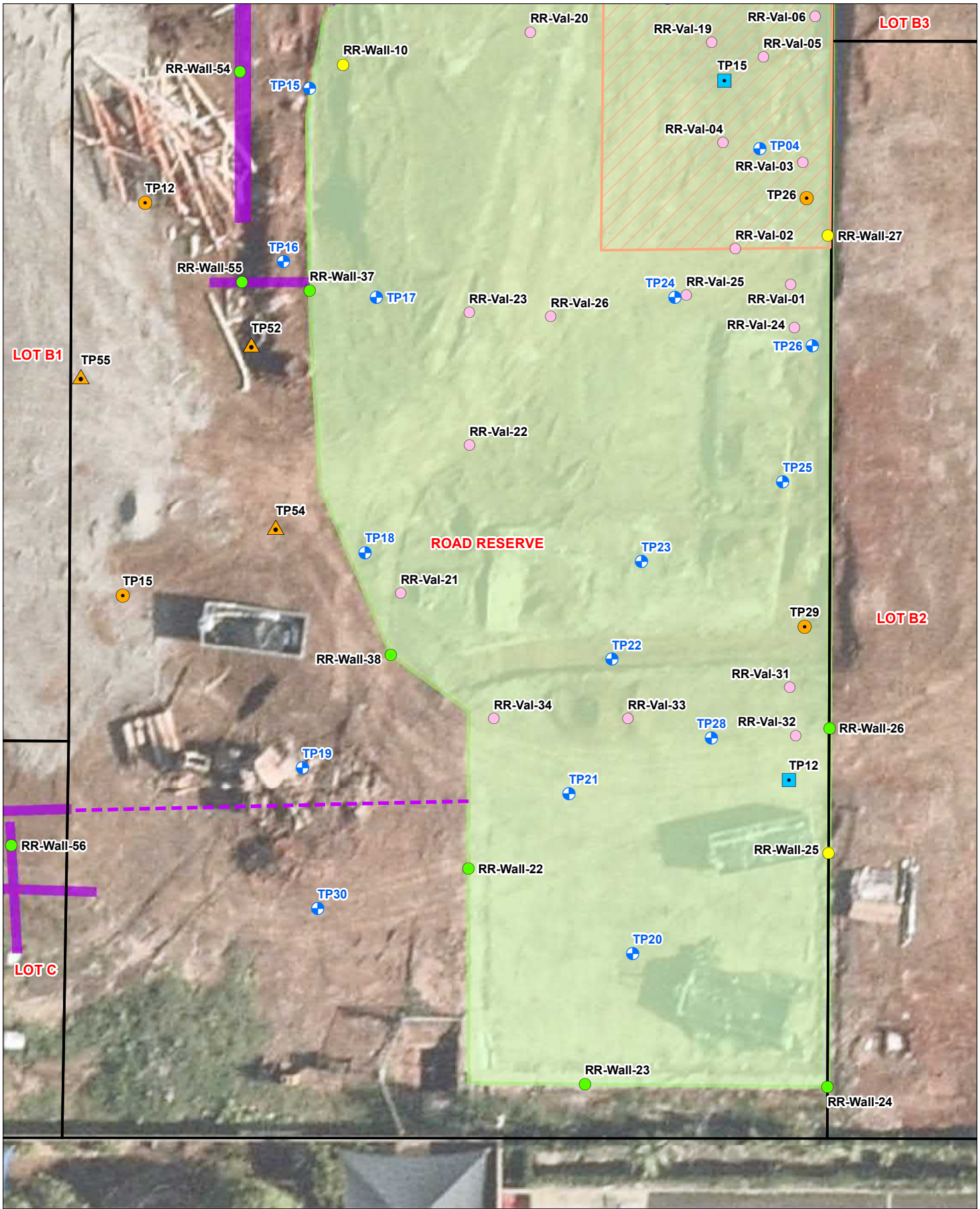
- RR-Val (Base Samples)
- RR-Val (Base Samples On Hold)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 3 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\68010679 Validation Sampling Locations.mxd



0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:250 at A4
Project Number:	680.10679
Date:	25-Nov-2021
Drawn by:	JG

SLR

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

- RR-Val (Base Samples)
- RR-Val (Base Samples On Hold)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 4 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Validation Sampling Locations.mxd

0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:250 at A4
Project Number:	680.10679
Date:	25-Nov-2021
Drawn by:	JG

SLR

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

- RR-Val (Base Samples)
- RR-Val (Base Samples On Hold)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 5 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Validation Sampling Locations.mxd

Attachment 9: Sewer Easement

0 10 20 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:1,000 at A4
Project Number:	680.10679
Date:	06-May-2021
Drawn by:	JG

Live Sewer Main

Future Land Use

- Commercial/Industrial
- Public Space
- Residential

JOHN STOKES SQUARE

Location of the Site

SLR

FIGURE 2

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Location of the Site.mxd

Appendices

Appendix A
EPA Summary Information

NOTIFICATION OF COMPLETION AND ISSUE OF STATEMENT OR CERTIFICATE OF ENVIRONMENTAL AUDIT

The following *pro forma* must be used by auditors when notifying EPA of the completion and issue of a statement of environmental audit or a certificate of environmental audit. This *pro forma* should be forwarded electronically (in .docx and .pdf format).

16 September 2022
Manager – Environmental Audit
EPA Victoria
GPO Box 4395
MELBOURNE, 3001

I, Jean Paul Pearce, a person appointed as an environmental auditor (contaminated land) by the Environment Protection Authority under s. 53S of the *Environment Protection Act 1970* (Vic.), have completed an environmental audit and issued a certificate/statement (*select appropriate*) of environmental audit for the site located at (*insert site address as per SoEA/CoEA*). Details are as follows.

Auditor	Jean Paul PEARCE
Auditor account number	101292
Auditor appointment end date	26 November 2022
Auditor's appointment category	CL
Audit Type	53X (site suitability audit)
Date EPA notified of audit	21 November 2019
Audit service order number	PRL8565 (NTEPA2019/0099-199)
Name of person requesting audit	Ms Sinead Redmond Project Management Lead Northern Territory Department of Infrastructure, Planning and Logistics Land Development Unit sinead.redmond@hksolutions EPA customer account number (if available). – n/a
Relationship of person requesting audit to site	Authorised representative of site owner
Name of premises owner	Department of Territory Families, Housing and Communities
Date of auditor engagement	20/11/2019
Completion date of the audit	16/9/2022
Reason for Audit	Due to the identified pesticide and asbestos contamination, we understand EPA has required an Auditor to determine the site is suitable for use;
Audit Categorisation	Risk
Environmental Segments	Air, Land, Groundwater, Surface water
If the audit was required by an EPA notice, licence or other, please provide EPA reference number	n/a
Current land use zoning	Zone MR (medium density residential), recently changed to Specific Use (SU) Zone SD49.
EPA Region	Darwin
Municipality	Nightcliff
Dominant Lot on title plan	Lot 9077 Town of Nightcliff Lot 9077 has since been subdivided creating Lot 12841 for Lot C and the road reserve.

Additional Lot on title plan(s)	The project area has been split into three audit areas based on the proposed development. This audit is the third audit area (Stage 3 of 3 stages) and comprises Lot C and the road reserve.
Site/Premises name	John Stokes Square Nightcliff Development
Building/complex sub-unit/lot No.	--
Street/Lot – Lower No.	47
Street/Lot – Upper No.	
Street Name	Progress,
Street type (road, court, etc)	Drive
Street suffix (North, South etc)	--
Suburb	Nightcliff
Postcode	0810
GIS Coordinate of Site centroid[1] Latitude (GDA94)	-12.388587°
Longitude (GDA94)	130.850751°
Site area (in square metres)	860 m^2 (Lot C) 5,448 m^2 (Road Reserve)
Plan of site/premises showing the audit site boundary attached	Yes
Plan of site/premises showing the audit site boundary attached in a spatial data format	No
Members and categories of support team utilised	Shandel Coleman (internal audit support). Bridget Roder (internal audit support).
Further works or requirements	No
Nature and extent of continuing risk	Risks in groundwater have not been found to be significant, however the condition of the groundwater should be tested by an appropriately qualified environmental consultant (to determine the suitability thereof) prior to being utilised for extractive use. Risks in soil vapour have not been found to be significant. Risks in soils have not been found to be significant with all known on-site ACM having been removed from site. ACM has been encountered beyond the site boundary and is not a risk to this site provided excavation works do not drag it back on to this site.
Outcome of the audit	Statement of Environmental Audit with condition
Has EPA determined CUTEP at this site?	No
Has the Auditor determined CUTEP at this site?	No
Has a GQRUZ been identified at the site/beyond the site by EPA?	No
Does NAPL remain at the site?	No – never encountered

[1] Longitude and latitude (decimal degrees) co-ordinates in the 1994 Geocentric Datum of Australia (GDA94) is required to six decimal places.

Please indicate which of the Protected Beneficial Uses of groundwater are precluded due to pollution	e.g. including site-sourced and regional pollution.

Protected Use	Precluded?
Maintenance of Ecosystems	No
Potable Water Supply (Desirable)	No
Potable Water Supply (Acceptable)	No
Potable Mineral Water Supply	N/A
Agriculture, Parks and Gardens	No
Stock Watering	No
Primary Contact Recreation	No
Industrial water use	No
Buildings and Structures	No

Historical land use	Residential
Current land use	Recently redeveloped for a road corridor and open space
Proposed future land use	Road corridor and open space
Surrounding land use – north	Progress Drive then commercial, with low density residential beyond A service station is located to the north-east of the site
Surrounding land use – south	Child care centre and tyre retailer then commercial
Surrounding land use – east	Recently developed residential (Lot B3), residential properties, then Dick Ward Drive A service station is located south-east of the site
Surrounding land use – west	Vacant land and laneway then commercial
Proposed land use zoning	Specific Use (SU) Zone SD49
Nearest surface water receptor – name	Outer Estuary of Darwin Harbour
Nearest surface water receptor – distance (m)	160 m
Nearest surface water receptor – direction	West
Likely point of groundwater discharge	Outer Estuary of Darwin Harbour, 160 m west of the site
Site aquifer formation	Unconsolidated soils
Groundwater flow direction	West
Groundwater TDS range (mg/L)	120 to 430 mg/L
Groundwater Segment	Segment A1
Are there multiple aquifers impacted by pollution at the site	n/a
Perched groundwater depth – upper (metres below ground level (mbgl))	n/a
Perched groundwater depth – lower (mbgl)	n/a

Regional groundwater depth – upper (mbgl)	6
Regional groundwater depth – lower (mbgl)	10
Number of bores within 2 km	46
Closest extractive use (distance in m)	Bore RN000130 (300 m from the site).
Zone of groundwater plume influence (m from site boundary)	Not applicable – non-source site
Year groundwater last monitored	2020
Have you attached electronic copies of Current Groundwater Analytical Results presented as a summary table?	Yes, refer to Appendix A

In notifying EPA of the completion of an environmental audit and issuing of a statement of environmental audit, I state that:

I am not aware of any conflict of interest that would preclude me from completing the environmental audit or issuing a certificate/statement (*select appropriate*) of environmental audit for the above site.

I have not had prior involvement in any assessment or cleanup works at the site, which would preclude me from completing the environmental audit or issuing a certificate/statement (*select appropriate*) of environmental audit for the above site.

Yours sincerely,

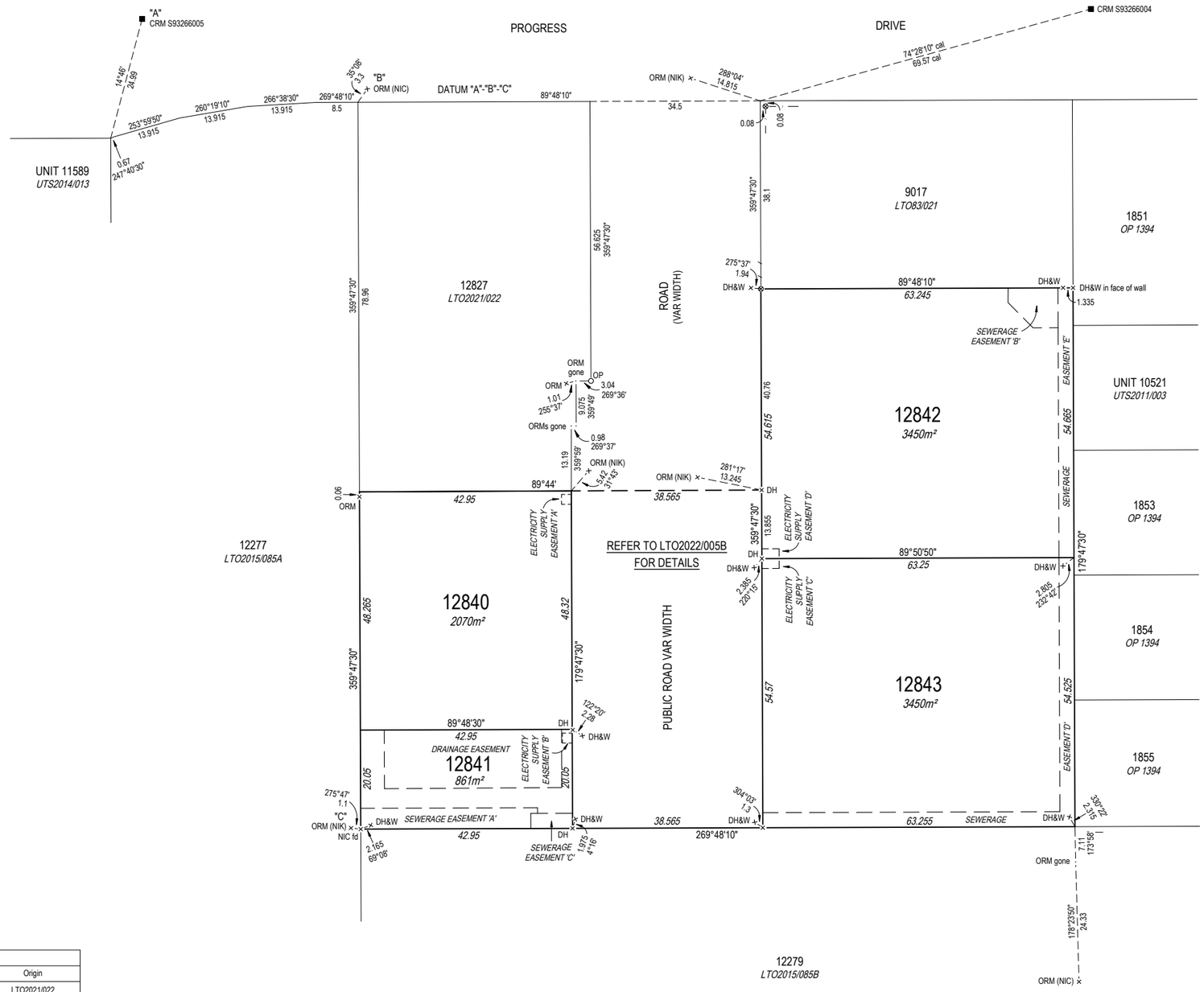
Signed: _____

JEAN PAUL PEARCE

ENVIRONMENTAL AUDITOR

(APPOINTED PURSUANT TO *THE ENVIRONMENT PROTECTION ACT 1970*)

Supersedes Part of LTO2021/022



Easements to be created by registration of this plan		
Description	Affects	In favour of
Drainage Easement	Lot 12841	Northern Territory of Australia
Electricity Supply Easement 'A'	Lot 12840	Power and Water Corporation
Electricity Supply Easement 'B'	Lot 12841	Power and Water Corporation
Sewerage Easement 'A'	Lot 12841	Power and Water Corporation
Sewerage Easement 'B'	Lot 12842	Power and Water Corporation

Existing Easements			
Description	Affects	In favour of	Origin
Electricity Supply Easement 'C'	Lot 12843	Power and Water Corporation	LTO2021/022
Electricity Supply Easement 'D'	Lot 12842	Power and Water Corporation	LTO2021/022
Sewerage Easement 'C'	Lot 12841	Power and Water Corporation	LTO83/010
Sewerage Easement 'D'	Lot 12843	Power and Water Corporation	LTO83/010
Sewerage Easement 'E'	Lot 12842	Power and Water Corporation	LTO83/010

SURVEYOR'S CERTIFICATE

I, Simon John Lewis
hereby certify that the survey represented on this plan was carried out by me or under my immediate supervision and was completed on 28/6/2022, and that this survey has been executed in accordance with the Licensed Surveyor's Act and the directions thereunder.

Licensed Surveyor — Date 25/08/2022

L.T.O. REGISTRATION

Lodged on . . . . . at . . . . .
Instrument Number . . . . . .
Registered on . . . . . at . . . . .
by me . . . . . .
Registrar-General

SURVEY APPROVAL

I, Robert Ian Sarib, the Surveyor-General, being satisfied that Part 5 of the Planning Act has been complied with:

(i) approve the survey under section 49 of the Licensed Surveyors Act;
(ii) acknowledge, on behalf of the Service Authorities designated, the vesting of the Service Easements shown hereon; and
(iii) accept on behalf of the Service Authorities specified, the land designated as roads or reserves hereon vested pursuant to section 64 of the Planning Act and section 7 of the Control of Roads Act

Surveyor-General — Date

Note
Dimensions of unmarked boundaries and connections are original unless otherwise shown
Public Road is vested in the City of Darwin
NIC denotes Nail in Concrete
NIK denotes Nail in Kerb

Version 1 - survey plan as lodged

LOTS 12840 TO 12843
SUBDIVISION OF LOT 12828
TOWN OF NIGHTCLIFF

Drawn by: Earl James & Associates (12209) 20/7/2022
Examined by: Earl James & Associates 22/08/2022
Map Reference
AZIMUTH Assumed from LTO2021/022 Observed at
SCALE 1:1000 (A3)

LTO2022/005A
SHEET 1 OF 2

AGON ENVIRONMENTAL

Groundwater Analytical Results

	Unit	EQL	ADWG 2018 Health	ADWG 2018 Aesthetic	ANZECC 2000 FW 95%	ANZECC 2000 FW 99%	ANZECC 2000 MW 90%	ANZECC 2000 MW 95%	ANZECC 2000 Recreational water quality and aesthetics	ANZECC 2000 Irrigation Long-term trigger value (LTV)	ANZECC 2000 Irrigation Short-term trigger value (STV)	NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 2-4m	NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m	NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay 2-4m	NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay 4-8m	WHO DWQG 4th Ed	JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Field ID																	JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Date																	21/01/2020	22/01/2020	22/01/2020	22/01/2020
Lab Report Number																	698341	698341	698341	698341
Sample Comments																				
Metals																				
Arsenic (filtered)	mg/L	0.001	0.01						0.05	0.1	2					0.01	0.002	<0.001	<0.001	<0.001
Beryllium (filtered)	mg/L	0.001	0.06							0.1	0.5						<0.001	<0.001	<0.001	<0.001
Boron (filtered)	mg/L	0.05	4		0.37	0.09			1	0.5						2.4	<0.05	<0.05	<0.05	<0.05
Cadmium (filtered)	mg/L	0.0002	0.002		0.0002	0.00006	0.014	0.0055	0.005	0.01	0.05					0.003	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	mg/L	0.5															11	7.7	5.3	5.7
Chromium (III+VI) (filtered)	mg/L	0.001							0.05	0.1	1					0.05	0.014	<0.001	<0.001	<0.001
Cobalt (filtered)	mg/L	0.001					0.014	0.001		0.05	0.1						0.006	0.002	0.005	0.002
Potassium	mg/L	0.5															1.9	1.0	0.6	<0.5
Copper (filtered)	mg/L	0.001	2	1	0.0014	0.001	0.003	0.0013	1	0.2	5					2	0.017	0.001	0.006	0.004
Magnesium	mg/L	0.5															10	3.5	2.7	4.6
Lead (filtered)	mg/L	0.001	0.01		0.0034	0.001	0.0066	0.0044	0.05	2	5					0.01	0.035	0.009	0.005	0.002
Manganese (filtered)	mg/L	0.005	0.5	0.1	1.9	1.2			0.1	0.2	10						0.21	0.19	0.14	0.032
Mercury (filtered)	mg/L	0.0001	0.001		0.0006	0.00006	0.0007	0.0004	0.001	0.002	0.002					0.006	<0.0001	<0.0001	<0.0001	<0.0001
Nickel (filtered)	mg/L	0.001	0.02		0.011	0.008	0.2	0.07	0.1	0.2	2					0.07	0.12	0.009	0.025	0.016
Selenium (filtered)	mg/L	0.001	0.01		0.011	0.005			0.01	0.02	0.05					0.04	<0.001	<0.001	<0.001	<0.001
Zinc (filtered)	mg/L	0.005		3	0.008	0.0024	0.023	0.015	5	2	5						0.26	0.044	0.093	0.034
PAH																				
Benzo(b+j)fluoranthene	µg/L	1															<1	<1	<1	<1
Benzo(k)fluoranthene	µg/L	1															<1	<1	<1	<1
Acenaphthylene	µg/L	1															<1	<1	<1	<1
Anthracene	µg/L	1															<1	<1	<1	<1
Benz(a)anthracene	µg/L	1															<1	<1	<1	<1
Acenaphthene	µg/L	1															<1	<1	<1	<1
Naphthalene	µg/L	1			16	2.5	90	70									<1	<1	<1	<1
Benzo(a) pyrene	µg/L	1	0.01						0.01							0.7	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	1															<1	<1	<1	<1
Chrysene	µg/L	1															<1	<1	<1	<1
Dibenz(a,h)anthracene	µg/L	1															<1	<1	<1	<1
Fluoranthene	µg/L	1															<1	<1	<1	<1
Fluorene	µg/L	1															<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	1															<1	<1	<1	<1
Phenanthrene	µg/L	1															<1	<1	<1	<1
PAHs (Sum of total)	µg/L	1															<1	<1	<1	<1
Pyrene	µg/L	1															<1	<1	<1	<1
BTEX																				
Toluene	µg/L	1	800	25												700	<1	<1	<1	<1
Xylene Total	µg/L	3	600	20												500	<3	<3	<3	<3
Benzene	µg/L	1	1		950	600	900	700	10			30,000	30,000	5,000	5,000	10	<1	<1	<1	<1
Ethylbenzene	µg/L	1	300	3												300	<1	<1	<1	<1
Xylene (m & p)	µg/L	2															<2	<2	<2	<2
Xylene (o)	µg/L	1			350	200											<1	<1	<1	<1
TRH																				
C6-C10	µg/L	20															<20	<20	<20	<20
C6-C10 (F1 minus BTEX)	µg/L	20															<20	<20	<20	<20
C10-C16	µg/L	50															80	<50	<50	<50
C16-C34	µg/L	100															200	200	<100	<100
C34-C40	µg/L	100															<100	<100	<100	<100
C10-C40 (Sum of total)	µg/L	100															280	200	<100	<100
C10-C16 (F2 minus Naphthalene)	µg/L	50															80	<50	<50	<50
TRH - 2013 NEPM Fractions (after silica gel clean-up)																				
TRH >C10-C16 (after silica gel clean-up)	µg/L	50															<50	-	-	-
TRH >C16-C34 (after silica gel clean-up)	µg/L	100															<100	-	-	-
TRH >C34-C40 (after silica gel clean-up)	µg/L	100															<100	-	-	-
TPH																				
C6-C9	µg/L	20															<20	<20	<20	<20
C10-C14	µg/L	50															80	<50	<50	<50
C15-C28	µg/L	100															300	200	<100	<100
C29-C36	µg/L	100															<100	<100	<100	<100
+C10-C36 (Sum of total)	µg/L	100															380	200	<100	<100
TRH - 1999 NEPM Fractions (after silica gel clean-up)																				
TRH C10-C14 (after silica gel clean-up)	µg/L	50															<50	-	-	-
TRH C10-C36 (Total) (after silica gel clean-up)	µg/L	100															<100	-	-	-
TRH C15-C28 (after silica gel clean-up)	µg/L	100															<100	-	-	-
TRH C29-C36 (after silica gel clean-up)	µg/L	100															<100	-	-	-
Organochlorine Pesticides																				
Aldrin + Dieldrin	µg/L	0.1	0.3													0.03	<0.1	<0.1	<0.1	<0.1
chlordane	µg/L	1	2		0.08	0.03			6							0.2	<1	<1	<1	<1
Endrin ketone	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
Organochlorine pesticides EPAVic	µg/L	1															<1	<1	<1	<1
Toxaphene	mg/L	0.01			0.0002	0.0001											<0.01	<0.01	<0.01	<0.01
Other organochlorine pesticides EPAVic	µg/L	1															<1	<1	<1	<1
Hexachlorobenzene	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
4,4-DDE	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
Endrin	µg/L	0.1			0.02	0.01	0.01	0.008	1							0.6	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	µg/L	0.1															<0.1	<0.1	<0.1	<0.1

AGON ENVIRONMENTAL

Groundwater Analytical Results

	Unit	EQL	ADWG 2018 Health	ADWG 2018 Aesthetic	ANZECC 2000 FW 95%	ANZECC 2000 FW 99%	ANZECC 2000 MW 90%	ANZECC 2000 MW 95%	ANZECC 2000 Recreational water quality and aesthetics	ANZECC 2000 Irrigation Long-term trigger value (LTV)	ANZECC 2000 Irrigation Short-term trigger value (STV)	NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 2-4m	NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay 4-8m	NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay 2-4m	NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Clay 4-8m	WHO DWQG 4th Ed	JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Field ID																	JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Date																	21/01/2020	22/01/2020	22/01/2020	22/01/2020
Lab Report Number																	698341	698341	698341	698341
Sample Comments																				
Aldrin	µg/L	0.1							1								<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	µg/L	0.1	10		0.2	0.07			10							2	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
Heptachlor	µg/L	0.1	0.3		0.09	0.01			3								<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
a-BHC	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
b-BHC	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
d-BHC	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
DDD	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
DDT	µg/L	0.1	9		0.01	0.006			3								<0.1	<0.1	<0.1	<0.1
Dieldrin	µg/L	0.1							1								<0.1	<0.1	<0.1	<0.1
Endosulfan I	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
Endosulfan II	µg/L	0.1															<0.1	<0.1	<0.1	<0.1
Methoxychlor	µg/L	0.1														20	<0.1	<0.1	<0.1	<0.1
Organophosphorous Pesticides																				
Azinophos methyl	µg/L	2	30		0.02	0.01			10								<2	<2	<2	<2
Bolstar (Sulprofos)	µg/L	2	10						20								<2	<2	<2	<2
Chlorfenvinphos	µg/L	2	2						10								<2	<2	<2	<2
Chlorpyrifos-methyl	mg/L	0.002															<0.002	<0.002	<0.002	<0.002
Coumaphos	µg/L	20															<20	<20	<20	<20
Demeton-O	µg/L	2															<2	<2	<2	<2
Demeton-S	µg/L	20															<20	<20	<20	<20
Diazinon	µg/L	2	4		0.01	0.00003			10								<2	<2	<2	<2
Dichlorvos	µg/L	2	5						20								<2	<2	<2	<2
Dimethoate	µg/L	2	7		0.15	0.1			100							6	<2	<2	<2	<2
Disulfoton	µg/L	2	4						6								<2	<2	<2	<2
Merphos	mg/L	0.002															<0.002	<0.002	<0.002	<0.002
EPN	µg/L	2															<2	<2	<2	<2
Methyl parathion	µg/L	2	0.7						6								<2	<2	<2	<2
Ethion	µg/L	2	4						6								<2	<2	<2	<2
Ethoprop	µg/L	2	1						1								<2	<2	<2	<2
Mevinphos (Phosdrin)	µg/L	2	5						6								<2	<2	<2	<2
Fenitrothion	µg/L	2	7		0.2	0.1			20								<2	<2	<2	<2
Fensulfothion	µg/L	2	10						20								<2	<2	<2	<2
Monocrotophos	µg/L	2	2						2								<2	<2	<2	<2
Fenthion	µg/L	2	7														<2	<2	<2	<2
Malathion	µg/L	2	70		0.05	0.002			100								<2	<2	<2	<2
Naled (Dibrom)	µg/L	2															<2	<2	<2	<2
Omethoate	µg/L	2	1						0.4								<2	<2	<2	<2
Phorate	µg/L	2															<2	<2	<2	<2
Pyrazophos	µg/L	2	20						1,000								<2	<2	<2	<2
Ronnel	µg/L	2							60								<2	<2	<2	<2
Terbufos	µg/L	2	0.9														<2	<2	<2	<2
Tetrachlorvinphos	mg/L	0.002	0.1														<0.002	<0.002	<0.002	<0.002
Tokuthion	mg/L	0.002															<0.002	<0.002	<0.002	<0.002
Trichloronate	µg/L	2															<2	<2	<2	<2
Chlorpyrifos	µg/L	20	10		0.01	0.00004	0.04	0.009	2							30	<20	<20	<20	<20
Phenols																				
2,4,5-Trichlorophenol	µg/L	10							1								<10	<10	<10	<10
3&4-Methylphenol (m&p-cresol)	µg/L	6															<6	<6	<6	<6
2,4-Dimethylphenol	µg/L	3															<3	<3	<3	<3
2,6-Dichlorophenol	µg/L	3															<3	<3	<3	<3
Phenols (Total Halogenated)	mg/L	0.01															<0.01	<0.01	<0.01	<0.01
2-Chlorophenol	µg/L	3	300	0.1	490	340											<3	<3	<3	<3
Tetrachlorophenols	µg/L	30															<30	<30	<30	<30
2-Methylphenol	µg/L	3															<3	<3	<3	<3
2,4-Dinitrophenol	mg/L	0.03			0.045	0.013											<0.03	<0.03	<0.03	<0.03
4,6-Dinitro-2-methylphenol	µg/L	30															<30	<30	<30	<30
4,6-Dinitro-o-cyclohexyl phenol	µg/L	100															<100	<100	<100	<100
4-chloro-3-methylphenol	µg/L	10															<10	<10	<10	<10
2,4-Dichlorophenol	µg/L	3	200	0.3	160	120											<3	<3	<3	<3
4-Nitrophenol	µg/L	30															<30	<30	<30	<30
Phenol	µg/L	3			320	85	520	400									<3	<3	<3	<3
2,4,6-Trichlorophenol	µg/L	10	20	2	20	3			10							200	<10	<10	<10	<10
2-Nitrophenol	µg/L	10															<10	<10	<10	<10
Pentachlorophenol	µg/L	10	10		10	3.6	33	22	10							9	<10	<10	<10	<10
Phenols (Total Non Halogenated)	mg/L	0.1															<0.1	<0.1	<0.1	<0.1
Chlorinated Hydrocarbons																				
1,1-dichloroethane	µg/L	1															<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	1															<1	<1	<1	<1
1,1-dichloroethene	µg/L	1	30						0.3								<1	<1	<1	<1
1,2-dichloropropane	µg/L	1														40	<1	<1	<1	<1
1,2-dichloroethane	µg/L	1	3						10							30	<1	<1	<1	<1
1,3-dichloropropane	µg/L	1															<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	1															<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	1															<1	<1	<1	<1
Chloroform	µg/L	5														300	6	10	<5	<5

AGON ENVIRONMENTAL

Groundwater Analytical Results

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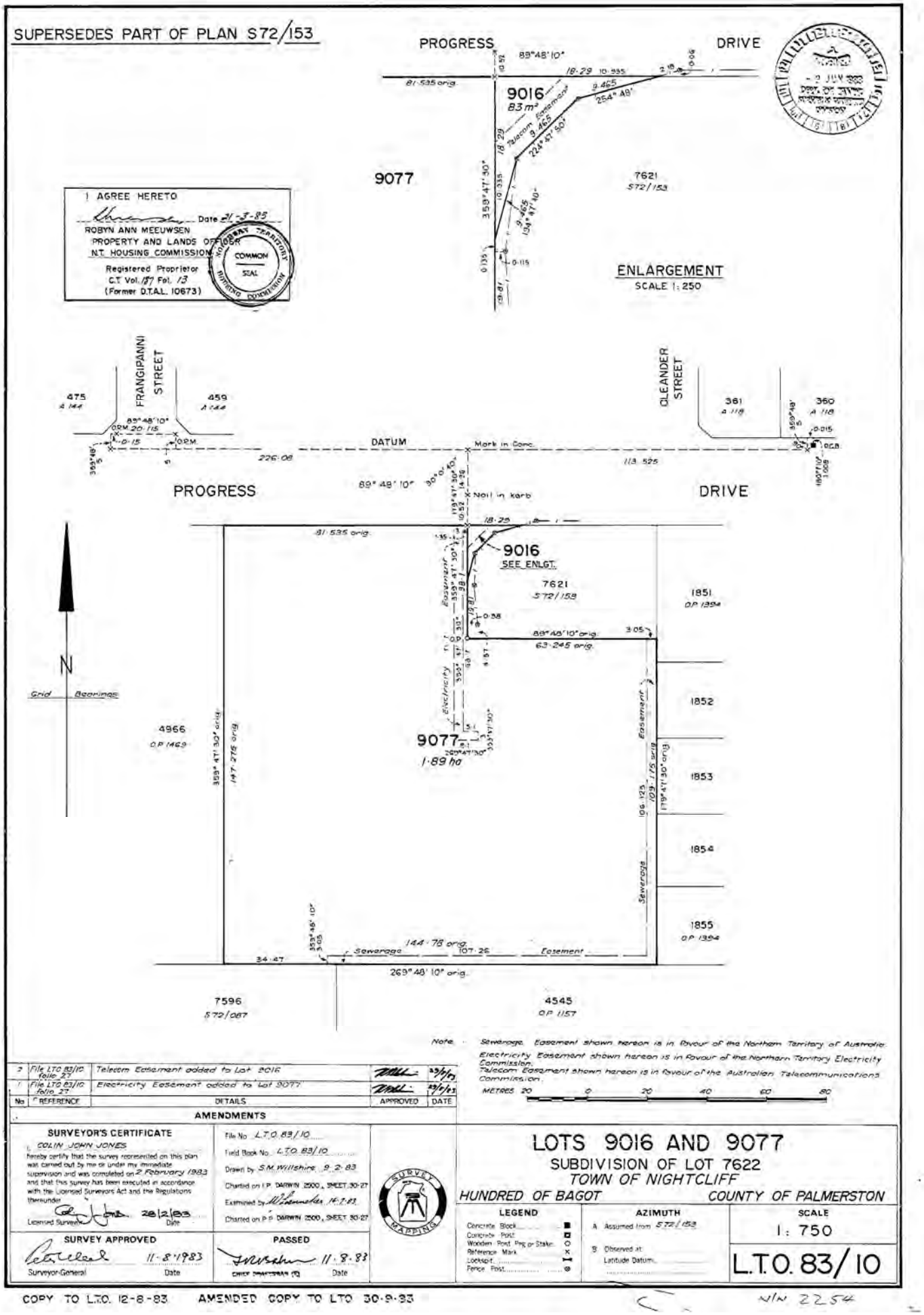
Field ID																	JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Date																	21/01/2020	22/01/2020	22/01/2020	22/01/2020
Lab Report Number																	698341	698341	698341	698341
Sample Comments																				
1,1,2,2-tetrachloroethane	µg/L	1															<1	<1	<1	<1
Chloromethane	µg/L	1															<1	<1	<1	<1
Dibromomethane	µg/L	1															<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	1															<1	<1	<1	<1
Tetrachloroethene	µg/L	1	50						10							40	<1	<1	<1	<1
Other chlorinated hydrocarbons EPAVic	µg/L	5															6	10	<5	<5
Trichloroethene	µg/L	1							30							20	<1	<1	<1	<1
Bromodichloromethane	µg/L	1														60	<1	<1	<1	<1
Dichloromethane	µg/L	1	4													20	<1	<1	<1	<1
Chlorinated hydrocarbons EPAVic	µg/L	5															6	10	<5	<5
cis-1,2-dichloroethene	µg/L	1															<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	1			6,500	5,400	5,800	1,900									<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	1															<1	<1	<1	<1
Vinyl chloride	µg/L	1	0.3													0.3	<1	<1	<1	<1
Bromoform	µg/L	1														100	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1	3						3							4	<1	<1	<1	<1
Chlorodibromomethane	µg/L	1														100	<1	<1	<1	<1
trans-1,2-dichloroethene	µg/L	1															<1	<1	<1	<1
Ethyl tert-Butyl Ether (ETBE)	µg/L	1															<1	<1	<1	<1
tert-Amyl Methyl Ether (TAME)	µg/L	1															<1	<1	<1	<1
tert-Butyl alcohol	µg/L	25															<25	<25	<25	<25
Halogenated Benzenes																				
1,2-dichlorobenzene	µg/L	1	1,500	1	160	120										1,000	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	1		20	260	160											<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	1	40	0.3	60	40										300	<1	<1	<1	<1
Chlorobenzene	µg/L	1	300	10													<1	<1	<1	<1
Halogenated Hydrocarbons																				
Iodomethane	µg/L	1															<1	<1	<1	<1
Bromomethane	µg/L	1	1														<1	<1	<1	<1
1,2-dibromoethane	µg/L	1	1													0.4	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	1															<1	<1	<1	<1
Herbicides																				
Dinoseb	µg/L	100															<100	<100	<100	<100
Pesticides																				
Parathion	µg/L	2	20		0.004	0.0007			30								<2	<2	<2	<2
Pirimiphos-methyl	mg/L	0.02	0.09						0.06								<0.02	<0.02	<0.02	<0.02
Inorganics																				
Alkalinity (Bicarbonate as CaCO3)	mg/L	20															<20	<20	<20	<20
Alkalinity (Hydroxide) as CaCO3	mg/L	20															<20	<20	<20	<20
Alkalinity (total) as CaCO3	mg/L	20															<20	<20	<20	<20
Chloride	mg/L	1		250					400								190	38	17	16
Sodium	mg/L	0.5		180					300								100	17	15	16
Alkalinity (Carbonate as CaCO3)	mg/L	10															<10	<10	<10	<10
Sulphate	mg/L	5		250					400								56	17	26	32
TDS	mg/L	10		600					1,000								430	120	120	150
pH (Lab)	-	0.1		6.5-8.5					6.5-8.5	6-8.5							6.1	6.2	4.5	4.9
Solvents																				
MTBE	mg/L	0.001															<0.001	<0.001	<0.001	<0.001
VOCs																				
Diisopropyl ether	mg/L	0.001															<0.001	<0.001	<0.001	<0.001

Appendix B
Certificate of Title



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Appendix C
Consultant's Reports

VALIDATION REPORT

John Stokes Square Redevelopment
Road Reserve and Lot C

Prepared for:

HK Solutions (on behalf of Department of Infrastructure, Planning and Logistics)
Building 2, Level 1, 631 Stuart Highway
Berrimah, NT 0828

(Report to be in conjunction with addendum titled: "Sewer Easement Remediation and Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C", SLR Consulting (Australia) Pty Ltd, November 2021 (reference: 680.10679.00200_R12))

SLR Ref: 680.10679.00200-R06
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May 2022

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with HK Solutions (on behalf of Department of Infrastructure, Planning and Logistics) (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
680.10679.00200-R06-v4.0	12 May 2022	Julie McDowell	Paul Turyn	Paul Turyn
680.10679.00200-R06-v3.0	22 November 2021	Julie McDowell	Julie McDowell	Paul Turyn
680.10679.00200-R06-v2.2	11 May 2021	Robin Birua	Julie McDowell	Julie McDowell

EXECUTIVE SUMMARY

The Department of Infrastructure, Planning and Logistics (DIPL), through Project Management Consultants HK Solutions Pty Ltd, have engaged SLR Consulting Australia Pty Ltd (SLR) to provide environmental consultancy services relating to the redevelopment of John Stokes Square, located at 47 Progress Drive, Nightcliff, Darwin, Northern Territory (herein referred to as the "Project Area").

The Project Area is planned to be subdivided as part of the redevelopment project, with varying land use classifications including high density residential, public open space, community and commercial. Works were undertaken across the Project Area to characterise, remediate and validate the newly defined land parcels to ensure suitability for the proposed land uses.

This report outlines the remediation and validation works that were undertaken for the proposed land parcels defined as the Road Reserve (5,448m^2) and Lot C (860m^2) (herein referred to as the "Site"). The aforementioned land parcels will be gifted to the City of Darwin (CoD) and will be utilised as a combined road corridor and public open space. SLR understands that CoD requires the land to be "unencumbered" and remediated so that no ongoing contamination management will be required. Results of the remediation and validation works undertaken within other areas of the Project Area are included under separate cover in the reports titled *"Validation Assessment, John Stokes Square Redevelopment, Lot A"* (SLR ref: 680.10679.00100-R02), and *"Validation Report, John Stokes Square Redevelopment, Proposed Residential Lots B1, B2 and B3"* (SLR ref: 680.10679.00100-R05).

This report has been prepared for endorsement by the appointed Auditor (as defined in Part 9 of the *Waste Management Pollution Control Act, 1998*) for the Site, Jean-Paul Pearce (Australian Environmental Auditor, "the Auditor") and in accordance with the *Northern Territory Contaminated Land Guidelines NT EPA, June 2017, Version 1.0*. The main role of the Auditor is to evaluate the environmental conditions of the Site at the date of signing the certificate of statement and to form an opinion, on which others can rely upon, regarding the suitability of the Site for future land uses. In doing so, the Auditor is required to review the environmental site assessment undertaken by environmental consultants in relation to site contamination to confirm the remediation objectives have been met prior to redevelopment of the Site.

Previous contaminated land investigations have been undertaken at the Site prior to SLR's engagement. These investigations confirmed that soil contamination was present within the Project Area, which included asbestos (bonded fragments and fibres) and pesticides (aldrin and dieldrin) in soil. Further characterisation works were conducted by SLR in 2020 to delineate impact previously identified at the Site, the results of which are presented in the report titled *"Detailed Site Investigation, John Stokes Square Redevelopment, Road Reserve and Lot C"*, September 2020 (ref: 680.10679-R03, "SLR DSI 2020"). The key results from the SLR DSI 2020 report that informed the Site's remediation strategy (and reported herein), were as follows.

- Reworked fill material was encountered across the Site. Apparent natural ground was intersected in 37 of the 40 test pits within which the average depth of fill was 0.53 m below ground level (bgl) (depths ranged from 0.2–1.3 mbgl). Further to the asbestos related impacts detailed above, additional anthropogenic waste was found in some test pits and appeared to be primarily related to old sub-surface infrastructure or construction demolition works including concrete, plastic conduit, and bricks.
- Asbestos impacted soils were present along the eastern portion of the Site within the fill material.

- Chemical analysis of soils indicated that, aside from the asbestos impacted areas, the material within the remainder of the Site was considered low risk and excess spoil could be disposed of as General Solid Waste (non-putrescible) with reference to the New South Wales Waste Classification Guidelines 2014. The material may also be considered as "clean fill" as defined by CoD at the Shoal Bay Waste Management Facility (SBWMF), however this classification would need to be made by the CoD's Waste Services team.
- Abandoned services were encountered in many locations across the Site including irrigation, conduit (assumed to be electrical), PVC pipe (assumed to be sewerage), and concrete (assumed to be stormwater) lines.

The remediation works undertaken at the Site were conducted in accordance with the strategy presented in the Auditor endorsed report titled "*Remediation Action Plan, John Stokes Square Redevelopment, Road Reserve and Lot C"*, August 2020 (ref: 680.10679-R04-v5.0, SLR RAP 2020). Remediation works conducted at the Site involved the following key activities.

- Excavation of asbestos containing material (ACM) debris and associated fill material from a predefined area of the Site, under asbestos conditions, for appropriate offsite disposal by a Class A licenced asbestos removal contractor. The final extent of the area excavated was guided by visual assessments undertaken by a suitably qualified Environmental Consultant and supported by analytical results received for validation samples collected from the base and walls of the excavation.
- Removal of abandoned underground services that were present across the Site. After the abandoned underground services were removed, a suitably qualified Environmental Consultant inspected the resultant trenches for visual signs of asbestos contamination. The depth of all trenches extended down into the natural soil material. The lateral extent of the trenches was guided by visual assessments undertaken by the Environmental Consultant and supported by analytical results received for validation samples collected from the walls of the trenches. Where underground services were identified as being constructed out of ACM, the service and surrounding bedding soils were removed by a licenced asbestos removal contractor for appropriate offsite disposal.

Even though all known asbestos impact has been removed from the Site, remediation works detailed in this report did not extend into the deeper fill material surrounding the "live" sewer mains that were present at the time of these works. Contractors conducting works associated with the removal/upgrade of these "live" services were advised to employ precautionary measures such as having safe work method statements and/or work-specific management plans addressing exposure to potentially asbestos impacted soils, unexpected finds protocol and associated training, to ensure workers understood the controls required to be implemented in the unlikely event unexpected asbestos was encountered.

Results of the remediation and validation works associated with the removal/upgrade of the sewer main along the southern boundary of the Site, that were overseen by SLR, are presented in the addendum report titled *"Sewer Easement Remediation and Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C"*, November 2021 (ref: 680.10679.00200_R12) and should be read in conjunction with this report.

Based on the field observations and analytical results obtained for the remediation and validation activities conducted at the Site by SLR, SLR considers that the Road Reserve and Lot C have been suitably remediated and validated for the proposed land use (public open space, roadway), subject to the considerations outlined in this report and the addendum report (SLR, November 2021).

In addition to the above, based on the results of the remediation and validation works conducted at the Site and the results of the DSI undertaken by SLR in 2020, spoil created during any future headworks/land servicing component of the broader redevelopment project, should be suitable for beneficial reuse onsite, or disposal to the SBWMF as General Solid Waste (non-putrescible), subject to considerations outlined in this report. The material may also be considered as "clean fill" as defined by the CoD at SBWMF, however this classification would need to be made by the CoD's Waste Services team.

CONTENTS

1 INTRODUCTION 8
1.1 Objectives 8
1.2 Scope of Work 9
1.3 Legislative Framework 9
2 BACKGROUND INFORMATION 10
2.1 Site Identification 10
2.2 Surrounding Environment 10
2.3 Proposed Future Land Use 11
2.4 Sub-Surface Infrastructure 11
2.5 Previous Environmental Investigations 11
2.5.1 Limited Soil Investigation (Greencap July 2019) 12
2.5.2 Detailed Soil Investigation (Greencap September 2019) 12
2.5.3 Additional Soil Investigation (Greencap October 2019,) 13
2.5.4 Detailed Site Investigation (Agon February 2020) 14
2.5.5 Detailed Site Investigation (June/July 2020, SLR) 15
2.6 Source of Asbestos Impact – Site 16
3 REMEDIATION AND VALIDATION METHODOLOGY 17
3.1 Remediation Strategy and Deviations 17
3.1.1 Prevention of Cross Contamination 17
3.1.2 Remediation of the "Known Asbestos Impact Area" 18
3.1.3 Further Visual Validation (Removal of Abandoned Services) 19
3.2 Soil Sampling Methodology 19
3.3 Decontamination of Equipment 20
3.4 Analytical Assessment 21
3.5 Screening Criteria 21
3.6 Air monitoring 21
4 RESULTS 22
4.1 Field Observations 23
4.2 Summary of Analytical Results 24
4.3 Clearance Inspections 25
4.4 Soil Movement and Disposal of Underground Services 25
4.5 Air Monitoring 26
4.6 Data Quality Review 26

4.6.1 Field Duplicate Samples 26
4.6.2 Equipment Rinsates 27
5 CONCEPTUAL SITE MODEL 27
6 FUTURE SITE MANAGEMENT CONSIDERATIONS 30
7 CONCLUSION 30
8 LIMITATIONS 30
9 REFERENCES 31

DOCUMENT REFERENCES

TABLES

Table 1 Site Information Details 10
Table 2 Soil Sampling Methodologies 20
Table 3 Air Monitoring Action Levels 22
Table 4 Maximum Trench Depths Associated with the Removal of Abandoned Services 24
Table 5 Summary of Validation Samples 25
Table 6 Summary of QC Combinations 26
Table 7 Conceptual Site Model 28

APPENDICES

Appendix A Figures
Appendix B Clearance Certificates
Appendix C Analytial Results from Previous Environmental Investigations
Appendix D Photograhic Logs
Appendix E Analytical Tables
Appendix F Certified Laboratory Documentation
Appendix G Air Quality Monitoring Reports
Appendix H Shoal Bay Waste Management Facility Receipts

1 Introduction

The Department of Infrastructure, Planning and Logistics (DIPL), through Project Management Consultants HK Solutions Pty Ltd, have engaged SLR Consulting Australia Pty Ltd (SLR) to provide environmental consultancy services relating to the redevelopment of John Stokes Square, located at 47 Progress Drive, Nightcliff, Darwin, Northern Territory (NT) (herein referred to as the "Project Area"). The location of the Project Area is shown in **Figure 1 (Appendix A)**.

The Project Area is planned to be subdivided as part of the redevelopment project, with varying land use classifications as shown in **Figure 2 (Appendix A)**. Works were undertaken to characterise, remediate and validate the newly defined land parcels to ensure suitability for the proposed land use.

This report outlines the remediation and validation works that were undertaken for proposed land parcels defined as Road Reserve and Lot C (herein referred to as the "Site"). The aforementioned land parcels will be gifted to the City of Darwin (CoD) and will be utilised as a combined road corridor and open space. SLR understands that CoD requires the land to be "unencumbered" and remediated so that no ongoing contamination management will be required.

Results of the remediation and validation works undertaken within other areas of the Project Area are included under separate cover in the reports titled *"Validation Assessment, John Stokes Square Redevelopment, Lot A"* (SLR ref: 680.10679.00100-R02), and *"Validation Report, John Stokes Square Redevelopment, Proposed Residential Lots B1, B2 and B3"* (SLR ref: 680.10679.00100-R05).

This report has been prepared for endorsement by the appointed Auditor (as defined in Part 9 of the *Waste Management Pollution Control Act, 1998*) (WMPC Act) for the Site, Jean-Paul Pearce (Australian Environmental Auditor, "the Auditor") and in accordance with the "*Northern Territory Contaminated Land Guidelines"*, NT EPA, June 2017, Version 1.0. The main role of the Auditor is to evaluate the environmental conditions of the Site at the date of signing the certificate of statement and to form an opinion, on which others can rely upon, regarding the suitability of the Site for future land uses. In doing so, the Auditor is required to review the outcome of environmental site assessments and validation works undertaken by environmental consultants in relation to site contamination to confirm the remediation objectives have been met prior to redevelopment of the Site.

All remediation and validation work undertaken at the Site have been completed in accordance with the Auditor's endorsed remediation action plan (RAP) prepared for the Site - *Remediation Action Plan - John Stokes Square Redevelopment- Road Reserve and Lot C*, August 2020 (ref:680.10679.R04).

1.1 Objectives

The purpose of this report is to document the remediation and validation work undertaken at the Site to meet CoD's requirements for land quality. Furthermore, it is to ensure that the remediation and validation works have been accomplished in accordance with the RAP and if so, whether the RAP's objectives have been met.

SLR understands the objectives of the RAP were as follows.

- To outline works required for the Site to meet the CoD's requirements for land quality.
- For the headworks/land servicing component of the broader project, provide spoil characterisations based on in-situ analysis to inform either beneficial reuse or disposal of spoil material at Shoal Bay Waste Management Facility (SBWMF), as required.

1.2 Scope of Work

The following scope of work was undertaken by a suitably qualified and experienced SLR environmental consultant to meet the objectives of the RAP developed for the Site.

- Oversaw the removal of uncontrolled fill material within the area defined as "Known Asbestos Impact" in the report titled *"Detailed Site Investigation, John Stokes Square Redevelopment, Road Reserve and Lot C"*, September 2020 (ref: 680.10679-R03, "SLR DSI 2020").
- Oversaw the removal of abandoned underground services including stormwater pipes, sewer pipes, electrical cables and pipes, communication cables, water supply network including irrigation and fire hydrant pipes, and visually inspected the services, spoil, and resultant excavations for evidence of asbestos contaminating material (ACM).
- Visually inspected and collected validation samples of the remediated areas of the Site (i.e., resultant excavations/trenches). Collated details of the areas remediated including the extent and depth of excavation, validation sample locations, sample identification labels, date sampled and photographic logs.
- Oversaw the removal of ACM and soil impacted with asbestos from the Site by a Class A licenced asbestos waste removal contractor for appropriate offsite disposal.
- Samples were collected and analysed for asbestos (presence/absence and/or asbestos fines (AF)/fibrous asbestos (FA)) at a National Association of Testing Authorities (NATA) accredited laboratory.
- Comparison of analytical results with relevant investigation levels (ILs) as prescribed in the RAP.
- Air quality monitoring for the presence of air borne asbestos fibres was conducted during all remediation and validation works undertaken at the Site.
- Collation of all field notes, photographic logs, certified laboratory reports, location of abandoned underground services, asbestos clearance certificates, waste disposal documentation and air quality monitoring results.
- Preparation of this validation report documenting all remediation and validation works undertaken at the Site.

1.3 Legislative Framework

The soil remediation and validation works were undertaken in accordance with the following regulatory requirements.

- ASC NEPM 2013, "National Environmental Protection (Assessment of Site Contamination) Measures 1999", (as amended on 16 May 2013).
- Western Australian (WA) Department of Health (DOH) 2009, "Guideline for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia".
- Standards Australia AS 4482.1-2005, "Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil. Part 1 Non-volatile and semi volatile compounds".
- New South Wales (NSW) Environmental Protection Authority (EPA) 2014, "Resource Recovery Order under Part 9, Clause 93 of the protection of the Environment Operations (Waste) Regulation 2014- the excavated natural material order 2014".

- NSW EPA 2014b, "Waste Classification Guidelines, Part 1: Classifying Waste".
- NT EPA 2017, "Northern Territory Contaminated Land Guidelines".
- NT EPA 2016, "Waste Management and Pollution Control Act".
- Safe Work Australia 2020, "How to manage and control asbestos in the workplace Code of Practice".

2 Background Information

2.1 Site Identification

The proposed remediation and validation works are applicable to the two specific land areas outlined below.

- Road Reserve, which covers a total area of 5448 m^2
- Lot C, which covers an area of 860 m^2.

A summary of Site information is detailed in **Table 1**. A Site Locality Plan is provided in **Figure 1 (Appendix A).** **Figure 2 (Appendix A)** shows the extent and boundary definition for the Site (i.e., Road Reserve and Lot C areas).

Table 1 Site Information Details

Site Information	Details
Site Owner	Northern Territory Government, Department of Local Government Housing and Community Development
Site Address	47 Progress Drive Nightcliff, Darwin, NT
Parcel Reference	Prior to subdivision, Lot 9077 Town of Nightcliff
Project Area Extents (approximate)	18,900 m^2
Road Reserve Area	5,448 m^2
Lot C Area	860 m^2
Current Occupier	DIPL
Current Land Use	Currently unoccupied, under redevelopment
Future Land Use	Police Station (Lot A), High Density Residential (B Lots), Road Reserve, Parking and Public Open Space (Lot C)
Current Zoning	Rezoned from Medium Density Residential to Specific Use Zone to facilitate the redevelopment of the broader site for a mix commercial, community, residential and public open space purposes.
Central GPS Coordinates (latitude and longitude)	-12.388828°, 130.851451°

2.2 Surrounding Environment

Additional information regarding surrounding land uses and activities, regional geology, regional topography, registered ground water bore information and acid sulphate soils have been outlined in the in the SLR report titled *"Detailed Site Investigation, John Stokes Square Redevelopment, Road Reserve and Lot C"*, September 2020 (ref: 680.10679-R03) (SLR DSI 2020).

2.3 Proposed Future Land Use

The planned redevelopment of the Project Area will comprise of high-density residential buildings within Lots B1, B2 and B3, a police station within Lot A, and roadways and public open space within the Road Reserve and Lot C. Construction of new and upgraded land servicing infrastructure will be delivered as part of the redevelopment project.

The Road Reserve and Lot C areas will be utilised as public open space following redevelopment, and the land will be gifted to the CoD upon completion. SLR understands that CoD requires the land to be "unencumbered" and remediated so that no ongoing contamination management will be required.

2.4 Sub-Surface Infrastructure

The following "live" sub-surface infrastructure were identified during the remediation works, with approximate locations shown in **Figure 3 – Maps 1 to 5 (Appendix A)**.

- A Ring Main Unit (RMU) with "live" high voltage (HV) cables extending north to the Site boundary.
- A "live" water main and line extending north to the Site boundary.
- A "live" sewer main that transects through the centre of the Road Reserve (north to south), connecting to a sewer main located in Lot C.
- A "live" sewer main running along the southern boundary of Lot C.

Many abandoned services were encountered during the remediation work undertaken at the Site. All abandoned services that were encountered, were removed.

SLR notes that an abandoned polyvinyl chloride (PVC) water supply pipe, located just above the "live" sewer main in Road Reserve, remains in-situ. Further excavation to remove the water pipe would have damaged the "live" sewer main.

2.5 Previous Environmental Investigations

SLR understands that DIPL commenced demolition of former public housing buildings in mid-2019, which were distributed across the wider Project Area. Majority of demolition waste from the Site was removed and a portion of crushed concrete rubble was screened and spread across the Site as general fill. The EPA raised concerns that pesticides may have been historically used under the building's foundations, and that ACM contaminated fill material may have been historically imported to the Site. As such, the first limited site investigation was undertaken by Greencap Pty Ltd (Greencap) in June 2019 to assess the presence of contamination associated with termite control chemicals at the building block located in the northwest corner of the Project Area, and potential ACM, asbestos fines (AF) and fibrous asbestos (FA) contamination at the footprints of demolished building blocks. Furthermore, a DSI was undertaken by Greencap in September 2019 to assess the nature and broader extent of contamination associated with pesticides residue and ACM identified in fill material across the Site.

To further facilitate the environmental audit report for the Site, in February 2020 Agon Environmental Pty Ltd (Agon) conducted additional investigations and remediation works within the Project Area to address previously identified asbestos and pesticide-related contamination.

Investigations conducted prior to SLR's engagement involved limited testing within the Site itself (i.e., Lot C and the Road Reserve). As such, SLR were engaged to undertake a gap analysis of the environmental site assessment works conducted to date and undertake further investigations to address any gaps identified (SLR DSI 2020).

A detailed review of the investigations undertaken at the Site has been undertaken by SLR and summaries of the works performed are provided in the sections below.

2.5.1 Limited Soil Investigation (Greencap July 2019)

Greencap conducted a Limited Soil Investigation (ref. J163245, July 2019) at the Site to understand the presence of pesticides beneath the building block located in the northwest corner of the Project Area (Lot A) and ACM in the fill material across the wider Project Area. The soil samples collected near surface were analysed for organochlorine pesticides (OCP) and heavy metals, and samples collected to a maximum depth of 1 meter below ground level (mbgl) were analysed for the presence/absence of ACM. OCP were identified at seven of the eight near surface soil sampling locations and comprised of chlordane, aldrin, dieldrin and heptachlor epoxide. Concentrations of aldrin and dieldrin exceeded the nominated human health-based IL for residential land use at three of the sample locations.

SLR understands that this investigation was limited in its scope and as such the sampling program undertaken did not provide a comprehensive understanding of the extent and nature of asbestos contamination across the wider Project Area. However, the investigation did identify that fill material was present across the Project Area to a maximum depth of 0.8 mbgl. The investigation did not assess the other areas of the Project Area where buildings were once present nor the Site (i.e. Road Reserve and Lot C) for OCP and arsenic based compounds.

None of the sample locations conducted in this investigation were within the Site (i.e. Road Reserve and Lot C).

2.5.2 Detailed Soil Investigation (Greencap September 2019)

Greencap conducted a DSI (ref. J163803) to further evaluate the extent of termite control pesticides in near surface soils and the extent of potential asbestos impact within the fill material identified across the Project Area. Near surface samples collected from or adjacent to the footprint of 11 residential building blocks were analysed for OCP and heavy metals. Testpits were also progressed across the Project Area to assess potential asbestos impact. Soil samples collected from the testpits to a maximum depth of 1 mbgl and were analysed for the presence/absence of asbestos where suspected (based on visual observations). OCP concentrations were reported above the laboratory's detection levels in the majority of near surface soil samples with results exceeding the human health-based IL for residential land use from two of the building footprints of the wider Project Area. Bonded asbestos was detected at six sample locations and friable asbestos was detected at one sample location.

Sample locations conducted in the Greencap September 2019 DSI that relate directly to soil conditions within the Road Reserve and Lot C are summarised below.

- Testpits:
  - TP03 (0.00-0.05 mbgl, 0.05-0.55 mbgl)
  - TP06 (0.00-0.05 mbgl, 0.05-0.65 mbgl)
  - TP09 (0.00-0.05 mbgl, 0.05-0.90 mbgl),
  - TP12 (0.00-0.10 mbgl, 0.10-0.55 mbgl)
  - TP15 (0.00-0.05 mbgl, 0.05-0.25 mbgl)

- TP20 (0.00-0.50 mbgl)
- TP23 (0.00-0.45 mbgl)
- TP26 (0.00-0.70 mbgl)
- TP29 (0.00-0.50 mbgl).

None of the surface soil samples used to investigate potential pesticide and/or heavy metal impact during this investigation were located within the Site (i.e. Road Reserve and Lot C).

Fragments of possible asbestos materials were identified in the bulk sampling and sieving of TP12 (0.00-0.55 mbgl) and TP20 (0.00-0.50 mbgl), and AF/FA was also detected in the sieved soil sample associate with TP20 (0.00-0.50 mbgl). The calculated bonded asbestos in soil concentration (calculated in general accordance with ASC NEPM 2013) for the following sample were below the adopted human health-based IL for residential land use (i.e. 0.01 w/w%).

- TP12 (0.0-0.55 mbgl) - 0.0041 w/w%
- TP20 (0.00-0.50 mbgl) - 0.0018 w/w%.

However, the AF/FA concentration in soil sample TP20 (0.00-0.50 mbgl) was 0.0047 w/w%, which is above the adopted human health-based IL for residential land use (i.e. 0.001 w/w%).

As a result of these investigations, testpit locations TP12 and TP20 were subsequently investigated further (**Section 2.5.3**) and remediated where required (**Section 2.5.4**).

Analytical results obtained for the samples collected within the Road Reserve and Lot C are included in **Appendix C**.

2.5.3 Additional Soil Investigation (Greencap October 2019,)

Greencap conducted an Additional Soil Investigation (ref J163803-02) to:

- address data gaps in previous investigations undertaken within the Project Area;
- delineate the extent and nature of asbestos impact found within the fill material; and
- delineate the extent of OCP identified within the former building footprints and immediate surroundings.

OCP concentrations were detected under most building footprints across the Project Area. Many forms of bonded ACM fragments were identified across the Project Area and were associated with the layer of fill. It was also observed that ACM fragments were scattered sporadically across the surface of the Project Area. Friable asbestos was also identified at several locations and concentrations detected exceeded the adopted human health-based criteria.

Sample locations assessed in this investigation that relate directly to soil conditions within the Road Reserve and Lot C are summarised below.

- Testpits:
  - TP50 (0.0-0.1 mbgl, 0.2-0.3 mbgl)
  - TP52 (0.0-0.05 mbgl, 0.1-0.2 mbgl)

- TP53 (0.0-0.05 mbgl, 0.1-0.2 mbgl)
- TP54 (0.0-0.1 mbgl)
- TP55 (0.05-0.1 mbgl, 0.15-0.25 mbgl).

None of the additional surface soil samples used to investigate potential pesticide and/or heavy metal impact during this investigation were located within the Site (i.e. Road Reserve and Lot C).

The purpose of testpits TP52, TP53, TP54 and TP55 was to delineate the ACM impact previously detected in TP12 (Greencap September 2019). The purpose of TP50 was to delineate to the south, the ACM fragments previously detected in TP17 (located within the Project Area but not within the Road Reserve and Lot C) (Greencap September 2019).

Testpits TP39, TP40, TP41 and TP42 were also completed during this investigation to delineate asbestos impact previously detected TP20 (0.00-0.50 mbgl). However, the locations of these delineation testpits (i.e. TP39 – TP42) are not located within the Road Reserve and Lot C (i.e. the Site) and therefore not discussed further in this report.

During this investigation, fragments of suspected asbestos material were identified in the bulk sampling and associated sieved sample TP54 (0.0-0.1 mbgl). Concentrations detected were above the adopted human health-based ILs for residential land use. Asbestos was not detected in any of the other samples that were located within the Road Reserve and Lot C.

The area around TP54 has been subsequently remediated (**Section 2.5.4**) and is considered to no longer represent soil conditions within the Site.

Analytical results obtained for the samples collected within the Road Reserve and Lot C are included in **Appendix C**.

2.5.4 Detailed Site Investigation (Agon February 2020)

Agon conducted a risk based DSI followed by remediation work within the Project Area. The investigation process was assessed by the Auditor to confirm if the Project Area is suitable for the proposed future development. The DSI included the investigation of asbestos, pesticides and groundwater to characterise the environmental condition of the Project Area. The findings were consistent with the previous investigations with fill material being encountered evenly across the Project Area.

Sample locations assessed in the Agon investigation that relate directly to soil and groundwater conditions within the Road Reserve and Lot C are summarised below.

- Testpits TP 10 (0.1 mbgl, 0.7 mbgl), TP12 (0.1 mbgl) and TP15 (0.1 mbgl, 1.0 mbgl).
- Soil samples collected when installing monitoring well MW01 (4 mbgl, 5 mbgl, 6 mbgl).
- Groundwater samples collected from monitoring well MW01.

Soil samples collected as part of this investigation within the Road Reserve and Lot C did not report any analytes above the nominated ILs adopted for residential land uses. Analytical results for these samples are included in **Appendix C**.

Minor concentrations of chloroform and total recoverable hydrocarbon (TRH) fractions were reported in the groundwater samples collected. However, silica gel clean-up was conducted on the highest results which reduced the TRH results to below the laboratory's limit of reporting (LOR). Groundwater samples collected from monitoring wells installed across the Project Area reported analytes' concentrations either below the laboratory's LOR or below the adopted assessment criteria. Some heavy metals exceeded the adopted assessment criteria in the groundwater samples collected, however they are not considered to pose a risk to future users of the Road Reserve and Lot C as access to groundwater is considered unlikely.

During this investigation, Agon oversaw the removal of surface soils that reported pesticide concentrations above the nominated health-based ILs for residential land uses (but below the health-based ILs specified for commercial/industrial land uses) from the wider Project Area. Soil from these "hotspot" areas were removed and relocated onto Lot A (proposed police station) and as such do not affect soil quality within the Road Reserve and Lot C.

As part of the Agon's investigation and remediation works, ACM, soil containing bonded ACM and soils containing AF/FA concentrations that exceeded the adopted criteria for residential land use, were remediated and resultant excavations visually validated. According the Agon report, the following "hot spots" that were remediated that relate specifically to the Road Reserve and Lot C are listed below.

- Testpit sample TP20 (0.00-0.50 mbgl)
- Testpit sample TP54 (0.0-0.1 mbgl).

Remediation works involved the removal of fill material from a 5 m^2 area around each of the "hotspot" locations. The depth of the excavation extended down into natural soils. Where asbestos material was encountered, the ACM material was placed into double sealed bags for appropriate offsite disposal by the licenced asbestos removal contractor. The resultant excavated area was visually inspected by an Agon representative (Agon, 2020).

Although ACM was previously detected in testpit sample TP12 (0.00-0.55 mbgl) (Greencap September 2019), this location was not targeted for further remediation works as the asbestos impact detected was below the adopted IL for residential land use and asbestos impact was not detected in samples collected from additional testpits conducted in the vicinity of this location (i.e. Greencap October 2019 testpits: TP52, TP53 and TP55).

2.5.5 Detailed Site Investigation (June/July 2020, SLR)

Investigations conducted prior to SLR's engagement involved limited testing within the Site itself (i.e., the Road Reserve and Lot C). To address data gaps in relation to previous environmental investigations undertaken with the Site, SLR conducted a DSI specifically covering the land parcels defined as the Road Reserve and Lot C (SLR DSI 2020). The findings of this investigation included the following:

- Asbestos impacted soils were identified in the eastern portion of the investigation area, represented in **Figure 4- Map 1 (Appendix A)**. Evidence of asbestos was visually identified in test pits TP01, TP02, TP04, TP24, TP26, TP39 and TP40. Laboratory testing confirmed that bonded ACM were present above the nominated ILs in testpit samples TP02_0.2, TP04_0.2, TP24_0.15, TP26_0.0-0.1, and TP26_0.15, and AF/FA concentrations in soils were present above the nominated ILs in test pits TP01_0.1, TP04_0.2, TP39_0.0-0.1 and TP40_0.0-0.1.

- Chemical analysis of soils (for COPC as defined in the sampling analysis quality plan - SLR reference *680.10679-R01-v4.0 Headworks SAQP 20200709*) indicated that, aside from the asbestos impacted areas, the material within the remainder of the Site was considered low risk and excess spoil could be disposed of as General Solid Waste (non-putrescible) with reference to the NSW Waste Classification Guidelines 2014. The material may also be considered as "clean fill" as defined by CoD at SBWMF, however this classification would need to be made by CoD's Waste Services team.
- Abandoned services were encountered in many locations across the Site including irrigation, conduit (assumed to be electrical), PVC pipe (assumed to be sewerage), and concrete (assumed to be stormwater) lines.
- Reworked fill material was encountered across the Site. Apparent natural ground was intersected in 37 of the 40 test pits within which the average depth of fill was 0.53 m bgl (depths ranged from 0.2–1.3 m bgl). Further to the asbestos related impacts detailed above, additional anthropogenic waste was found in some test pits and appeared to be primarily related to old sub-surface infrastructure or construction demolition works including concrete, plastic conduit, and bricks.

Based on the results of this DSI, SLR prepared a RAP (SLR RAP 2020) that targeted the asbestos impact reported in testpits TP01, TP02, TP04, TP24, TP26, TP39 and TP40. This report details the results of the remediation and validation works completed at the Site in accordance the aforementioned RAP.

2.6 Source of Asbestos Impact – Site

In summary, based on the results from previous investigations and observations noted during remediation works conducted across the Site, identified asbestos impact appears to have resulted from a number of sources as described below.

- Asbestos impact identified within the uncontrolled fill material present across the Project Area (including the Site), appears to be residential building debris (mainly fragments of ACM sheeting). The presence of asbestos debris within surface soils is a common feature in Darwin due to the widespread damage caused by Cyclone Tracy in December 1974. The 1975 aerial imagery covering the Project Area, clearly shows the presence of scattered debris post Cyclone Tracy.
- Sheeting made from ACM appeared to be used as forming during the installation/construction of some of the concrete stormwater risers encountered along the boundaries between the Road Reserve, and Residential Lot B2 and Lot B3. ACM debris was also identified in the rework material around these stormwater risers.
- Asbestos impacted fill material was also identified between layers of asphalt found in the Road Reserve, which suggests that fill material impacted with asbestos debris had been used to construct (or upgrade) the road system within the Project Area.
- Pipes made from ACM products were used for the Project Area's water distribution system and in some instances used as a conduit for communications cables, and as such, are considered additional primary source of asbestos impact. Asbestos pipes were found in the middle (Road Reserve) to the southern portion of the Project Area (Residential Lot B2).

3 Remediation and Validation Methodology

3.1 Remediation Strategy and Deviations

Remediation and validation activities conducted at the Site were completed in general accordance with the Auditor endorsed RAP (SLR RAP 2020, ref: 680.10679.R04-v5.0).

The remediation strategy was developed in general accordance with the following guidelines and standards.

- ASC NEPM 2013.
- Australian Standard AS 4482.1-2005, "Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and semi-volatile compounds".
- WA DOH 2019, "Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, Consultation Draft" November 2019.
- NT EPA 2017, "Northern Territory Contaminated Land Guidelines".

In addition, SLR's Standard Operating Procedures (SOPs) were followed to ensure integrity was maintained and sampling procedures were completed in general accordance with the relevant guidelines and standards.

The remediation and validation activities that were carried out within the Site are detailed in the following sections.

3.1.1 Prevention of Cross Contamination

As part of the remediation works undertaken on the adjacent residential allotments, the Road Reserve was used to stockpile and screen spoil removed from Lots B1, B2 and B3. Details of the remediation works conducted on Lots B1, B2 and B3 are provided in the SLR report titled *Validation Report, John Stokes Square Redevelopment, Proposed Residential Lots B1, B2 and B3"* (SLR ref: 680.10679.00100-R05).

The following measures were considered to determine whether the Site had been further impacted due to the handling and storage of spoil associated with remediation activities undertaken on Lots B1, B2 and B3.

- During the remediation and validation works conducted on the residential allotments, designated asbestos waste stockpiles were placed within the "Known Asbestos Impact Area". These stockpiles were placed on geofabric secured to the ground and where possible, located within areas of the Road Reserve already sealed with bitumen (i.e., former roadway).
- Surface samples were collected from the areas where asbestos waste stockpiles were stored. Validation samples collected did not report any asbestos impact, therefore confirming that the asbestos waste stockpiles were adequately removed from the Site and did not cross contaminate the surface of the Road Reserve.

As part of the remediation works associated with the Site, spoil excavated from the "Known Asbestos Impact Area" was placed directly into lined skip bins before being appropriately disposed of offsite by a licenced asbestos removal contractor. This measure prevented non-impacted areas of the Site being contaminated as a result of the remediation activities undertaken at the Site.

3.1.2 Remediation of the "Known Asbestos Impact Area"

Remediation and validation activities that were carried out on the "Known Asbestos Impact Area" defined in the SLR DSI 2020 report, included the following.

- Asbestos impacted fill material within the "Known Asbestos Impact Area" was excavated under asbestos conditions.
- The lateral extent of the final excavated area was guided by visual assessments undertaken by a suitably qualified Environmental Consultant. In relation to the remediation of the "Known Asbestos Impact Area", the final excavated area on the Road Reserve is referred to herein as "the main excavation".
- The walls of the main excavation were visually inspected, and validation samples were collected, targeting the fill layer, at a sampling density of 1:25 m^2.
- The depth of the main excavation extended down into natural soils. The base of the excavation was visually inspected for evidence of ACM by the Environmental Consultant. As a deviation to the RAP, judgemental samples were also collected from the base of the excavation, particularly in areas where higher levels of asbestos debris and underground services constructed out of ACM products, were identified.
- The asbestos impacted soils, ACM and ACM impacted fill material, were placed directly into lined skip bins before being appropriately disposed of offsite by a Class A licenced asbestos removal contractor.
- A small volume (<2 m^3) of bitumen and concrete kerbing were removed from the Road Reserve and stockpiled prior to being disposed of offsite to the SBWMF as "General Waste". Prior to disposal, the material was visually inspected by the Environmental Consultant for the presence of ACM impact (none was observed).
- Details of the area remediated at the Site were collected and included the extent and depth of excavation, validation sample locations, sample identification labels, date sampled and photographic logs. Validation samples were collected and analysed by a NATA accredited laboratory in accordance with the methodology outlined in **Section 3.2.**
- Water for dust suppression was made available throughout the remediation activities undertaken at the Site.
- Air quality monitoring was undertaken during all remediation activities conducted at the Site to determine the presence of air borne asbestos fibres.
- Asbestos removal, including excavation and transport of asbestos impacted soils, was undertaken by a Class A licenced asbestos removal contractor under an approved asbestos removal control plan.
- Analytical results obtained for soil samples collected at the Site were compared to relevant ILs. If validation samples returned results above the ILs, further excavation and validation sampling would have been undertaken to ensure the Site's remediation objectives were achieved.
- All field notes, photographic logs, certified laboratory reports, asbestos clearance certificates, waste disposal documentation and air quality monitoring results were collated.
- This validation report was prepared, documenting all remediation and validation works undertaken at the Site.

3.1.3 Further Visual Validation (Removal of Abandoned Services)

In addition to the remediation and validation measures outlined above for the "Known Asbestos Impact Area", measures undertaken during the removal of abandoned underground services from the Site are outlined below.

- After the abandoned underground services were removed, a suitably qualified environmental consultant inspected the resultant trenches for visual signs of asbestos contamination.
- The depth of all trenches extended down into natural soils. The lateral extent of the trenches was guided by visual assessments undertaken by a suitably qualified Environmental Consultant.
- Underground services constructed out of ACM products were removed by excavating down to the sandy bedding material surrounding these services. The sandy bedding material was then removed by a shovel, to minimise damage to the asbestos pipes. The pipes were then removed by the licenced asbestos removal contractor.
- The walls of the trenches were visually inspected, and validation samples were generally collected at a sampling density of 1:25m^2, targeting the fill layer. For services located within the main excavation, the trenches were validated based on the validation samples collected and visual inspections conducted for the main excavation.
- As a deviation to the RAP, for some of the service trenches located outside the main excavation, the number of wall samples collected were less than the sampling density specified in the RAP. In these instances, the judgement of the Environmental Consultant was used to determine the number of samples to be collected. This judgement was based on visual observations at the time of trenching works, lack of ACM impact observed, previous experience at the Site and the results of past environmental studies conducted within these areas.
- Details of the services removed were collated and included the extent and depth of the service trench, type of service and the material it was constructed out of, validation sampling locations, sample identification numbers, date sampled and photographic logs.
- Validation samples were collected and analysed by a NATA accredited laboratory in accordance with the methodology outlined in **Section 3.2.**
- Spoil removed from the trenches were placed adjacent to the trench and visually inspected for the presence of asbestos contamination. If visual observations found ACM debris, or asbestos impact was reported in the validation samples collected from the service trenches located outside the main excavation area, then the spoil would have been transported to the lined skip bins and validation samples collected from the surface where the material had been stockpiled.
- An approximately 20 m long section of abandoned PVC sewer line was not removed at the time the SLR Environmental Consultant was onsite (refer to **Figure 4 (Appendix A)**). This line could not be removed at the time, due to the presence of a waste stockpile (broken concrete pipes) that had been created as part of the Site's remediation works. SLR has received anecdotal information that this section of pipe has since been removed, however SLR was not present during its removal.

3.2 Soil Sampling Methodology

Soil validation sampling was undertaken in accordance with the RAP, the details of which are provided in **Table 2**.

Table 2 Soil Sampling Methodologies

Activity	Comment / Details
Soil sampling frequencies	• Base of excavations in red natural soils –visual validation only. Clearance certificates supplied by a suitably qualified Environmental Consultant. **See note below.** • Walls of excavation including fill material without asbestos contamination – Validation samples collected at a rate of 1:25 m^2, with a minimum of one sample per excavation wall and base (base only where excavation depth did not extend into natural soils). **See note below.** • Duplicate samples collected at a rate of 1:20 for soil samples. • Coordinates of sample locations recorded with a handheld GPS or similar device.
Sample analysis	• Validation samples analysed for percentage weight/weight asbestos content in accordance with the WA DoH guidelines.
Sample collection	• Sample collection undertaken in general accordance with WA DoH guidelines and SLR SOPs. Dedicated disposable nitrile gloves and laboratory supplied sample containers were used for sample collection.
Sample submission	• Chain of custody (COC) documentation completed at the time of sample collection and accompanied the samples to the nominated laboratory. • All samples submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis (where possible).

Note:

1. Deviation from the RAP. As a conservative measure, judgemental samples were collected from the base of the main excavation due to the presence of:

   - Asbestos debris in fill material extending beyond the "Known Asbestos Impact Area".
   - Underground services constructed using ACM products (e.g., conduit housing electrical cable and some water distribution lines).
   - Fill material containing ACM debris located between the bitumen layers found within the Road Reserve.

   Judgemental samples were collected beneath areas where high levels of ACM debris were observed.

2. Deviation from the RAP. For some of the service trenches located outside the main excavation, the number of wall samples collected were less than the sampling density specified in the RAP. In these instances, the judgement of the Environmental Consultant was used to determine the number of samples to be collected. This judgement was based on visual observations at the time of trenching works, lack of ACM impact observed, previous experience at the Site and the results of past environmental studies conducted within these areas.

3.3 Decontamination of Equipment

A 20-ton excavator was used to remove contaminated asbestos soil and abandoned underground services in the Road Reserve and Lot C. The excavator was solely used for the earthworks at the Site and decontamination procedures were followed. The excavator bucket was washed within asbestos stockpile footprints area and the ground surface was visually inspected and validation samples were collected to assess the contamination from the excavator.

3.4 Analytical Assessment

Validation samples were submitted to ALS Pty Ltd (ALS) laboratory who are NATA accredited for the analyses performed.

Scheduled samples were analysed for asbestos in soils - presence/absence and/or FA/AF. The DSI previously undertaken by SLR (SLR DSI 2020) confirmed that asbestos impact, when identified, appeared to be confined to the fill material overlaying the natural deeper red silty clay soil material. Samples collected from the walls of the excavations were collected from the fill layer and therefore analysed for both presence/absence and FA/AF to verify whether asbestos impact was adequately removed. As the excavations extended down into the natural red soil material, it was agreed with the Auditor when developing the RAP, that the base of the excavations would be visually assessed and soil samples collected from the base analysed for presence/absence only, to verify whether asbestos impact had been adequately removed.

All non-scheduled samples were placed on hold at the laboratory should further analysis be required as part of the characterisation and validation process.

As detailed in the RAP, the SLR DSI 2020 determined that, aside from the asbestos impacts, the material outside the defined "Known Asbestos Impact Area" was considered low risk and excess spoil could be disposed of as "General Solid Waste" (non-putrescible) with reference go the NSW Waste Classification Guidelines 2014. As such, validation samples collected from the Site as part of these remediation works were only analysed for asbestos.

3.5 Screening Criteria

Due to the land quality requirements stipulated by CoD, AF/FA or bonded asbestos concentrations less than the laboratory's limit of reporting is the required validation criteria i.e. <0.001% w/w FA/AF and "no asbestos detected", respectively.

3.6 Air monitoring

Air monitoring was conducted for the duration of the remediation activities conducted at the Site as a precautionary measure. The airborne asbestos monitoring was conducted at the boundaries of the Site (north, south, east and west) and were static locations.

Monitors were set up at the commencement of the shift (approximately 0700) and collected at the completion of Site works (ranges from 1600 – 1700 on weekday and from 12 noon -1300 on Saturday).

Each monitor was calibrated as per SLR's internal NATA accredited procedure and set at a flow rate of 1 L/minute Monday to Friday and 2 L/min on Saturday (as the work shift is shorter, 0700 – 1300, so the flow rate is increased to ensure an appropriate sampling volume is achieved over the shorter shift).

SLR is NATA accredited in our Darwin laboratory to conduct all sampling and analysis of filters. SLR's accreditation number is 3130**.** Air monitoring was conducted in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust, 2nd Edition [NOHSC: 3003 (2005)].

All air monitoring results were compared to the public health exposure standard of 0.01 fibres/mL.

Consideration was given to the asbestos air-quality limit of 0.01 fibres/mL, for protecting the public around contaminated sites as endorsed by the enHealth Council in Management of asbestos in the non-occupational environment 2005 document (enHealth 2005).

In the event results of the airborne asbestos monitoring showed respirable asbestos fibre levels in excess of the levels outlined in **Table 3**, action was taken immediately.

Table 3 Air Monitoring Action Levels

Action Level	Control	Action
Less than 0.01 fibres/ml	No new control measures are necessary	• Continue with current control measures.
At 0.01 fibres/ml or more than 0.01 fibres/ml but less than or equal to 0.02 fibres/ml	1. Review	• Review control measures.
	2. Investigate	• Investigate the cause.
	3. Implement	• Implement additional or alternative controls to eliminate or minimise exposure and prevent further releases. • Communicate any additional controls during daily pre-start meeting.
More than 0.02 fibres/ml	4. Stop removal work	• Cease excavation / transport of material.
	5. Notify Regulator	• Notify the Head Contractor, followed by the regulator (NT WorkSafe) both verbally and in written communication.
	6. Investigate the cause	• Conduct a thorough assessment across the Site to determine the cause. • Consult with all personnel involved in the works. • Determine ongoing mitigation measures. • Continue to carry out air-monitoring to ensure further controls have mitigated the problem.

Table adopted form the Code of Practice under Section 274 of *the Work Health and Safety (National Uniform Legislation) Act 2011 (the WHS Act): How to safely remove Asbestos*

4 Results

The remediation and validation activities undertaken at the Site were completed between 01 October to 13 November 2020. A photographic log of the remediation works is provided in **Appendix D.** The extent of excavation works completed as part of the remediation activities undertaken at the Site are shown in **Figure 4 – Maps 1 to 5 (Appendix A)**.

Civil works were completed in general accordance with the Principal contractor's (Greenspace Pty Ltd) Construction Environmental Management Plan (CEMP) T20-1056_V2.0. THE Mining Pty Ltd was engaged by the Principal Contractor to undertake earthworks across the Site. Earthworks were required to remove uncontrolled fill material identified within the defined "Known Asbestos Impact Area", abandoned underground services and any asbestos impacted soil/ACM debris visually identified by the Environmental Consultant during these works.

Material removed included ACM debris, soil impacted by ACM debris, abandoned underground services (including those constructed out of ACM). Northern Trade Solutions Pty Ltd (NTS) were engaged to appropriately remove and dispose of ACM products and asbestos impacted soils. NTS holds a Class A Licence in asbestos removal and demolition.

Field observations and summaries of the analytical results obtained for the remediation and validation activities undertaken at the Site are provided below.

4.1 Field Observations

Key field observations noted during the remediation works at the Site are summarised as follows.

- The maximum excavation depth at the Site was 2 m and was associated with the removal of abandoned underground services.
- Near surface soil across the Site consisted typically of fill material comprising of reddish -yellowish brown to light grey, fine sandy and gravelly sandy silts. Underlaying the fill material was yellowish to reddish brown, fine to coarse sandy gravelly silts at depths ranging from 0.4 to 2.0 mgbl. The northern portion of the Road Reserve, beneath the former bitumen sealed roadway, comprised of reddish to yellowish brown, fine to coarse gravelly sandy silt with traces of laterite soils. Light greyish, fine to coarse silty sand was encountered across Lot C.
- Various inclusions of building rubble (concrete, PVC, plastics, glass bottles and aluminium cans) were observed in the southwest portion of Lot C, and northwest portion of the Road Reserve.
- A number of ACM fragments were found in fill material beyond the "Known Area of Asbestos Impact" defined in the SLR DSI 2020 report. The final extent of the excavated area on the Road Reserve (i.e., the main excavation) is shown in **Figure 4 – Maps 1 to 5 (Appendix A).**
- Burnt wooden logs and a layer of bitumen material in the reworked soils were encountered within the southern portion of the main excavation. This material was removed as part of the remediation works.
- Higher number of ACM fragments were identified in the southern portion of the main excavation. It was evident that fill material impacted with ACM was used during the construction (or upgrade) of the road, as the material was found between bitumen layers encountered in this area.
- Moreover, sheeting made from ACM was used as forming during the installation/construction of one of the three concrete stormwater risers located along the eastern extent of the main excavation. ACM debris was also identified in the rework material around on of these stormwater risers. These risers were removed as part of the remediation works conducted within the main excavation.
- Two asbestos pipes were identified within the extent of the main excavation. One pipe was a former water distribution pipe (part of the water system) and the other was used as a conduit for electrical cables. Care was taken when removing these pipes to prevent them from being damaged and causing asbestos fibres being released. Water was used to suppress any dust generated during the removal of these pipes by the licensed asbestos removalist.
- Numerous ACM fragments were identified within the fill material surrounding various abandoned services located within the south and southwest portions of the main excavation. The impacted material was placed directly into lined skip bins for appropriate offsite disposal by the licenced asbestos removal contractor.

- Following the removal of asbestos impact within the Road Reserve and underground services located within the main excavation, the base of the excavation was visually inspected for evidence of any residual ACM impact.
- The maximum trench depth associated with the different types of services removed from the Site are summarised in **Table 4.**

Table 4 Maximum Trench Depths Associated with the Removal of Abandoned Services

Service Type	Maximum Trench Depth
Stormwater	2.0 m
Sewer pipes	1.8 m
Electrical pipes and cables	0.7 m
Water distribution pipes	0.7 m
Communication pipes and cables	0.5 m
Electrical pipes and cables	0.7 m

- Only one service trench located outside the main excavation observed asbestos impact. Three asbestos fragments were noted when removing a PVC sewer line located on Lot C (near sample location RR-Wall-16). The ACM fragments and approximately 2 m^3 of surrounding soil were removed and placed into the lined skip bins for appropriate offsite disposal by the licenced asbestos removal contractor.
- Visual inspections of all other service trenches located within the Site, but outside the main excavation area, did not find any evidence of asbestos impact.
- Locations and extent of resultant trenches were georeferenced and are shown on **Figure 4 – Maps 1 to 5 (Appendix A).**
- No stained or odorous soils were identified during the remediation works and removal of underground services works.

4.2 Summary of Analytical Results

A tabulated summary of the analytical laboratory results is included in **Appendix E** and certified laboratory certificates are provided in **Appendix F**.

A summary of the validation samples collected at the Site is provided in **Table 5**. Sample locations are shown on **Figure 4- Maps 1 to 5 (Appendix A)**. A summary of analytical results is as follows.

- A total of 17 wall samples were collected from the main excavation, targeting the fill layer. Of these samples, 13 were analysed for asbestos impact (presence/absence, FA/AF). A total of 34 judgemental samples were also collected from the base of the main excavation, 31 of which were analysed for asbestos impact (presence/absence) to further support visual observations that the asbestos impact had been adequately removed.
- A total of 40 wall samples were collected from the trenches created during the removal of abandoned services across the remainder of the Site. Of these samples, 18 were analysed for asbestos impact (presence/absence, FA/AF). Base samples were not collected from these trenches, as the depth of the excavation extended down into natural soils. The bases of these trenches were visually inspected for the presence of ACM.

- Asbestos was not detected in any of the soil samples collected from the Site.

Table 5 Summary of Validation Samples

Sample Type	Sample Identification	Analysis
Base samples – main excavation (judgement samples)	RR-Val-01, RR-Val-02, RR-Val-03, RR-Val-04, RR-Val-05, RR-Val-06, RR-Val-07, RR-Val-08, RR-Val-09, , RR-Val-11, RR-Val-14, RR-Val-15, RR-Val-16, RR-Val-17, RR-Val-18, RR-Val-19, RR-Val-20, RR-Val-21, RR-Val-22, RR-Val-23, RR-Val-24, RR-Val-25, RR-Val-26, RR-Val-27, RR-Val-28, RR-Val-29, RR-Val-30, RR-Val-31, RR-Val-32, RR-Val-33, RR-Val-34	*Presence/absence of asbestos in soils *FA/AF
	RR-Val-10, RR-Val-12, RR-Val-13,	On hold
Wall samples - main excavation	RR-Wall-22, RR-Wall-23, RR-Wall-24, RR-Wall-26, RR-Wall-28, RR-Wall-31, RR-Wall-32, RR-Wall-33, RR-Wall-34, RR-Wall-35, RR-Wall-36, RR-Wall-37, RR-Wall-38	*Presence/absence of asbestos in soils *FA/AF
	RR-Wall-25, RR-Wall-27, RR-Wall-29, RR-Wall-30	On hold
Wall samples – service trenches	RR-Wall- 01, RR-Wall-04, RR-Wall-05, RR-Wall-12, RR-Wall-15, RR-Wall-16, RR-Wall-18, RR-Wall-20, RR-Wall-21, RR-Wall-39, RR-Wall-42, RR-Wall-46, RR-Wall-51, RR-Wall-53, RR-Wall-54, RR-Wall-55, RR-Wall-56, RR-Wall-57	*Presence/absence of asbestos in soils *FA/AF
	RR-Wall-02, RR-Wal-03, RR-Wall-06, RR-Wall-07, RR-Wall-08, RR-Wall-09, RR-Wall-10, RR-Wall-11, RR-Wall-13, RR-Wall-14, RR-Wall-17, RR-Wall-19, RR-Wall-40, RR-Wall-41, RR-Wall-43, RR-Wall-44, RR-Wall-45, RR-Wall-47, RR-Wall-48, RR-Wall-49, RR-Wall-50, RR-Wall-52	On hold
Field QC samples – field duplicates	RR-Wall-53/QA01 RR-Wall-54/QA02 RR-Wall-55/QA03	*Presence/absence of asbestos in soils *FA/AF

4.3 Clearance Inspections

Visual inspections were conducted for all excavations and trenches created at the Site as a result of the remediation activities outlined herein. No ACM debris were found during any of the clearance inspections. **Appendix B** includes the Clearance Certificates provided for visually validated areas at the Site.

4.4 Soil Movement and Disposal of Underground Services

Spoil removed from the main excavation area was placed directly into lined skip bins for appropriate disposal to the SBWMF by a licenced asbestos removal contractor. Approximately 1,600 tonnes (or 2,000 m^3 based on an assumed soil density of 1.3 for silty clayey soils) of ACM and ACM contaminated soil was disposed of to the SBWMF. The SBWMF disposal receipts have been included in **Appendix H**.

Spoil from the trenches created when removing the abandoned underground services were visually inspected by the Environmental Consultant for the presence of ACM. As per the Auditor endorsed RAP, spoil that was visually cleared as not being impacted with ACM debris, was used to backfill the service trenches created as part of the remediation activities conducted at the Site.

Stockpiles of underground services (e.g., concrete pipes, PVC conduits, metal pipes, cables etc) were still onsite when SLR completed the Site's remediation works. These stockpiles were visually inspected by the Environmental Consultant for the presence of ACM. No visual evidence of ACM debris was found during the inspections and therefore these stockpiles would be considered suitable for offsite recycling and/or disposal at the SBWMF.

The bitumen sealed surfaces were scrapped and stockpiled at the southern end of the Road Reserve. The small bitumen stockpile (~2m^3) was visually inspected by the Environmental Consultant for evidence of ACM, prior to being disposed of to the SBWMF.

4.5 Air Monitoring

Air monitoring for airborne fibres was conducted for each day intrusive works were carried out as part of the remediation works. Monitoring results did not report airborne fibres above the detection limit of the method used, which is 0.01 fibres/ml. Air monitoring reports are included in **Appendix G.**

4.6 Data Quality Review

4.6.1 Field Duplicate Samples

Table 6 outlines the primary and duplicate sample combinations collected and submitted for analyses during the remediation and validation works undertaken across the Site. Results are summarised in the analytical tables included in **Appendix E.** Certified laboratory certificates are included in **Appendix F**.

The additional judgemental samples collected from the base of the excavation (34 in total) were not included when determining the required number of field duplicates to be collected as part of the remediation and validation works undertaken at the Site. As detailed in Section 3.4, these judgemental samples were collected as a conservative measure and were not part of the original RAP.

A total of 31 validation samples were analysed from the walls of the excavations and trenches created across the Site. As per the RAP, field duplicates were collected at a rate of 1 per 20 soil samples.

Table 6 Summary of QC Combinations

Parent Samples	Duplicate
RR-Wall-53	RR-Wall-QA01
RR-Wall-54	RR-Wall-QA02
RR-Wall-55	RR-Wall-QA03

The relative percent differences (RPDs) calculated between the primary and duplicate sample combinations were considered acceptable.

4.6.2 Equipment Rinsates

As asbestos is the only COPC targeted for this remediation work, no equipment rinsate blanks were collected.

5 Conceptual Site Model

The Site's Conceptual Site Model (CSM) has been updated taking into account the remediation and validation works conducted at the Site (and presented in this report), as well as the results from previous environmental investigations undertaken at the Site.

The CSM prepared for the Site and surrounds is presented below in **Table 7** in tabulated form.

In developing the CSM, the following points were considered.

- Asbestos impact was the only contamination identified at the Site during the DSI undertaken by SLR in 2020 (SLR DSI 2020). Asbestos impact was identified in soil samples collected from SLR test pits TP01, TP02, TP04, TP24, TP26, TP39 and TP40. Asbestos impact was also detected in soil samples collected from test pits completed by Greencap in 2019 - TP12, TP20, and TP54. Locations of previous investigation points completed within the Site are shown in **Figure 4 (Appendix A)**.
- All known asbestos impact at the Site has been remediated and resultant excavations have been validated through either soil and/or visual clearance inspections, as detailed in this report.
- Soil samples collected from the SLR test pits completed across the Site in 2020 (SLR DSI 2020) did not report any pesticide impact above the nominated ILs specified for residential land use and public open space scenarios. Pesticide impact was not detected above the nominated ILs in any of the soil samples collected from the Site during previous investigations undertaken by Greencap and Agon. As such, pesticides are not considered COPC for the Site.
- During the DSI completed by SLR, heavy metals such as arsenic, copper, lead, nickel, zinc and total chromium were detected in soil samples collected from the majority of test pits advanced across the Site (SLR DSI 2020). None of the concentrations detected exceeded the health-based and/or ecological ILs specified for residential land use and public open space scenarios. Elevated arsenic and total chromium concentrations were reported across the Site, however further analyses confirmed that concentrations detected are indicative of natural soil conditions (SLR DSI 2020). Heavy metal impact was not detected in any of the soil samples collected from the Site during previous investigations undertaken by Greencap and Agon. As a result of these investigations, heavy metals are not considered COPC for the Site.
- Groundwater beneath the wider Project Area was intersected at depths between 2.69 and 3.72 mbgl and inferred to flow in a westerly direction towards coastal mangrove community and outer estuary of Darwin Harbor (located approximately 160 m from the Project Area) (Agon DSI 2020). According to the Agon DSI report (2020), groundwater samples reported dissolved heavy metal concentrations above the nominated ILs adopted for assessing potential impacts to groundwater users and marine aquatic ecosystems.
- Future users of the Site will not extract and use groundwater from beneath the Site and as such groundwater impact in the form of dissolved heavy metals, is not considered to pose an exposure risk to future users of the Road Reserve and Lot C.

Table 7 Conceptual Site Model

Sources		Exposure	Receptors			Complete Source-Pathway-Receptor Linkage
Primary Source	Secondary Sources	Transport Mechanism Possible and Routes of Exposure	Person or Ecological Receptor Potentially Exposed	Receptor Present		
				On-site	Off-site	
None – all known primary sources of impact (i.e. uncontrolled fill, building material and services made out of ACM) have been removed from the Site.	Soil contamination: • None. All known soil impacts (i.e. asbestos) have been removed and resultant excavations validated.	Dispersion • Uptake via plants • Dermal contact • Incidental ingestion • Leaching via percolation Wind Erosion: • Inhalation of dusts Volatilisation • Inhalation	Residents	×	✓	× *does not exist as all known sources have been removed
			Commercial workers	×	✓	× *does not exist as all known sources have been removed
			Intrusive workers	✓	✓	× *does not exist as all known sources have been removed
			People in open spaces	✓	✓	× *does not exist as all known sources have been removed
			Ecological receptors (terrestrial biota)	✓	✓	× *does not exist as all known sources have been removed
	Groundwater Contamination: • Heavy metals	Migration of groundwater and its extraction • Dermal contact • Incidental ingestion • Inhalation • Terrestrial/ aquatic	Residents	×	✓	× *although bores exist within the locality, the SPR linkage is not considered viable as groundwater within the locality is not expected to be used for domestic purposes especially given the availability of a reticulated, treated (mains) water supply and low groundwater yield..
			Commercial workers	×	✓	× *although bores exist within the locality, the SPR linkage is not considered viable as groundwater within the locality is not expected to be used for commercial purposes especially given the availability of a reticulated, treated (mains) water supply and low groundwater yield. There is no design to establish a bore onsite for future users of the Site.

Sources		Exposure	Receptors			Complete Source-Pathway-Receptor Linkage
Primary Source	Secondary Sources	Transport Mechanism Possible and Routes of Exposure	Person or Ecological Receptor Potentially Exposed	Receptor Present		
				On-site	Off-site	
		Groundwater impact is not volatile and therefore exposure pathway associated with the "migration of groundwater – volatilisation – inhalation" is not considered to exist.	Intrusive workers	✓	✓	✗ *does not exist as groundwater is located at depths greater than 2.69 mbgl and as such is unlikely to enter typical excavations/underground service pits located either on site or within the surrounding locality.
			People in open spaces	✓	✓	✗ *does not exist as groundwater is not expected to be used by users of public open spaces.
			Ecological receptors (terrestrial and aquatic biota)	✗ (terrestrial only)	✓	**Potentially Complete** *possible that ground impact (dissolved heavy metals) could migrate offsite to the coastal mangrove communities located approximately 160 m west of the Project Area.

6 Future Site Management Considerations

A "live" sewer main is located along the southern boundary of the Site (i.e., Road Reserve and Lot C). This sewer main connects to a second "live" sewer main that transects through the centre of the Road Reserve (north to south) at depth. Even though all known asbestos impact has been removed from the Site, remediation works detailed in this report did not extend into the deeper fill material surrounding the "live" sewer mains that were present at the time of these works.

Contractors conducting works associated with the removal/upgrade of these "live" services were advised to employ precautionary measures such as having safe work method statements and/or work-specific management plans addressing exposure to potentially asbestos impacted soils, unexpected finds protocol and associated training, to ensure workers understood the controls required to be implemented in the unlikely event unexpected asbestos was encountered.

Results of the remediation and validation works associated with the removal/upgrade of the sewer main along the southern boundary of the Site, that were overseen by SLR, are presented in the addendum report titled *"Sewer Easement Remediation and Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C"*, November 2021 (ref: 680.10679.00200_R12) and should be read in conjunction with this report.

7 Conclusion

Based on the field observations and analytical results obtained for the remediation and validation activities conducted at the Site, SLR considers that the Road Reserve and Lot C have been suitably remediated and validated for the proposed land use (public open space, roadway), subject to the considerations outlined in this report.

In addition to the above, based on the results of the remediation and validation works conducted at the Site and the results of the DSI undertaken by SLR in 2020, spoil created during any future headworks/land servicing component of the broader redevelopment project, should be suitable for beneficial reuse onsite, or disposal to the SBWMF as General Solid Waste (non-putrescible) with reference to the NSW Waste Classification Guidelines 2014, subject to considerations outlined in this report. The material may also be considered as "clean fill" as defined by CoD at SBWMF, however this classification would need to be made by CoD Waste Services team.

8 Limitations

The following information will assist in understanding the uncertainties relating to the interpretation of the data obtained during this investigation and the recommendations presented in the report and help with assessment and interpretation of the report.

SLR assumes no responsibility for the quality or accuracy of data obtained from external sources, or for occurrences outside the scope of works defined in this report.

All work conducted, and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR, is suitable for a specific objective.

Services were conducted in a conscientious and professional manner. The nature of the task, however, and the likely disproportion between any damage or loss which might arise from the work and any report prepared as a result and the cost of our services is such that SLR cannot guarantee that all issues of concern/contamination have been identified.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

9 References

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APPENDIX A

Figures

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SLR

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PARAP NT 0820
AUSTRALIA
T: 61 8 8998 0116

www.slrconsulting.com

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Project No.:	680.10679
Date:	24-Jun-2020
Drawn by:	Sarah Doherty
Scale:	1:4,000
Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 52

LEGEND

Project Area

Site Area

N
W E
S

Imagery sourced from Nearmaps June 2020

Figure 1

0 35 70 140 Metres

John Stokes Square - Project Area Locality

0 10 20 m

Live Sewer Main

Future Land Use

- Commercial/Industrial
- Public Space
- Residential

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:1,000 at A4
Project Number:	680.10679
Date:	06-May-2021
Drawn by:	JG

SLR

JOHN STOKES SQUARE

Location of the Site

FIGURE 2

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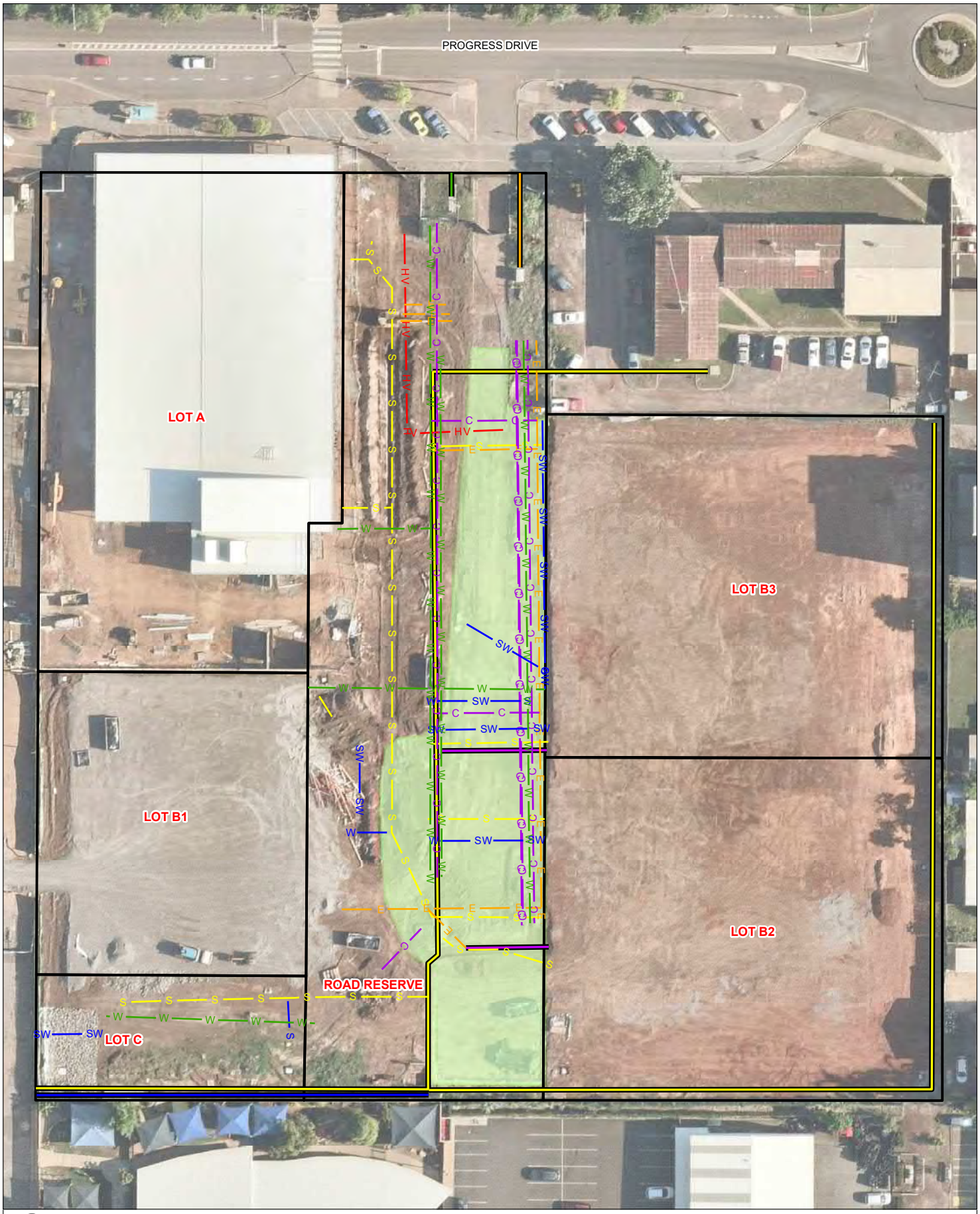

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Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:800 at A4
Project Number:	680.10679
Date:	15-Feb-2021
Drawn by:	JG

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Asbestos Area Excavation

Proposed Allotment Boundaries

Underground Services

- Asbestos
- Live Stormwater
- Live Sewer
- Live Electrical & Communication Cable
- Live Water Pipe

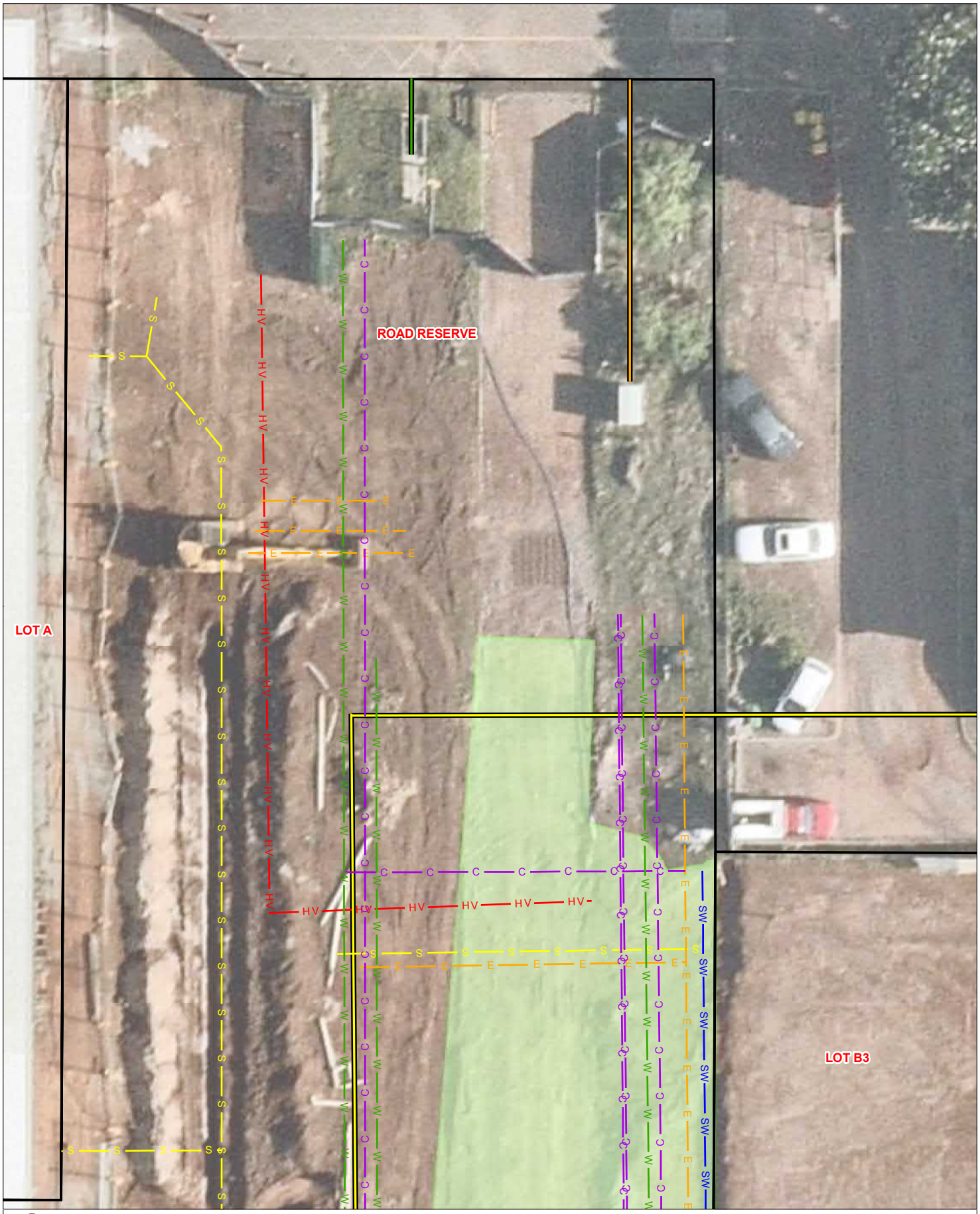
- E — Electrical
- HV — High Voltage
- W — Water
- SW — Stormwater
- C — Communication
- S — Sewer

JOHN STOKES SQUARE

Locations of the Underground Services and the Asbestos Excavation Area

FIGURE 3 - Map 1 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Underground Services and Excavation Area.mxd



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Scale:	1:250 at A4
Project Number:	680.10679
Date:	15-Feb-2021
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SLR

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JOHN STOKES SQUARE

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FIGURE 3 - Map 2 of 5

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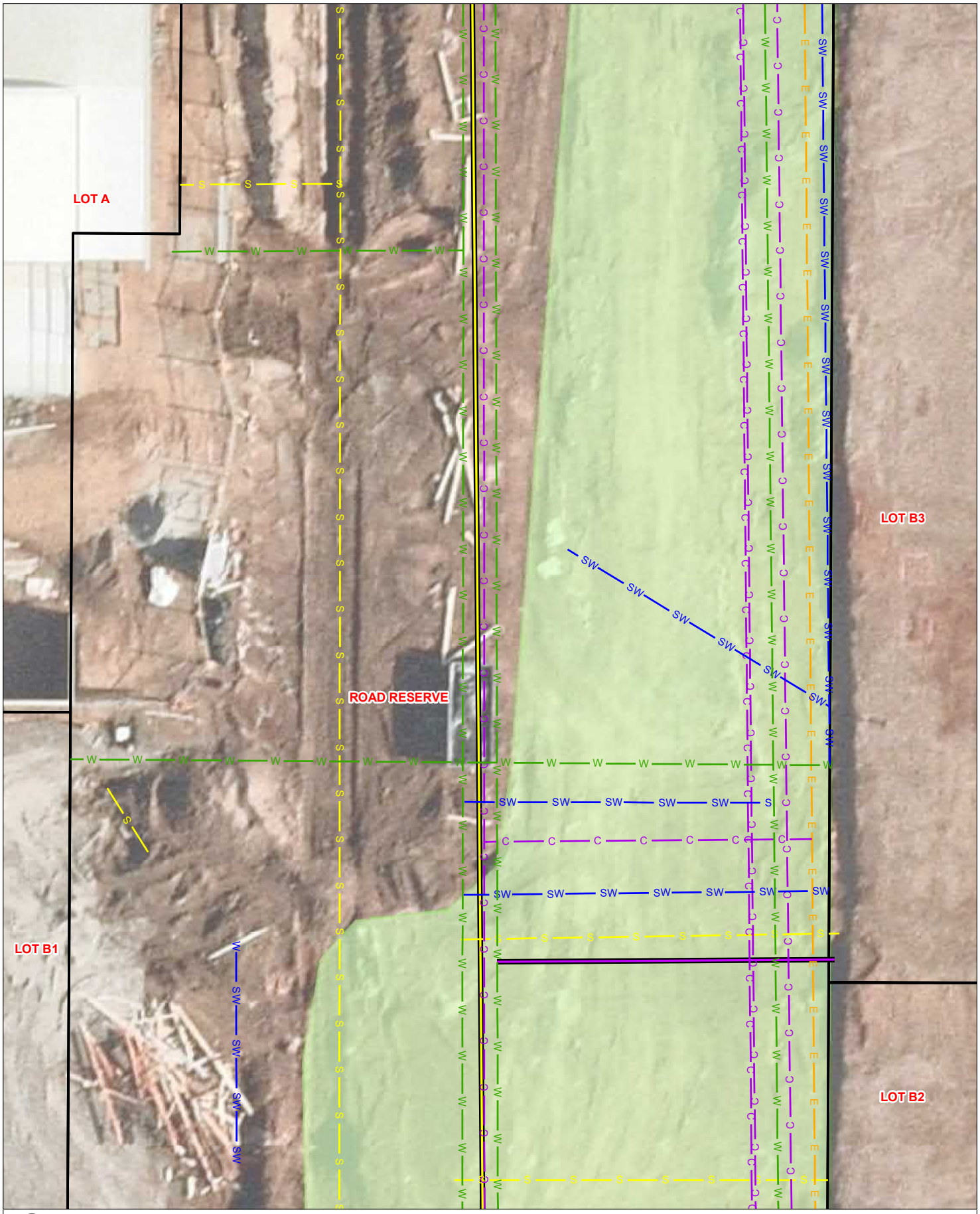

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JOHN STOKES SQUARE

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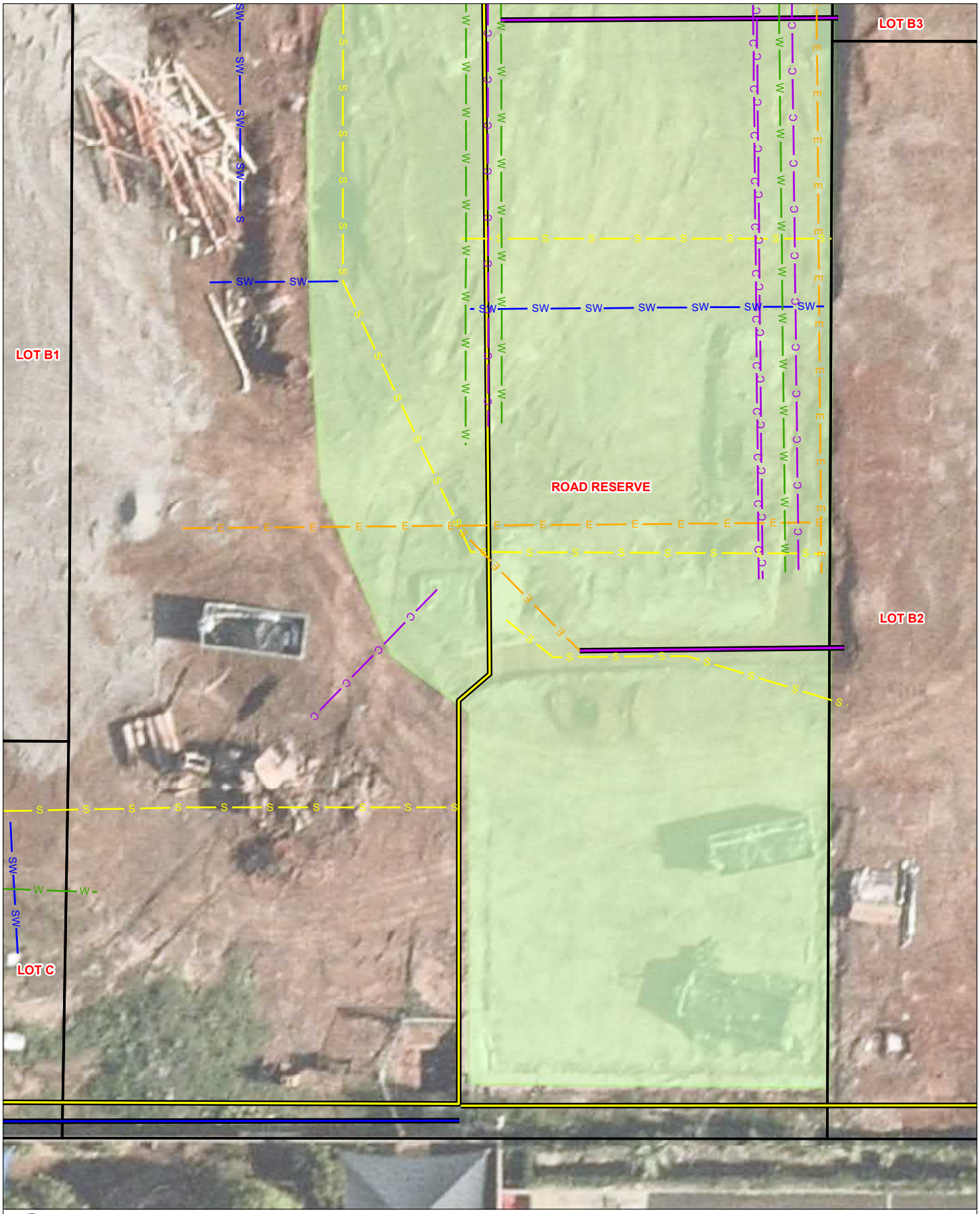

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JOHN STOKES SQUARE

Locations of the Underground Services and the Asbestos Excavation Area

FIGURE 3 - Map 4 of 5

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FIGURE 3 - Map 5 of 5

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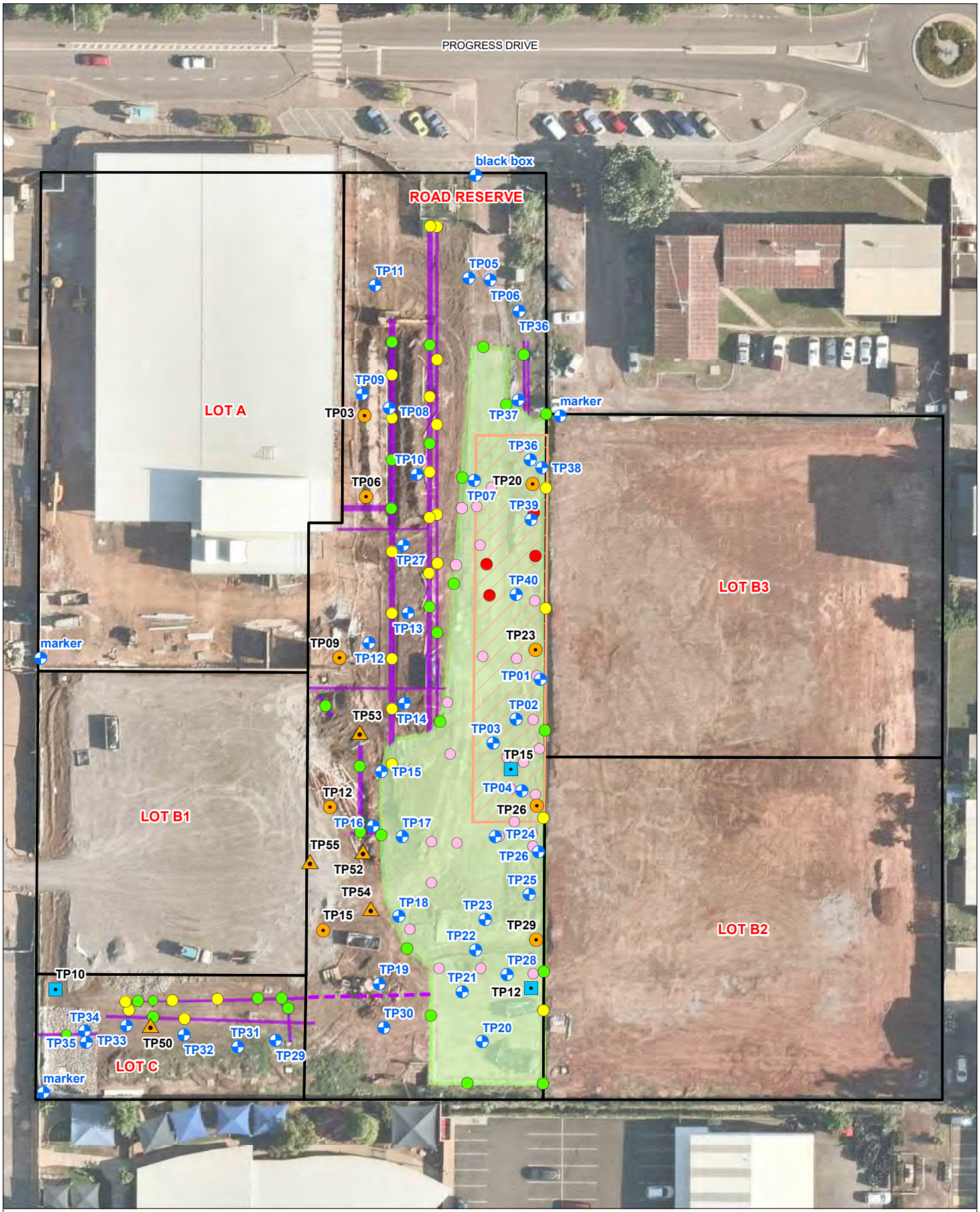

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Project Number:	680.10679
Date:	25-Nov-2021
Drawn by:	JG

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

- RR-Val (Base Samples)
- RR-Val (Base Samples On Hold)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 1 of 5

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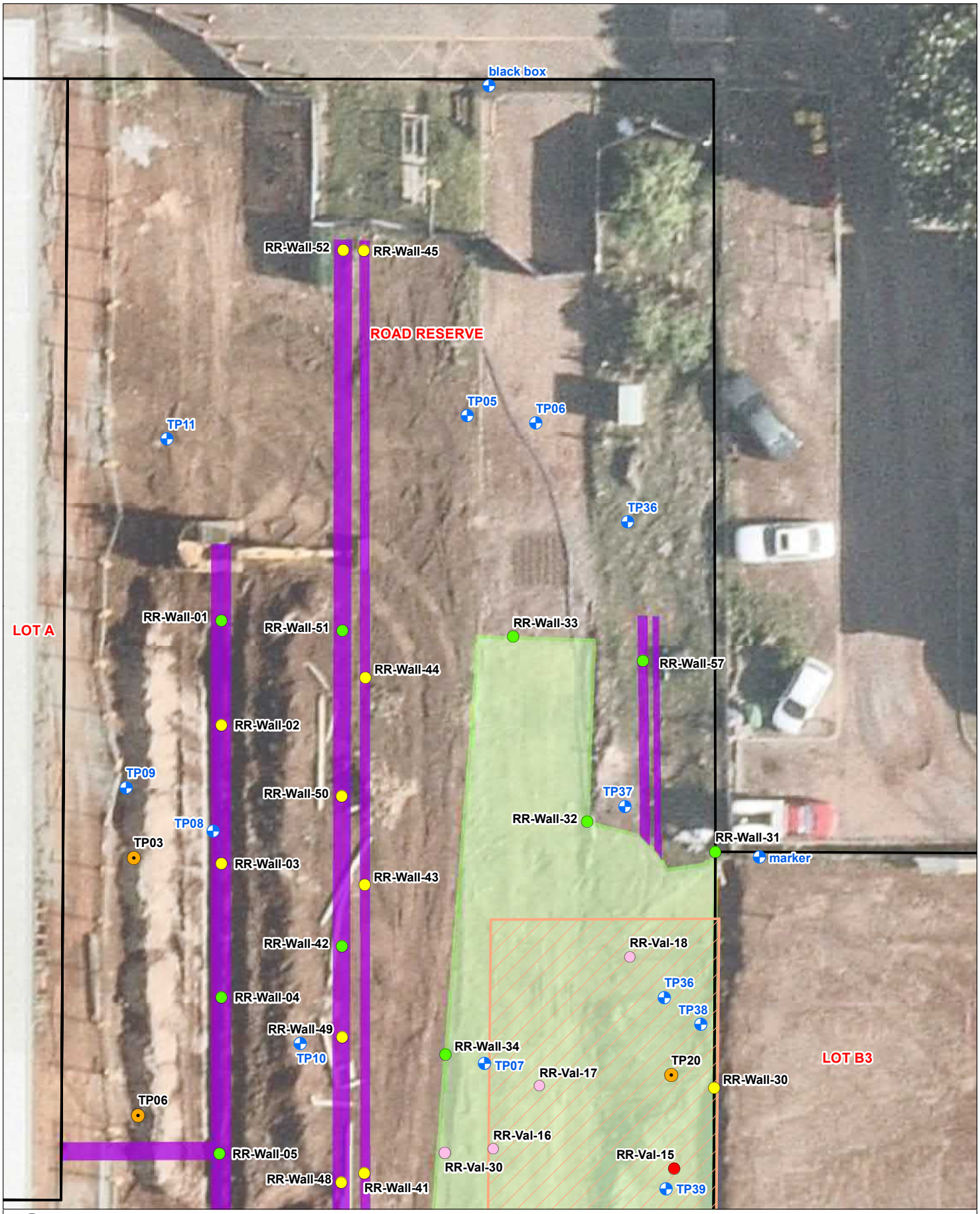

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Drawn by:	JG

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- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 2 of 5

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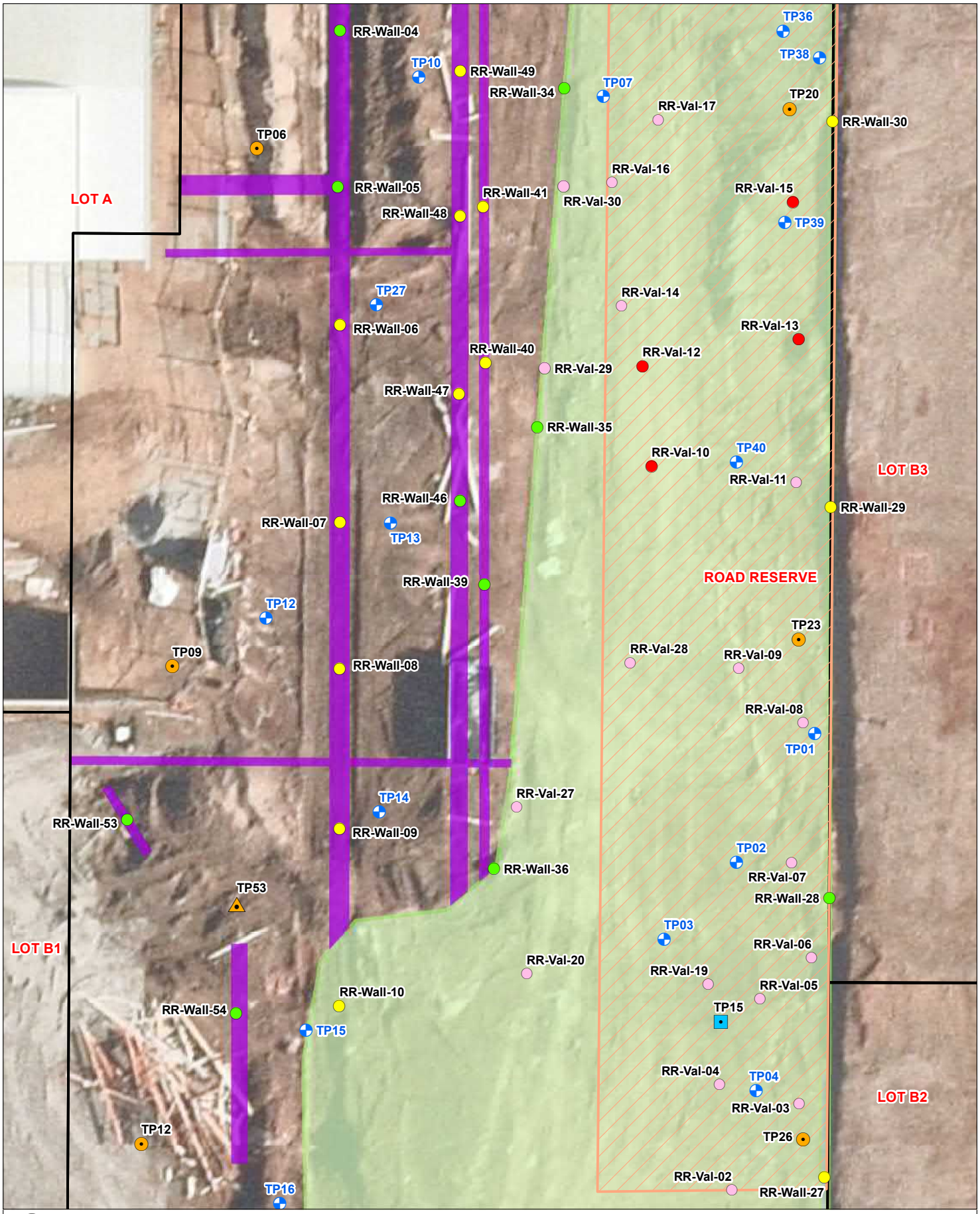

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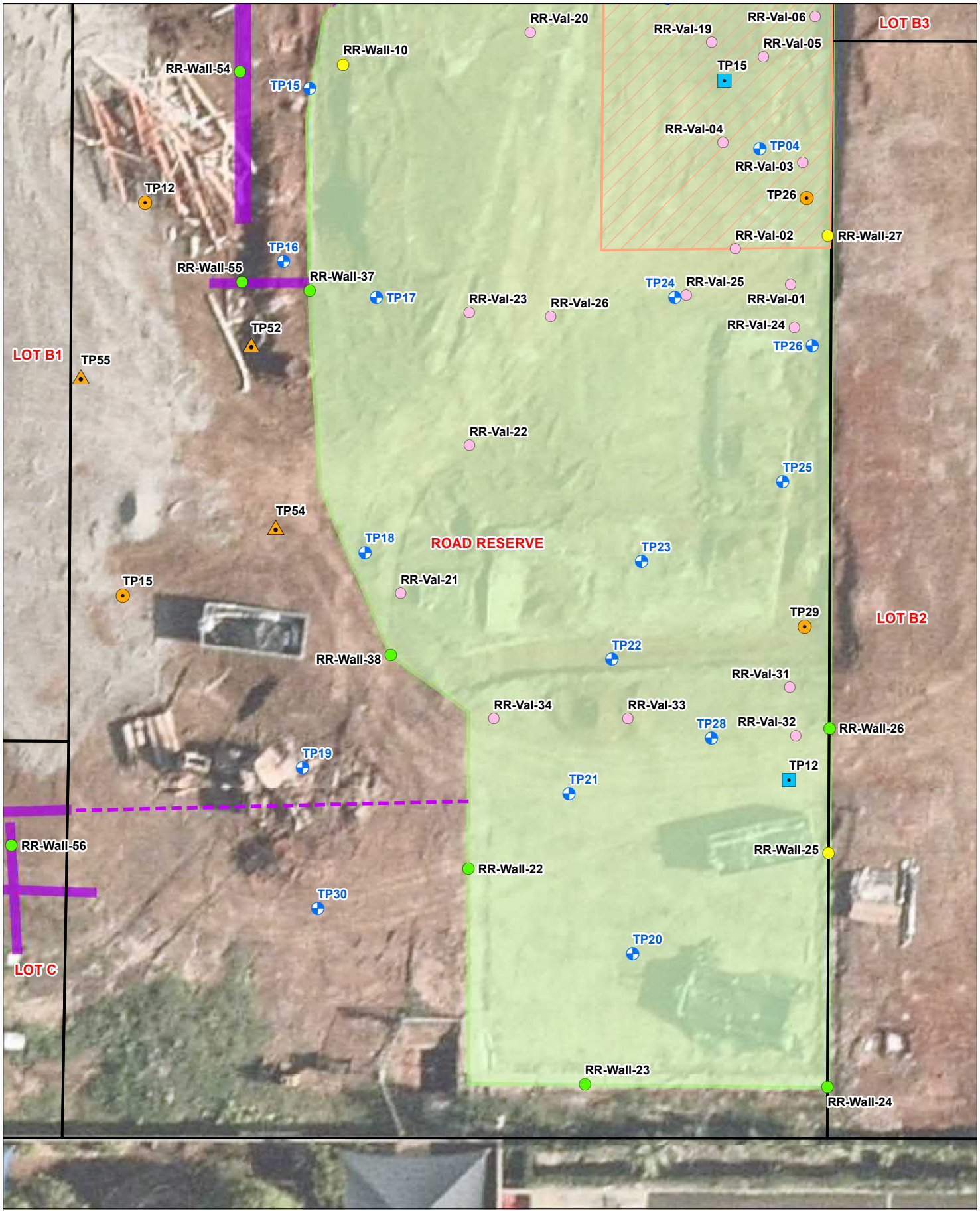

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JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 4 of 5

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JOHN STOKES SQUARE

Validation Sampling Locations

FIGURE 4 - Map 5 of 5

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APPENDIX B

Clearance Certificates

ASBESTOS CLEARANCE CERTIFICATE

Job Number:	680.10679.00200	**Document Ref:**	680.10679.00200-R01-v1.0-CLR-20210216.docx
Date of Issue:	3 February 2021	**Signature:**	
Clearance Inspection Undertaken By:	Robin Birua		

1	**CLIENT DETAILS**	
1.1	Client Name:	HK Solutions on behalf of the Department of Infrastructure, Planning and Logistics (DIPL)
1.2	Client Contact Name:	Sinead Redmond
1.3	Client Address:	Building 2, Level 1, 631 Stuart Hwy, Berrimah NT 0828
1.4	Client Telephone Number:	0427 544 775

2	**ASBESTOS INSPECTION DETAILS**			
2.1	Date of Clearance Inspection:	1 – 28 October and 11 – 13 November 2020	Time of Clearance Inspection:	Various
2.2	Site Address:	John Stocks Square, 47 Progressive Drive, Nightcliff, Northern Territory		
2.3	Asbestos Inspection Location:	This clearance certificate is issued in relation to the asbestos removal works and removal of abandoned underground services located on the Road Reserve and Lot C (herein referred to as the Site). **Figure 1** shows the extent of the Site and **Figure 2 – Maps 1 to 5**, show then extent of services at the Site. Refer to the **Figure 3 – Maps 1 to 5** for the areas where visual clearances for asbestos related impact have been undertaken at the Site.		
2.4	Asbestos Removal Contractor Company & Licence Number:	Northern Trade Solutions NT Pty Ltd (NTS). Licence number: EPL225		
2.5	Asbestos Removal Contractor Supervisor & Licence Number:	Tony Karambetis CPCCDE3015A		
2.6	Details of Asbestos Inspection Activities:	The following areas have been visually inspected for visible assumed asbestos containing materials (ACM) debris: **1) Known Asbestos Impact Area**		

2	ASBESTOS INSPECTION DETAILS	
		Fill material within the "Known Asbestos Impact Area", as defined in the SLR DSI 2020 report (SLR reference: 680.10679-R04-v5.0), was removed under asbestos conditions. The area was excavated down into natural soil conditions and to a maximum depth of 0.6m below ground level (mbgl). The lateral extent of the final excavated area for the "Known Asbestos Impact Area" was guided by visual assessments undertaken by a suitably qualified Environmental Consultant (Robin Birua) and is shown in **Figure 2 – Maps 1 to 5**. The excavated material was loaded directly into designated skip bins for offsite disposal as "Special Waste – Asbestos" to the Shoal Bay Waste Management Facility (SBWMF). Following the satisfactory removal of ACM, the excavated area was visually inspected for visible residual ACM debris. Validation soil samples were also collected from the walls of the excavation and judgemental samples were collected from the base of the excavation for analytical testing of asbestos in soil. Visual clearance was not given for the excavation area at this stage due to the presence of several abandoned underground services that were still present within the area (refer to **Photographs 1-3**). **2) Stormwater pipes and risers** After the removal of fill material (0.6 mbgl) from the "Known Asbestos Impact Area", the stormwater pipes located along the east boundary of the Road serve was removed by excavating to a maximum depth of 2.0 mbgl. Three concrete risers connected to the stormwater pipes along the proposed eastern boundary of the Road Reserve were also removed. One of the risers were installed using asbestos sheeting as formwork between the concrete blocks. The riser was loaded directly into skip bins after the removal for offsite disposal as "Special Waste – Asbestos" (refer to **Photographs 4-7**). ACM debris was also noted in the fill material surrounding one stormwater risers and was removed and placed directly into designated skip bins for subsequent offsite disposal as asbestos waste. Note that after removing the stormwater pipes, the trenches were further excavated down to apparent natural soil. The resultant trench was visually inspected for visible ACM debris. Concrete waste generated from the removal of stormwater infrastructure were inspected for any sign of ACM prior to being placed into a stockpile to be disposed of as Commercial Waste (general solid waste) at the SBWMF. Stormwater pipes and one concrete riser were also located in Lot C. The locations of the pipes are shown in **Figure 2 – Maps 1 to 5.** The stormwater pipes were removed by excavating the soils located above the pipes and inspected for visible ACM during the spoil removal. The spoil was stockpiled adjacent to the excavated trench. The spoil and trenches were visually inspected for visible ACM following the removal of stormwater pipes. Validation samples were also collected from the walls of the resultant trenches. The trenches were backfilled with the same excavated soils once inspections confirmed no visual evidence of ACM were present. **3) Communication services** After the removal of fill material (approximately 0.6 mbgl) from the "Known Asbestos Impact Area", the communication cables and conduits located within this area were removed. Fill material (i.e., reworked natural soils) above the communication services were removed first and stockpiled adjacent to the resultant trench. The excavated soils were visually inspected for visible ACM during the soil removal. After the removal of communications services, the resultant trenches were extended to apparent natural soil. The resultant trenches were inspected for visible ACM and backfilled when visually cleared. The trenches were backfilled with the spoil removed during the removal of the communication pipes/cables.

2	ASBESTOS INSPECTION DETAILS	
		Communications cables and conduits were also removed from outside the "Known Asbestos Impact Area" in the Road Reserve and Lot C. Most communication cables and conduits were located at a maximum depth of 0.5 mbgl. The resultant trenches and spoil were visually inspected by the environmental consultant and once deemed to be cleared of visual evidence of ACM, were backfilled (refer to **Photo 8**). **4) Water distribution pipes** The water distribution pipes were located at a maximum depth of 0.7 mbgl at the centre of the Road Reserve and extended north – south of the Site (refer to **Figure 2 – Maps 1 to 5**). Some additional water pipes were also connected to the main water main and extended towards the western boundary of the Road Reserve. After the removal of fill material (approximately 0.6 mbgl) from the "Known Asbestos Impact Area", the water distribution pipes within this area were removed. A fire hydrant pipe constructed out of ACM was found within the "Known Asbestos Impact Area". Care was taken when removing this pipe to prevent it from being damaged and causing a release of ACM debris. Fill material surrounding this asbestos pipe and the asbestos pipe itself were placed directly into the designated skip bins for offsite disposal as "Special Waste – Asbestos) at the SBWMF. After the removal of the asbestos pipe, the resultant trench was visually inspected for ACM debris and judgemental soil samples were also collected for validation purposes (refer to **Photographs 18-19**). Water services were also removed from outside the "Known Asbestos Impact Area" in the Road Reserve and Lot C. The excavated soils were stockpiled adjacent to the trenches temporarily and the soils were inspected for visible ACM debris. After the water services were removed, the resultant trenches were visually inspected by the environmental consultant and once deemed to be cleared of visual evidence of ACM, were backfilled (refer to **Photographs 9-10**). **5) Electrical services** After the removal of fill material (approximately 0.6 mbgl) from the "Known Asbestos Impact Area", the electrical cables and conduits located within this area were removed. The electrical cables and conduits were located to a maximum depth of 0.7 mbgl across the Site (refer to **Figure 2 – Maps 1 to 5**). An asbestos pipe being used as a conduit for electrical cables, was found in the southern end of the Road Reserve at a depth of 0.8 mbgl. Care was taken when removing this pipe to prevent it from being damaged and causing a release of asbestos fibres. Water was used to suppress any dust generated during the removal of this pipe by the licensed asbestos removalist. Fill material surrounding this asbestos pipe and the asbestos pipe itself were placed directly into the designated skip bins for offsite disposal as "Special Waste – Asbestos) at the SBWMF. After the removal of the asbestos pipe, the resultant trench was visually inspected for ACM debris and judgemental soil samples were also collected (refer to **Photographs 16-17**). Electrical services were also removed from outside the Known Asbestos Impact Area in the Road Reserve and Lot C. The excavated soils were stockpiled adjacent to the trenches temporarily and the soils were carefully inspected for visible ACM debris. After the electrical services were removed, the resultant trenches were visually inspected by the environmental consultant and once deemed to be cleared of visual evidence of ACM, were backfilled (refer to **Photographs 11-12**). **6) Sewer pipes (PVC and concrete) and concrete risers**

2	ASBESTOS INSPECTION DETAILS	
		After the removal of fill material (approximately 0.6 mbgl) from the "Known Asbestos Impact Area", the abandoned sewer pipes located within this area were removed. The sewer pipes across the Site at the Road Reserve and Lot C were located to maximum depth of 1.8 mbgl. ACM material was noted in one of the sewer risers located within this area. Fill material around this riser was removed and placed directly into designated skip bins for appropriate offsite disposal. After the removal of the sewer services within this area, the resultant trenches were visually inspected for ACM debris. Sewer services were also removed from outside the "Known Asbestos Impact Area" in the Road Reserve and Lot C. ACM debris were noted in only one sewer trench outside the "Known Asbestos Impact Area". The ACM debris and approximately $2m^3$ of surrounding soil were removed and placed into designated skip bins for offsite disposal. The resultant excavation was visually inspected for ACM debris and validation samples were collected from the walls of the excavation. For the remaining sewer services located outside the "Known Asbestos Impact Area", the excavated soils were stockpiled adjacent to the trenches temporarily and the soils were carefully inspected for visible ACM debris. After the services were removed, the resultant trenches were visually inspected by the environmental consultant and once deemed to be cleared of visual evidence of ACM, were backfilled (refer to **Photographs 13-15**).

3	CLEARANCE INSPECTION – VISUAL	
3.1	Method:	Visual inspections were undertaken by a suitably qualified environmental consultant from SLR Consulting Australia Pty Ltd (SLR) of the final excavated area for the "Known Asbestos Impact Area" and trenches created after the removal of abandoned services at the Site. The base and walls of the excavation and trenches were visually inspected for ACM debris and representative soil samples were collected from the walls of excavation in accordance of the RAP. Analytical results are discussed in the validation report that details the remediation works undertaken at the Site. Asbestos material encountered during the removal of abandoned underground services were removed in accordance with the Code of Practice How to Safely Remove Asbestos 2011. Refer to the **Figure 3 – Maps 1 to 5** for the areas where visual clearances for asbestos related impact have been undertaken at the Site.
3.2	Visual Summary:	It is the opinion of Robin Birua of SLR that the excavated area and trenches associated with the removal of abandoned underground services mentioned in Section 2.6, have been visually inspected, as far as reasonably practicable and are considered to be free of visible ACM debris at surfaces inspected (i.e., walls and bases of the excavations/trenches). Refer to **Appendix B** for representative photographs.
3.3	Limitations:	It should however be noted that: • The Visual Inspection and Clearance Certificate are limited to accessible, visible surfaces as detailed in **Section 2.6** only. • Inspections are conducted in a conscientious and professional manner. The nature of the task and the likely disproportion between any damage or loss which might arise from the work or Clearance Certificate prepared and the cost of our services, is such that SLR cannot guarantee that all asbestos materials/issues of concern have been identified and/or addressed.

3	CLEARANCE INSPECTION – VISUAL	
		• Unless specified in this Clearance Certificate, this Clearance Certificate does not guarantee that the dust present in or around those areas mentioned in **Section 2.3** and **Section 2.6** of this Clearance Certificate are free of asbestos contamination. The inspection is for visible ACM debris as detailed in **Section 2.6** only. • It is possible that ACM are present in areas that were inaccessible/visually obscured during the inspection. If any ACM or assumed ACM are encountered on site, access to the materials should be appropriately restricted and advice sought from a suitably qualified and experienced consultant. • SLR accepts no responsibility or liability for the completeness of the removal by the appointed licensed asbestos removal contractor.

4	ASBESTOS AIRBORNE FIBRE MONITORING	
4.1	Background Monitoring:	Air monitoring for airborne fibres was conducted for each day intrusive works were carried out as part of the remediation works. Control (as required) and background airborne fibre monitoring was conducted, in general accordance with Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust, 2nd Edition [NOHSC: 3003 (2005)].
4.2	Clearance Monitoring:	Clearance airborne fibre monitoring was not requested by the Client. It therefore does not form part of this Clearance Certificate.
4.3	Results:	The analysis of all asbestos airborne fibre monitoring was undertaken by SLR at our NATA accredited laboratory. All airborne asbestos monitoring results showed less than the minimum detection limit of the method used which is 0.01 fibres/mL (refer to the SLR Airborne Asbestos Monitoring Report, Ref: 680.10679.0000-JLF-63 through to 680.10679.0000-JLF-92).

5	RE-OCCUPATION	
5.1		**It is the opinion of SLR that the area as detailed in Section 2.3 of this Clearance Certificate is fit for re-occupation and for normal works to proceed**. The asbestos removal work area and the surrounding area have been inspected, as far as reasonably practicable, and are considered to be free of visible assumed or suspected asbestos debris. Within the scope of works, all asbestos has been removed as per **Section 2.6** of this Clearance Certificate (please note the limitations in **Section 3.3**). While SLR carries out the work to the best of our ability, we totally exclude any loss or damages which may arise from services provided to the Client and/or associated parties. This Clearance Certificate and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

APPENDIX A

Figures

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Project No.:	680.10679
Date:	24-Jun-2020
Drawn by:	Sarah Doherty
Scale:	1:4,000
Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 52

LEGEND

Project Area

Site Area

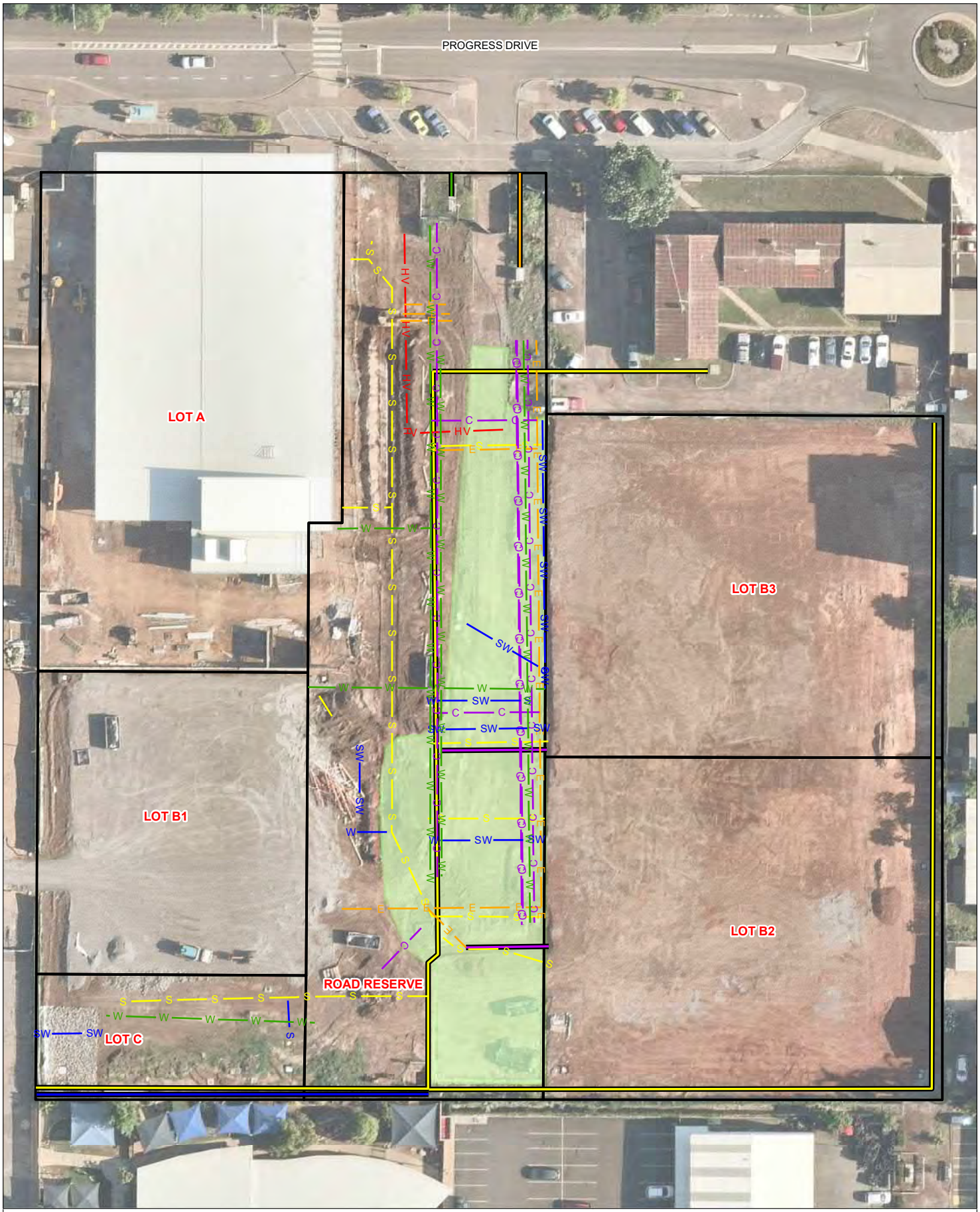
N
W E
S

Imagery sourced from Nearmaps June 2020

Figure 1

0 35 70 140 Metres

John Stokes Square - Project Area Locality



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Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:800 at A4
Project Number:	680.10679
Date:	15-Feb-2021
Drawn by:	JG

SLR

Asbestos Area Excavation

Proposed Allotment Boundaries

Underground Services

- Asbestos
- Live Stormwater
- Live Sewer
- Live Electrical & Communication Cable
- Live Water Pipe

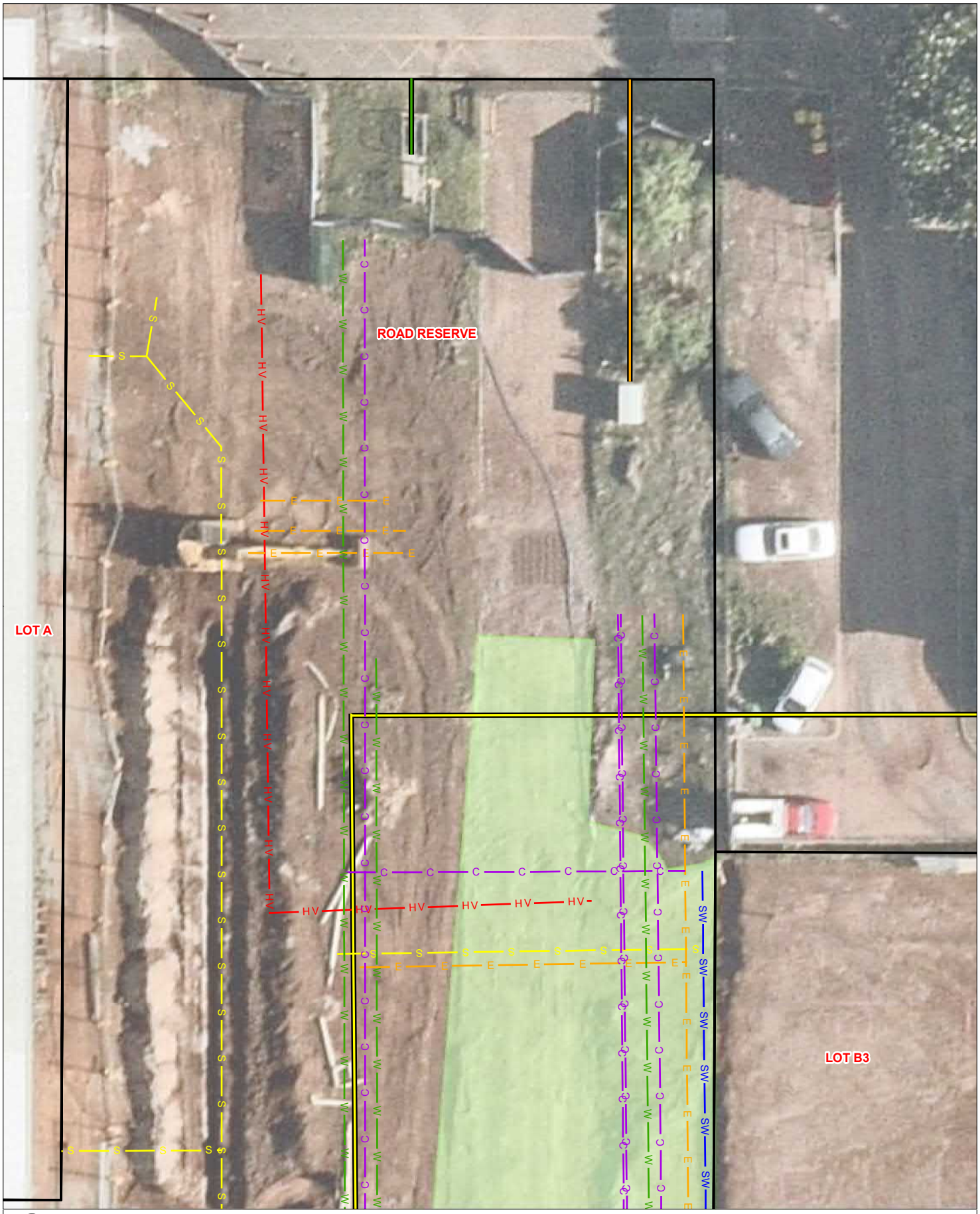
- E — Electrical
- HV — High Voltage
- W — Water
- SW — Stormwater
- C — Communication
- S — Sewer

JOHN STOKES SQUARE

Locations of the Underground Services and the Asbestos Excavation Area

FIGURE 2 - Map 1 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680010679 Underground Services and Excavation Area.mxd



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JOHN STOKES SQUARE

Locations of the Underground Services and the Asbestos Excavation Area

FIGURE 2 - Map 2 of 5

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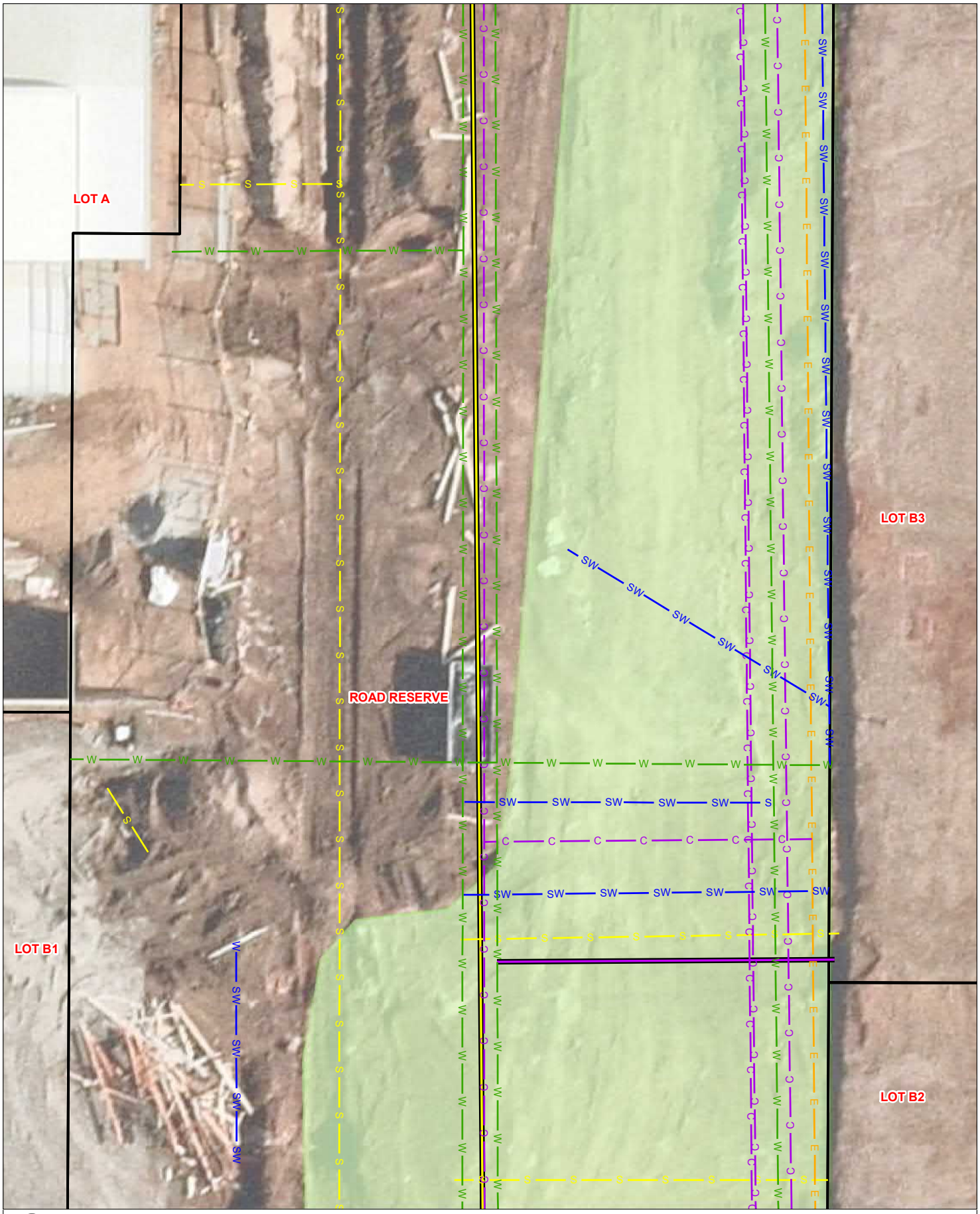

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JOHN STOKES SQUARE

Locations of the Underground Services and the Asbestos Excavation Area

FIGURE 2 - Map 3 of 5

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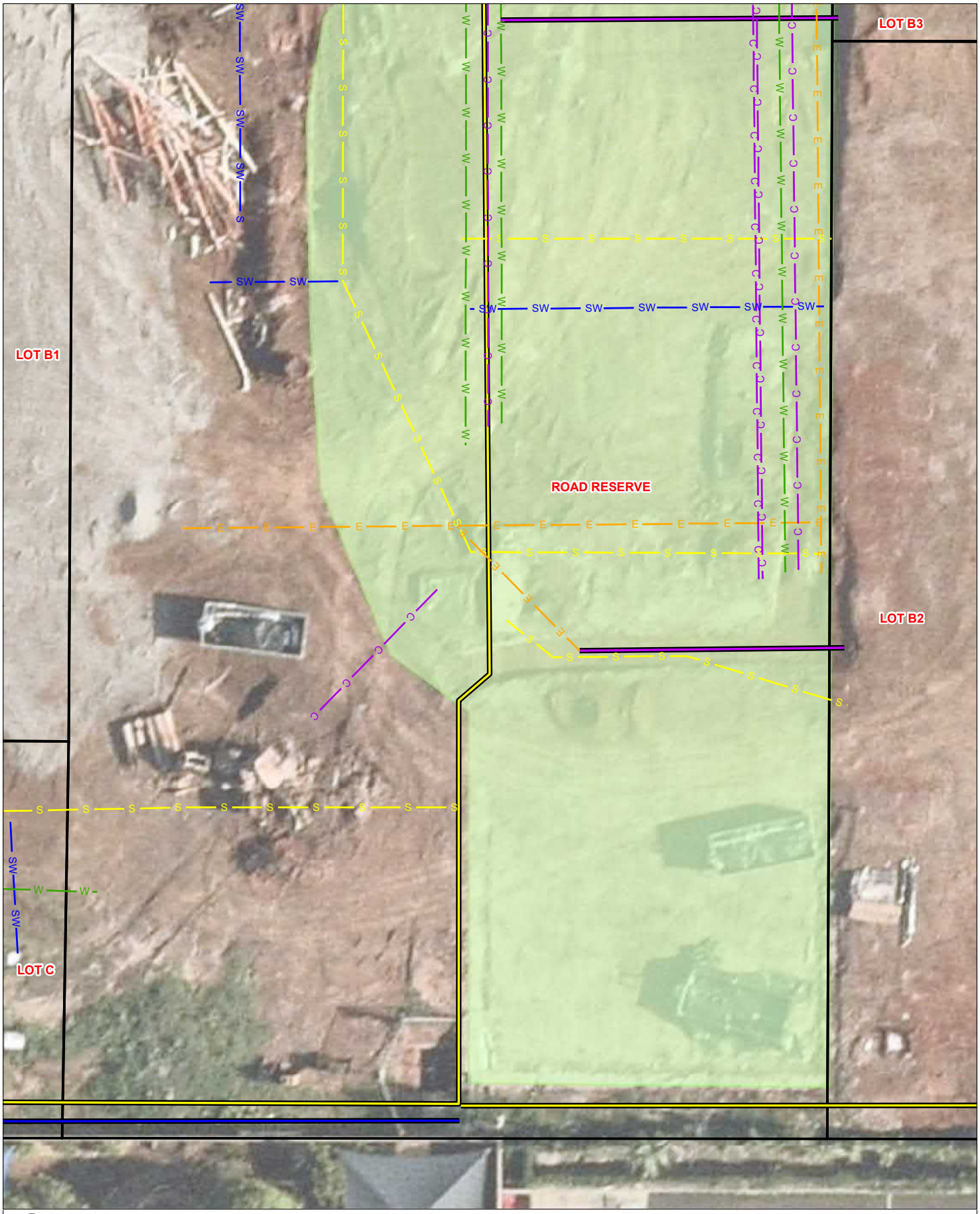

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JOHN STOKES SQUARE

Locations of the Underground Services and the Asbestos Excavation Area

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JOHN STOKES SQUARE

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FIGURE 2 - Map 5 of 5

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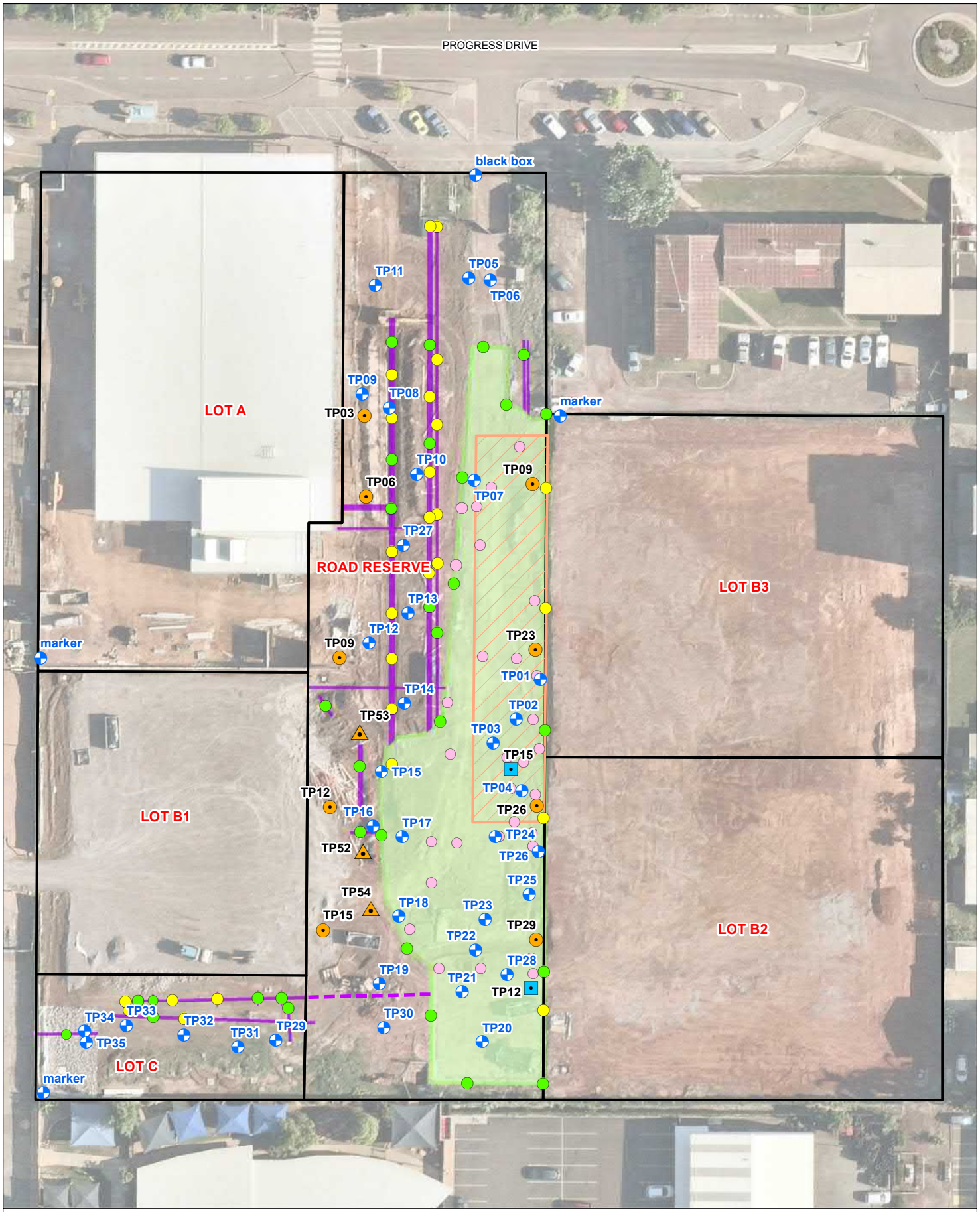

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Project Number:	680.10679
Date:	15-Feb-2021
Drawn by:	JG

SLR

- Greencap's Test Pit Locations (ref: DSI, Greencap 2019)
- Greencap's Test Pit Locations (ref: Additional Soil Investigation, Greencap 2019)
- Agon's Test Pit Locations (ref: DSI, Agon 2020)
- SLR's DSI test pit locations (ref: DSI, SLR 2020)
- Proposed Allotment Boundaries
- Infrastructure removed when SLR was not on site
- Services Excavation
- Asbestos Excavation
- Known Asbestos Impact Area

Validation Sampling Locations

- RR-Val (Base Samples)
- RR-Wall (Wall Samples)
- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Visual Clearance Areas and Validation Sample Locations

FIGURE 3 - Map 1 of 5

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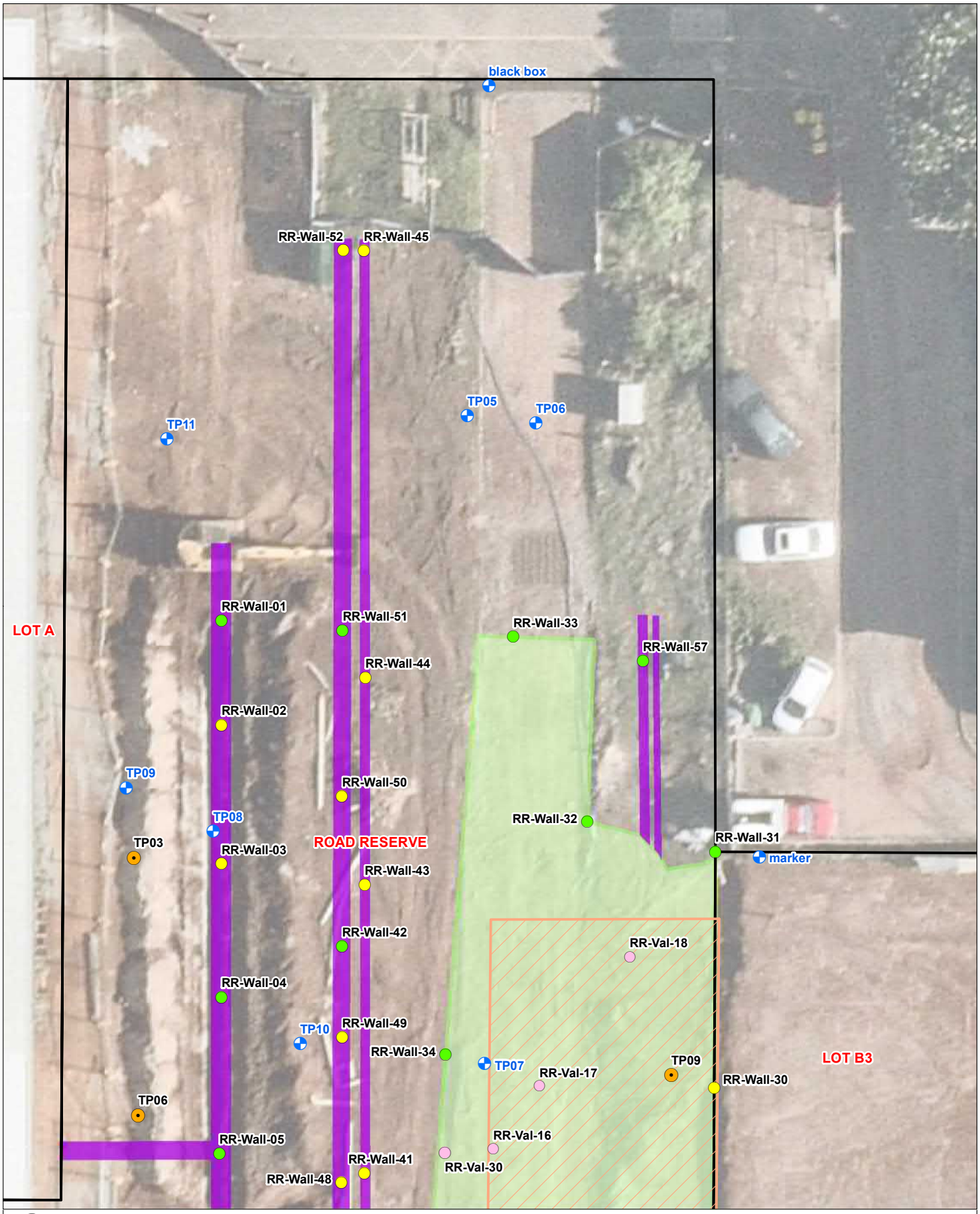

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- RR-Wall (Wall Samples On Hold)

JOHN STOKES SQUARE

Visual Clearance Areas and Validation Sample Locations

FIGURE 3 - Map 2 of 5

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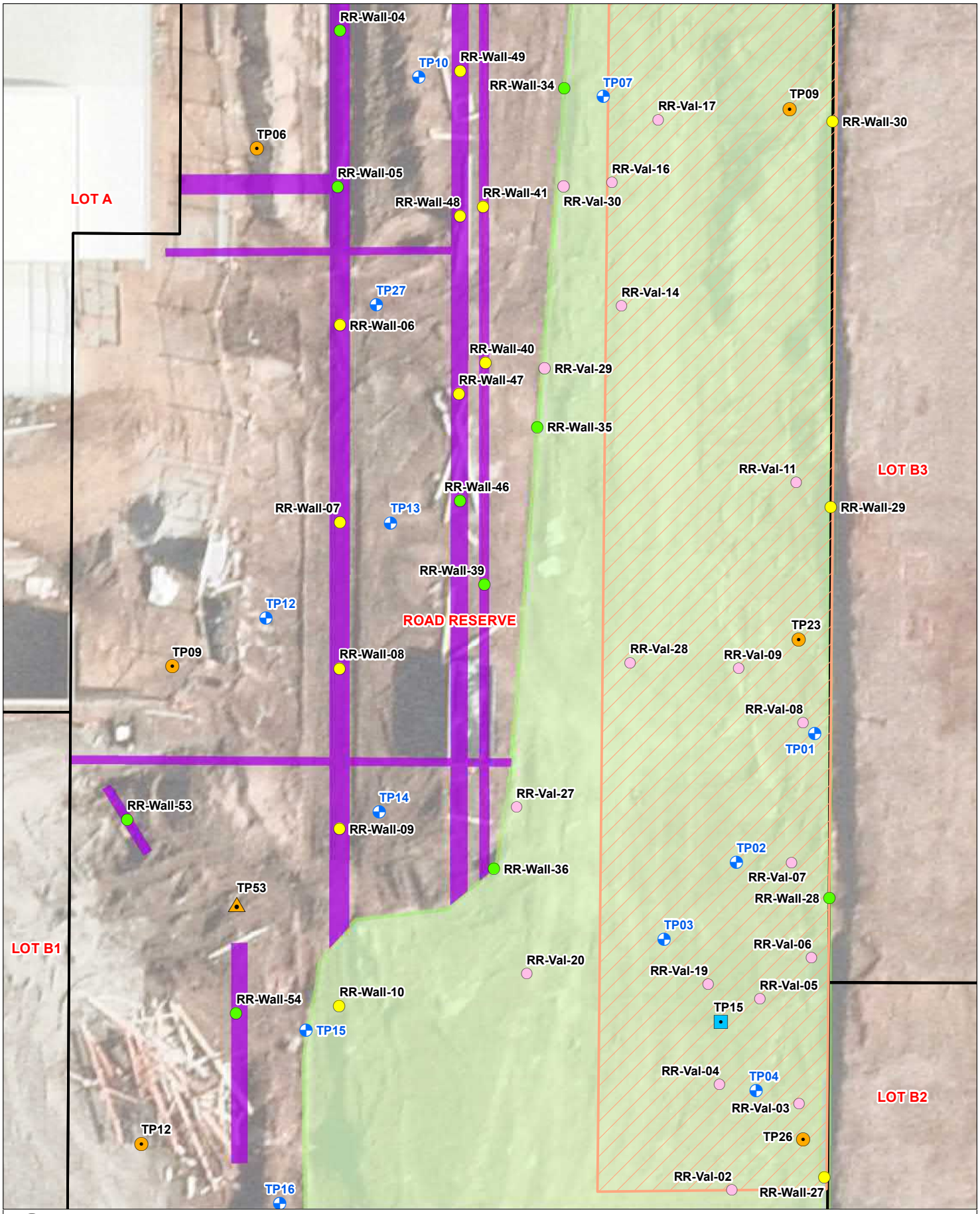

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JOHN STOKES SQUARE

Visual Clearance Areas and Validation Sample Locations

FIGURE 3 - Map 3 of 5

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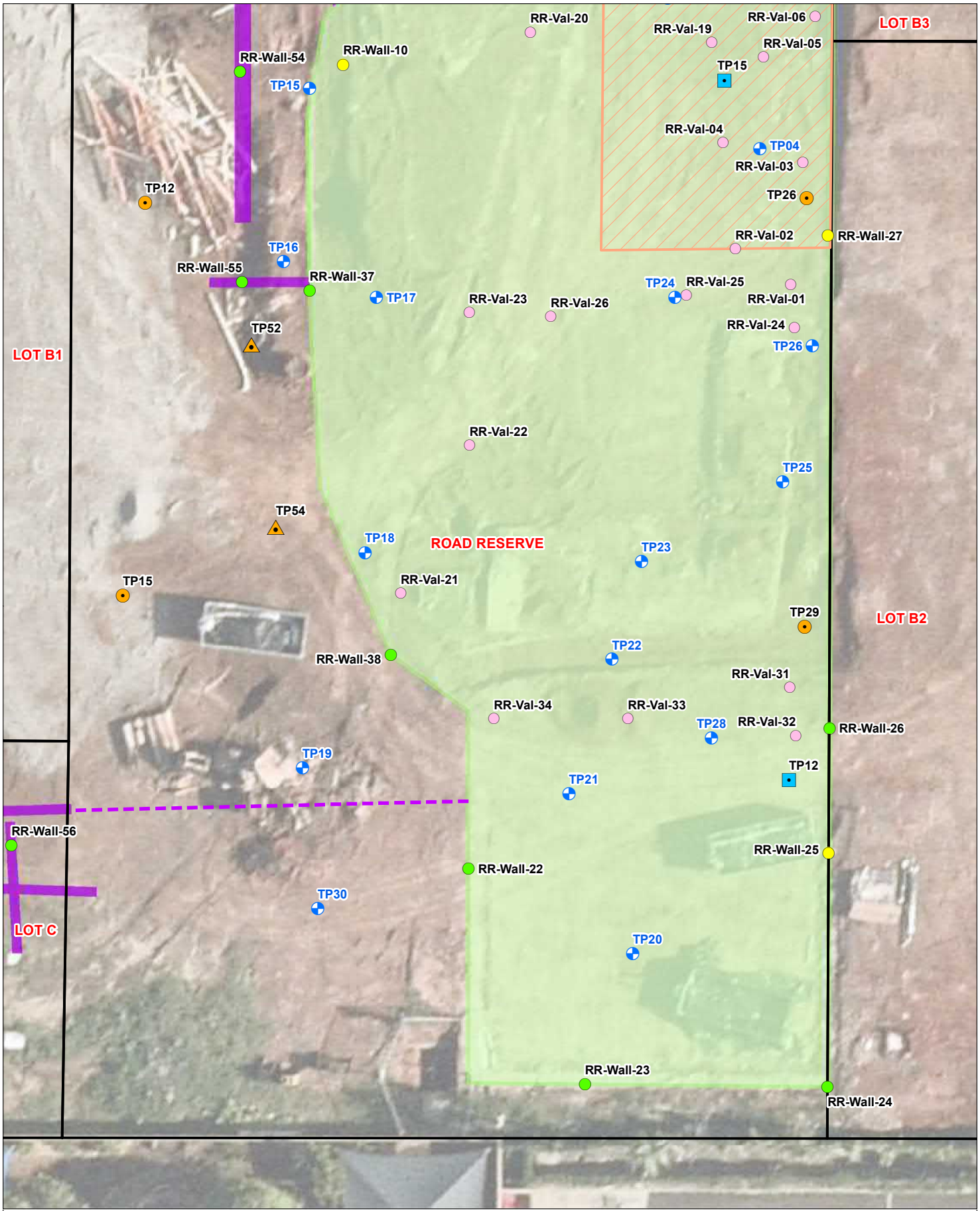

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JOHN STOKES SQUARE

Visual Clearance Areas and Validation Sample Locations

FIGURE 3 - Map 4 of 5

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JOHN STOKES SQUARE

Visual Clearance Areas and Validation Sample Locations

FIGURE 3 - Map 5 of 5

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Validation Sampling Locations.mxd

APPENDIX B

Representative Photographs

Photo 1 Excavated area following the removal of fill materials from the known asbestos impact area in the Road Reserve.

Photo 2 Excavated area following the removal of fill materials from the known asbestos impact area in the Road Reserve.

Photo 3 Extended excavated area outside the known asbestos impact area during the removal of asbestos contaminated soils.

Photo 4 Represents the trench after the removal of concrete stormwater pipes located the eastern boundary of the Road Reserve.

Photo 5 Represents the AC sheets were used as a foam material in between the concrete slabs in the stormwater riser

Photo 6 Represents a trench after the removal of stormwater pipe in Lot C

Photo 7 Represents a trench during the removal of stormwater pipes. The stormwater pipe was located at a depth of 0.8 mbgs.

Photo 8 Represents the removal of communication conduit.

Photo 9 Represents a trench after the removal of a water pipes

Photo 10 Represents a water supply pipe that was located at the centre of the Road Reserve extended north – South of the Site.

Photo 11 Represents electrical conduits at the north end of the Road Reserve located at a depth of 0.7 mbgs.

Photo 12 Represents electrical conduits located along the western boundary of the Road Reserve at a depth of 0.7 mbgs

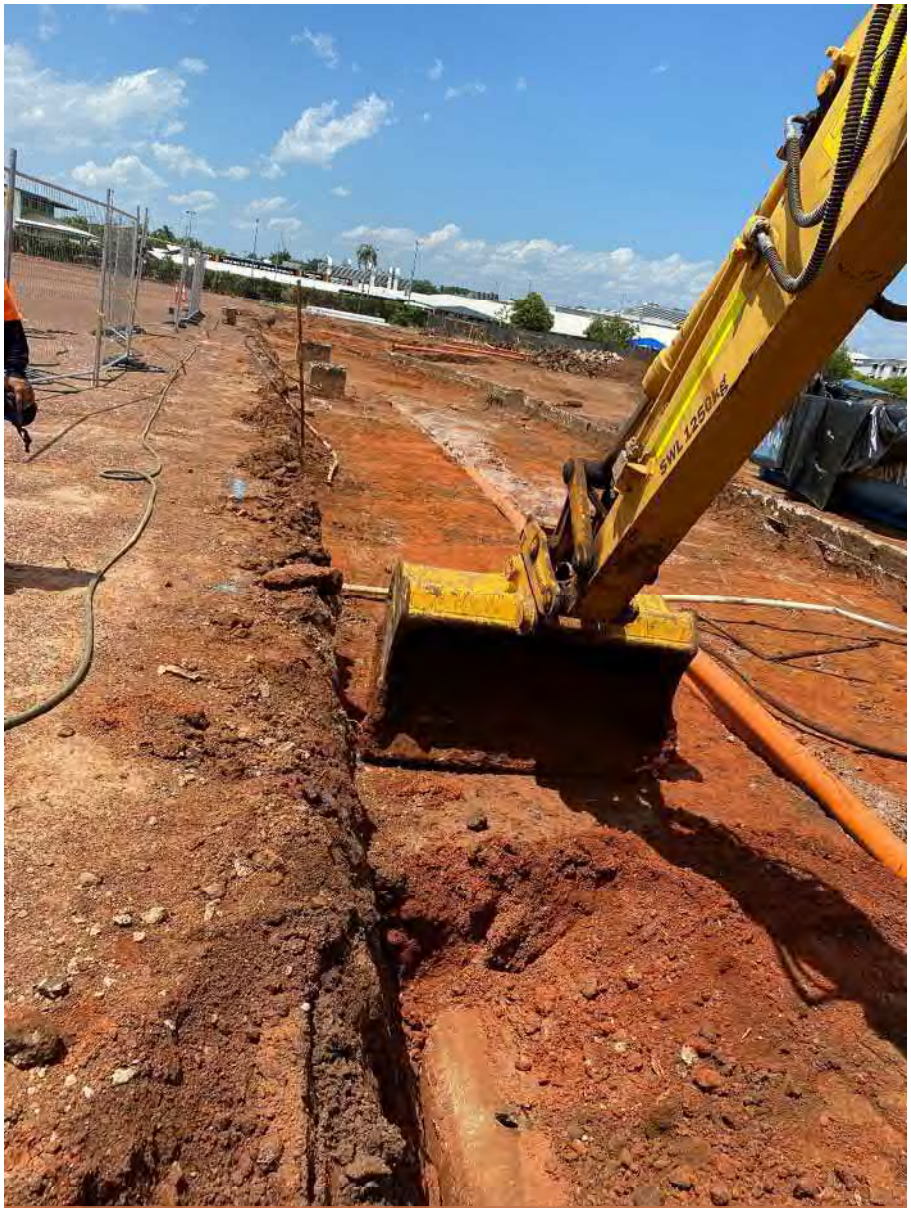

Photo 13 Represents a trench after the removal of PVC sewerage pipes and the associated concrete risers

Photo 14 Represents the concrete riser associated with the PVC sewerage pipes located the South – West corner the Road Reserve. ACM debris was encountered in the fill material at the sewer riser.

Photo 15 Represents a trench located along the western boundary of the Road Reserve

Photo 16 Represents a trench after the removal of an electrical conduit containing asbestos materials.

Photo 17 Represents a trench during a visual inspection and soil sampling after the removal of asbestos conduit

Photo 18 Represents a fire hydrant pipe containing asbestos material

Photo 19 Represents the fire hydrant trench excavated to a natural soil after the removal of the conduit

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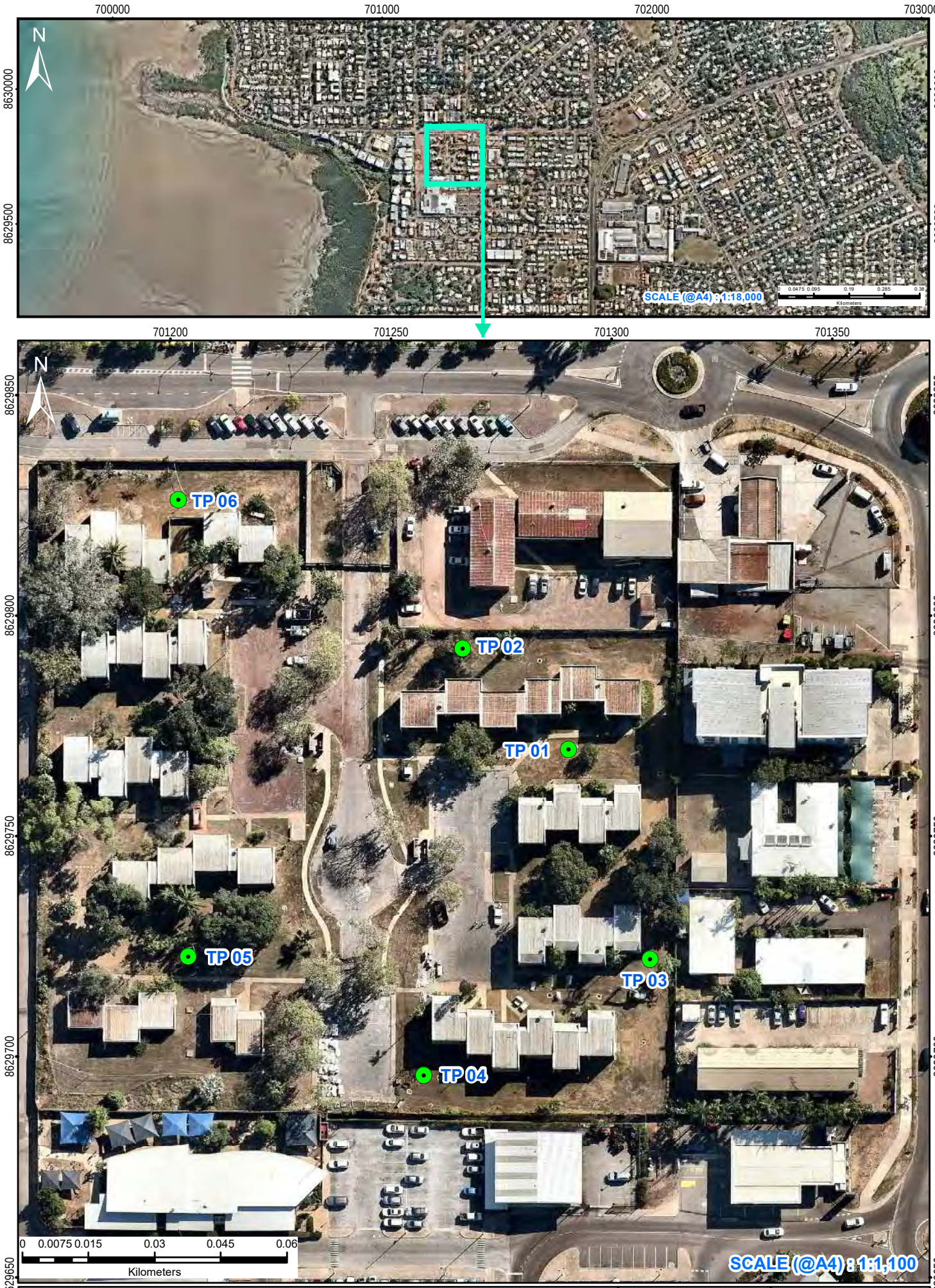
APPENDIX C

Analytical Results from Previous Environmental Investigations

Limited Soil Investigation (Greencap, July 2019)



Project: Soil Contamination Investigation – John Stokes Square, 47 Progress Drive, Nightcliff NT		Coordinate System: GDA_1994_MGA_Zone_52	GREENCAP Going Further in Managing Risk
Figure:1 Site Plan and Test Pit Locations	Job Ref: J163245	Date: July 2019 Author: Sam.K. Checked: Stuart C.	

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Project: Soil Contamination Investigation – John Stokes Square, 47 Progress Drive, Nightcliff NT		Coordinate System: GDA_1994_MGA_Zone_52	GREENCAP
Figure:2 Site and Sub-Slab Surface Soil Sample Locations	Job Ref: J163245	Date: July 2019	Author: Sam.K.	Checked: Stuart C.

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3.2 Soil Sampling Methodology

A total of eight near surface soil samples were collected from the footprint of the recently demolished residential unit block. Samples were collected with the use of a clean hand trowel and placed directly into laboratory-supplied acid-rinsed and solvent-washed screw top glass jars and filled to the top to eliminate headspace. Sample jars were stored immediately in a chilled portable container and accompanied by completed Chain of Custody (CoC) forms for dispatch to National Association of Testing Authorities (NATA) accredited laboratories within acceptable holding times for the scheduled analyses.

Six test pits were excavated across the site to a maximum depth of one metre below ground level (mbgl) with the use of a mechanical excavator supplied by NTEX. 10 L bulk soil samples were collected from each layer of distinct fill material (plus one sample collected from natural or reworked natural material) and screened on site through a 7 x 7 mm sieve with any pieces of suspected ACM collected for subsequent laboratory analysis. Sub-samples (500 mL) of screened fill material were placed in plastic zip lock (double) bags for analysis of AF and/or FA.

A fresh pair of disposable nitrile gloves were worn by the sampler when collecting each individual sample and soil conditions at all locations were logged by an experienced Greencap environmental consultant.

Quality assurance and quality control (QAQC) samples including replicate samples and field, rinsate and trip blanks were also collected and analysed. A discussion of the QAQC procedures is presented in **Section 4**.

3.3 Soil Analytical Program

3.3.1 Chemical Analyses

Eight surface soil samples collected from the footprint of the residential unit block were submitted to a NATA-accredited laboratory and analysed for OCP and heavy metal concentrations.

The laboratories used for analysis of OCP and heavy metals in soil samples were Eurofins-MGT (primary laboratory) and ALS Laboratory Environmental (ALS) (secondary laboratory). Both laboratories hold NATA accreditation and the aforementioned analyses are within their NATA registration.

3.3.2 Asbestos

Potential ACM fragments were analysed for asbestos content (including total weight). Sub-samples of soil collected were analysed for AF and/or FA as per Australian Standard AS4964-2004 Method for the qualitative identification of asbestos in bulk samples (AS4964-2004).

The laboratory used for the asbestos identification was Greencap's in-house asbestos identification laboratory, approved by the NATA for asbestos identification.

3.4 Assessment Criteria / Investigation Levels

Analytical results for termiticide residues (including OCP and heavy metals) have been compared with criteria specified in the NEPM. As a large portion of the site will continue to be used for residential purposes, the relevant investigation exposure settings are considered to be:

- Table 1A(1) Health-based Investigation Levels (HILs) for soil contaminants - Residential A; and
- Generic and calculated Ecological Investigation Levels (EILs) for soil contaminants - Urban Residential/public open space. The EILs were calculated using the NEPM EIL calculation toolkit and were based on additional physico-chemical analytical data obtained from the near surface soil samples collected from the footprint of the demolished residential units.

Asbestos results have been compared with health screening levels specified in Table 7, Section 4, Schedule B1 of the NEPM, specifically that for Residential A sites; however, it should be noted that only one health screening level is appropriate for assessment of friable asbestos in soil on sites designated for all uses. Bonded ACM in soil investigation criteria was 0.01% and FA and AF investigation criteria was 0.001% by weight (w/w).

3.5 Soil Investigation Results

3.5.1 Soil Conditions

Near surface soils encountered in the residential unit footprints typically consisted of brown, soft sandy Clay and light brown, loose Sand fill materials.

Fill materials encountered during test pitting typically consisted of a surface layer of dark grey, medium density silty Sands at depths ranging from 0.0 – 0.2 mbgl and underlain by greyish brown, firm sandy Silts or stiff sandy Silts containing white, mottled yellow siltstone cobbles at depths ranging from 0.0 – 0.3 mbgl. Fill materials were encountered to a maximum depth of 0.8 mbgl at Test Pit 06 and included dark greyish brown, soft sandy Silts (from 0.0 – 0.8 mbgl). Fill materials at all locations were underlain by natural or reworked natural brownish red, soft silty Clays.

Potential ACM fragments were identified in Test Pit 02 (0.1-0.2 mbgl) and Test Pit 04 (0.2-0.3 mbgl) following on-site screening of 10 L bulk samples from each layer of fill. The fragments were collected into separate zip-lock (double) bags, examined and deemed friable and subsequently analysed in Greencap's NATA-accredited laboratory for asbestos presence/absence. No other fragments of potential ACM were detected at remaining test locations.

No staining or odours were encountered in any of the residential unit footprint or in any of the test pits. Surface soil and test pit logs are presented in **Appendix A**.

3.5.2 Analytical Results

OCP were detected in seven of the eight surface soil samples and included chlordanes, aldrin, dieldrin and heptachlor epoxide. The majority of analytical results were less than the adopted assessment criteria, as summarised below in **Table 1**, with the exception of aldrin + dieldrin in samples collected from three locations (SS01-3 (7.27 mg/kg) , SS02-3 (8.3 mg/kg) and SS02-4 (15 mg/kg)).

Heavy metals were detected in all eight surface soil samples and included arsenic, chromium, copper, lead, nickel and zinc. All heavy metal analytical results were less than the adopted assessment criteria, as summarised below in **Table 2**.

Table 1: OCPs in Surface Soil Results Summary

	OCP Concentrations (mg/kg)				
	Chlordanes - Total	Aldrin	Dieldrin	Aldrin + Dieldrin	Heptachlor epoxide
NEPM 2013 Table 1A(1) HILs for soil contaminants - Residential A	**50**	**-**	**-**	**6**	**10**
Number of Samples	8	8	8	8	8
Number of Detects	1	4	7	7	2
Minimum Concentration	<0.01	<0.05	<0.05	<0.05	<0.05
Maximum Concentration	0.3 (*SS01-1*)	3.0 (SS02-4)	12 (SS02-4)	15 (SS02-4)	1.6 (SS01-1)
Number of HIL exceedances	0	-	-	3	0

Table 2: Heavy Metals in Surface Soil Results Summary

	Heavy Metal Concentrations (mg/kg)									
	Arsenic	Cadmium	Chromium (III)	Chromium (VI)	Chromium (Tot)	Copper	Lead	Mercury	Nickel	Zinc
NEPM 2013 Table 1A(1) HILs for soil contaminants - Residential A	**100**	**20**	**-**	**100**	**-**	**6,000**	**300**	**40**	**400**	**7,400**
NEPM 2013 Calculated EIL for soil contaminants (Aged) - Urban Residential/ public open space	**100**	**-**	**420**	**-**	**-**	**220**	**1,100**	**-**	**220**	**550**
Number of Samples	8	8	2	2	8	8	8	8	8	8
Number of Detects	8	0	2	0	8	7	8	0	7	8
Minimum Concentration	5.1	<0.4	140	<1	33	<5	6	<0.1	<5	19
Maximum Concentration	31	<0.4	160	<1	250	55	29	<0.1	17	86
Number of HIL exceedances	0	0	-	0	-	0	0	0	0	0
Number of EIL exceedances	0	0	0	-	-	0	0	-	0	0

Two fragments of suspected friable ACM were collected from field screened (7 x 7 mm sieve) 10 L bulk soil samples (Test Pit 02_0.1-0.2 mbgl and Test Pit 04_0.2-0.3 mbgl) and analysed for asbestos, both of which were confirmed as ACM. The fragments of confirmed ACM were weighed and the concentration of friable asbestos material in soil calculated using the following equation as per NEPM:

%w / w asbestos in soil = (% asbestos content x ACM (kg)) / (soil volume (L) x soil density (kg/L))

The concentration of friable ACM calculated in samples of soil collected from test pits TP02 (0.1-0.2 mbgl) and TP04 (0.2-0.3 mbgl) exceeded the health-based assessment criteria.

Eleven sub-samples of soil (≥ 500 mL) were collected from the 10 L (7 x 7 mm) screened samples and analysed for AF and/or FA, none of which were detected at the limit of reporting for the method (AS4964-2004).

The results of the asbestos in soil calculations and asbestos in soil laboratory analytical results are presented below in **Table 3**.

Table 3 – Asbestos in Soil Results

		ACM fragments identified (Y/N)	Bulk weight of Sample	Weight of ACM in sample (g)	Weight of friable asbestos (g)	Friable asbestos content (w/w %)	Asbestos in Soil (w/w %) (AS4964-2004)
ASC NEPM Health Screening Level – AF & FA		**-**	**-**	**-**	**-**	**0.001**	**0.001**
Sample Location	**Depth**						
TP01	0.0-0.1	N	12.5	-	-	-	ND
TP01	0.3-0.4	N	12.5	-	-	-	ND
TP02	0.0-0.1	N	12.5	-	-	-	ND
TP02*	0.1-0.2	Y	12.5	1.39	1.39	0.0111	ND
TP03	0.0-0.1	N	12.5	-	-	-	ND
TP03	0.2-0.3	N	12.5	-	-	-	ND
TP04	0.0-0.1	N	12.5	-	-	-	ND

		ACM fragments identified (Y/N)	Bulk weight of Sample	Weight of ACM in sample (g)	Weight of friable asbestos (g)	Friable asbestos content (w/w %)	Asbestos in Soil (w/w %) (AS4964-2004)
ASC NEPM Health Screening Level – AF & FA		-	-	-	-	0.001	0.001
Sample Location	**Depth**						
TP04**	0.2-0.3	Y	12.5	6.61	5.288	0.0423	ND
TP05	0.0-0.1	N	12.5	-	-	-	ND
TP05	0.15-0.25	N	12.5	-	-	-	ND
TP06	0.0-0.1	N	12.5	-	-	-	ND

* Sample has an assumed asbestos content of 100% based on laboratory assessment

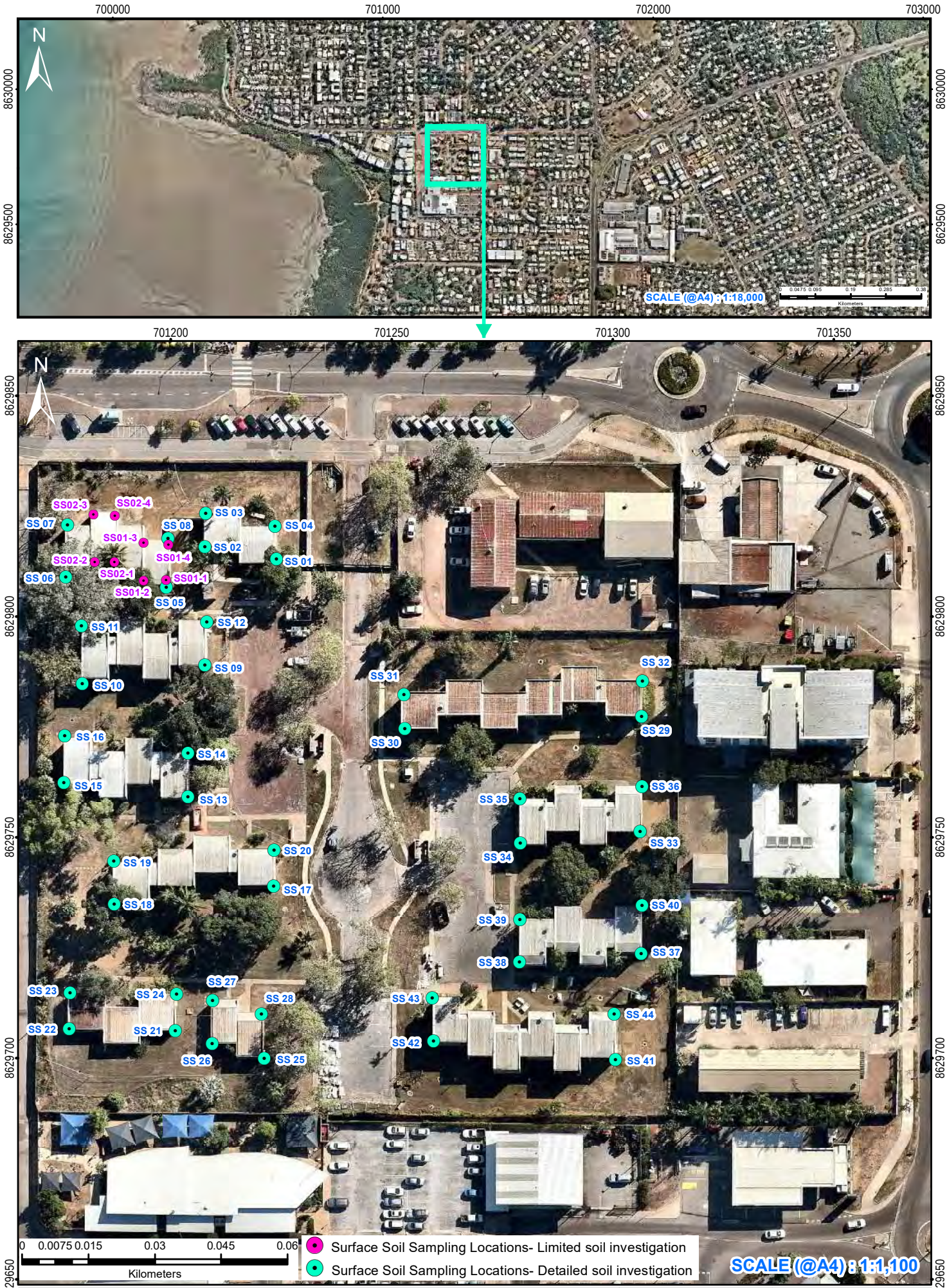
** Sample has an estimated asbestos content of 80% (based on weight of soil and organic material that may have been attached)

ND = Not detected at or above LOR (0.01 %)

A tabulated summary of the reported results is presented in **Attachment 1** at the end of this report. Details of the chemical analysis and asbestos identification test results are provided in the NATA test certificates provided in **Appendix B** and **Appendix C**, respectively.

				Organochlorine Pesticides																									Heavy Metals										Physico-chemical Parameters				
				Chlordanes - Total	DDD	DDE	DDT	a-BHC	Aldrin	b-BHC	d-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Aldrin + Dieldrin	DDT+DDE+DDD	VIC EPA IWRG 621 OCP (Total)	VIC EPA IWRG 621 Other OCP (Total)	Arsenic	Cadmium	Chromium (III)	Chromium (V)	Chromium (Total)	Copper	Iron	Lead	Mercury	Nickel	Zinc	Clay	Conductivity	pH	Total Organic Carbon	Cation Exchange Capacity
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	µS/cm	pH	%	meq/100g
LOR				0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	5	0.05	0.05	0.05	0.1	2	0.4	5	1	5	5	20	5	0.1	5	5	1	10	0.1	0.1	0.05
NEPM 2013 Table 1A(1) HILs for soil contaminants - Residential A				50	-	-	-	-	-	-	-	-	270		-	10	-	-	-	6	-	10	300	20	6	240	-	-	100	20	-	100	-	6000	-	300	40	400	7400	-	-	-	-	-
NEPM 2013 Calculated EIL for soil contaminants (Aged) - Urban Residential/public open space				-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	420	-	-	220	-	1100	-	220	550	-	-	-	-	-
Type	Sample_ID	Sampled_Date	Lab_Report_#																																								
Surface Soil	SS01-1	26/06/2019	662971-S	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.6	<0.05	<0.05	<1	2	<0.05	<0.05	3.9	5.1	<0.4	-	-	33	13	-	17	<0.1	6.8	61	-	-	-	-	-
Surface Soil	SS01-2	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	2.6	<0.05	<0.05	0.26	18	<0.4	-	-	180	17	-	19	<0.1	17	26	-	-	-	-	-
Surface Soil	SS01-3	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	0.57	<0.05	<0.05	6.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	7.27	<0.05	<0.05	7.27	28	<0.4	-	-	200	30	-	20	<0.1	17	86	-	-	-	-	-
Surface Soil	SS01-4	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.05	<0.05	<0.05	<0.1	24	<0.4	-	-	220	14	-	25	<0.1	15	21	-	-	-	-	-
Surface Soil	SS02-1	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	<0.05	<1	0.61	<0.05	0.86	0.25	11	<0.4	-	-	43	<5	-	6	<0.1	<5	31	-	-	-	-	-
Surface Soil	SS02-2	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	2.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	2.94	<0.05	2.94	<0.1	31	<0.4	160	<1	220	55	110,000	29	<0.1	12	54	14	2300	9.2	0.4	72
Surface Soil	SS02-3	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	7.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	8.3	<0.05	8.3	<0.1	30	<0.4	140	<1	250	11	100,000	26	<0.1	14	19	11	540	8	0.6	15
Surface Soil	SS02-4	26/06/2019	662971-S	<0.1	<0.05	<0.05	<0.05	<0.05	3.0	<0.05	<0.05	12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	15	<0.05	15.05	<0.1	21	<0.4	-	-	190	11	-	20	<0.1	10	25	-	-	-	-	-
Statistical Summary																																											
Number of Results				8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	2	2	8	8	2	8	8	8	8	8	8	8	8
Number of Detects				1	0	0	0	0	4	0	0	7	0	0	0	0	0	0	0	2	0	0	0	7	0	4	4	8	0	2	0	8	7	2	8	0	7	8	8	8	8	8	8
Minimum Concentration				<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.05	<0.05	<0.05	<0.1	5.1	<0.4	140	<1	33	<5	100000	6	<0.1	<5	19	11	540	8	0.4	15
Minimum Detect				0.3	ND	ND	ND	ND	0.24	ND	ND	0.26	ND	ND	ND	ND	ND	ND	ND	0.25	ND	ND	ND	0.61	ND	0.86	0.25	5.1	ND	140	ND	33	11	100000	6	ND	6.8	19	11	540	8	0.4	15
Maximum Concentration				0.3	<0.05	<0.05	<0.05	<0.05	3	<0.05	<0.05	12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.6	<0.05	<0.05	<0.05	<1	15	<0.05	15.05	7.27	31	<0.4	160	<1	250	55	110000	29	<0.1	17	86	14	2300	9.2	0.6	72
Maximum Detect				0.3	ND	ND	ND	ND	3	ND	ND	12	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	15	ND	15.05	7.27	31	ND	160	ND	250	55	110000	29	ND	17	86	14	2300	9.2	0.6	72
Average Concentration				0.081	0.025	0.025	0.025	0.025	0.64	0.025	0.025	3.9	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.25	0.025	0.025	0.5	4.8	0.025	3.4	1.5	21	0.2	150	<1	167	19	105000	20	0.05	12	40	12.5	1420	8.6	0.5	43.5
Median Concentration				0.05	0.025	0.025	0.025	0.025	0.1325	0.025	0.025	2.35	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.5	2.77	0.025	0.4425	0.15	22.5	0.2	150	0.5	195	13.5	105000	20	0.05	13	28.5	12.5	1420	8.6	0.5	43.5
Standard Deviation				0.088	0	0	0	0	1	0	0	4.3	0	0	0	0	0	0	0	0.55	0	0	0	5.1	0	5.5	2.7	9.3	0	-	-	82	16	-	7	0	5.1	24	-	-	-	-	-
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Detailed Soil Investigation (Greencap, September 2019)



Project: Soil Contamination Investigation – John Stokes Square, 47 Progress Drive, Nightcliff NT			Coordinate System: GDA_1994_MGA_Zone_52	GREENCAP
Figure 3: Surface Soil Sample Locations	Job Ref: J163803	Date: August 2019	Author: Sam.K.	Checked: Stuart C.

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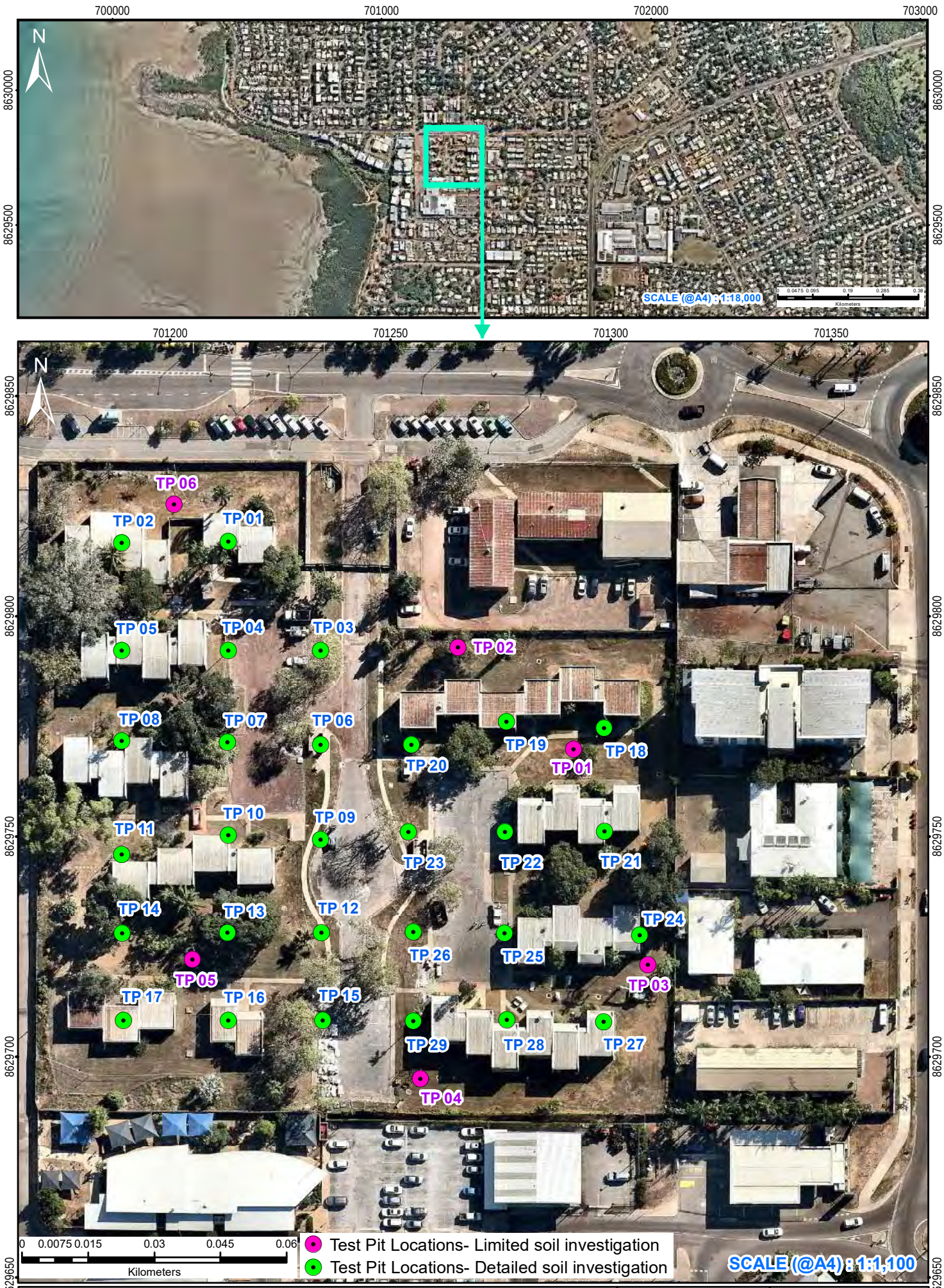

Project: Soil Contamination Investigation – John Stokes Square, 47 Progress Drive, Nightcliff NT			Coordinate System: GDA_1994_MGA_Zone_52	GREENCAP
Figure4: Test Pit Locations	Job Ref: J163803	Date: August 2019	Author: Sam.K.	Checked: Stuart C.

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5 SOIL INVESTIGATION RESULTS

5.1 Soil Conditions

The maximum depth of the investigation was 1.0 metre below ground level (m bgl).

Near surface soils encountered across the footprints of the residential unit block typically consisted fill material comprising light greyish brown, fine sandy silts and fine gravelly sand silts.

Underlying fill material typically consisted of yellowish brown to greyish brown, fine to coarse gravelly sandy (and sandy gravelly) silts at depths ranging from the surface to a maximum depth of 0.9 mbgl (TP09). The western portion of the site noted to have an additional layer of topsoil consisting of light greyish brown sandy silt or fine gravelly sandy silt to a maximum depth of 0.1m bgl (TP09 and TP12). Various inclusions of building rubble (concrete, PVC and plastics) were observed at several of the locations tested. In addition, various fragments of building waste suspected to contain ACM were identified at 13 of the 29 locations tested. It is noted that not all of the suspect material was confirmed to contain asbestos, as discussed further in Section 5.2.2.

All test pits extended into natural soils which comprised clayey, sandy, gravelly silts, generally coloured reddish brown to yellowish brown, observed to the maximum depth of the excavation.

No stained or odorous soils were encountered in any of the sample. Surface soil materials encountered are presented in the soil sample register along with test pit logs in Appendix B.

5.2 Analytical Results

5.2.1 Chemical Results

A tabulated summary of the reported results is presented as Attachment 1 to this report. Details of the testing results are provided in the NATA test certificates presented in Appendix A.

Elevated concentrations of OCPs above the laboratory detection limits were identified in the majority of samples collected from the perimeter of the building footprints. However, all reported results were below the adopted criteria with the exception of the following:

- Sample SS30 reported an elevated Aldrin + Dieldrin concentration of 368.8 mg/kg, exceeding the adopted HIL A of 6 mg/kg
- Sample SS18 reported an elevated heptachlor concentration of 7.8 mg/kg, exceeding the adopted HIL A of 6 mg/kg.

5.2.2 Asbestos

During the investigation, numerous fragments of suspected asbestos materials were identified during the bulk sampling and sieving. However, only fragments of suspect materials collected from the following test pits were confirmed to contain asbestos:

- TP11 (0.0-0.8 mbgl);
- TP12 (0.0-0.55 mbgl);
- TP17 (0.0-0.4 mbgl); and
- TP20 (0.0-0.5 mbgl).

The fragments confirmed as ACM were weighed and the concentration of asbestos material in soil calculated using the following equation as per NEPM:

% w/w asbestos in soil = (% asbestos content x ACM (kg)) / (soil volume (L) x soil density (kg/L))

The results of the asbestos in soil calculations are presented below in Table 3.

Table 3 Asbestos in Soil Results

						Bonded Asbestos in Soil (w/w %)	FA & AF in Soil (w/w %) (AS4964-2004)
					ASC NEPM HSL - Bonded ACM (Res. A)	0.01	-
					ASC NEPM HSL – AF & FA	-	0.001
Test Pit #	**Depth of Fill**	**ACM identified?**	**Weight of Sample (kg)**	**Weight of ACM in sample (g)**	**Weight of asbestos (g)**		
TP01	0.00-0.05	No	15.8	-	-	-	ND
	0.05-0.85	No					
TP02	0.00-0.75	No	12.8	-	-	-	ND
TP03	0.00-0.05	No	15.2	-	-	-	ND
	0.05-0.55						
TP04	0.00-0.05	No	13.3	-	-	-	ND
	0.05-0.55						
TP05	0.00-0.40	No	15.4	-	-	-	ND
TP06	0.00-0.05	No	14.7	-	-	-	ND
	0.05-0.65						
TP07	0.00-0.05	No	15.1	-	-	-	ND
	0.05-0.65						
TP08	0.00-0.05	No	12.2	-	-	-	ND
	0.05-0.40						
TP09	0.00-0.05	No	14.3	-	-	-	ND
	0.05-0.90						
TP10	0.00-0.05	No	14.9	-	-	-	ND
	0.05-0.40						
TP11	0.00-0.80	Yes	16.4	0.78	0.234*	0.0014	ND
TP12	0.00-0.10	Yes	17.1	2.33	0.699*	0.0041	ND
	0.10-0.55						
TP13	0.00-0.35	No	11.2	-	-	-	ND
TP14	0.00-0.05	No	15.3	-	-	-	ND
	0.05-0.30						
TP15	0.00-0.05	No	15.6	-	-	-	ND
	0.05-0.25						
TP16	0.00-0.65	No	16.4	-	-	-	ND
TP17	0.00-0.40	Yes	17.4	9.03	2.709*	0.0156	ND
TP18	0.00-0.25	No	14.7	-	-	-	ND
TP19	0.00-0.20	No	14.5	-	-	-	ND
TP20	0.00-0.50	Yes	10.2	0.61	0.183*	0.0018	FA = 0.0047 % w/w
TP21	0.00-0.75	No	16.6	-	-	-	ND
TP22	0.00-0.60	No	14.2	-	-	-	ND
TP23	0.00-0.45	No	13.0	-	-	-	ND
TP24	0.00-0.40	No	16.9	-	-	-	ND
TP25	0.00-0.30	No	13.6	-	-	-	ND

						Bonded Asbestos in Soil (w/w %)	FA & AF in Soil (w/w %) (AS4964-2004)
					ASC NEPM HSL - Bonded ACM (Res. A)	0.01	-
					ASC NEPM HSL – AF & FA	-	0.001
Test Pit #	Depth of Fill	ACM identified?	Weight of Sample (kg)	Weight of ACM in sample (g)	Weight of asbestos (g)		
TP26	0.00-0.70	No	16.4	-	-	-	ND
TP27	0.00-0.65	No	15.4	-	-	-	ND
TP28	0.00-0.80	No	16.6	-	-	-	ND
TP29	0.00-0.50	No	16.9	-	-	-	ND

* Sample has an assumed asbestos content of 30% based on laboratory assessment

ND = Not detected at or above LOR

The concentration of bonded ACM calculated in the sample collected from test pit TP17 (0.0-0.4 mbgl) was 0.016 % w/w, which exceeded the health-based assessment criteria for residential land use; however, the concentration of bonded ACM in samples of soil collected from test pits TP17 and TP20 was less than the health-based assessment criteria for residential land use.

Sub-samples of soil were collected from the 10 L (7 x 7 mm) screened samples and analysed for AF and/or FA in accordance with Australian Standard AS4964-2004: '*Method for the Qualitative Identification of Asbestos in Bulk Samples'*. One sample (TP20) reported friable asbestos at a concentration of 0.0047 % w/w, greater than the health-based assessment criteria for all land use types.

Details of the asbestos identification and asbestos in soil test results are provided in the NATA-accredited certificates of analysis provided in Appendix A.

Detailed Soil Investigation

Option Group Pty Ltd t/a NTEX

John Stokes Square, 47 Progress Drive, Nightcliff NT

Attachment 1: Soil Analytical Results Tables

					Organochlorine Pesticides																								Metals												Physico-chem					
					Chlordanes - Total	DDD	DDE	DDT	a-BHC	Aldrin	b-BHC	d-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Endrin Ketone	g-BHC (Lindane)	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Aldrin + Dieldrin	DDD+DDE+DDT	Arsenic	Cadmium	Chromium III	Chromium VI	Chromium (III+VI)	Copper	Iron	Lead	Mercury	Nickel	Zinc	Moisture (dried @ 103°C)	% Clay	Conductivity	pH	Total Organic Carbon	Cation Exchange Capacity
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	µS/cm	pH	%	meq/100g
LOR																											2	0.4		1	5	5		5	0.1	5	5	1	1	10	0.1	0.1	0.05
NEPM 2013 Table 1A(1) HILs for soil contaminants - Residential A					50	-	-	-	-	-	-	-	-	270			10	-	-	-	6	-	10	300	20	6	240	100	20		100	-	6000	-	300	40	400	7400	-	-	-	-	-	-
NEPM 2013 Calculated EILs for soil contaminants (Aged) - Urban Residential/public open space					-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	440		-	220	-	1100	-	260	820	-	-	-	-	-	-
Type	Residential Block	Sample_ID	Date Sampled	Lab Report #																																								
Surface Soil	# 1	SS01-1	26/06/2019	662971-S	0.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	< 0.05	< 0.05	< 1	2	< 0.05	5.1	< 0.4	-	-	33	13	-	17	< 0.1	6.8	61	14	-	-	-	-	-
Surface Soil	# 1	SS01-2	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.26	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	2.6	< 0.05	18	< 0.4	-	-	180	17	-	19	< 0.1	17	26	16	-	-	-	-	-
Surface Soil	# 1	SS01-3	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.57	< 0.05	< 0.05	6.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	7.27	< 0.05	28	< 0.4	-	-	200	30	-	20	< 0.1	17	86	14	-	-	-	-	-
Surface Soil	# 1	SS01-4	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<0.05	< 0.05	24	< 0.4	-	-	220	14	-	25	< 0.1	15	21	15	-	-	-	-	-
Surface Soil	# 1	SS02-1	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	0.61	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.25	< 0.05	< 0.05	< 1	0.61	< 0.05	11	< 0.4	-	-	43	< 5	-	6	< 0.1	<5	31	8.3	-	-	-	-	-
Surface Soil	# 1	SS02-2	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.24	< 0.05	< 0.05	2.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	2.94	< 0.05	31	< 0.4	160	<1	220	55	110000	29	< 0.1	12	54	14	14	2300	9.2	0.4	72
Surface Soil	# 1	SS02-3	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	1.2	< 0.05	< 0.05	7.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	8.3	< 0.05	30	< 0.4	140	<1	250	11	100000	26	< 0.1	14	19	12	11	540	8	0.6	15
Surface Soil	# 1	SS02-4	26/06/2019	662971-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	3.0	< 0.05	< 0.05	12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	15	< 0.05	21	< 0.4	-	-	190	11	-	20	< 0.1	10	25	7.8	-	-	-	-	-
Surface Soil	# 2	SS01	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.09	< 0.05	10	< 0.4	-	-	94	20	74000	24	< 0.1	15	62	2.0	8	220	6.2	6.1	13
Surface Soil	# 2	SS02	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	23	< 0.4	-	<1	180	15	-	27	< 0.1	14	75	3.2	-	-	-	-	-
Surface Soil	# 2	SS03	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	4.5	0.5	-	-	29	58	-	23	< 0.1	8.7	96	3.0	-	-	-	-	-
Surface Soil	# 2	SS04	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	9.9	< 0.4	-	-	70	14	-	31	< 0.1	12	200	2.7	-	-	-	-	-
Surface Soil	# 1	SS05	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05	< 0.05	0.52	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.6	< 0.05	17	< 0.4	-	<1	110	33	-	19	< 0.1	11	45	4.2	-	-	-	-	-
Surface Soil	# 1	SS06	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.1	< 0.05	< 0.05	1.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	1.4	< 0.05	16	< 0.4	-	-	87	18	-	15	< 0.1	15	71	14.0	-	-	-	-	-
Surface Soil	# 1	SS07	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.14	< 0.05	< 0.05	2.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	2.64	< 0.05	17	0.7	-	<1	130	14	-	24	< 0.1	13	130	7.0	-	-	-	-	-
Surface Soil	# 1	SS08	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.34	< 0.05	< 0.05	2.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	2.44	< 0.05	24	< 0.4	-	<1	210	17	-	28	< 0.1	16	45	10.0	-	-	-	-	-
Surface Soil	# 3	SS09	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	0.58	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.64	< 0.05	19	< 0.4	-	<1	150	16	-	21	< 0.1	15	48	6.8	-	-	-	-	-
Surface Soil	# 3	SS10	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.17	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.17	< 0.05	21	< 0.4	-	<1	220	15	-	23	< 0.1	20	50	9.3	-	-	-	-	-
Surface Soil	# 3	SS11	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.68	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.68	< 0.05	15	< 0.4	-	<1	190	14	99000	18	< 0.1	12	25	4.3	16	460	7.1	1.5	11
Surface Soil	# 3	SS12	7/08/2019	670777-S	0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.13	< 0.05	< 0.05	1.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	1.23	< 0.05	29	< 0.4	-	<1	210	20	-	23	< 0.1	9.4	42	3.1	-	-	-	-	-
Surface Soil	# 4	SS13	7/08/2019	670777-S	< 0.1	0.08	< 0.05	< 0.05	< 0.05	0.85	< 0.05	< 0.05	3.9	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	4.75	0.08	17	< 0.4	-	<1	210	8.9	-	17	< 0.1	11	38	4.6	-	-	-	-	-
Surface Soil	# 4	SS14	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	0.23	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.28	< 0.05	6.7	< 0.4	-	-	52	32	-	20	5.5	7.5	280	1.9	-	-	-	-	-
Surface Soil	# 4	SS15	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.39	< 0.05	< 0.05	4.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	4.59	< 0.05	14	< 0.4	-	<1	160	12	-	16	< 0.1	12	25	8.3	-	-	-	-	-
Surface Soil	# 4	SS16	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.57	< 0.05	< 0.05	1.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	1.77	< 0.05	15	< 0.4	-	<1	120	14	-	19	< 0.1	12	53	5.4	-	-	-	-	-
Surface Soil	# 5	SS17	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	0.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.46	< 0.05	9.4	< 0.4	-	-	88	21	-	21	< 0.1	10	67	9.8	-	-	-	-	-
Surface Soil	# 5	SS18	7/08/2019	670777-S	9.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	7.8	0.09	< 0.05	< 1	0.12	< 0.05	22	< 0.4	-	<1	160	18	-	22	< 0.1	15	110	14.0	-	-	-	-	-
Surface Soil	# 5	SS19	7/08/2019	670777-S	0.4	< 0.05	< 0.05	< 0.05	< 0.05	0.93	< 0.05	< 0.05	1.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.11	0.1	< 0.05	< 1	2.33	< 0.05	29	< 0.4	-	<1	180	13	-	25	< 0.1	13	38	10.0	-	-	-	-	-
Surface Soil	# 5	SS20	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	9.5	< 0.4	-	-	48	22	-	16	< 0.1	9.7	41	10.0	-	-	-	-	-
Surface Soil	# 6	SS21	7/08/2019	670777-S	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.88	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.88	< 0.05	15	< 0.4	-	<1	180	11	94000	19	< 0.1	16	45	3.4	13	70	6.3	2.2	6.9
Surface Soil	# 6	SS22	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.09	< 0.05	8.8	< 0.4	-	<1	100	9.4	-	14	< 0.1	9.4	49	1.0	-	-	-	-	-
Surface Soil	# 6	SS23	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.21	< 0.05	8.2	< 0.4	-	-	55	13	-	15	< 0.1	7.6	57	1.0	-	-	-	-	-
Surface Soil	# 6	SS24	7/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	15	< 0.4	-	<1	150	21	-	24	< 0.1	12	51	5.1	-	-	-	-	-
Surface Soil	# 7	SS25	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.14	< 0.05	13	< 0.4	-	<1	110	16	-	16	< 0.1	17	34	4.3	-	-	-	-	-
Surface Soil	# 7	SS26	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	2.1	< 0.05	15	< 0.4	-	<1	180	11	-	18	< 0.1	18	25	5.7	-	-	-	-	-
Surface Soil	# 7	SS27	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	1.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	1.56	< 0.05	9.9	< 0.4	-	-	91	16	-	15	< 0.1	14	200	3.9	-	-	-	-	-
Surface Soil	# 7	SS28	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.1	< 0.05	17	< 0.4	-	<1	150	18	-	22	< 0.1	14	48	4.4	-	-	-	-	-
Surface Soil	# 8	SS29	8/08/2019	670777-S	0.5	< 0.05	< 0.05	< 0.05	< 0.05	0.1	< 0.05	< 0.05	0.22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.32	< 0.05	23	< 0.4	-	-	73	21	-	19	< 0.1	11	97	3.9	-	-	-	-	-
Surface Soil	# 8	SS30	8/08/2019	670777-S	0.4	< 0.05	< 0.05	< 0.05	< 0.05	360	< 0.05	< 0.05	8.8	< 0.05	< 0.05	< 0.05	< 0.05	0.16	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 1	368.8	< 0.05	11	< 0.4	-	-	47	25	-	15	< 0.1	12	120	3.4	-	-	-	-	-
Surface Soil	# 8	SS31	8/08/2019	670777-S	0.4	< 0.05	< 0.05	< 0.05	< 0.05	0.2	< 0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.32	< 0.05	15	< 0.4	-	<1	160	18	88000	22	< 0.1	18	340	3.4	11	310	6.3	1.7	5.5
Surface Soil	# 8	SS32	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	16	< 0.4	-	<1	110	44	-	21	< 0.1	9.4	230	3.4	-	-	-	-	-
Surface Soil	# 9	SS33	8/08/2019	670777-S	0.7	< 0.05	< 0.05	< 0.05	< 0.05	0.14	< 0.05	< 0.05	0.92	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 1	1.06	< 0.05	17	< 0.4	-	<1	130	16	-	19	< 0.1	10	110	6.4	-	-	-	-	-
Surface Soil	# 9	SS34	8/08/2019	670777-S	1.1	< 0.05	< 0.05	< 0.05	< 0.05	0.35	< 0.05	< 0.05	2.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	< 0.05	< 1	2.55	< 0.05	11	< 0.4	-	-	91	12	-	15	< 0.1	8.3	68	5.0	-	-	-	-	-
Surface Soil	# 9	SS35	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.28	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.28	< 0.05	21	< 0.4	-	<1	180	15	-	27	< 0.1	16	51	5.5	-	-	-	-	-
Surface Soil	# 9	SS36	8/08/2019	670777-S	0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.68	< 0.05	< 0.05	3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	3.68	< 0.05	8.3	< 0.4	-	-	81	23	-	19	< 0.1	12	79	7.1	-	-	-	-	-
Surface Soil	# 10	SS37	8/08/2019	670777-S	0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	0.25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.3	< 0.05	7.9	< 0.4	-	-	44	21	-	24	< 0.1	8.9	74	4.9	-	-	-	-	-
Surface Soil	# 10	SS38	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.1	< 0.05	18	< 0.4	-	<1	170	11	-	20	< 0.1	7.1	35	4.7	-	-	-	-	-
Surface Soil	# 10	SS39	8/08/2019	670777-S	0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	< 0.05	< 1	0.2	< 0.05	15	< 0.4	-	<1	160	13	-	18	0.2	10	54	2.8	-	-	-	-	-
Surface Soil	# 10	SS40	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	0.06	< 0.05	6.7	< 0.4	-	-	93	15	-	13	< 0.1	< 5	44	21.0	-	-	-	-	-
Surface Soil	# 11	SS41	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.18	< 0.05	< 0.05	2.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	2.58	< 0.05	11	< 0.4	-	<1	110	12	76000	23	< 0.1	12	93	4.7	18	210	7.4	1.2	8.8
Surface Soil	# 11	SS42	8/08/2019	670777-S	0.4	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	0.45	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05	< 1	0.52	< 0.05	13	< 0.4	-	-	97	8.9	-	13	< 0.1	9.9	48	2.7	-	-	-	-	-
Surface Soil	# 11	SS43	8/08/2019	670777-S	0.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	1.4	< 0.05	14	< 0.4	-	<1	130	14	-	16	< 0.1	8.9	32	4.2	-	-	-	-	-
Surface Soil	# 11	SS44	8/08/2019	670777-S	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.35	< 0.05	< 0.05	3.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	3.45	< 0.05	9.2	0.8	-	-	60	19	-	24	< 0.1	8.7	130	5.4	-	-	-	-	-
				Mean																												91571						13	587.1	7.2	2	18.88571

GREENCAP NT	SS08	QA01	RPD	SS25	QA03	RPD	SS37	QA05	RPD
	M19-Au15699	M19-Au15736		M19-Au15716	M19-Au15737			M19-Au15738	
% Moisture	10	9.4	6.1856	4.3	4.5	-4.5455	4.9	5.7	-15.09434
Heavy Metals									
Arsenic	24	19	23.256	13	24	-59.459	7.9	7.2	9.271523
Cadmium	< 0.4	< 0.4	0	< 0.4	< 0.4	0	< 0.4	< 0.4	0
Chromium	210	170	21.053	**110**	**220**	-66.667	44	57	-25.74257
Copper	17	19	-11.11	16	13	20.6897	21	20	4.878049
Lead	28	23	19.608	16	22	-31.579	24	23	4.255319
Mercury	< 0.1	< 0.1	0	< 0.1	< 0.1	0	< 0.1	< 0.1	0
Nickel	16	15	6.4516	17	14	19.3548	8.9	10	-11.64021
Zinc	45	58	-25.24	34	57	-50.549	74	67	9.929078
OCP									
4.4'-DDD	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
4.4'-DDE	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
4.4'-DDT	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
a-BHC	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Aldrin	0.34	0.2	51.852	< 0.05	< 0.05	0	0.05	0.06	-18.18182
b-BHC	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Chlordanes - Total	< 0.1	< 0.1	0	< 0.1	0.2	0	0.1	0.1	0
d-BHC	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Dieldrin	2.1	2	4.878	0.14	0.66	-130	0.25	0.28	-11.32075
Endosulfan I	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Endosulfan II	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Endosulfan sulphate	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Endrin	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Endrin aldehyde	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Endrin ketone	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
g-BHC (Lindane)	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Heptachlor	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Heptachlor epoxide	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Hexachlorobenzene	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Methoxychlor	< 0.05	< 0.05	0	< 0.05	< 0.05	0	< 0.05	< 0.05	0
Toxaphene	< 1	< 1	0	< 1	< 1	0	< 1	< 1	0
Aldrin + Dieldrin	2.44	2.2	10.345	0.14	0.66	-130	0.3	0.34	-12.5

SS08	QA02	RPD	SS25	QA04	RPD	SS37	QA06	RPD
M19-Au15699			M19-Au15716			M19-Au15728		
10	10.9	-8.6124402	4.3	5	-15.053763	4.9	6.3	-25
24	5	131.03448	13	<5 2.5	135.48387	7.9	<5 2.5	103.8462
< 0.4	<1	N/A	< 0.4	<1	N/A	< 0.4	<1	N/A
210	**102**	69.230769	**110**	**44**	85.714286	44	36	20
17	11	42.857143	16	12	28.571429	21	15	33.33333
28	14	66.666667	16	11	37.037037	24	15	46.15385
< 0.1	<0.1	N/A	< 0.1	<0.1	0	< 0.1	<0.1	0
16	6	90.909091	17	7	83.333333	8.9	5	56.11511
45	40	11.764706	34	40	-16.216216	74	102	-31.8182
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
0.34	0.12	95.652174	< 0.05	<0.05	0	0.05	0.1	-66.6667
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.1	<0.05	N/A	< 0.1	<0.05	N/A	0.1	0.16	-46.1538
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
2.1	1.2	54.545455	0.14	0.23	-48.648649	0.25	0.49	-64.8649
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.05	0	< 0.05	<0.05	0	< 0.05	<0.05	0
< 0.05	<0.2	N/A	< 0.05	<0.2	N/A	< 0.05	<0.2	N/A
< 1	-	-	< 1	-		< 1	-	
2.44	1.32		0.14	0.23	-48.648649	0.3	0.59	-65.1685

Additional Soil Investigation (Greencap, October 2019)

4 FIELD INVESTIGATIONS

4.1 Sampling Rationale

The additional soil investigation comprised the collection of soil samples and materials for analysis of COPC (OCP and ACM) based on the following rationale.

Delineation and additional testing for OCP, as presented on Figure 2 below:

- 11 additional surface samples (SS53 to SS63 inclusive) were collected from the footprints of the previously demolished residential unit blocks.
- One surface sample (SS64) was collected from the footprint of the former northern unit block adjacent to the driveway entrance, which had not been demolished prior to previous investigations. This building was demolished shortly before sampling was carried out.
- Several locations were sampled around each location from which elevated results were reported previously:
    - Previous location SS01-03 – SS65 at the approximate location of SS01-03, SS65_N(5) approximately five metres to the north, SS65_E(5) approximately five metres to the east, SS65_S(5) approximately five metres to the south and SS65_W(5) approximately five metres to the west.
    - Previous location SS02-03 – SS66 at the approximate location of SS02-03, SS66_N(5) approximately five metres to the north, SS66_E(5) approximately five metres to the east and SS66_S(5) approximately five metres to the south. No sample was collected to the west of this location because a stockpile of demolition waste restricted access.
    - Previous location SS02-04 – SS67 at the approximate location of SS02-04, SS67_N(5) approximately five metres to the north, SS67_E(5) approximately five metres to the east and SS67_S(5) approximately five metres to the south. No sample was collected to the west of this location because this was covered by sample SS66_E(5).
    - Previous location SS18 – SS68 at the approximate location of SS18, SS68_N(5) approximately five metres to the north, SS68_E(5) approximately five metres to the east, SS68_S(5) approximately five metres to the south and SS68_W(5) approximately five metres to the west.
    - Previous location SS30 – SS69 at the approximate location of SS30, SS69_N(5) approximately five metres to the north, SS69_E(5) approximately five metres to the east, SS69_S(5) approximately five metres to the south and SS69_W(5) approximately five metres to the west.

It is noted that Figure 2 shows only the central location for each of the abovementioned ‘clusters’.

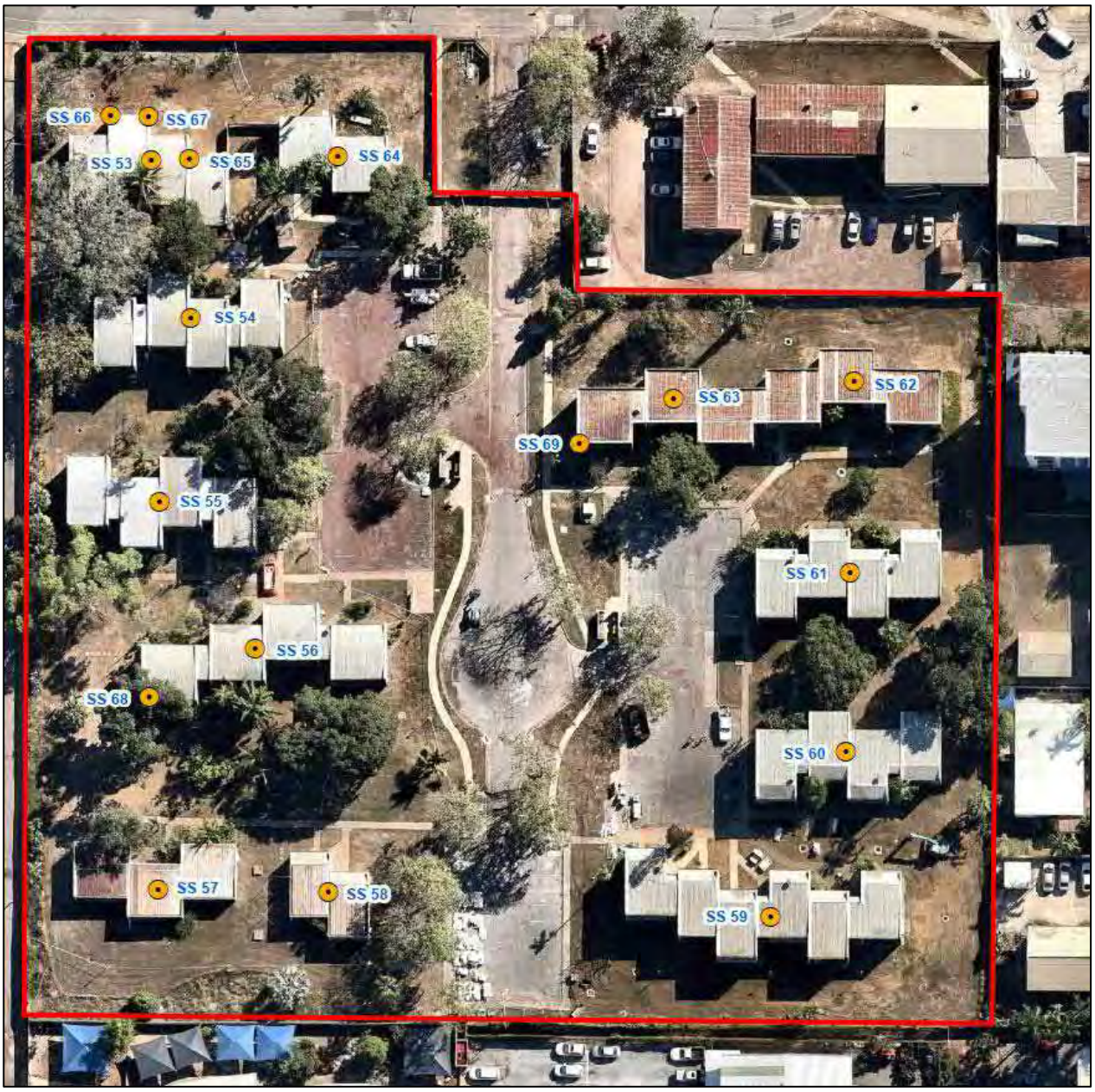


Figure 2: Sample Locations (OCP)

Delineation and additional testing for ACM, as presented on Figure 3 below:

- Additional test pitting at 21 locations (TP36 to TP56 inclusive) across the site to further assess the potential for ACM around locations where ACM was identified during previous investigations:
    - Previous location TP02 (June 2019) – TP36, TP37, TP38 and TP39.
    - Previous location TP20 (August 2019) – TP40, TP41 and TP42.
    - Previous location TP04 (June 2019) – TP43, TP44, TP45 and TP46.
    - Previous location TP17 (August 2019) – TP47, TP48, TP49, TP50 and TP51.
    - Previous location TP12 (August 2019) – TP52, TP53, TP54 and TP55.
    - Previous location TP11 (August 2019) – TP56.

Several of the test locations were not able to be excavated where originally proposed due to the presence of site infrastructure remaining (i.e. roads, etc) or the presence of the demolition waste stockpiles.

- An additional test location (TP57 in the eastern portion of the site for additional site coverage.
- Visual identification and soil screening of fill material for potential ACM (in bonded or friable form) and the collection and laboratory identification of ACM encountered.
- For the collection of screened soil samples for laboratory analysis of AF and FA.
- The collection and analysis for two samples of fibre cement sheet (FSC 01 and FSC 02) identified on the ground surface during the investigation.

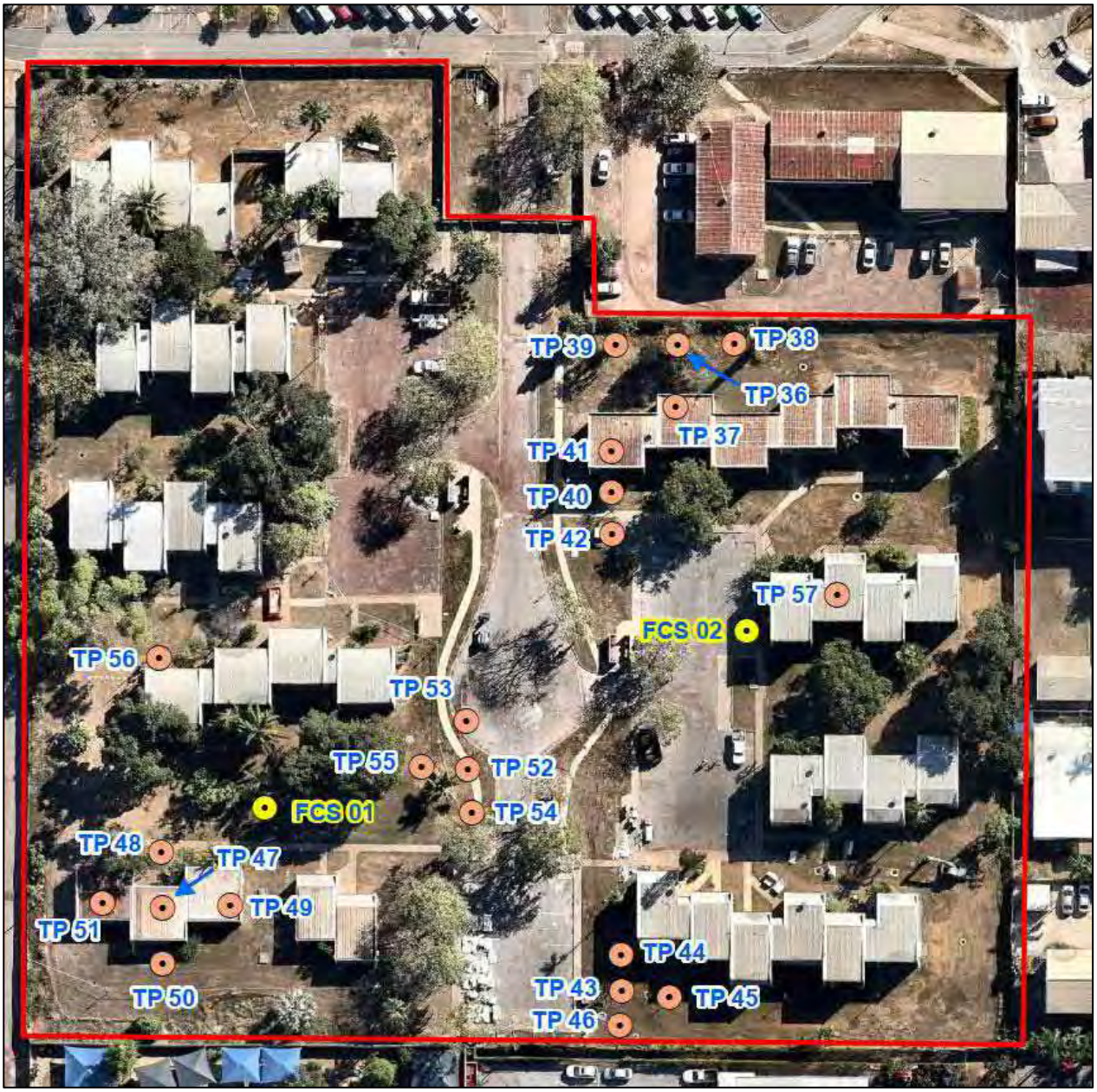
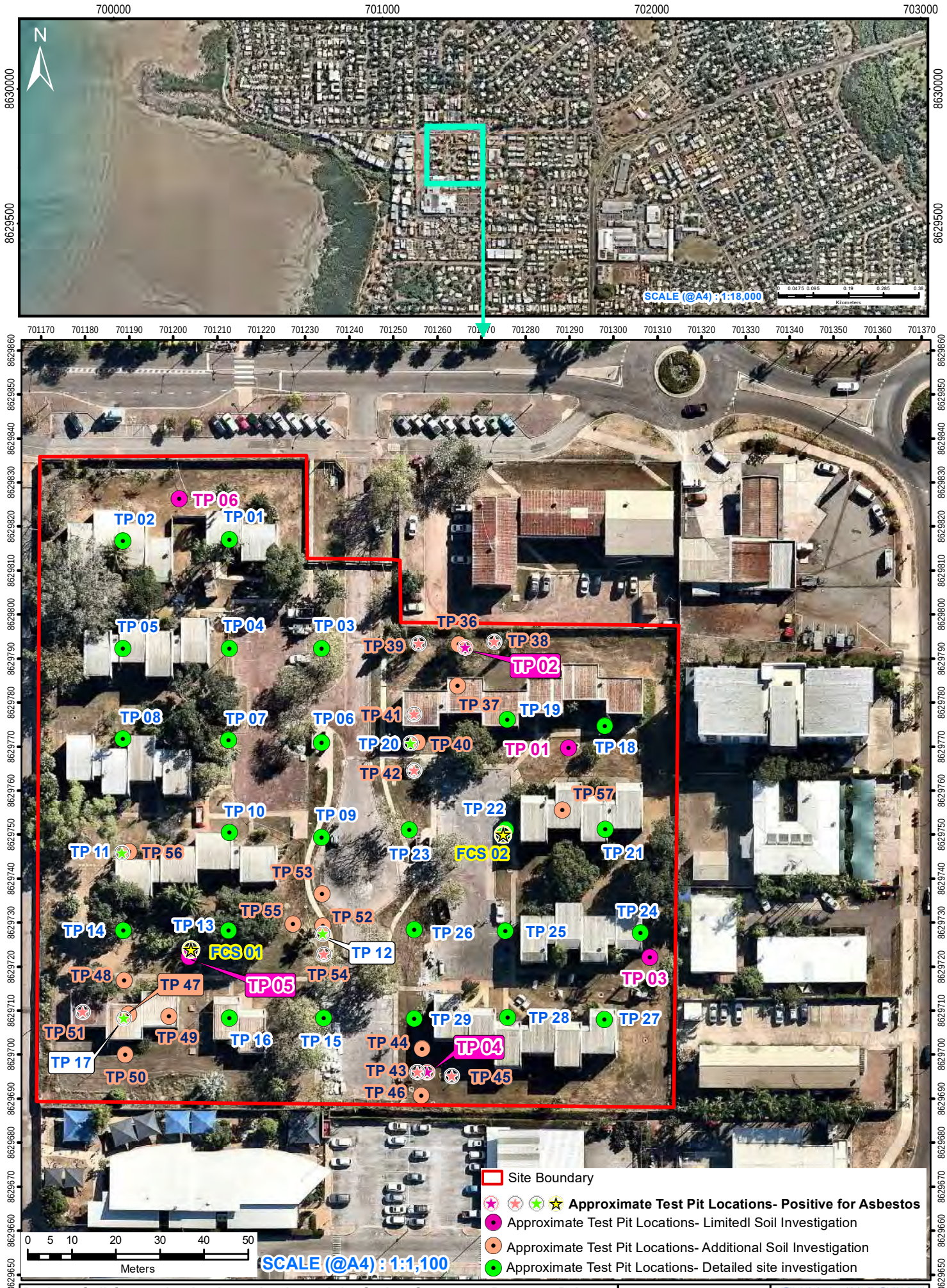


Figure 3: Test Pit Locations



Project: Soil Contamination Investigation – John Stokes Square, 47 Progress Drive, Nightcliff NT		Coordinate System: GDA_1994_MGA_Zone_52	GREENCAP
Figure4: Test Pit Locations	Job Ref: J163803	Date: October 2019	Author: Sam.K.	Checked: Stuart C.

No warranty is given in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of or reliance upon the data.Data must not be used for direct marketing or be used in breach of privacy laws, Nearmap imagery 13th June 2019.

5 SOIL INVESTIGATION RESULTS

5.1 Soil Conditions

The maximum depth of the investigation was 0.9 metres below ground level (m bgl). Soil conditions encountered were similar to those described in Greencap's September 2019 report (refer Section 3.2), with various inclusions of building rubble (concrete, PVC and plastics) were observed at several of the locations tested. In addition, various fragments of cement sheet were identified many of the locations tested. It is noted that not all the suspect material was confirmed to contain asbestos, as discussed further in Section 5.2.2. No stained or odorous soils were encountered in any of the sample. Test pit logs are presented in Appendix A.

5.2 Analytical Results

Chemical Results

A tabulated summary of the reported results is presented as Attachment 1 to this report. Details of the testing results are provided in the NATA test certificates presented in Appendix B.

Elevated concentrations of OCPs above the laboratory detection limits were identified in the majority of samples collected. Most of the reported results were below the adopted criteria with the exception of the following:

- Sample SS64 reported an elevated aldrin + dieldrin concentration of 8.61mg/kg, exceeding the adopted health criteria for standard residential land use of 6mg/kg. The reported result is below the adopted health criteria for high density residential, open space and commercial/industrial land use.
- Sample SS65_W(5), at a depth of 0.25m, reported an elevated aldrin + dieldrin concentration of 39.7mg/kg, exceeding the adopted health criteria for standard residential (6mg/kg), high density and open space land uses (both 10mg/kg). The reported result is below the adopted health criteria for commercial/industrial land use.
- Sample SS69_S(5), from the ground surface, reported an elevated aldrin + dieldrin concentration of 23.4mg/kg, exceeding the adopted health criteria for standard residential (6mg/kg), high density and open space land uses (both 10mg/kg). The reported result is below the adopted health criteria for commercial/industrial land use.

Asbestos

During the investigation, numerous fragments of suspected asbestos materials were identified during the bulk sampling and sieving. However, only fragments of suspect materials collected from the following test pits were confirmed to contain asbestos:

- TP38 (0.0-0.1m bgl) – fragments of asbestos fines identified during laboratory analysis of sub-sample.
- TP39 (0.0-0.1m bgl) – fragments of asbestos fines identified during laboratory analysis of sub-sample.
- TP40 (0.0-0.1m bgl) – fragments of cement sheet containing asbestos identified in bulk sample.
- TP42 (0.3-0.4m bgl) – fragments of cement sheet containing asbestos identified in bulk sample.
- TP42 (0.6-0.7m bgl) – fragments of cement sheet containing asbestos identified in bulk sample and fragments of asbestos fines identified during laboratory analysis of sub-sample.
- TP43 (0.0-0.1m bgl) – fragments of cement sheet containing asbestos identified in bulk sample.
- TP45 (0.1-0.2m bgl) – fragments of cement sheet containing asbestos identified in bulk sample.
- TP51 (0.0-0.05m bgl) – fragments of asbestos fines identified during laboratory analysis of sub-sample.
- TP54 (0.0-0.1m bgl) – fragments of cement sheet containing asbestos identified in bulk sample and fragments of asbestos fines identified during laboratory analysis of sub-sample.

The fragments confirmed as ACM were weighed and the concentration of asbestos material in soil calculated. The results of the asbestos in soil calculations are presented below in Table 2.

Table 2: Asbestos in Soil Results

Test Pit #	Sample Depth (m)	ACM identified?	Weight of bonded ACM in sample (g)	Weight of asbestos (g)*	Weight of FA and AF (g)	Bonded Asbestos in Soil (w/w %)**	FA & AF in Soil (w/w %)***
TP36	0.0-0.1	No	-	-	-	-	ND
TP37	0.0-0.1	No	-	-	-	-	ND
TP38	0.0-0.1	Yes	-	-	0.011	-	0.0012
TP39	0.0-0.1	Yes	-	-	0.094	-	0.01
TP40	0.0-0.1	Yes	8.6	2.58	-	0.017	ND
TP41	0.0-0.1	No	-	-	-	-	ND
TP42	0.3-0.4	Yes	117.5	35.25	-	0.235	ND
	0.6-0.7	Yes	5.7	1.71	0.049	0.011	0.0064
TP43	0.0-01	Yes	1.7	0.51	-	0.003	ND
TP44	0.0-0.1	No	-	-	-	-	ND
TP45	0.1-0.2	Yes	5.9	1.77	-	0.012	ND
	0.2-0.3	No	-	-	-	-	ND
	0.4-0.5	No	-	-	-	-	ND
TP46	0.0-0.1	No	-	-	-	-	ND
	0.1-0.2	No	-	-	-	-	ND
TP47	0.0-0.1	No	-	-	-	-	ND
	0.5-0.6	No	-	-	-	-	ND
TP48	0.0-0.1	No	-	-	-	-	ND
TP49	0.1-0.2	No	-	-	-	-	ND
	0.4-0.5	No	-	-	-	-	ND
TP50	0.0-0.1	No	-	-	-	-	ND
	0.2-0.3	No	-	-	-	-	ND
TP51	0.0-0.05	Yes	-	-	0.0017		0.00002
	0.1-0.2	No	-	-	-	-	ND
TP52	0.0-0.05	No	-	-	-	-	ND
	0.1-0.2	No	-	-	-	-	ND
TP53	0.0-0.05	No	-	-	-	-	ND
	0.1-0.2	No	-	-	-	-	ND
TP54	0.0-0.1	Yes	7.1	2.13	0.177	0.014	0.021
TP55	0.05-0.1	No	-	-	-	-	ND
	0.15-0.25	No	-	-	-	-	ND
TP56	0.0-0.05	No	-	-	-	-	ND
	0.1-0.2	No	-	-	-	-	ND
TP57	0.0-0.1	No	-	-	-	-	ND

* Sample has an assumed asbestos content of 30% based on laboratory assessment.

** Weight of all samples is based on a volume of 10L per sample, and an average bulk density based on the results of previous investigations of 1.5g/cm3

*** Based on weight of fines compared to weight of sub-sample (generally just under 1kg, refer attached laboratory certificates).

ND = Not detected.

Shaded cell indicates result exceeds one or more of the adopted criteria.

The concentrations of bonded ACM calculated in the samples collected from TP40 (0.0-0.1m bgl), TP42 (0.3-0.4m bgl), TP42 (0.6-0.7m bgl), TP45 (0.1-0.2m bgl) and TP54 (0.0-0.1m bgl) exceeded the health based assessment criteria for residential land use. Most of the reported results did not exceed the health criteria for other land uses considered, with the exception of the concentration from TP42 (0.3-0.4m bgl) which exceeded all relevant health based criteria.

Sub-samples of soil were collected from the 10 L (7 x 7 mm) screened samples and analysed for AF and/or FA in accordance with Australian Standard AS4964-2004: '*Method for the Qualitative Identification of Asbestos in Bulk Samples*'. Samples collected from TP38 (0.0-0.1m bgl), TP39 (0.0-0.1m bgl), TP42 (0.6-0.7m bgl) and TP54 (0.0-0.1m bgl) reported friable asbestos at estimated concentrations greater than the health-based assessment criteria for all land use types. The limitations of the analytical techniques should be considered with respect to these concentrations.

In addition, two samples of suspect material were collected during the field investigations from the ground surface (approximately 15m east of TP48 and approximately 10m west of TP57). Both samples were analysed and confirmed to contain asbestos.

Details of the asbestos identification and asbestos in soil test results are provided in the NATA-accredited certificates of analysis provided in Appendix A.

Additional Soil Investigation

Option Group Pty Ltd t/a NTEX

John Stokes Square, 47 Progress Drive, Nightcliff NT

Attachment 1: Soil Analytical Results Tables

				OCP		Halogenated Benzenes	Organochlorine Pesticides																						
				Vic EPA IWRG 621 OCP (Total)*	Vic EPA IWRG 621 Other OCP (Total	Hexachlorobenzene	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1
NEPM 2013 Table 1A(1) HILs Res A Soil						10				6		50				240		270			10				6		300	20
NEPM 2013 Table 1A(1) HILs Res B Soil						15				10		90				600		400			20				10		500	30
NEPM 2013 Table 1A(1) HILs Rec C Soil						10				10		70				400		340			20				10		400	30
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil						80				45		530				3600		2000			100				50		2500	160
LocCode	Field_ID	Sampled_Date-Time	Lab_Report_Number																										
SS53	SS53	25/09/2019	680009	0.21	<0.1	<0.05	<0.05	<0.05	<0.05	0.21	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS54	SS54	25/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS55	SS55	25/09/2019	680009	2.23	<0.1	<0.05	<0.05	0.93	2.23	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS56	SS56	25/09/2019	680009	0.44	<0.1	<0.05	<0.05	0.05	0.44	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS57	SS57	25/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS58	SS58	25/09/2019	680009	2.56	0.2	<0.05	<0.05	0.06	2.36	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS59	SS59	25/09/2019	680009	2.18	2.1	<0.05	<0.05	<0.05	0.08	<0.05	1.9	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.05	<0.05	<1
SS60	SS60	25/09/2019	680009	4.07	1.93	<0.05	<0.05	<0.05	0.24	2.14	<0.05	1.7	<0.05	<0.05	<0.05	<0.05	1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	<0.05	<0.05	<1
SS61	SS61	25/09/2019	680009	0.24	<0.1	<0.05	<0.05	<0.05	0.24	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS62	SS62	25/09/2019	680009	0.67	0.67	<0.05	<0.05	<0.05	<0.05	<0.05	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<1
SS63	SS63	25/09/2019	680009	0.87	0.87	<0.05	<0.05	<0.05	<0.05	<0.05	0.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<1
SS64	SS64	27/09/2019	680009	8.87	0.26	<0.05	<0.05	0.81	8.61	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	7.8	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	0.16	<0.05	<0.05	<0.05	<1
SS65	SS65_0.0	26/09/2019	680009	4.45	<0.1	<0.05	<0.05	0.25	4.45	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	4.2	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_0.25	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_E(5)_0.0	26/09/2019	680009	1.5	<0.1	<0.05	<0.05	0.1	1.5	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_E(5)_0.25	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_N(5)_0.0	26/09/2019	680009	1.6	<0.1	<0.05	<0.05	0.1	1.6	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_N(5)_0.5	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_S(5)_0.0	26/09/2019	680009	2.4	0.1	<0.05	<0.05	0.2	2.3	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	2.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_S(5)_0.5	26/09/2019	680009	1.2	0.1	<0.05	<0.05	<0.05	1.1	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS65	SS65_W(5)_0.0	26/09/2019	680009	3.83	0.53	<0.05	<0.05	0.1	3.3	<0.05	0.4	<0.05	<0.05	<0.05	<0.05	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<1
SS65	SS65_W(5)_0.25	26/09/2019	680009	42.35	2.57	<0.05	0.08	<0.05	3.7	39.7	<0.05	2	<0.05	<0.05	<0.05	0.08	36	<0.05	<0.05	<0.05	0.27	<0.05	0.54	<0.05	<0.05	0.3	<0.05	<0.05	<1
SS66	SS66_0.0	26/09/2019	680009	2.72	0.1	<0.05	<0.05	<0.05	0.32	2.62	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_0.50	26/09/2019	680009	0.85	0.7	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	0.7	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_E(5)_0.0	26/09/2019	680009	1.81	0.1	<0.05	<0.05	<0.05	0.11	1.71	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_E(5)_0.5	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_N(5)_0.0	26/09/2019	680009	0.66	0.2	<0.05	<0.05	<0.05	0.05	0.46	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	0.41	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_N(5)_0.25	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_S(5)_0.0	26/09/2019	680009	2.4	<0.1	<0.05	<0.05	0.4	2.4	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS66	SS66_S(5)_0.25	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_0.0	26/09/2019	680009	0.45	<0.1	<0.05	<0.05	<0.05	<0.05	0.45	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.45	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_0.25	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_E(5)_0.0	26/09/2019	680009	1.48	<0.1	<0.05	<0.05	0.08	1.48	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_E(5)_0.25	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_N(5)_0.0	26/09/2019	680009	1.67	0.63	<0.05	<0.05	0.24	1.04	<0.05	0.5	<0.05	<0.05	<0.05	<0.05	0.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.08	<0.05	<0.05	<1
SS67	SS67_N(5)_0.5	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_S(5)_0.0	26/09/2019	680009	1.7	<0.1	<0.05	<0.05	0.5	1.7	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS67	SS67_S(5)_0.5	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_0.0	27/09/2019	680009	4.58	4.33	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	3.1	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	0.13	<0.05	<0.05	<1
SS68	SS68_0.5	27/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_E(5)_0.0	27/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_E(5)_0.25	27/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_N(5)_0.0	27/09/2019	680009	2.07	1	<0.05	<0.05	<0.05	0.07	1.07	<0.05	0.6	<0.05	<0.05	<0.05	<0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.4	<0.05	<0.05	<1
SS68	SS68_N(5)_0.5	27/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_S(5)_0.0	27/09/2019	680009	0.14	<0.1	<0.05	<0.05	<0.05	0.14	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_S(5)_0.5	27/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS68	SS68_W(5)_0.0	27/09/2019	680009	0.72	0.48	<0.05	<0.05	<0.05	0.24	<0.05	0.4	<0.05	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<1
SS68	SS68_W(5)_0.25	27/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS69	SS69_0.0	26/09/2019	680009	1.89	1.51	<0.05	<0.05	0.06	0.38	<0.05	1.2	<0.05	<0.05	<0.05	<0.05	0.32	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.31	<0.05	<0.05	<1
SS69	SS69_0.5	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS69	SS69_E(5)_0.0	27/09/2019	680009	3.6	0.1	<0.05	<0.05	2.1	3.5	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS69	SS69_E(5)_0.25	28/09/2019	680009	4	0.2	<0.05	<0.05	<0.05	1.1	3.8	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	2.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS69	SS69_N(5)_0.0	26/09/2019	680009	9.64	9.16	<0.05	<0.05	<0.05	0.21	0.48	<0.05	7.9	<0.05	<0.05	<0.05	<0.05	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	1.2	<0.05	<1
SS69	SS69_N(5)_0.5	26/09/2019	680009	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS69	SS69_S(5)_0.0	26/09/2019	680009	25.46	2.06	<0.05	<0.05	<0.05	16	23.4	<0.05	1.7	<0.05	<0.05	<0.05	<0.05	7.4	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	0.36	<0.05	<0.05	<0.05	<1
SS69	SS69_S(5)_0.5	26/09/2019	680009	0.4	0.2	<0.05	<0.05	<0.05	0.06	0.2	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SS69	SS69_W(5)_0.0	26/09/2019	680009	5.79	2.59	<0.05	<0.05	<0.05	2.1	3.2	<0.05	2.2	<0.05	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	<0.05	<0.05	<1
SS69	SS69_W(5)_0.25	26/09/2019	680009	12.1	11.58	<0.05	<0.05	<0.05	0.37	0.52	<0.05	11	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	0.44	<0.05	<0.05	<1

Soil Duplicate Summary
John Stokes Square

Greencap Ref: J163803

Field Duplicates (SOIL) Filter: Lab_Report_Nu	Lab Report Number	680009	680009		680009	680009		680009	680009		680009	680009		680009	ES1931738		680009	ES1931738		680009	ES1931738		680009	ES1931738	
	Field ID	SS65_0.0	QA01	RPD	SS66_0.0	QA03	RPD	SS67_0.0	QA05	RPD	SS68_0.0	QA07	RPD	SS65_0.0	QA02	RPD	SS66_0.0	QA04	RPD	SS67_0.0	QA06	RPD	SS68_0.0	QA08	RPD
	Sampled Date/Time	26/09/2019	26/09/2019		26/09/2019	26/09/2019		26/09/2019	26/09/2019		27/09/2019	27/09/2019		26/09/2019	26/09/2019		26/09/2019	26/09/2019		26/09/2019	26/09/2019		27/09/2019	27/09/2019	
Chem_Gr	ChemNam	Units	EQL																						
OCP	Vic EPA IW	mg/kg	0.1	**4.45**	**3.21**	**32**	2.72	3.3	19	0.45	0.38	17	**4.58**	**<0.1**	**191**	4.45			2.72			0.45			4.58		
	Vic EPA IW	mg/kg	0.1	<0.1	0.1	0	**0.1**	**0.3**	**100**	<0.1	<0.1	0	**4.33**	**<0.1**	**191**	<0.1			0.1			<0.1			4.33		
Inorganics	Moisture C	%	1	4.6	5.1	10	1.3	2.2	51	4.4	5.1	15	**3.1**	**7.5**	**83**	4.6			1.3			4.4			3.1		
Halogenat	Hexachlor	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
ed Benzenes																											
Organochl	4,4-DDE	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Aldrin	mg/kg	0.05	0.25	0.21	17	0.32	0.3	6	<0.05	<0.05	0	<0.05	<0.05	0	0.25	0.13	63	0.32	0.16	67	<0.05	<0.05	0	<0.05	<0.05	0
	Aldrin + Di	mg/kg	0.05	**4.45**	**3.11**	**35**	2.62	3.0	14	0.45	0.38	17	**0.25**	**<0.05**	**133**	**4.45**	**1.81**	**84**	**2.62**	**1.59**	**49**	0.45	0.27	50	**0.25**	**<0.05**	**133**
	b-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	chlordane	mg/kg	0.1 (Primary): 0.05 (Inter	<0.1	0.1	0	**0.1**	**0.3**	**100**	<0.1	<0.1	0	**3.1**	**<0.1**	**188**	<0.1	0.07	0	0.1	0.08	22	<0.1	<0.05	0	**3.1**	**<0.05**	**194**
	d-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	DDD	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	DDT	mg/kg	0.05 (Primary): 0.2 (Inter	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.2	0	<0.05	<0.2	0	<0.05	<0.2	0
	DDT+DDE	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Dieldrin	mg/kg	0.05	**4.2**	**2.9**	**37**	2.3	2.7	16	0.45	0.38	17	**0.25**	**<0.05**	**133**	**4.2**	**1.68**	**86**	**2.3**	**1.43**	**47**	0.45	0.27	50	**0.25**	**<0.05**	**133**
	Endosulfar	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfar	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfar	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin alde	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin ket	mg/kg	0.05	0.07	<0.05	33	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	0.07	<0.05	33	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	g-BHC (Lin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	**1.1**	**<0.05**	**183**	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	**1.1**	**<0.05**	**183**
	Heptachlor	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	**0.13**	**<0.05**	**89**	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	**0.13**	**<0.05**	**89**
	Methoxych	mg/kg	0.05 (Primary): 0.2 (Inter	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.2	0	<0.05	<0.2	0	<0.05	<0.2	0
	Toxaphene	mg/kg	1	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0			<1.0			<1.0			<1.0		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 80 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Blanks Results Summary
John Stokes Square

Greencap Ref: J163803

Field Blanks (WATER)
Filter: Lab_Report_Number in('680009')

Lab Report Number	680009	680009	680009
Field ID	FB01	RB01	TB01
Sampled_Date/Time	26/09/2019	26/09/2019	26/09/2019
Sample Type	Field_B	Rinsate	Trip_B

Chem_Group	ChemName	Units	EQL			
Halogenated Benzenes	Hexachlorobenzene	µg/l	0.1	<0.1	<0.1	<0.1
Organochlorine Pesticides	4,4-DDE	µg/l	0.1	<0.1	<0.1	<0.1
	a-BHC	µg/l	0.1	<0.1	<0.1	<0.1
	Aldrin	µg/l	0.1	<0.1	<0.1	<0.1
	Aldrin + Dieldrin	µg/l	0.1	<0.1	<0.1	<0.1
	b-BHC	µg/l	0.1	<0.1	<0.1	<0.1
	chlordane	µg/l	1	<1	<1	<1
	d-BHC	µg/l	0.1	<0.1	<0.1	<0.1
	DDD	µg/l	0.1	<0.1	<0.1	<0.1
	DDT	µg/l	0.1	<0.1	<0.1	<0.1
	DDT+DDE+DDD	µg/l	0.1	<0.1	<0.1	<0.1
	Dieldrin	µg/l	0.1	<0.1	<0.1	<0.1
	Endosulfan I	µg/l	0.1	<0.1	<0.1	<0.1
	Endosulfan II	µg/l	0.1	<0.1	<0.1	<0.1
	Endosulfan sulphate	µg/l	0.1	<0.1	<0.1	<0.1
	Endrin	µg/l	0.1	<0.1	<0.1	<0.1
	Endrin aldehyde	µg/l	0.1	<0.1	<0.1	<0.1
	Endrin ketone	µg/l	0.1	<0.1	<0.1	<0.1
	g-BHC (Lindane)	µg/l	0.1	<0.1	<0.1	<0.1
	Heptachlor	µg/l	0.1	<0.1	<0.1	<0.1
	Heptachlor epoxide	µg/l	0.1	<0.1	<0.1	<0.1
	Methoxychlor	µg/l	0.1	<0.1	<0.1	<0.1
	Toxaphene	mg/l	0.01	<0.01	<0.01	<0.01

Detailed Site Investigation (February 2020; Agon)

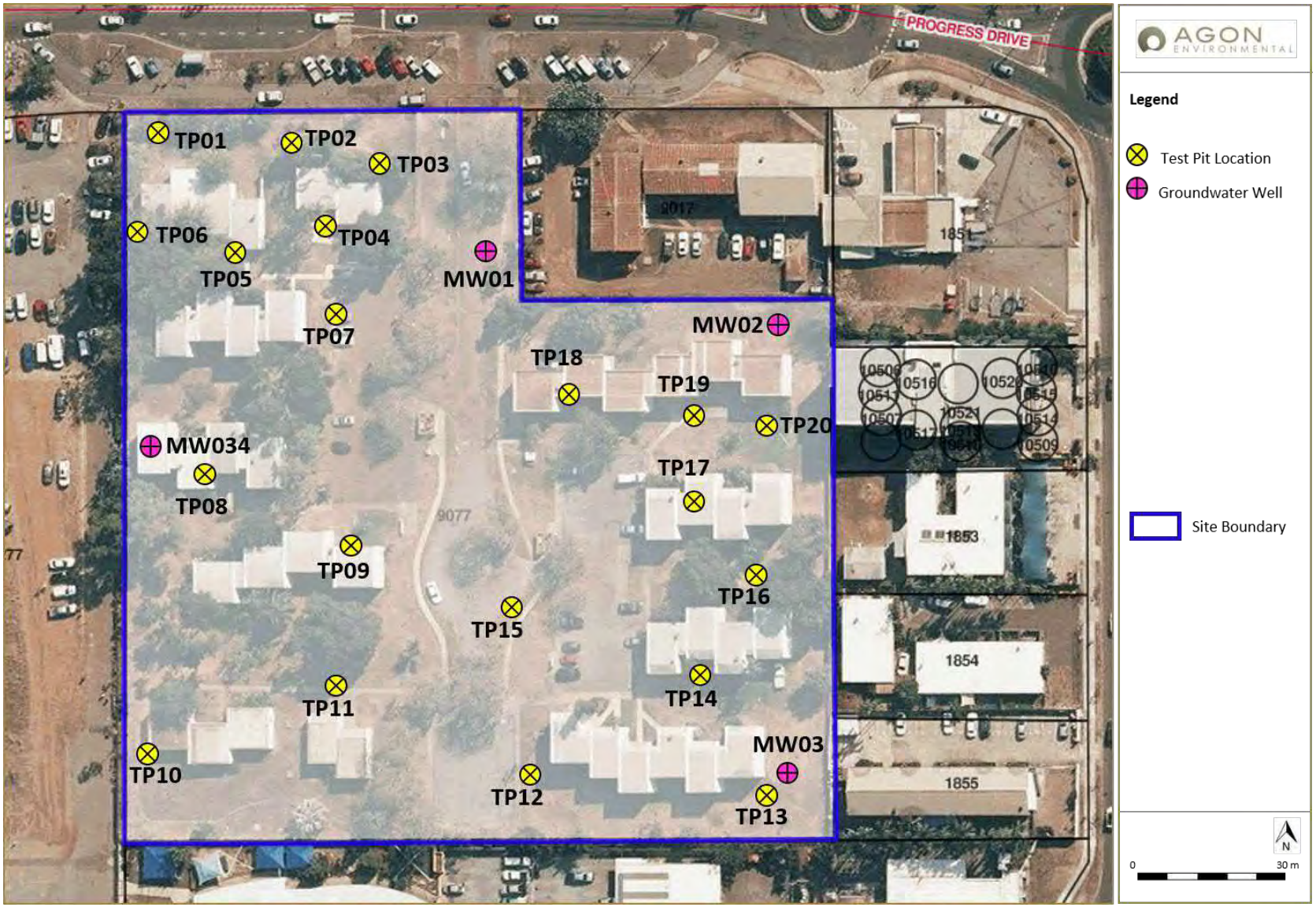


Figure 9: Agon Sample Locations
Source: NR Maps

10.0 SOIL INVESTIGATION RESULTS

10.1 Soil Conditions

Subsurface soil conditions consist of fill materials typically comprising brown sandy clay and clayey silty sand with minor gravel extending to a maximum depth of 800 mm. Inclusions of building rubble (concrete fragments, bitumen fragments, and PVC) were encountered across the surface of the site and within the shallow fill material.

Surface fill materials were overlying natural material consisting of brown and red brown clayey sandy gravel and stiff to very stiff red brown sandy clay with trace gravels. Areas of surface fill were also observed to be reworked natural soils disturbed during the demolition of the former site buildings.

No potential asbestos containing materials were observed during the intrusive investigations.

10.2 Soil Analytical Results

A tabulated summary of reported results (and adopted assessment criteria) is presented in Table 1G, Appendix G. Laboratory certificate and chain of custody documentation is provided in Appendix H.

All concentrations of analytes in the natural soils were below the adopted assessment criteria.

All analytes from soil analysis of fill material were below the NEPM Commercial and Industrial HILs, HSLs, EILs and ESLs assessment criteria.

The following analytes exceeded the Residential NEPM HIL and EIL criteria:

- OCPs Aldrin + Dieldrin, in sample 09_0_0.1 (TP09) reported a concentration of 7.5 mg/kg exceeding HIL A criterion of 6 mg/kg. The sample immediately below this (09_1_0.7) recorded a concentration of Aldrin + Dieldrin below the HIL criterion. The soil has subsequently been place in the commercial area; and
- Nickel was detected in excess of the NEPM EIL criterion (15 mg/kg) in 3 of the 34 samples analysed, reporting a maximum concentration of 19 mg/kg in sample 04_0_0.1 (TP04). The sample below this (04_1_0.6) recorded a concentration of nickel below the EIL criterion.

11.0 GROUNDWATER INVESTIGATION RESULTS

11.1 Groundwater Conditions

The Standing Water Levels (SWLs), Total Depth and observations were recorded during the groundwater investigation and are summarised below in

Table 9: Groundwater Conditions

Well ID	Date	SWL (m TOC)	Total Depth (m TOC)	Observations
MW01	21-01-2020	3.72	9.56	Light brown turbid becoming slightly turbid. No odour. No sheen.
MW02	21-01-2020	3.79	9.55	
MW03	22-01-2020	2.69	9.55	
MW04	22-01-2020	3.51	9.57	

11.2 Groundwater Parameters

Groundwater purge details are presented in Appendix F. Final groundwater parameters measured during purging the wells just prior to sampling are summarised in Table 10.

Table 10: Groundwater Parameters

Well ID	Date	Volume (L)	DO (ppm)	EC (µS/cm)	pH	Redox (mV)	Temperature (°C)
MW01	21-01-2020	6	2.96	880	5.34	126.8	30.6
MW02	21-01-2020	8.0	2.68	203.1	5.66	123.4	30.1
MW03	22-01-2020	7.8	5.77	166.1	4.69	215.0	30.1
MW04	22-01-2020	8.5	3.03	191.8	4.42	318.0	30.2

Notes: DO = Dissolved Oxygen, EC = Electrical Conductivity, Redox = Reduction / Oxidisation Potential

11.3 Groundwater Analytical Results

Reported concentrations of TRH, Ether Oxygenates, BTEX and Halogenated Volatile Organics were below the adopted assessment criteria.

Minor concentrations of chloroform and TRH fractions were detected in groundwater. It is noted that silica gel clean-up was conducted on the highest results in MW01. The silica gel clean-up process removes naturally occurring hydrocarbons which can be present from vegetable matter, bacterial activity or from mangrove environs. The results from MW01 following the clean up were all below the limit of laboratory reporting.

Concentrations of some heavy metals exceeded the respective ADWG 2018 Health and Aesthetic, ANZECC 2000 Marine, Freshwater, Recreational and Irrigation and the WHO DQQG criteria.

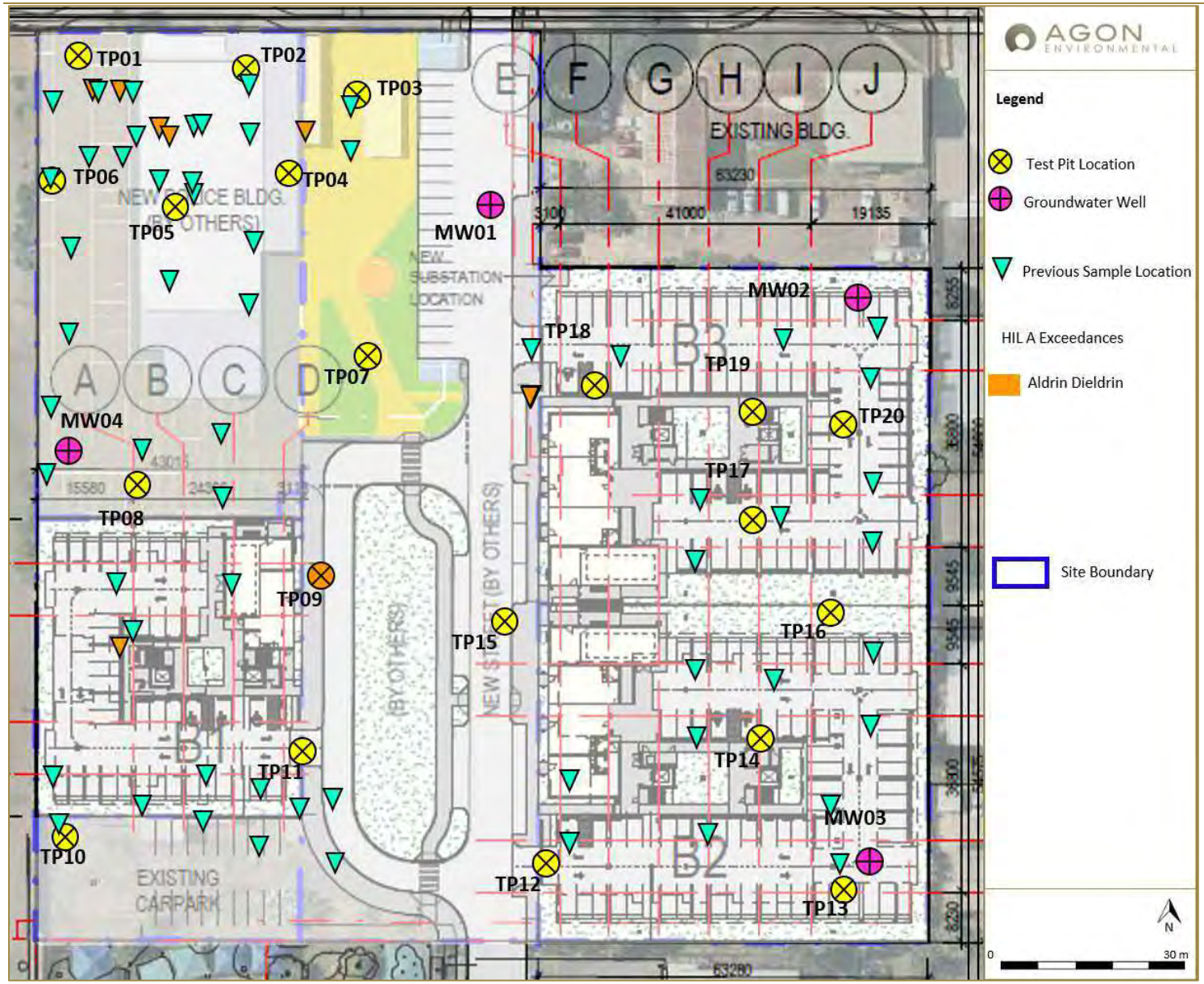


Figure 10: Soil OCP Exceedances

Source: NR Maps; Extracts Buildings Plans

APPENDIX G: TABULATED ANALYTICAL DATA

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

								Metals										
JF1006 John Stokes Square DSI					Cobalt	Arsenic	Cadmium	Beryllium	Boron	Chromium (III+VI)	Chromium (hexavalent)	Copper	Lead	Molybdenum	Manganese	Mercury	Nickel	Selenium	Silver	Iron	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					5	2	0.4	2	10	5	1	5	5	5	5	0.1	5	2	0.2	20	5
NEPM 2013 HILs Res A Soil					100	100	20	60	4,500		100	6,000	300		3,800	40	400	200			7,400
NEPM 2013 HILs Res B Soil					600	500	150	90	40,000		500	30,000	1,200		14,000	120	1,200	1,400			60,000
NEPM 2013 HILs Commercial/Industrial D Soil					4000	3000	900	500	300000		3600	240000	1500		60000	730	6000	10000			400000
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																					
Sand 0-1m																					
Sand 1-2m																					
Sand 2-4m																					
NEPM 2013 ESLs for Urban Res, Coarse Soil																					
0-2m																					
Prelim EILs Urban Res/ Open Public Spaces						100				570		45	1100				15				220
Prelim EILs Commercial/ Industrial						160				940		55	1800				20				300
Field ID	**Location**	**Lab Report**	**Date**																		
01_0_0.15	**TP01**	688422	12/11/2019			12	<0.4	<2			<1		31	<5		<0.1	15	<2	<0.2		
02_0_0.1	**TP02**	688422	12/11/2019			11	<0.4			120		13	17			<0.1	10				20
02_1_0.8	**TP02**	688422	12/11/2019		<5	15	<0.4	<2	<10	300	<1	7.2	17		44	<0.1	8.9	<2			<5
03_0_0.1	**TP03**	688422	12/11/2019			12	<0.4			180		9.2	15			<0.1	11				22
03_1_0.8	**TP03**	688422	12/11/2019																	100,000	
04_0_0.1	**TP04**	688422	12/11/2019		5.2	12	<0.4	<2	<10	160	<1	13	17		270	<0.1	19	<2			20
04_1_0.6	**TP04**	692905	12/11/2019														13				
05_0_0.1	**TP05**	688422	12/11/2019			12	<0.4			110		9.5	14			<0.1	8.2				29
05_1_0.72	**TP05**	688422	12/11/2019		<5	17	<0.4	<2	<10	180	<1	7.4	11		40	<0.1	<5	<2			<5
06_0_0.1	**TP06**	688422	12/11/2019		<5	19	<0.4	<2	<10	230	<1	12	25		150	<0.1	11	<2			40
06_1_1.2	**TP06**	688422	12/11/2019			20	<0.4			290		10	14			<0.1	12				5.4
07_0_0.1	**TP07**	688422	12/11/2019			24	<0.4			160		<5	17			<0.1	7.0				5.6
08_0_0.1	**TP08**	688422	12/11/2019			15	<0.4	<2			<1		20	<5		<0.1	8.2	<2	<0.2		
09_0_0.1	**TP09**	688422	12/11/2019		<5	12	<0.4	<2	<10	160	<1	10	13		92	<0.1	7.7	<2			21
09_1_07	**TP09**	692905	12/11/2019																		
10_0_0.1	**TP10**	688422	12/11/2019			12	<0.4			200		7.6	14			<0.1	8.9				68
10_1_0.7	**TP10**	688422	12/11/2019			21	<0.4	<2			<1		19	7.0		<0.1	10	<2	<0.2		
11_0_0.2	**TP11**	688422	12/11/2019			14	<0.4			140		15	19			<0.1	7.8				86
11_1_0.8	**TP11**	688422	12/11/2019																	170,000	
12_0_0.1	**TP12**	688422	12/11/2019		<5	14	<0.4	<2	<10	200	<1	8.8	16		110	<0.1	9.7	<2			17
13_0_0.1	**TP13**	688422	12/11/2019			7.5	<0.4	<2			<1		15	<5		<0.1	5.2	<2	<0.2		
13_1_0.6	**TP13**	688422	12/11/2019			24	<0.4			250		9.3	20			<0.1	13				5.3
14_0_0.1	**TP14**	688422	12/11/2019		<5	14	<0.4	<2	<10	140	<1	8.3	15		61	<0.1	6.6	<2			16
14_1_0.6	**TP14**	688422	12/11/2019			24	<0.4			270		7.2	19			<0.1	11				<5
15_0_0.1	**TP15**	688422	12/11/2019			18	<0.4			180		5.8	16			<0.1	6.9				11
15_1_1.0	**TP15**	688422	12/11/2019			18	<0.4			260		7.5	19			<0.1	11				5.9
16_0_0.1	**TP16**	688422	12/11/2019		<5	13	<0.4	<2	<10	180	<1	7.9	19		76	<0.1	7.3	<2			70
16_1_1.0	**TP16**	688422	12/11/2019																	170,000	
17_0_0.2	**TP17**	688422	12/11/2019			18	<0.4	<2			<1		16	<5		<0.1	11	<2	<0.2		
18_0_0.1	**TP18**	688422	12/11/2019			11	<0.4			100		20	16			<0.1	11				54
18_1_1.0	**TP18**	688422	12/11/2019																	180,000	
19_0_0.1	**TP19**	688422	12/11/2019			9.9	<0.4			130		12	14			<0.1	16				9.9
19_1_0.7	**TP19**	688422	12/11/2019		<5	17	<0.4	<2	<10	220	<1	10	16		46	<0.1	13	<2			8.8
20_0_0.1	**TP20**	688422	12/11/2019		<5	6.5	<0.4	<2	<10	67	<1	10	10		56	<0.1	9.0	<2			24
20_1_0.8	**TP20**	688422	12/11/2019			18	<0.4			240		10	17			<0.1	13				8.6
MW01_4M	**MW01**	694532	18/12/2019										6.6								
MW01_5M	**MW01**	694532	18/12/2019										<5								
MW01_6M	**MW01**	694532	18/12/2019										6.2								
MW02_4M	**MW02**	694532	18/12/2019										<5								
MW02_5M	**MW02**	694532	18/12/2019										<5								
MW03_4M	**MW03**	694532	18/12/2019										6.4								
MW03_5M	**MW03**	694532	18/12/2019										7.4								
MW04_4M	**MW04**	694532	18/12/2019										8.1								
MW04_5M	**MW04**	694532	18/12/2019										8.9								
MW04_6M	**MW04**	694532	18/12/2019										<5								

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

	PAH																								
JF1006 John Stokes Square DSI	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Benzo(k)fluoranthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Acenaphthene	Naphthalene	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	PAHs (Sum of total)	Pyrene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 HILs Res A Soil	3													3	3									300	
NEPM 2013 HILs Res B Soil	4													4	4									400	
NEPM 2013 HILs Commercial/Industrial D Soil	40													40	40									4000	
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																									
Sand 0-1m													3												
Sand 1-2m																									
Sand 2-4m																									
NEPM 2013 ESLs for Urban Res, Coarse Soil																									
0-2m																0.7									
Prelim EILs Urban Res/ Open Public Spaces													170												
Prelim EILs Commercial/ Industrial													370												
Field ID	**Location**	**Lab Report**	**Date**																							
01_0_0.15	**TP01**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_0_0.1	**TP02**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_1_0.8	**TP02**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03_0_0.1	**TP03**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
03_1_0.8	**TP03**	688422	12/11/2019																								
04_0_0.1	**TP04**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
04_1_0.6	**TP04**	692905	12/11/2019																								
05_0_0.1	**TP05**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
05_1_0.72	**TP05**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
06_0_0.1	**TP06**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
06_1_1.2	**TP06**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
07_0_0.1	**TP07**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
08_0_0.1	**TP08**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09_0_0.1	**TP09**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09_1_07	**TP09**	692905	12/11/2019																								
10_0_0.1	**TP10**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10_1_0.7	**TP10**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
11_0_0.2	**TP11**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
11_1_0.8	**TP11**	688422	12/11/2019																								
12_0_0.1	**TP12**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
13_0_0.1	**TP13**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
13_1_0.6	**TP13**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14_0_0.1	**TP14**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14_1_0.6	**TP14**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_0_0.1	**TP15**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_1_1.0	**TP15**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16_0_0.1	**TP16**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16_1_1.0	**TP16**	688422	12/11/2019																								
17_0_0.2	**TP17**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18_0_0.1	**TP18**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18_1_1.0	**TP18**	688422	12/11/2019																								
19_0_0.1	**TP19**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
19_1_0.7	**TP19**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20_0_0.1	**TP20**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20_1_0.8	**TP20**	688422	12/11/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW01_4M	**MW01**	694532	18/12/2019												<0.5												
MW01_5M	**MW01**	694532	18/12/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW01_6M	**MW01**	694532	18/12/2019												<0.5												
MW02_4M	**MW02**	694532	18/12/2019												<0.5												
MW02_5M	**MW02**	694532	18/12/2019												<0.5												
MW03_4M	**MW03**	694532	18/12/2019												<0.5												
MW03_5M	**MW03**	694532	18/12/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW04_4M	**MW04**	694532	18/12/2019	<0.5	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW04_5M	**MW04**	694532	18/12/2019												<0.5												
MW04_6M	**MW04**	694532	18/12/2019												<0.5												

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

				BTEX						TRH							TPH				
JF1006 John Stokes Square DSI				Toluene	Xylene Total	Benzene	Ethylbenzene	Xylene (m & p)	Xylene (o)	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	C10-C16 (F2 minus Naphthalene)	C6-C9	C10-C14	C15-C28	C29-C36	+C10-C36 (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.3	0.1	0.1	0.2	0.1	20	20	50	100	100	100	50	20	20	50	50	50
NEPM 2013 HILs Res A Soil																					
NEPM 2013 HILs Res B Soil																					
NEPM 2013 HILs Commercial/Industrial D Soil																					
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																					
Sand 0-1m				160	40	0.5	55				45					110					
Sand 1-2m				220	60	0.5					70					240					
Sand 2-4m				310	95	0.5					110					440					
NEPM 2013 ESLs for Urban Res, Coarse Soil																					
0-2m				85	105	50	70				180		300	2,800		120					
Prelim EILs Urban Res/ Open Public Spaces																					
Prelim EILs Commercial/ Industrial																					
Field ID	**Location**	**Lab Report**	**Date**																		
01_0_0.15	**TP01**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
02_0_0.1	**TP02**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
02_1_0.8	**TP02**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
03_0_0.1	**TP03**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
03_1_0.8	**TP03**	688422	12/11/2019																		
04_0_0.1	**TP04**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
04_1_0.6	**TP04**	692905	12/11/2019																		
05_0_0.1	**TP05**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
05_1_0.72	**TP05**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
06_0_0.1	**TP06**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
06_1_1.2	**TP06**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
07_0_0.1	**TP07**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
08_0_0.1	**TP08**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
09_0_0.1	**TP09**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
09_1_07	**TP09**	692905	12/11/2019																		
10_0_0.1	**TP10**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
10_1_0.7	**TP10**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
11_0_0.2	**TP11**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
11_1_0.8	**TP11**	688422	12/11/2019																		
12_0_0.1	**TP12**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
13_0_0.1	**TP13**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
13_1_0.6	**TP13**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
14_0_0.1	**TP14**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
14_1_0.6	**TP14**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
15_0_0.1	**TP15**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
15_1_1.0	**TP15**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
16_0_0.1	**TP16**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
16_1_1.0	**TP16**	688422	12/11/2019																		
17_0_0.2	**TP17**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
18_0_0.1	**TP18**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
18_1_1.0	**TP18**	688422	12/11/2019																		
19_0_0.1	**TP19**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
19_1_0.7	**TP19**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
20_0_0.1	**TP20**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
20_1_0.8	**TP20**	688422	12/11/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW01_4M	**MW01**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW01_5M	**MW01**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW01_6M	**MW01**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW02_4M	**MW02**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW02_5M	**MW02**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW03_4M	**MW03**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW03_5M	**MW03**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW04_4M	**MW04**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW04_5M	**MW04**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50
MW04_6M	**MW04**	694532	18/12/2019	<0.1	<0.3	<0.1	<0.1	<0.2	<0.1	<20	<20	<50	<100	<100	<100	<50	<20	<20	<50	<50	<50

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

JF1006 John Stokes Square DSI

	Organochlorine Pesticides																								
	Aldrin + Dieldrin	chlordane	Endrin ketone	Organochlorine pesticides EPAVic	Toxaphene	Hexachlorobenzene	Other organochlorine pesticides EPAVic	4,4-DDE	Endosulfan sulphate	Endrin	Endrin aldehyde	Aldrin	g-BHC (Lindane)	DDT+DDE+DDD	Heptachlor	Heptachlor epoxide	a-BHC	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Methoxychlor
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.1	0.05	0.1	1	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 HILs Res A Soil	6	50			20	10				10				240	6										300
NEPM 2013 HILs Res B Soil	10	90			30	15				20				600	10										500
NEPM 2013 HILs Commercial/Industrial D Soil	45	530			160	80				100				3600	50										2500
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																									
Sand 0-1m																									
Sand 1-2m																									
Sand 2-4m																									
NEPM 2013 ESLs for Urban Res, Coarse Soil																									
0-2m																									
Prelim EILs Urban Res/ Open Public Spaces																					180				
Prelim EILs Commercial/ Industrial																					640				

Field ID	Location	Lab Report	Date																							
01_0_0.15	TP01	688422	12/11/2019	0.09	<0.1	<0.05	<0.1	<1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05
02_0_0.1	TP02	688422	12/11/2019	<0.5		<0.5			<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_1_0.8	TP02	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
03_0_0.1	TP03	688422	12/11/2019																								
03_1_0.8	TP03	688422	12/11/2019																								
04_0_0.1	TP04	688422	12/11/2019	0.08	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	0.08	<0.05	<0.05	<0.05
04_1_0.6	TP04	692905	12/11/2019																								
05_0_0.1	TP05	688422	12/11/2019																								
05_1_0.72	TP05	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
06_0_0.1	TP06	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
06_1_1.2	TP06	688422	12/11/2019																								
07_0_0.1	TP07	688422	12/11/2019																								
08_0_0.1	TP08	688422	12/11/2019	<0.05	<0.1	<0.05	<0.1	<1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
09_0_0.1	TP09	688422	12/11/2019	7.5	0.2			<1	<0.05		<0.05	<0.05	<0.05		1.8			<0.05					<0.05	<0.05	5.7	<0.05	<0.05	<0.05
09_1_07	TP09	692905	12/11/2019	0.21											0.06										0.15			
10_0_0.1	TP10	688422	12/11/2019	<0.5		<0.5			<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10_1_0.7	TP10	688422	12/11/2019	<0.05	<0.1	<0.05	<0.1	<1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
11_0_0.2	TP11	688422	12/11/2019	0.83											0.83									<0.05				
11_1_0.8	TP11	688422	12/11/2019																								
12_0_0.1	TP12	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
13_0_0.1	TP13	688422	12/11/2019	<0.05	<0.1	<0.05	<0.1	<1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
13_1_0.6	TP13	688422	12/11/2019																								
14_0_0.1	TP14	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14_1_0.6	TP14	688422	12/11/2019	<0.5		<0.5			<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_0_0.1	TP15	688422	12/11/2019	<0.5		<0.5			<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_1_1.0	TP15	688422	12/11/2019																								
16_0_0.1	TP16	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
16_1_1.0	TP16	688422	12/11/2019																								
17_0_0.2	TP17	688422	12/11/2019	<0.05	<0.1	<0.05	<0.1	<1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18_0_0.1	TP18	688422	12/11/2019																								
18_1_1.0	TP18	688422	12/11/2019																								
19_0_0.1	TP19	688422	12/11/2019	<0.5		<0.5			<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
19_1_0.7	TP19	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20_0_0.1	TP20	688422	12/11/2019	<0.05	<0.1			<1	<0.05		<0.05	<0.05	<0.05		<0.05			<0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20_1_0.8	TP20	688422	12/11/2019																								
MW01_4M	MW01	694532	18/12/2019																								
MW01_5M	MW01	694532	18/12/2019																								
MW01_6M	MW01	694532	18/12/2019																								
MW02_4M	MW02	694532	18/12/2019																								
MW02_5M	MW02	694532	18/12/2019																								
MW03_4M	MW03	694532	18/12/2019																								
MW03_5M	MW03	694532	18/12/2019																								
MW04_4M	MW04	694532	18/12/2019																								
MW04_5M	MW04	694532	18/12/2019																								
MW04_6M	MW04	694532	18/12/2019																								

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

				Organophosphorous Pesticides																													
JF1006 John Stokes Square DSI				Azinophos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Merphos	EPN	Methyl parathion	Ethion	Ethoprop	Mevinphos (Phosdrin)	Fenitrothion	Fensulfothion	Monocrotophos	Fenthion	Malathion	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate	Chlorpyrifos
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.2	0.2	0.2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NEPM 2013 HILs Res A Soil																																			160
NEPM 2013 HILs Res B Soil																																			340
NEPM 2013 HILs Commercial/Industrial D Soil																																			2000
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																																			
Sand 0-1m																																			
Sand 1-2m																																			
Sand 2-4m																																			
NEPM 2013 ESLs for Urban Res, Coarse Soil																																			
0-2m																																			
Prelim EILs Urban Res/ Open Public Spaces																																			
Prelim EILs Commercial/ Industrial																																			
Field ID	**Location**	**Lab Report**	**Date**																																
01_0_0.15	**TP01**	688422	12/11/2019	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
02_0_0.1	**TP02**	688422	12/11/2019																																
02_1_0.8	**TP02**	688422	12/11/2019																																<0.2
03_0_0.1	**TP03**	688422	12/11/2019																																
03_1_0.8	**TP03**	688422	12/11/2019																																
04_0_0.1	**TP04**	688422	12/11/2019																																<0.2
04_1_0.6	**TP04**	692905	12/11/2019																																
05_0_0.1	**TP05**	688422	12/11/2019																																
05_1_0.72	**TP05**	688422	12/11/2019																																<0.2
06_0_0.1	**TP06**	688422	12/11/2019																																<0.2
06_1_1.2	**TP06**	688422	12/11/2019																																
07_0_0.1	**TP07**	688422	12/11/2019																																
08_0_0.1	**TP08**	688422	12/11/2019	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
09_0_0.1	**TP09**	688422	12/11/2019																																<0.2
09_1_07	**TP09**	692905	12/11/2019																																
10_0_0.1	**TP10**	688422	12/11/2019																																
10_1_0.7	**TP10**	688422	12/11/2019	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
11_0_0.2	**TP11**	688422	12/11/2019																																
11_1_0.8	**TP11**	688422	12/11/2019																																
12_0_0.1	**TP12**	688422	12/11/2019																																<0.2
13_0_0.1	**TP13**	688422	12/11/2019	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
13_1_0.6	**TP13**	688422	12/11/2019																																
14_0_0.1	**TP14**	688422	12/11/2019																																<0.2
14_1_0.6	**TP14**	688422	12/11/2019																																
15_0_0.1	**TP15**	688422	12/11/2019																																
15_1_1.0	**TP15**	688422	12/11/2019																																
16_0_0.1	**TP16**	688422	12/11/2019																																<0.2
16_1_1.0	**TP16**	688422	12/11/2019																																
17_0_0.2	**TP17**	688422	12/11/2019	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
18_0_0.1	**TP18**	688422	12/11/2019																																
18_1_1.0	**TP18**	688422	12/11/2019																																
19_0_0.1	**TP19**	688422	12/11/2019																																
19_1_0.7	**TP19**	688422	12/11/2019																																<0.2
20_0_0.1	**TP20**	688422	12/11/2019																																<0.2
20_1_0.8	**TP20**	688422	12/11/2019																																
MW01_4M	**MW01**	694532	18/12/2019																																
MW01_5M	**MW01**	694532	18/12/2019																																
MW01_6M	**MW01**	694532	18/12/2019																																
MW02_4M	**MW02**	694532	18/12/2019																																
MW02_5M	**MW02**	694532	18/12/2019																																
MW03_4M	**MW03**	694532	18/12/2019																																
MW03_5M	**MW03**	694532	18/12/2019																																
MW04_4M	**MW04**	694532	18/12/2019																																
MW04_5M	**MW04**	694532	18/12/2019																																
MW04_6M	**MW04**	694532	18/12/2019																																

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

					Phenols																			Amino		Amino Aromatics			Anilines	
JF1006 John Stokes Square DSI					2,4,5-Trichlorophenol	3&4-Methylphenol (m&p-cresol)	2,4-Dinitrophenol	2,3,4,6-Tetrachlorophenol	Picloram	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2,4,6-Trichlorophenol	Phenols (Total Halogenated)	2-Methylphenol	Tetrachlorophenols	2-Nitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-chloro-3-methylphenol	Phenol	4-Nitrophenol	Pentachlorophenol	Phenols (Total Non Halogenated)	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	2-nitroaniline	Aniline
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					1	0.4	5	5	0.5	0.5	0.5	0.5	0.5	1	1	0.2	10	1	0.5	20	1	0.5	5	1	20	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 HILs Res A Soil									4,500													3,000		100								
NEPM 2013 HILs Res B Soil									6,600													45,000		130								
NEPM 2013 HILs Commercial/Industrial D Soil									35000													240000		660								
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																															
Sand 0-1m																															
Sand 1-2m																															
Sand 2-4m																															
NEPM 2013 ESLs for Urban Res, Coarse Soil																															
0-2m																															
Prelim EILs Urban Res/ Open Public Spaces																															
Prelim EILs Commercial/ Industrial																															
Field ID	**Location**	**Lab Report**	**Date**																												
01_0_0.15	**TP01**	688422	12/11/2019	<1	<0.4	<5			<0.5	<0.5	<0.5	<0.5	<1	<1	<0.2	<10	<1	<0.5	<20	<1	<0.5	<5	<1	<20							
02_0_0.1	**TP02**	688422	12/11/2019	<1	<0.4	<5	<5		<0.5	<0.5	<0.5	<0.5	<1		<0.2		<1	<5		<1	<0.5	<5	<1		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_1_0.8	**TP02**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
03_0_0.1	**TP03**	688422	12/11/2019																													
03_1_0.8	**TP03**	688422	12/11/2019																													
04_0_0.1	**TP04**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
04_1_0.6	**TP04**	692905	12/11/2019																													
05_0_0.1	**TP05**	688422	12/11/2019																													
05_1_0.72	**TP05**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
06_0_0.1	**TP06**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
06_1_1.2	**TP06**	688422	12/11/2019																													
07_0_0.1	**TP07**	688422	12/11/2019																													
08_0_0.1	**TP08**	688422	12/11/2019	<1	<0.4	<5			<0.5	<0.5	<0.5	<0.5	<1	<1	<0.2	<10	<1	<0.5	<20	<1	<0.5	<5	<1	<20							
09_0_0.1	**TP09**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
09_1_07	**TP09**	692905	12/11/2019																													
10_0_0.1	**TP10**	688422	12/11/2019	<1	<0.4	<5	<5		<0.5	<0.5	<0.5	<0.5	<1		<0.2		<1	<5		<1	<0.5	<5	<1		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10_1_0.7	**TP10**	688422	12/11/2019	<1	<0.4	<5			<0.5	<0.5	<0.5	<0.5	<1	<1	<0.2	<10	<1	<0.5	<20	<1	<0.5	<5	<1	<20							
11_0_0.2	**TP11**	688422	12/11/2019																													
11_1_0.8	**TP11**	688422	12/11/2019																													
12_0_0.1	**TP12**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
13_0_0.1	**TP13**	688422	12/11/2019	<1	<0.4	<5			<0.5	<0.5	<0.5	<0.5	<1	<1	<0.2	<10	<1	<0.5	<20	<1	<0.5	<5	<1	<20							
13_1_0.6	**TP13**	688422	12/11/2019																													
14_0_0.1	**TP14**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
14_1_0.6	**TP14**	688422	12/11/2019	<1	<0.4	<5	<5		<0.5	<0.5	<0.5	<0.5	<1		<0.2		<1	<5		<1	<0.5	<5	<1		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_0_0.1	**TP15**	688422	12/11/2019	<1	<0.4	<5	<5		<0.5	<0.5	<0.5	<0.5	<1		<0.2		<1	<5		<1	<0.5	<5	<1		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_1_1.0	**TP15**	688422	12/11/2019																													
16_0_0.1	**TP16**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
16_1_1.0	**TP16**	688422	12/11/2019																													
17_0_0.2	**TP17**	688422	12/11/2019	<1	<0.4	<5			<0.5	<0.5	<0.5	<0.5	<1	<1	<0.2	<10	<1	<0.5	<20	<1	<0.5	<5	<1	<20							
18_0_0.1	**TP18**	688422	12/11/2019																													
18_1_1.0	**TP18**	688422	12/11/2019																													
19_0_0.1	**TP19**	688422	12/11/2019	<1	<0.4	<5	<5		<0.5	<0.5	<0.5	<0.5	<1		<0.2		<1	<5		<1	<0.5	<5	<1		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
19_1_0.7	**TP19**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
20_0_0.1	**TP20**	688422	12/11/2019		<0.4			<0.5							<0.2							<0.5		<1								
20_1_0.8	**TP20**	688422	12/11/2019																													
MW01_4M	**MW01**	694532	18/12/2019																													
MW01_5M	**MW01**	694532	18/12/2019																													
MW01_6M	**MW01**	694532	18/12/2019																													
MW02_4M	**MW02**	694532	18/12/2019																													
MW02_5M	**MW02**	694532	18/12/2019																													
MW03_4M	**MW03**	694532	18/12/2019																													
MW03_5M	**MW03**	694532	18/12/2019																													
MW04_4M	**MW04**	694532	18/12/2019																													
MW04_5M	**MW04**	694532	18/12/2019																													
MW04_6M	**MW04**	694532	18/12/2019																													

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

																	Chlorinated Hydrocarbons																	
JF1006 John Stokes Square DSI	Benzyl chloride	Hexachlorocyclopentadiene	Hexachloroethane	1,1-dichloroethane	1,1-dichloroethene	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	Bromochloromethane	Chloroform	Bromodichloromethane	Chloromethane	1,1,1,2-tetrachloroethane	Tetrachloroethene	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	cis-1,3-dichloropropene	Hexachlorobutadiene	Dibromomethane	Dichloromethane	Other chlorinated hydrocarbons EPAVic	Trichloroethene	Chlorinated hydrocarbons EPAVic	cis-1,2-dichloroethene	1,1,2-trichloroethane	trans-1,3-dichloropropene	Vinyl chloride	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	trans-1,2-dichloroethene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 HILs Res A Soil																																	
NEPM 2013 HILs Res B Soil																																	
NEPM 2013 HILs Commercial/Industrial D Soil																																	
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																																	
Sand 0-1m																																	
Sand 1-2m																																	
Sand 2-4m																																	
NEPM 2013 ESLs for Urban Res, Coarse Soil																																	
0-2m																																	
Prelim EILs Urban Res/ Open Public Spaces																																	
Prelim EILs Commercial/ Industrial																																	
Field ID	**Location**	**Lab Report**	**Date**																															
01_0_0.15	**TP01**	688422	12/11/2019				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_0_0.1	**TP02**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_1_0.8	**TP02**	688422	12/11/2019																															
03_0_0.1	**TP03**	688422	12/11/2019																															
03_1_0.8	**TP03**	688422	12/11/2019																															
04_0_0.1	**TP04**	688422	12/11/2019																															
04_1_0.6	**TP04**	692905	12/11/2019																															
05_0_0.1	**TP05**	688422	12/11/2019																															
05_1_0.72	**TP05**	688422	12/11/2019																															
06_0_0.1	**TP06**	688422	12/11/2019																															
06_1_1.2	**TP06**	688422	12/11/2019																															
07_0_0.1	**TP07**	688422	12/11/2019																															
08_0_0.1	**TP08**	688422	12/11/2019				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09_0_0.1	**TP09**	688422	12/11/2019																															
09_1_07	**TP09**	692905	12/11/2019																															
10_0_0.1	**TP10**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10_1_0.7	**TP10**	688422	12/11/2019				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
11_0_0.2	**TP11**	688422	12/11/2019																															
11_1_0.8	**TP11**	688422	12/11/2019																															
12_0_0.1	**TP12**	688422	12/11/2019																															
13_0_0.1	**TP13**	688422	12/11/2019				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
13_1_0.6	**TP13**	688422	12/11/2019																															
14_0_0.1	**TP14**	688422	12/11/2019																															
14_1_0.6	**TP14**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_0_0.1	**TP15**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_1_1.0	**TP15**	688422	12/11/2019																															
16_0_0.1	**TP16**	688422	12/11/2019																															
16_1_1.0	**TP16**	688422	12/11/2019																															
17_0_0.2	**TP17**	688422	12/11/2019				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18_0_0.1	**TP18**	688422	12/11/2019																															
18_1_1.0	**TP18**	688422	12/11/2019																															
19_0_0.1	**TP19**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
19_1_0.7	**TP19**	688422	12/11/2019																															
20_0_0.1	**TP20**	688422	12/11/2019																															
20_1_0.8	**TP20**	688422	12/11/2019																															
MW01_4M	**MW01**	694532	18/12/2019																															
MW01_5M	**MW01**	694532	18/12/2019																															
MW01_6M	**MW01**	694532	18/12/2019																															
MW02_4M	**MW02**	694532	18/12/2019																															
MW02_5M	**MW02**	694532	18/12/2019																															
MW03_4M	**MW03**	694532	18/12/2019																															
MW03_5M	**MW03**	694532	18/12/2019																															
MW04_4M	**MW04**	694532	18/12/2019																															
MW04_5M	**MW04**	694532	18/12/2019																															
MW04_6M	**MW04**	694532	18/12/2019																															

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

				Explosives			Halogenated Benzenes												Halogenated Hydrocarbons					Herbicides														
				2,6-dinitrotoluene	Nitrobenzene	2,4-Dinitrotoluene	1,2,3,5-Tetrachlorobenzene	1,2,3,4-tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,4,5-tetrachlorobenzene	1,3,5-Trichlorobenzene	Pentachlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Bromobenzene	4-chlorotoluene	Chlorobenzene	Iodomethane	Bromomethane	1,2-dibromoethane	Dichlorodifluoromethane	Trichlorofluoromethane	Pronamide	Trifluralin	2,4,5-TP (Silvex)	2,4-Dichlorprop	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	Dicamba	2,4,5-Trichlorophenoxy Acetic Acid	2-Methyl-4-Chlorophenoxy Butanoic Acid	2-Methyl-4-chlorophenoxyacetic acid	Atrazine	Dinoseb	Hedonal	Mecoprop
JF1006 John Stokes Square DSI				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5
NEPM 2013 HILs Res A Soil																														600	600	600	320		900	600
NEPM 2013 HILs Res B Soil																														900	900	900	470		1,600	900
NEPM 2013 HILs Commercial/Industrial D Soil																														5000	5000	5000	2500		9000	5000
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																																				
Sand 0-1m																																				
Sand 1-2m																																				
Sand 2-4m																																				
NEPM 2013 ESLs for Urban Res, Coarse Soil																																				
0-2m																																				
Prelim EILs Urban Res/ Open Public Spaces																																				
Prelim EILs Commercial/ Industrial																																				
Field ID	**Location**	**Lab Report**	**Date**																																			
01_0_0.15	**TP01**	688422	12/11/2019		<0.5	<0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
02_0_0.1	**TP02**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													
02_1_0.8	**TP02**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
03_0_0.1	**TP03**	688422	12/11/2019																																			
03_1_0.8	**TP03**	688422	12/11/2019																																			
04_0_0.1	**TP04**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
04_1_0.6	**TP04**	692905	12/11/2019																																			
05_0_0.1	**TP05**	688422	12/11/2019																																			
05_1_0.72	**TP05**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
06_0_0.1	**TP06**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
06_1_1.2	**TP06**	688422	12/11/2019																																			
07_0_0.1	**TP07**	688422	12/11/2019																																			
08_0_0.1	**TP08**	688422	12/11/2019		<0.5	<0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
09_0_0.1	**TP09**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
09_1_07	**TP09**	692905	12/11/2019																																			
10_0_0.1	**TP10**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													
10_1_0.7	**TP10**	688422	12/11/2019		<0.5	<0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
11_0_0.2	**TP11**	688422	12/11/2019																																			
11_1_0.8	**TP11**	688422	12/11/2019																																			
12_0_0.1	**TP12**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
13_0_0.1	**TP13**	688422	12/11/2019		<0.5	<0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
13_1_0.6	**TP13**	688422	12/11/2019																																			
14_0_0.1	**TP14**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
14_1_0.6	**TP14**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													
15_0_0.1	**TP15**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													
15_1_1.0	**TP15**	688422	12/11/2019																																			
16_0_0.1	**TP16**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
16_1_1.0	**TP16**	688422	12/11/2019																																			
17_0_0.2	**TP17**	688422	12/11/2019		<0.5	<0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5
18_0_0.1	**TP18**	688422	12/11/2019																																			
18_1_1.0	**TP18**	688422	12/11/2019																																			
19_0_0.1	**TP19**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													
19_1_0.7	**TP19**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
20_0_0.1	**TP20**	688422	12/11/2019																											<0.5	<0.5	<0.5	<0.2		<0.5	<0.5
20_1_0.8	**TP20**	688422	12/11/2019																																			
MW01_4M	**MW01**	694532	18/12/2019																																			
MW01_5M	**MW01**	694532	18/12/2019																																			
MW01_6M	**MW01**	694532	18/12/2019																																			
MW02_4M	**MW02**	694532	18/12/2019																																			
MW02_5M	**MW02**	694532	18/12/2019																																			
MW03_4M	**MW03**	694532	18/12/2019																																			
MW03_5M	**MW03**	694532	18/12/2019																																			
MW04_4M	**MW04**	694532	18/12/2019																																			
MW04_5M	**MW04**	694532	18/12/2019																																			
MW04_6M	**MW04**	694532	18/12/2019																																			

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

JF1006 John Stokes Square DSI																																	
		MAH					Nitroaromatics			Other		PCBs								Pesticides			Phthalates						Solvents					
		Total MAH	1,3,5-trimethylbenzene	Styrene	Isopropylbenzene	1,2,4-trimethylbenzene	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Acetophenone	Actril (loxynil)	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1221	Arochlor 1260	Arochlor 1016	PCBs (Sum of total)	Parathion	Pirimiphos-methyl	Mirex	Bis(2-ethylhexyl) phthalate	Diethylphthalate	Butyl benzyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	4-Methyl-2-pentanone	Acetone	Allyl chloride	Carbon disulfide	Methyl Ethyl Ketone
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.01	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 HILs Res A Soil																			1			10											
NEPM 2013 HILs Res B Soil																			1			20											
NEPM 2013 HILs Commercial/Industrial D Soil																			7			100											
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																																	
Sand 0-1m																																	
Sand 1-2m																																	
Sand 2-4m																																	
NEPM 2013 ESLs for Urban Res, Coarse Soil																																	
0-2m																																	
Prelim EILs Urban Res/ Open Public Spaces																																	
Prelim EILs Commercial/ Industrial																																	
Field ID	**Location**	**Lab Report**	**Date**																														
01_0_0.15	**TP01**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5									<0.2	<0.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_0_0.1	**TP02**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
02_1_0.8	**TP02**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
03_0_0.1	**TP03**	688422	12/11/2019																																
03_1_0.8	**TP03**	688422	12/11/2019																																
04_0_0.1	**TP04**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
04_1_0.6	**TP04**	692905	12/11/2019																																
05_0_0.1	**TP05**	688422	12/11/2019																																
05_1_0.72	**TP05**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
06_0_0.1	**TP06**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
06_1_1.2	**TP06**	688422	12/11/2019																																
07_0_0.1	**TP07**	688422	12/11/2019																																
08_0_0.1	**TP08**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5									<0.2	<0.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
09_0_0.1	**TP09**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
09_1_07	**TP09**	692905	12/11/2019																																
10_0_0.1	**TP10**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
10_1_0.7	**TP10**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5									<0.2	<0.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
11_0_0.2	**TP11**	688422	12/11/2019																																
11_1_0.8	**TP11**	688422	12/11/2019																																
12_0_0.1	**TP12**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
13_0_0.1	**TP13**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5									<0.2	<0.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
13_1_0.6	**TP13**	688422	12/11/2019																																
14_0_0.1	**TP14**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
14_1_0.6	**TP14**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_0_0.1	**TP15**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15_1_1.0	**TP15**	688422	12/11/2019																																
16_0_0.1	**TP16**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
16_1_1.0	**TP16**	688422	12/11/2019																																
17_0_0.2	**TP17**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5									<0.2	<0.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
18_0_0.1	**TP18**	688422	12/11/2019																																
18_1_1.0	**TP18**	688422	12/11/2019																																
19_0_0.1	**TP19**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
19_1_0.7	**TP19**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
20_0_0.1	**TP20**	688422	12/11/2019											<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.01											
20_1_0.8	**TP20**	688422	12/11/2019																																
MW01_4M	**MW01**	694532	18/12/2019																																
MW01_5M	**MW01**	694532	18/12/2019																																
MW01_6M	**MW01**	694532	18/12/2019																																
MW02_4M	**MW02**	694532	18/12/2019																																
MW02_5M	**MW02**	694532	18/12/2019																																
MW03_4M	**MW03**	694532	18/12/2019																																
MW03_5M	**MW03**	694532	18/12/2019																																
MW04_4M	**MW04**	694532	18/12/2019																																
MW04_5M	**MW04**	694532	18/12/2019																																
MW04_6M	**MW04**	694532	18/12/2019																																

AGON ENVIRONMENTAL

APPENDIX G
Laboratory Analysis Results

				SVOCs								VOCs	Inorganics									
JF1006 John Stokes Square DSI				3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	Bis(2-chloroethoxy) methane	Bis(2-chloroisopropyl) ether	Dibenzofuran	N-nitrosopiperidine	Dibenz(a,j)acridine	Iron (%)	% Clay*	Conductivity (1:5 aqueous extract)	Fluoride	Moisture Content (dried @ 103°C)	Cyanide (Free)	Cyanide Total	pH (Lab)	TOC	CEC
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	uS/cm	mg/kg	%	mg/kg	mg/kg	-	%	meq/100g
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	1	10	100	1	5	5	0.1	0.1	0.05
NEPM 2013 HILs Res A Soil																		250				
NEPM 2013 HILs Res B Soil																		300				
NEPM 2013 HILs Commercial/Industrial D Soil																		1500				
NEPM 2013 Res A/B Soil HSL for Vapour Intrusion																						
Sand 0-1m																						
Sand 1-2m																						
Sand 2-4m																						
NEPM 2013 ESLs for Urban Res, Coarse Soil																						
0-2m																						
Prelim EILs Urban Res/ Open Public Spaces																						
Prelim EILs Commercial/ Industrial																						
Field ID	**Location**	**Lab Report**	**Date**																			
01_0_0.15	**TP01**	688422	12/11/2019													<100	15	<5	<5			
02_0_0.1	**TP02**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					11					
02_1_0.8	**TP02**	688422	12/11/2019														14	<5				
03_0_0.1	**TP03**	688422	12/11/2019														9.3					
03_1_0.8	**TP03**	688422	12/11/2019										10	21	25		12			5.8	0.1	2.6
04_0_0.1	**TP04**	688422	12/11/2019														13	<5				
04_1_0.6	**TP04**	692905	12/11/2019														13					
05_0_0.1	**TP05**	688422	12/11/2019														11					
05_1_0.72	**TP05**	688422	12/11/2019														14	<5				
06_0_0.1	**TP06**	688422	12/11/2019														11	<5				
06_1_1.2	**TP06**	688422	12/11/2019														12					
07_0_0.1	**TP07**	688422	12/11/2019														5.7					
08_0_0.1	**TP08**	688422	12/11/2019													<100	11	<5	<5			
09_0_0.1	**TP09**	688422	12/11/2019														7.1	<5				
09_1_07	**TP09**	692905	12/11/2019														13					
10_0_0.1	**TP10**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					8.6					
10_1_0.7	**TP10**	688422	12/11/2019													<100	11	<5	<5			
11_0_0.2	**TP11**	688422	12/11/2019														9.3					
11_1_0.8	**TP11**	688422	12/11/2019										17	32	240		15			6.5	0.1	3.6
12_0_0.1	**TP12**	688422	12/11/2019														6.0	<5				
13_0_0.1	**TP13**	688422	12/11/2019													<100	8.1	<5	<5			
13_1_0.6	**TP13**	688422	12/11/2019														11					
14_0_0.1	**TP14**	688422	12/11/2019														9.5	<5				
14_1_0.6	**TP14**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					14					
15_0_0.1	**TP15**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					7.5					
15_1_1.0	**TP15**	688422	12/11/2019														12					
16_0_0.1	**TP16**	688422	12/11/2019														11	<5				
16_1_1.0	**TP16**	688422	12/11/2019										17	30	15		15			5.9	0.3	2.3
17_0_0.2	**TP17**	688422	12/11/2019													<100	9.5	<5	<5			
18_0_0.1	**TP18**	688422	12/11/2019														11					
18_1_1.0	**TP18**	688422	12/11/2019										18	28	<10		13			5.0	0.2	1.6
19_0_0.1	**TP19**	688422	12/11/2019	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					13					
19_1_0.7	**TP19**	688422	12/11/2019														15	<5				
20_0_0.1	**TP20**	688422	12/11/2019														10	<5				
20_1_0.8	**TP20**	688422	12/11/2019														14					
MW01_4M	**MW01**	694532	18/12/2019														21					
MW01_5M	**MW01**	694532	18/12/2019														24					
MW01_6M	**MW01**	694532	18/12/2019														26					
MW02_4M	**MW02**	694532	18/12/2019														20					
MW02_5M	**MW02**	694532	18/12/2019														23					
MW03_4M	**MW03**	694532	18/12/2019														24					
MW03_5M	**MW03**	694532	18/12/2019														25					
MW04_4M	**MW04**	694532	18/12/2019														25					
MW04_5M	**MW04**	694532	18/12/2019														23					
MW04_6M	**MW04**	694532	18/12/2019														23					

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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Company	AGON ENVIRONMENTAL	Purchase Order		Project Manager	JOHN IDDLES
Address	1/41 Jessop Crescent Berrimah 0828	Eurofins | mgt Quote №		Project №	JF1006
Contact Name	Robyn Maurer				
Contact Phone №	0428 547 849				
Special Direction	ANALYSIS: B12A and Semi Vol CHC 3 DAY TAT, remaining analysis STD TAT				
Relinquished by (Signature)					
(Time / Date)	___:___				

Project Name	JOHN STOKES SQUARE
Electronic Results Format	ESDAT
Email for Results	robyn.maurer@agonenviro.com.au; sophie.hambour@agonenviro.com.au; INVOICE: Finance@agonenviro.com.au
Turn Around Requirements	1 DAY* 2 DAY* 3 DAY* * Surcharges apply; 5 DAY (Std.) Other ( )

Analysis (Note Where metals are requested, please specify "Total" or "Filtered")

№	Client Sample ID	Date	Matrix	M13A: METALS	SEMI VOL CHC	B3: PAH, PHENOLS	B12A: TRH, BTEXN, Oxygenates	B14: OCP OPP	pH	TDS	B11C: Cation	B11 E: Anion	B1: TRH BTEXN	HOLD	Containers: 1L Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL vial	125mL Amber Glass	Jar	Sample Comments / DG Hazard Warning
1	JF1066_MW01_201021	21.01.2020	W	X	X	X	X	X	X	X	X	X										1 x 500ml plastic,
2	JF1066_MW01_201022	22.01.2020		X	X	X		X	X	X	X	X	X									PLEASE FORWARD 2 x VOC and Metal vials to ALS. Hold remaining VOC's 3 x 60ml plastic
3	JF1066_MW02_201022	22.01.2020	W	X	X	X	X	X	X	X	X	X										
4	JF1066_MW03_201022	22.01.2020	W	X	X	X	X	X	X	X	X	X										
5	JF1066_MW04_201022	22.01.2020	W	X	X	X	X	X	X	X	X	X										
6	JF1066_MW04B_201022	22.01.2020	W	X									X									Hold all others unless advised
7	JF1066_T1_201022	22.01.2020	W	X																		Hold all others unless advised
8	JF1066_Trip_201022	22.01.2020	W										X									
9	JF1066_R1_201022	22.01.2020	W	X									X									
10																						
11																						
12																						

Method of Shipment: Courier (#) Hand Delivered Postal

Laboratory Use Only								
Received By		SYD | BNE | MEL | PER | ADL | NEW | DAR	Date	__/__/__	Time	__:__	Signature	Temperature
Received By	Mollie Reeve	SYD | BNE (MEL) | PER | ADL | NEW | DAR	Date	22/1/20	Time	9:00	Signature	Report № 69819

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Agon Environmental Pty Ltd
3/224 Glen Osmond Road
Fullarton
SA 5063

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Robyn Maurer**

Report **698191-W**
Project name JOHN STOKES SQUARE
Project ID JF1006
Received Date Jan 22, 2020

Client Sample ID			**JF1066_WAT01_201021**	**JF1066_WAT01_201022**	**JF1066_WAT02_201022**	**JF1066_WAT03_201022**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja21725**	**M20-Ja21726**	**M20-Ja21727**	**M20-Ja21728**
Date Sampled			**Jan 21, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	0.08	-	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	0.3	-	0.2	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	-	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.38	-	0.2	< 0.1
Ether Oxygenates						
Methyl-tert-Butyl Ether	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Di-isopropyl Ether*	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Ethyl-tert Butyl Ether*	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Tertiary Amyl Methyl Ether*	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Tertiary Butyl Alcohol*	0.025	mg/L	< 0.025	-	< 0.025	< 0.025
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	-	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	125	-	128	85
Halogenated Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			JF1066_WAT01_201021	JF1066_WAT01_201022	JF1066_WAT02_201022	JF1066_WAT03_201022
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M20-Ja21725	M20-Ja21726	M20-Ja21727	M20-Ja21728
Date Sampled			Jan 21, 2020	Jan 22, 2020	Jan 22, 2020	Jan 22, 2020
Test/Reference	LOR	Unit				
Halogenated Volatile Organics						
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroform	0.005	mg/L	0.006	0.006	0.010	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	0.006	0.006	0.01	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	0.006	0.006	0.01	< 0.005
4-Bromofluorobenzene (surr.)	1	%	125	125	128	85
Toluene-d8 (surr.)	1	%	111	94	108	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	-	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	0.08	-	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.08	-	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	0.2	-	0.2	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	-	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.28	-	0.2	< 0.1

Client Sample ID			JF1066_WAT06_201022
Sample Matrix			Water
Eurofins Sample No.			M20-Ja21729
Date Sampled			Jan 22, 2020
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1

Client Sample ID			JF1066_WAT06_201022
Sample Matrix			**Water**
Eurofins Sample No.			**M20-Ja21729**
Date Sampled			**Jan 22, 2020**
Test/Reference	LOR	Unit	
Ether Oxygenates			
Methyl-tert-Butyl Ether	0.001	mg/L	< 0.001
Di-isopropyl Ether*	0.001	mg/L	< 0.001
Ethyl-tert Butyl Ether*	0.001	mg/L	< 0.001
Tertiary Amyl Methyl Ether*	0.001	mg/L	< 0.001
Tertiary Butyl Alcohol*	0.025	mg/L	< 0.025
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	126
Halogenated Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.001	mg/L	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Methylene Chloride	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005

Client Sample ID			JF1066_WAT06_201022
Sample Matrix			**Water**
Eurofins Sample No.			**M20-Ja21729**
Date Sampled			**Jan 22, 2020**
Test/Reference	LOR	Unit	
Halogenated Volatile Organics			
4-Bromofluorobenzene (surr.)	1	%	126
Toluene-d8 (surr.)	1	%	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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
Eurofins | mgt Suite B12A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 23, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Ether Oxygenates	Melbourne	Jan 23, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
BTEX	Melbourne	Jan 23, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Halogenated Volatile Organics	Melbourne	Jan 23, 2020	7 Days
- Method: USEPA 8260 MGT 350A Halogenated Volatile Organics			

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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Company Name: Agon Environmental Pty Ltd
Address: 3/224 Glen Osmond Road
Fullarton
SA 5063

Project Name: JOHN STOKES SQUARE
Project ID: JF1006

Order No.:
Report #: 698191
Phone: 08 8338 1009
Fax:

Received: Jan 22, 2020 9:00 AM
Due: Jan 28, 2020
Priority: 3 Day
Contact Name: John Iddles

Eurofins Analytical Services Manager : Michael Cassidy

Sample Detail						Halogenated Volatile Organics	Eurofins | mgt Suite B12A
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	JF1066_WAT01_201021	Jan 21, 2020		Water	M20-Ja21725	X	X
2	JF1066_WAT01_201022	Jan 22, 2020		Water	M20-Ja21726	X	X
3	JF1066_WAT02_201022	Jan 22, 2020		Water	M20-Ja21727	X	X
4	JF1066_WAT03_201022	Jan 22, 2020		Water	M20-Ja21728	X	X
5	JF1066_WAT06_201022	Jan 22, 2020		Water	M20-Ja21729	X	X
Test Counts						5	5

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.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

ppm: Parts per million | **ppb:** Parts per billion | **%:** Percentage

org/100mL: Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate 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 - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
Ether Oxygenates							
Methyl-tert-Butyl Ether	mg/L	< 0.001			0.001	Pass	
Di-isopropyl Ether*	mg/L	< 0.001			0.001	Pass	
Ethyl-tert Butyl Ether*	mg/L	< 0.001			0.001	Pass	
Tertiary Amyl Methyl Ether*	mg/L	< 0.001			0.001	Pass	
Tertiary Butyl Alcohol*	mg/L	< 0.025			0.025	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Halogenated Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	105			70-130	Pass	
TRH C10-C14	%	126			70-130	Pass	
LCS - % Recovery							
Ether Oxygenates							
Methyl-tert-Butyl Ether	%	83			70-130	Pass	
Di-isopropyl Ether*	%	104			75-125	Pass	
Ethyl-tert Butyl Ether*	%	106			75-125	Pass	
Tertiary Amyl Methyl Ether*	%	103			75-125	Pass	
Tertiary Butyl Alcohol*	%	104			75-125	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	98			70-130	Pass	
Xylenes - Total	%	97			70-130	Pass	
LCS - % Recovery							
Halogenated Volatile Organics							
1.1-Dichloroethene	%	80			70-130	Pass	
1.1.1-Trichloroethane	%	86			70-130	Pass	
1.2-Dichlorobenzene	%	99			70-130	Pass	
1.2-Dichloroethane	%	100			70-130	Pass	
Trichloroethene	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	87			70-130	Pass	
TRH C6-C10	%	101			70-130	Pass	
TRH >C10-C16	%	120			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-Ja19177	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Ether Oxygenates				Result 1					
Methyl-tert-Butyl Ether	M20-Ja19177	NCP	%	79			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M20-Ja19177	NCP	%	101			70-130	Pass	
Toluene	M20-Ja19177	NCP	%	109			70-130	Pass	
Ethylbenzene	M20-Ja19177	NCP	%	105			70-130	Pass	
m&p-Xylenes	M20-Ja19177	NCP	%	109			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	M20-Ja19177	NCP	%	109			70-130	Pass	
Xylenes - Total	M20-Ja19177	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Ja19177	NCP	%	93			70-130	Pass	
TRH C6-C10	M20-Ja19177	NCP	%	122			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Ja21728	CP	%	77			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Ja21728	CP	%	73			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Ja19063	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Ether Oxygenates				Result 1	Result 2	RPD			
Methyl-tert-Butyl Ether	M20-Ja19063	NCP	mg/L	0.002	0.002	4.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M20-Ja19063	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M20-Ja19063	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M20-Ja19063	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M20-Ja19063	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M20-Ja19063	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M20-Ja19063	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Ja19063	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M20-Ja19063	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Halogenated Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroform	S20-Ja16497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Halogenated Volatile Organics				Result 1	Result 2	RPD			
cis-1.2-Dichloroethene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vinyl chloride	S20-Ja16497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Ja21727	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M20-Ja21727	CP	mg/L	0.2	0.2	9.0	30%	Pass	
TRH C29-C36	M20-Ja21727	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Ja21727	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M20-Ja21727	CP	mg/L	0.2	0.2	10	30%	Pass	
TRH >C34-C40	M20-Ja21727	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	No
Appropriate sample containers have been used	No
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.

Authorised By

Michael Cassidy	Analytical Services Manager
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

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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Agon Environmental Pty Ltd
3/224 Glen Osmond Road
Fullarton
SA 5063

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Robyn Maurer**

Report **698341-W**
Project name JOHN STOKES SQUARE
Project ID JF1006
Received Date Jan 22, 2020

Client Sample ID			**JF1066_MW01_201021**	**JF1066_MW02_201022**	**JF1066_MW03_201022**	**JF1066_MW04_201022**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja23007**	**M20-Ja23008**	**M20-Ja23009**	**M20-Ja23010**
Date Sampled			**Jan 21, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	64	55	111	57
p-Terphenyl-d14 (surr.)	1	%	77	65	113	80
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Client Sample ID			JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja23007**	**M20-Ja23008**	**M20-Ja23009**	**M20-Ja23010**
Date Sampled			**Jan 21, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	84	75	112	83
Tetrachloro-m-xylene (surr.)	1	%	65	60	127	57
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	76	62	137	64

Client Sample ID			JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja23007**	**M20-Ja23008**	**M20-Ja23009**	**M20-Ja23010**
Date Sampled			**Jan 21, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	44	35	69	40
Chloride	1	mg/L	190	38	17	16
pH (at 25°C)	0.1	pH Units	6.1	6.2	4.5	4.9
Sulphate (as SO4)	5	mg/L	56	17	26	32
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	430	120	120	150
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	0.001	mg/L	0.002	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	-	-	< 0.001	< 0.001
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	-	-	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.05	< 0.05	-	-
Boron (filtered)	0.05	mg/L	-	-	< 0.05	< 0.05
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.014	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	-	-	< 0.001	< 0.001
Cobalt	0.001	mg/L	0.006	0.002	-	-
Cobalt (filtered)	0.001	mg/L	-	-	0.005	0.002
Copper	0.001	mg/L	0.017	0.001	-	-
Copper (filtered)	0.001	mg/L	-	-	0.006	0.004
Lead	0.001	mg/L	0.035	0.009	-	-

Client Sample ID			JF1066_MW01_201021	JF1066_MW02_201022	JF1066_MW03_201022	JF1066_MW04_201022
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja23007**	**M20-Ja23008**	**M20-Ja23009**	**M20-Ja23010**
Date Sampled			**Jan 21, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Lead (filtered)	0.001	mg/L	-	-	0.005	0.002
Manganese	0.005	mg/L	0.21	0.19	-	-
Manganese (filtered)	0.005	mg/L	-	-	0.14	0.032
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.12	0.009	-	-
Nickel (filtered)	0.001	mg/L	-	-	0.025	0.016
Selenium	0.001	mg/L	< 0.001	< 0.001	-	-
Selenium (filtered)	0.001	mg/L	-	-	< 0.001	< 0.001
Zinc	0.005	mg/L	0.26	0.044	-	-
Zinc (filtered)	0.005	mg/L	-	-	0.093	0.034
Alkali Metals						
Calcium	0.5	mg/L	11	7.7	5.3	5.7
Magnesium	0.5	mg/L	10	3.5	2.7	4.6
Potassium	0.5	mg/L	1.9	1.0	0.6	< 0.5
Sodium	0.5	mg/L	100	17	15	16

Client Sample ID			JF1066_WAT4B_201022	JF1066_TRIPLICATE_201022	JF1066_T1_201022	JF1066_R1_201022
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja23011**	**M20-Ja23012**	**M20-Ja23013**	**M20-Ja23014**
Date Sampled			**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	-	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	-	< 0.1
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	-	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	-	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	-	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	93	-	99	100

Client Sample ID			JF1066_WAT4B_201022	JF1066_TRIPLICATE_201022	JF1066_T1_201022	JF1066_R1_201022
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Ja23011**	**M20-Ja23012**	**M20-Ja23013**	**M20-Ja23014**
Date Sampled			**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**	**Jan 22, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	< 0.05
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Cobalt (filtered)	0.001	mg/L	0.001	< 0.001	-	< 0.001
Copper (filtered)	0.001	mg/L	0.004	0.003	-	< 0.001
Lead (filtered)	0.001	mg/L	0.002	0.003	-	< 0.001
Manganese (filtered)	0.005	mg/L	0.030	0.044	-	< 0.005
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	< 0.0001
Nickel (filtered)	0.001	mg/L	0.017	< 0.001	-	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Zinc (filtered)	0.005	mg/L	0.032	0.025	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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 - 2013 NEPM Fractions	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Jan 24, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins | mgt Suite B1			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 24, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins | mgt Suite B3			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)			
Eurofins | mgt Suite B11E: Cl/SO4/Alkalinity			
Chloride	Melbourne	Jan 24, 2020	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	Jan 24, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Jan 24, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
pH (at 25°C)	Melbourne	Jan 24, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Dissolved Solids Dried at 180°C ± 2°C	Melbourne	Jan 24, 2020	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			
NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	Melbourne	Jan 28, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	Melbourne	Jan 28, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins | mgt Suite B11C: Na/K/Ca/Mg	Melbourne	Jan 24, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals by ICP-AES			

eurofins | Environment Testing

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Fax:

Received: Jan 22, 2020 11:00 AM
Due: Jan 30, 2020
Priority: 5 Day
Contact Name: Robyn Maurer

Eurofins Analytical Services Manager : Michael Cassidy

Sample Detail						pH (at 25°C)	Total Dissolved Solids Dried at 180°C ± 2°C	Eurofins | mgt Suite B3	Eurofins | mgt Suite B14	Eurofins | mgt Suite B1	BTEXN and Volatile TRH	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	Eurofins | mgt Suite B11E: Cl/SO4/Alkalinity	Eurofins | mgt Suite B11C: Na/K/Ca/Mg
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	JF1066_MW01_201021	Jan 21, 2020		Water	M20-Ja23007	X	X	X	X			X	X	X
2	JF1066_MW02_201022	Jan 22, 2020		Water	M20-Ja23008	X	X	X	X			X	X	X
3	JF1066_MW03_201022	Jan 22, 2020		Water	M20-Ja23009	X	X	X	X			X	X	X
4	JF1066_MW04_201022	Jan 22, 2020		Water	M20-Ja23010	X	X	X	X			X	X	X
5	JF1066_WAT4B_201022	Jan 22, 2020		Water	M20-Ja23011					X		X		
6	JF1066_TRIPLICATE_20102	Jan 22, 2020		Water	M20-Ja23012					X		X		

eurofins | Environment Testing

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Project Name: JOHN STOKES SQUARE
Project ID: JF1006

Order No.:
Report #: 698341
Phone: 08 8338 1009
Fax:

Received: Jan 22, 2020 11:00 AM
Due: Jan 30, 2020
Priority: 5 Day
Contact Name: Robyn Maurer

Eurofins Analytical Services Manager : Michael Cassidy

Sample Detail						pH (at 25°C)	Total Dissolved Solids Dried at 180°C ± 2°C	Eurofins | mgt Suite B3	Eurofins | mgt Suite B14	Eurofins | mgt Suite B1	BTEXN and Volatile TRH	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	Eurofins | mgt Suite B11E: Cl/SO4/Alkalinity	Eurofins | mgt Suite B11C: Na/K/Ca/Mg
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
	2													
7	JF1066_T1_201022	Jan 22, 2020		Water	M20-Ja23013						X			
8	JF1066_R1_201022	Jan 22, 2020		Water	M20-Ja23014					X		X		
Test Counts						4	4	4	4	3	1	7	4	4

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.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

ppm: Parts per million | **ppb:** Parts per billion | **%:** Percentage

org/100mL: Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate 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 - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	113			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	108			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	110			70-130	Pass	
TRH C10-C14	%	113			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	122			70-130	Pass	
Toluene	%	118			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	108			70-130	Pass	
Xylenes - Total	%	110			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	76			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	86			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	78			70-130	Pass	
Dibenz(a.h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	74			70-130	Pass	
Fluorene	%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	99			70-130	Pass	
Naphthalene	%	87			70-130	Pass	
Phenanthrene	%	71			70-130	Pass	
Pyrene	%	78			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	77			70-130	Pass	
Dimethoate	%	75			70-130	Pass	
Ethion	%	106			70-130	Pass	
Fenitrothion	%	93			70-130	Pass	
Methyl parathion	%	92			70-130	Pass	
Mevinphos	%	96			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	71			30-130	Pass	
2.4-Dichlorophenol	%	73			30-130	Pass	
2.4.5-Trichlorophenol	%	103			30-130	Pass	
2.4.6-Trichlorophenol	%	72			30-130	Pass	
2.6-Dichlorophenol	%	81			30-130	Pass	
4-Chloro-3-methylphenol	%	67			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	%	70			30-130	Pass	
Tetrachlorophenols - Total	%	53			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	55			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	75			30-130	Pass	
2-Methylphenol (o-Cresol)	%	57			30-130	Pass	
2-Nitrophenol	%	83			30-130	Pass	
2.4-Dimethylphenol	%	63			30-130	Pass	
2.4-Dinitrophenol	%	62			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	55			30-130	Pass	
4-Nitrophenol	%	36			30-130	Pass	
Dinoseb	%	72			30-130	Pass	
Phenol	%	39			30-130	Pass	
LCS - % Recovery							
Chloride	%	102			70-130	Pass	
Sulphate (as SO4)	%	114			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	101			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	80			70-130	Pass	
Total Alkalinity (as CaCO3)	%	86			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	91			80-120	Pass	
Beryllium	%	83			80-120	Pass	
Boron	%	106			80-120	Pass	
Cadmium	%	94			80-120	Pass	
Chromium	%	95			80-120	Pass	
Cobalt	%	101			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	100			80-120	Pass	
Manganese	%	100			80-120	Pass	
Mercury	%	88			75-125	Pass	
Nickel	%	100			80-120	Pass	
Selenium	%	89			80-120	Pass	
Zinc	%	98			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	103			70-130	Pass	
Magnesium	%	103			70-130	Pass	
Potassium	%	103			70-130	Pass	
Sodium	%	110			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	M20-Ja20448	NCP	%	128			70-130	Pass	
Sulphate (as SO4)	M20-Ja20448	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Ja26667	NCP	%	91			75-125	Pass	
Beryllium	M20-Ja26667	NCP	%	85			75-125	Pass	
Boron	M20-Ja19551	NCP	%	122			75-125	Pass	
Cadmium	M20-Ja26667	NCP	%	95			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	M20-Ja26667	NCP	%	96			75-125	Pass	
Cobalt	M20-Ja26667	NCP	%	101			75-125	Pass	
Copper	M20-Ja26667	NCP	%	96			75-125	Pass	
Lead	M20-Ja26667	NCP	%	104			75-125	Pass	
Manganese	M20-Ja26667	NCP	%	97			75-125	Pass	
Mercury	M20-Ja26667	NCP	%	96			70-130	Pass	
Nickel	M20-Ja26667	NCP	%	98			75-125	Pass	
Selenium	M20-Ja26667	NCP	%	89			75-125	Pass	
Zinc	M20-Ja26667	NCP	%	96			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M20-Ja21885	NCP	%	94			70-130	Pass	
Magnesium	M20-Ja21885	NCP	%	95			70-130	Pass	
Potassium	B20-Ja19831	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Sodium	M20-Ja23008	CP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M20-Ja19673	NCP	%	99			70-130	Pass	
Beryllium (filtered)	M20-Ja19673	NCP	%	100			75-125	Pass	
Boron (filtered)	M20-Ja19673	NCP	%	60			75-125	Fail	Q08
Cadmium (filtered)	M20-Ja19673	NCP	%	96			70-130	Pass	
Chromium (filtered)	M20-Ja19673	NCP	%	99			70-130	Pass	
Cobalt (filtered)	M20-Ja19673	NCP	%	97			75-125	Pass	
Copper (filtered)	M20-Ja19673	NCP	%	95			70-130	Pass	
Lead (filtered)	M20-Ja19673	NCP	%	99			70-130	Pass	
Manganese (filtered)	M20-Ja19673	NCP	%	82			70-130	Pass	
Mercury (filtered)	M20-Ja19673	NCP	%	101			70-130	Pass	
Nickel (filtered)	M20-Ja19673	NCP	%	96			70-130	Pass	
Selenium (filtered)	M20-Ja19673	NCP	%	72			70-130	Pass	
Zinc (filtered)	M20-Ja19673	NCP	%	21			70-130	Fail	Q08
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Ja21445	NCP	%	112			70-130	Pass	
TRH C6-C10	M20-Ja21445	NCP	%	97			70-130	Pass	
TRH >C10-C16	B20-Ja20370	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-Ja21445	NCP	%	102			70-130	Pass	
TRH C10-C14	B20-Ja20370	NCP	%	116			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M20-Ja21445	NCP	%	116			70-130	Pass	
Toluene	M20-Ja21445	NCP	%	113			70-130	Pass	
Ethylbenzene	M20-Ja21445	NCP	%	103			70-130	Pass	
m&p-Xylenes	M20-Ja21445	NCP	%	103			70-130	Pass	
o-Xylene	M20-Ja21445	NCP	%	107			70-130	Pass	
Xylenes - Total	M20-Ja21445	NCP	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M20-Ja20447	NCP	mg/L	170	150	14	30%	Pass	
pH (at 25°C)	M20-Ja21764	NCP	pH Units	8.1	8.1	pass	30%	Pass	
Sulphate (as SO4)	M20-Ja20447	NCP	mg/L	44	47	6.0	30%	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	M20-Ja21442	NCP	mg/L	7100	6600	8.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M20-Ja21764	NCP	mg/L	910	840	8.0	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M20-Ja21764	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	M20-Ja21764	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	M20-Ja21764	NCP	mg/L	910	840	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	M20-Ja19551	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	M20-Ja26667	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M20-Ja26667	NCP	mg/L	0.042	0.043	2.0	30%	Pass	
Lead	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	M20-Ja26667	NCP	mg/L	0.030	0.030	<1	30%	Pass	
Mercury	M20-Ja26667	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium	M20-Ja26667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M20-Ja26667	NCP	mg/L	0.026	0.028	6.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M20-Ja23008	CP	mg/L	7.7	5.9	27	30%	Pass	
Magnesium	M20-Ja23008	CP	mg/L	3.5	3.1	14	30%	Pass	
Potassium	M20-Ja23008	CP	mg/L	1.0	1.1	6.0	30%	Pass	
Sodium	M20-Ja23008	CP	mg/L	17	15	7.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M20-Ja19673	NCP	mg/L	0.007	0.007	4.0	30%	Pass	
Beryllium (filtered)	M20-Ja19673	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron (filtered)	M20-Ja19673	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium (filtered)	M20-Ja19673	NCP	mg/L	0.0011	0.0011	1.0	30%	Pass	
Chromium (filtered)	M20-Ja19673	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	M20-Ja19673	NCP	mg/L	0.004	0.004	1.0	30%	Pass	
Copper (filtered)	M20-Ja19673	NCP	mg/L	0.016	0.016	2.0	30%	Pass	
Lead (filtered)	M20-Ja19673	NCP	mg/L	0.010	0.010	2.0	30%	Pass	
Manganese (filtered)	M20-Ja19673	NCP	mg/L	0.16	0.16	3.0	30%	Pass	
Mercury (filtered)	M20-Ja19673	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M20-Ja19673	NCP	mg/L	0.006	0.006	1.0	30%	Pass	
Selenium (filtered)	M20-Ja19673	NCP	mg/L	0.25	0.25	1.0	30%	Pass	
Zinc (filtered)	M20-Ja19673	NCP	mg/L	0.90	0.92	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Ja23011	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M20-Ja23011	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M20-Ja19788	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M20-Ja19788	NCP	mg/L	< 0.1		<1	30%	Pass	
TRH >C34-C40	M20-Ja19788	NCP	mg/L	< 0.1		<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Ja23011	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M20-Ja19788	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M20-Ja19788	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M20-Ja19788	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M20-Ja23011	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M20-Ja23011	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M20-Ja23011	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M20-Ja23011	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M20-Ja23011	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M20-Ja23011	CP	mg/L	< 0.003	< 0.003	<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

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.

Authorised By

Michael Cassidy	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

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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Agon Environmental Pty Ltd
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NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Sophie Hambour**

Report **699081-W**
Project name JOHN STOKES SQUARE
Project ID JF1006
Received Date Jan 29, 2020

Client Sample ID			**JF1066_WAT01_201021**
Sample Matrix			**Water**
Eurofins Sample No.			**M20-Ja28609**
Date Sampled			**Jan 21, 2020**
Test/Reference	LOR	Unit	
TRH - 2013 NEPM Fractions (after silica gel clean-up)			
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)			
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Jan 29, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Jan 29, 2020	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			

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Company Name: Agon Environmental Pty Ltd
Address: 3/224 Glen Osmond Road
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Project Name: JOHN STOKES SQUARE
Project ID: JF1006

Order No.:
Report #: 699081
Phone: 08 8338 1009
Fax:

Received: Jan 29, 2020 3:14 PM
Due: Feb 3, 2020
Priority: 5 Day
Contact Name: Sophie Hambour

Eurofins Analytical Services Manager : Michael Cassidy

Sample Detail						TRH (after Silica Gel cleanup)
Melbourne Laboratory - NATA Site # 1254 & 14271						X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	JF1066_WAT01_201021	Jan 21, 2020		Water	M20-Ja28609	X
Test Counts						1

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.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate 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							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	92			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	98			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH >C10-C16 (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34 (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40 (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH C10-C36 (Total) (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C10-C14 (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28 (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36 (after silica gel clean-up)	M20-Ja23236	NCP	mg/L	< 0.1	< 0.1	<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

Michael Cassidy	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic (VIC)

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.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

APPENDIX D

Photographic Logs

Table 1 Road Reserve and Lot C Photo Log

Photo 1 Represents the excavation of the known asbestos impact area. Stockpiles in the background are from remediation works conducted on the residential sites ("clean").

Photo 2 Represents the excavation of the known asbestos impact area. Stockpiles in the background are from remediation works conducted on the residential sites ("clean").

Photo 3 – Representative of PVC communication pipe just beneath the fill material in the known asbestos impact area

Photo 4 Represents the excavation of the known asbestos impact area

Photo 5 Representative of the asbestos constructed pipe used for water supply in fire services

Photo 6 Representative of the asbestos pipes after the removal

Photo 7 Representative of excavated trench after the removal of asbestos pipes and validation sampling locations

Photo 8 Representative of topsoil along the west boundary of the road reserve

Photo 9 Representative of excavated after the removal of electrical cables

Photo 10 Representative of asbestos fragment encountered in fil materials during the removal process of underground services

Photo 11 Representative of asbestos fragment encountered in fil materials during the removal process of underground services

Photo 12 Representative of high voltage cables noted in the Road Reserve

Photo 13 Representative of excavated known impacted area identified in SLR's DSI after the excavation. Photographer is facing towards the southern boundary.

Photo 14 Representative of asbestos debris in fill/rework material of the stormwater riser

Photo 15 Representative of ACM debris in subsurface during the fill material removal

Photo 16 Representative of ACM debris in subsurface beneath the bitumen during the fill material removal

Photo 17 Representative of electrical conduit after the removal

Phot0 18 Representative of trench after the removal of electrical conduits

Photo 19 Representative of electrical conduit in the Road Reserve in the known asbestos impact area

Photo 20 Representative of stormwater pipes in known asbestos impact area

Photo 21 Representative of asbestos sheet during the underground services removal in the known asbestos impact area

Photo 22 Representative of stormwater riser after removal in the known asbestos impact area

Photo 23 Representative of asbestos sheets found during the fill material removal in the known asbestos impact area

Photo 24 Representative of asbestos fragments found during the fill material removal in the known asbestos impact area

Photo 25 Representative of 1.8m deep trench after the removal of concrete stormwater pipe located along the western boundary of the Road Reserve

Photo 26 Representative of asbestos sheet in sub surface noted during the removal of stormwater pipe in the known asbestos impact area

Photo 27 Representative of ACM debris noted during the fill material removal in the known asbestos impact area

Photo 28 Representative of bitumen stockpile after removal from the Road Reserve

Photo 29 Representative of area showing after the removal of bitumen layer (~200mm bgs)

Photo 30 Representative of AC sheets used as a foam material in one of the stormwater riser located at the far north east corner of the Road Reserve

Photo 31 Representative of stormwater riser located at the centre of the Road Reserve

Photo 32 Representative of asbestos debris noted just beneath the bitumen layer in fill material

Photo 33 Representative of asbestos debris noted just beneath the bitumen layer in fill material

Photo 34 Representative of excavated area after the removal of fill material to a depth of 500mm bgs in the known asbestos impact area

Photo 35 Representative of asbestos debris noted just beneath the bitumen layer in fill material

Photo 36 Representative of stormwater riser located at along the eastern boundary of the Road Reserve

Photo 37 Representative of excavation at the far north end of the Road reserve to confirm the depth of fill material beneath the bitumen layer

Phot 38 Representative of high voltage copper cables located at the far north end of Road Reserve

Photo 39 Representative of PVC conduit for high voltage cables located at the northern part of the Road Reserve

Photo 41 Representative of a PVC sewerage pipe located at the far north-west end of the Road reserve adjacent the Lot A

Photo 42 Representative of the broken live sewerage clay pipe during the removal of PVC water supply pipe located just above the clay sewerage pipe.

Photo 43 Representative of ACM debris during the removal of underground services in the known asbestos impact area

Photo 44 Representative of clay sewerage pipe in the Road Reserve

Photo 45 Representative of abandoned electrical cable and concrete rubble buried at the corner of lot A and lot B1 in the Road Reserve

Photo 46 Representative of a trench after the removal of electrical cable in the road reserve

Photo 47 Rrepresentative of deep excavation (1.8 mbgs) after the removal of the PVC sewerage pipes in the Road Reserve

Photo 48 Representative of PVC sewerage pipes in the Road Reserve

Photo 49 Representative of sewerage riser connected to the PVC sewerage pipes in the Road Reserve

Photo 50 Representative of deep excavation and soil profile after the removal of PVC sewerage pipe in the Road Reserve

Photo 51 Representative of deep excavation and soil profile after the removal of PVC sewerage pipe in the Road Reserve

Photo 52 Representative of excavation and soil profile during the removal of PVC sewerage pipe in the Road Reserve

Photo 53 Representative of sewer riser connecting PVC sewer pipes in the Road Reserve

Photo 54 Representative of a PVC pipe after removal from the Road Reserve

Photo 55 Representative of ACM sheets embedded in the sewer riser

Photo 56 Representative of a cast iron water pipe and high voltage electrical cable in the Road Reserve

Photo 58 Representative of shallow excavation after the removal of cast iron water supply pipe in the Road Reserve

Photo 59 Representative of a cast iron water supply pipe after the removal form the Road Reserve

Photo 60 Representative of shallow excavation after the removal of cast iron water supply pipe in the Road Reserve

Photo 61 Representative of a cast iron water supply pipe located in the Road Reserve

Photo 62 Representative of a manhole for live sewerage located in the Road Reserve

Photo 63 Representative of a sewer pipe located in the Road Reserve

Photo 64 Representative of electrical cables located in the Road Reserve

Photo 65 Representative of electrical cables, kerbs and tree roots in the Road Reserve

Photo 66 Representative of PVC pipes located at the far north end of the Road Reserve

Photo 67 Representative of stormwater pipes after the removal from the Road Reserve and Lot C

Photo 68 Representative of stormwater risers from the Road Reserve

Photo 69 Representative of stormwater risers from the Road Reserve

Photo 70 Representative of an excavation after the removal of PVC in north – west corner of the Road Reserve

Photo 71 Representative of excavation after the removal of PVC sewer pipes in the Road Reserve

Photo 72 Representative of ACM debris noted just below the bitumen in fill material at the edge of the known asbestos impact area in the Road reserve

Photo 73 Representative of ACM debris noted just below the bitumen in fill material at the edge of the known asbestos impact area in the Road reserve

Photo 74 Representative of ACM debris noted just below the bitumen in fill material at the edge of the known asbestos impact area in the Road Reserve

Photo 75 Representative of a stormwater riser in lot C

Photo 76 Representative of a stormwater riser in lot C

Photo 77 Representative of an excavation after the removal of a storm water pipe in Lot C

Photo 78 Representative of a trench after the removal of water distribution pipes

Photo 79 Representative of recyclable pipes and conduits stockpiles

Photo 80 Representative of PVC conduit for communication cable located in the far north end of the Road Reserve

Photo 81 Representative of PVC conduits for electrical cables in the Road Reserve

Photo 83 Representative of ground surface after backfilling the trenches in the Road Reserve

Photo 84 Representative recyclable PVC pipes, electrical cables and conduits

APPENDIX E

Analytical Tables

Table 1-
Main Excavation Base Sample Analytical Results
John Stokes Square Redevelopment Project - Remediation and Validation Road Reserve and Lot C

Field_ID	Field_ID	RR-VAL-01	RR-VAL-02	RR-VAL-03	RR-VAL-04	RR-Val-05	RR-Val-06	RR-Val-07	RR-Val-08
LocCode	LocCode	RR-VAL-01	RR-VAL-02	RR-VAL-03	RR-VAL-04	RR-Val-05	RR-Val-06	RR-Val-07	RR-Val-08
Sampled_Date-Time	Sampled_Date	01-Oct-2020	01-Oct-2020	02-Oct-2020	02-Oct-2020	05-Oct-2020	05-Oct-2020	05-Oct-2020	07-Oct-2020
	Lab_Report_Number	EN2006670	EN2006670	EN2006670	EN2006670	EN2006757	EN2006757	EN2006757	EN2006757

Chem_Group	Units	LOR	IL (1)								
Weight of sample	g	0.01	-	81.8	51.8	43.1	66.2	49	55.9	52.9	58.8
Asbestos Detected	g/kg	0.1	<0.1 (ND)	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	<5 (ND)	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA)	%W/W	0.001	<0.001	-	-	-	-	-	-	-	-

ND - non-detect
IL (1) - ASC NEMP 2013, all site uses include residential with access to soil

Table 1-
Main Excavation Base Sample Analytical Results
John Stokes Square Redevelopment Project - Remediation and Validation Road Reserve and Lot C

Field_ID	Field_ID	RR-Val-09	RR-Val-11	RR-Val-14	RR-Val-16	RR-Val-17	RR-Val-18	RR-Val-19	RR-Val-20	RR-Val-21
LocCode	LocCode	RR-Val-09	RR-Val-11	RR-Val-14	RR-Val-16	RR-Val-17	RR-Val-18	RR-Val-19	RR-Val-20	RR-Val-21
Sampled_Date-Time	Sampled_Date	07-Oct-2020	10-Oct-2020	10-Oct-2020	10-Oct-2020	10-Oct-2020	10-Oct-2020	13-Oct-2020	14-Oct-2020	14-Oct-2020
	Lab_Report_Number	EN2006757	EN2006887	EN2006887	EN2006887	EN2006887	EN2006887	EN2006955	EN2006955	EN2006955
Chem_Group	Units	LOR								
Weight of sample	g	0.01	52.5	60	70.2	65.7	67.2	66.4	74	73.4	69
Asbestos Detected	g/kg	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA)	%W/W	0.001	-	-	-	-	-	-	-	-	-

ND - non-detect
IL (1) - ASC NEMP 2013, all site uses include residential with access to

Table 1-
Main Excavation Base Sample Analytical Results
John Stokes Square Redevelopment Project - Remediation and Validation Road Reserve and Lot C

Field_ID	Field_ID	RR-Val-22	RR-Val-23	RR-Val-24	RR-Val-25	RR-Val-26	RR-VAL-27	RR-VAL-28	RR-VAL-29	RR-VAL-30
LocCode	LocCode	RR-Val-22	RR-Val-23	RR-Val-24	RR-Val-25	RR-Val-26	RR-VAL-27	RR-VAL-28	RR-VAL-29	RR-VAL-30
Sampled_Date-Time	Sampled_Date	14-Oct-2020	14-Oct-2020	15-Oct-2020	15-Oct-2020	15-Oct-2020	15-Oct-2020	16-Oct-2020	20-Oct-2020	20-Oct-2020
	Lab_Report_Number	EN2006955	EN2006955	EN2006955	EN2006955	EN2006955	EN2007718	EN2007718	EN2007718	EN2007718
Chem_Group	Units	LOR								
Weight of sample	g	0.01	69.5	56.5	56.9	79.9	62.7	66.4	76.7	52.9	61.2
Asbestos Detected	g/kg	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA)	%W/W	0.001	-	-	-	-	-	-	-	-	-

ND - non-detect
IL (1) - ASC NEMP 2013, all site uses include residential with access to

Table 1-
Main Excavation Base Sample Analytical Results
John Stokes Square Redevelopment Project - Remediation and Validation Road Reserve and Lot C

Field_ID	**Field_ID**	RR-VAL-31	RR-VAL-32	RR-VAL-33	RR-VAL-34
LocCode	**LocCode**	RR-VAL-31	RR-VAL-32	RR-VAL-33	RR-VAL-34
Sampled_Date-Time	**Sampled_Date**	28-Oct-2020	28-Oct-2020	28-Oct-2020	28-Oct-2020
	Lab_Report_Number	EN2007718	EN2007718	EN2007718	EN2007718

Chem_Group	**Units**	**LOR**				
Weight of sample	g	0.01	63.3	70.2	68	73.2
Asbestos Detected	g/kg	0.1	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	ND	ND	ND	ND
Asbestos in Soil (AF+FA)	%W/W	0.001	-	-	-	-

ND - non-detect
IL (1) - ASC NEMP 2013, all site uses include residential with access to

Table 02
Wall Samples Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation - Road Reserve and Lot C

		Field_ID		RR-Wall-01	RR-Wall-04	RR-Wall-05	RR-Wall-12	RR-Wall-15	RR-Wall-16	RR-Wall-18	RR-Wall-20
		LocCode		RR-Wall-01	RR-Wall-04	RR-Wall-05	RR-Wall-12	RR-Wall-15	RR-Wall-16	RR-Wall-18	RR-Wall-20
		Sampled_Date		11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020
		Lab_Report_Number		EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662
Analytes	**Units**	**LOR**	**IL (1)**								
Weight of sample	g	0.01	-	654	612	673	629	687	707	844	861
Asbestos Detected	g/kg	0.1	<0.1 (ND)	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	<5 (ND)	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

Table 02
Wall Samples Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation - Road Reserve and Lot C

	Field_ID	RR-Wall-21	RR-Wall-22	RR-Wall-23	RR-Wall-24	RR-Wall-26	RR-Wall-28	RR-Wall-31	RR-Wall-32	RR-Wall-33	RR-Wall-34
	LocCode	RR-Wall-21	RR-Wall-22	RR-Wall-23	RR-Wall-24	RR-Wall-26	RR-Wall-28	RR-Wall-31	RR-Wall-32	RR-Wall-33	RR-Wall-34
	Sampled_Date	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020
	Lab_Report_Number	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662
Analytes	**Units**	**LOR**									
Weight of sample	g	0.01	886	787	721	724	768	769	772	776	684	663
Asbestos Detected	g/kg	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

Table 02
Wall Samples Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation - Road Reserve and Lot C

		Field_ID	RR-Wall-35	RR-Wall-36	RR-Wall-37	RR-Wall-38	RR-Wall-39	RR-Wall-42	RR-Wall-46	RR-Wall-51	RR-Wall-53	RR-Wall-QA01
		LocCode	RR-Wall-35	RR-Wall-36	RR-Wall-37	RR-Wall-38	RR-Wall-39	RR-Wall-42	RR-Wall-46	RR-Wall-51	RR-Wall-53	RR-Wall-QA01
		Sampled_Date	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2020	11-Nov-2002	11-Nov-2002	13-Nov-2020	13-Nov-2020
		Lab_Report_Number	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007662	EN2007718	EN2007718	EN2007722	EN2007722
Analytes	**Units**	**LOR**										
Weight of sample	g	0.01	874	673	894	801	970	773	804	933	804	749
Asbestos Detected	g/kg	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

Table 02
Wall Samples Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation - Road Reserve and Lot C

		Field_ID	RR-Wall-54	RR-Wall-QA02	RR-Wall-55	RR-Wall-QA03	RR-Wall-56	RR-Wall-57
		LocCode	RR-Wall-54	RR-Wall-QA02	RR-Wall-55	RR-Wall-QA03	RR-Wall-56	RR-Wall-57
		Sampled_Date	13-Nov-2020	13-Nov-2020	13-Nov-2020	13-Nov-2020	11-Nov-2020	13-Nov-2020
		Lab_Report_Number	EN2007722	EN2007722	EN2007722	EN2007722	EN2007662	EN2007722
Analytes	**Units**	**LOR**						
Weight of sample	g	0.01	737	805	742	665	834	736
Asbestos Detected	g/kg	0.1	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

APPENDIX F

Certified Laboratory Documentation

Taa : MYTG200182

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	**LABORATORY:** ALS
PROJECT: John Stokes Square- Road Reserve Remediation	**LABORATORY ADDRESS:**
PROJECT NUMBER: 680.10679	**SAMPLER:** Robin Birua
PROJECT MANAGER: Sarah Doherty	**SAMPLER CONTACT No:** 0482 680 165
PM CONTACT No: 0417 647 498	**Email Reports and Invoices to:** sdoherty@slrconsulting.com; pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com

Turnaround Time (TAT)

☐ Standard TAT

☒ Non Standard or Urgent TAT

COC Number 1 of 1

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

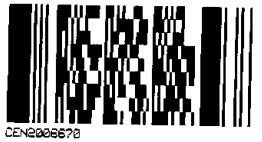
REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP (S-26, S-12, EA200F)	VAL (S-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	RR-Val-01	1/10/2020	Soil	x1 Bag			x							
2	RR-Val-02	1/10/2020	Soil	x1 Bag			x							
3	RR-Val-03	2/10/2020	Soil	x1 Bag			x							
4	RR-Val-04	2/10/2020	Soil	x1 Bag			x							
5	STP33-Val-01	1/10/2020	Soil	x1 Bag			x							
6														
7														
8														
9														
10														
11														

Same Day TAT

TAT

Environmental Division
Newcastle
Work Order Reference
EN2006670



Telephone : +61 2 4014 2500

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Robin Birua	Date / Time	4/10/2020	**Received by**	Sign	Date / Time	8:30am 05/10/20
Relinquished By	Sign	Date / Time		**Received by**	Sign	Date / Time	7/10/20 9:00
Relinquished By	Sign	Date / Time		**Received by**	Sign	Date / Time	

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EN2006670**		
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Dorherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: sdoherty@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0005 (SY/333/20 V2)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 07-Oct-2020 09:00	Issue Date	: 07-Oct-2020
Client Requested Due Date	: 07-Oct-2020	Scheduled Reporting Date	: **07-Oct-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 5 / 5

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA200 Asbestos Identification in Soils -
EN2006670-001	01-Oct-2020 00:00	RR-VAL-01	✓
EN2006670-002	01-Oct-2020 00:00	RR-VAL-02	✓
EN2006670-003	02-Oct-2020 00:00	RR-VAL-03	✓
EN2006670-004	02-Oct-2020 00:00	RR-VAL-04	✓
EN2006670-005	01-Oct-2020 00:00	STP33-Val-01	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

J Mcdowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com

Sarah Dorherty

- *AU Certificate of Analysis - NATA (COA)	Email	sdoherty@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sdoherty@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sdoherty@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sdoherty@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	sdoherty@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	sdoherty@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	sdoherty@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	sdoherty@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2006670**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Dorherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 07-Oct-2020 09:00
Order number	: ----	Date Analysis Commenced	: 07-Oct-2020
C-O-C number	: ----	Issue Date	: 07-Oct-2020 15:17
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 5		
No. of samples analysed	: 5		

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. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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*
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- 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.
- 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)			Client sample ID	RR-VAL-01	RR-VAL-02	RR-VAL-03	RR-VAL-04	STP33-Val-01
			Client sampling date / time	01-Oct-2020 00:00	01-Oct-2020 00:00	02-Oct-2020 00:00	02-Oct-2020 00:00	01-Oct-2020 00:00
Compound	CAS Number	LOR	Unit	EN2006670-001	EN2006670-002	EN2006670-003	EN2006670-004	EN2006670-005
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**81.8**	**51.8**	**43.1**	**66.2**	**75.1**
APPROVED IDENTIFIER:	----	-	--	**C.OWLER**	**C.OWLER**	**C.OWLER**	**C.OWLER**	**C.OWLER**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-VAL-01 - 01-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-VAL-02 - 01-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-VAL-03 - 02-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-VAL-04 - 02-Oct-2020 00:00	Mid brown soil.
EA200: Description	STP33-Val-01 - 01-Oct-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2006670**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Dorherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 07-Oct-2020
Order number	: ----	Date Analysis Commenced	: 07-Oct-2020
C-O-C number	: ----	Issue Date	: 07-Oct-2020
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 5		
No. of samples analysed	: 5		

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. 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*
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2006670**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Dorherty	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 07-Oct-2020
Site	: ----	Issue Date	: 07-Oct-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 5
Order number	: ----	No. of samples analysed	: 5

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag (EA200) RR-VAL-01, RR-VAL-02, STP33-Val-01	**01-Oct-2020**	**----**	----	----	**07-Oct-2020**	30-Mar-2021	✓
Snap Lock Bag (EA200) RR-VAL-03, RR-VAL-04	**02-Oct-2020**	**----**	----	----	**07-Oct-2020**	31-Mar-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	**LABORATORY:** ALS
PROJECT: John Stokes Square- Road Reserve Remediation	**LABORATORY ADDRESS:**
PROJECT NUMBER: 680.10679	**SAMPLER:** Robin Birua
PROJECT MANAGER: Sarah Doherty	**SAMPLER CONTACT No:** 0482 680 165
PM CONTACT No: 0417 647 498	**Email Reports and Invoices to:** sdoherty@slrconsulting.com; pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com

Turnaround Time (TAT)

- ☐ Standard TAT
- ☒ Non Standard or Urgent TAT

COC Number 1 of 1

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP (S-26, S-12, EA200F)	VAL (S-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	RR-Val-05	10/5/2020	Soil	x1 Bag			x							
2	RR-Val-06	10/5/2020	Soil	x1 Bag			x							
3	RR-Val-07	10/5/2020	Soil	x1 Bag			x							
4	RR-Val-08	10/7/2020	Soil	x1 Bag			x							
5	RR-Val-09	10/7/2020	Soil	x1 Bag			x							
6														
7														
8														
9														
10														
11														

24 Hrs TAT

Environmental Division
Newcastle
Work Order Reference
EN2006757

Telephone : +61 2 4014 2500

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	**Robin Birua**	Date / Time	10/7/2020
Relinquished By	Sign	Date / Time	
Relinquished By	Sign	Date / Time	

Received by	AL	Sign	08/10/20 10:15am
Received by	Sign		Date / Time
Received by	Sign		Date / Time

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EN2006757**		
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Dorherty	Contact	:
Address	: 589 HAY STREET JOLIMONT WA, AUSTRALIA 6014	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: sdoherty@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0005 (SY/333/20 V2)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 08-Oct-2020 10:15	Issue Date	: 08-Oct-2020
Client Requested Due Date	: 09-Oct-2020	Scheduled Reporting Date	: **09-Oct-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 5 / 5

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA200G Asbestos Identification in Soils -
EN2006757-001	10-May-2020 00:00	RR-Val-05	✓
EN2006757-002	10-May-2020 00:00	RR-Val-06	✓
EN2006757-003	10-May-2020 00:00	RR-Val-07	✓
EN2006757-004	10-Jul-2020 00:00	RR-Val-08	✓
EN2006757-005	10-Jul-2020 00:00	RR-Val-09	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

J Mcdowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
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- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com

Sarah Dorherty

- *AU Certificate of Analysis - NATA (COA)	Email	sdoherty@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sdoherty@slrconsulting.com
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- EDI Format - ESDAT (ESDAT)	Email	sdoherty@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	sdoherty@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2006757**	Page	: 1 of 3
Amendment	: **1**		
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: 589 HAY STREET JOLIMONT WA, AUSTRALIA 6014	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 08-Oct-2020 10:15
Order number	: ----	Date Analysis Commenced	: 08-Oct-2020
C-O-C number	: ----	Issue Date	: 20-Oct-2020 13:58
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- Amendment (20/10/2020): This report has been amended to alter the sample dates. All analysis results are as per the previous report.
- 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.
- 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)				Client sample ID	RR-Val-05	RR-Val-06	RR-Val-07	RR-Val-08	RR-Val-09
				Client sampling date / time	05-Oct-2020 00:00	05-Oct-2020 00:00	05-Oct-2020 00:00	07-Oct-2020 00:00	07-Oct-2020 00:00
Compound	CAS Number	LOR	Unit		EN2006757-001	EN2006757-002	EN2006757-003	EN2006757-004	EN2006757-005
					Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--		**-**	**-**	**-**	**-**	**-**
Sample weight (dry)	----	0.01	g		**49.0**	**55.9**	**52.9**	**58.8**	**52.5**
APPROVED IDENTIFIER:	----	-	--		**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg		**No**	**No**	**No**	**No**	**No**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-Val-05 - 05-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-06 - 05-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-07 - 05-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-08 - 07-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-09 - 07-Oct-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2006757**	Page	: 1 of 3
Amendment	: **1**		
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: 589 HAY STREET JOLIMONT WA, AUSTRALIA 6014	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 08-Oct-2020
Order number	: ----	Date Analysis Commenced	: 08-Oct-2020
C-O-C number	: ----	Issue Date	: 20-Oct-2020
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 5		
No. of samples analysed	: 5		

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. 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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2006757**	Page	: 1 of 4
Amendment	: **1**		
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 08-Oct-2020
Site	: ----	Issue Date	: 20-Oct-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 5
Order number	: ----	No. of samples analysed	: 5

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) RR-Val-05, RR-Val-06, RR-Val-07	**05-Oct-2020**	**----**	----	----	**08-Oct-2020**	03-Apr-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) RR-Val-08, RR-Val-09	**07-Oct-2020**	**----**	----	----	**08-Oct-2020**	05-Apr-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	**LABORATORY:** ALS
PROJECT: John Stokes Square- Road Reserve Validation	**LABORATORY ADDRESS:**
PROJECT NUMBER: 680.10679	**SAMPLER:** Robin Birua
PROJECT MANAGER: Sarah Doherty	**SAMPLER CONTACT No:** 0482 680 165
PM CONTACT No: 0417 647 498	**Email Reports and Invoices to:** sdoherty@slrconsulting.com; pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com

Turnaround Time (TAT)

- ☐ Standard TAT
- ☒ Non Standard or Urgent TAT

COC Number 1 of 1

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP (S-26, S-12, EA200F)	VAL (S-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	RR-Val-10	10/10/2020	Soil	x1 Bag			x							on Hold
2	RR-Val-11	10/10/2020	Soil	x1 Bag			x							
3	RR-Val-12	10/10/2020	Soil	x1 Bag			x							on Hold
4	RR-Val-13	10/10/2020	Soil	x1 Bag			x							on Hold
5	RR-Val-14	10/10/2020	Soil	x1 Bag			x							
6	RR-Val-15	10/10/2020	Soil	x1 Bag			x							on Hold
7	RR-Val-16	10/10/2020	Soil	x1 Bag			x							
8	RR-Val-17	12/10/2020	Soil	x1 Bag			x							
9	RR-Val-18	12/10/2020	Soil	x1 Bag			x							
10														
11														

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Robin Birua	Date / Time 12/10/2020	**Received by**	Sign AL	Date / Time 14/10/2020 9:45am	**Temperature Received:**
Relinquished By	Sign	Date / Time	**Received by**	Sign	Date / Time	
Relinquished By	Sign	Date / Time	**Received by**	Sign	Date / Time	

Toll: MYTG257133

TAT

Environmental Division
Newcastle
Work Order Reference
EN2006887

Telephone : +61 2 4014 2500

SLR Consulting Australia Pty Ltd

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2006887**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: sdoherty@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: EM2018HEGAUS0002 (EN/333 Secondary work BQ)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 14-Oct-2020 08:15	Issue Date	: 14-Oct-2020
Client Requested Due Date	: 15-Oct-2020	Scheduled Reporting Date	: **15-Oct-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 9 / 5

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA200G Asbestos Identification in Soils -
EN2006887-001	10-Oct-2020 00:00	RR-Val-10	✓	
EN2006887-002	10-Oct-2020 00:00	RR-Val-11		✓
EN2006887-003	10-Oct-2020 00:00	RR-Val-12	✓	
EN2006887-004	10-Oct-2020 00:00	RR-Val-13	✓	
EN2006887-005	10-Oct-2020 00:00	RR-Val-14		✓
EN2006887-006	10-Oct-2020 00:00	RR-Val-15	✓	
EN2006887-007	10-Oct-2020 00:00	RR-Val-16		✓
EN2006887-008	10-Oct-2020 00:00	RR-Val-17		✓
EN2006887-009	10-Oct-2020 00:00	RR-Val-18		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

J Mcdowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com

Sarah Doherty

- *AU Certificate of Analysis - NATA (COA)	Email	sdoherty@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sdoherty@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sdoherty@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sdoherty@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	sdoherty@slrconsulting.com
- AU Interpretive QC Report (Anon QCI Not Rep) (QCI_NoAnon)	Email	sdoherty@slrconsulting.com
- AU QC Report (Anon QC Not Rep) - NATA (QC_NoAnon)	Email	sdoherty@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	sdoherty@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	sdoherty@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	sdoherty@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2006887**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 14-Oct-2020 08:15
Order number	: ----	Date Analysis Commenced	: 14-Oct-2020
C-O-C number	: ----	Issue Date	: 14-Oct-2020 12:36
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: EN/333 Secondary work BQ		
No. of samples received	: 9		
No. of samples analysed	: 5		

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. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- 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.
- 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)			Client sample ID	RR-Val-11	RR-Val-14	RR-Val-16	RR-Val-17	RR-Val-18
			Client sampling date / time	10-Oct-2020 00:00	10-Oct-2020 00:00	10-Oct-2020 00:00	10-Oct-2020 00:00	10-Oct-2020 00:00
Compound	CAS Number	LOR	Unit	EN2006887-002	EN2006887-005	EN2006887-007	EN2006887-008	EN2006887-009
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Sample weight (dry)	----	0.01	g	**60.0**	**70.2**	**65.7**	**67.2**	**66.4**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-Val-11 - 10-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-14 - 10-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-16 - 10-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-17 - 10-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-18 - 10-Oct-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2006887**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 14-Oct-2020
Order number	: ----	Date Analysis Commenced	: 14-Oct-2020
C-O-C number	: ----	Issue Date	: 14-Oct-2020
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: EN/333 Secondary work BQ		
No. of samples received	: 9		
No. of samples analysed	: 5		

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. 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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2006887**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 14-Oct-2020
Site	: ----	Issue Date	: 14-Oct-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 5

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
RR-Val-11, RR-Val-14, RR-Val-16, RR-Val-17, RR-Val-18	**10-Oct-2020**	**----**	----	----	**14-Oct-2020**	08-Apr-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	LABORATORY: ALS
PROJECT: John Stokes Square- Road Reserve Validation	LABORATORY ADDRESS:
PROJECT NUMBER: 680.10679	SAMPLER: Robin Birua
PROJECT MANAGER: Sarah Doherty	SAMPLER CONTACT No: 0482 680 165
PM CONTACT No: 0417 647 498	Email Reports and invoices to: sdoherty@slrconsulting.com; pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com

Turnaround Time (TAT): ☐ Standard TAT ☒ Non Standard or Urgent TAT

COC Number: 1 of 1

TAT

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP ($-26, S-12, EA200F)	VAL ($-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	RR-Val-19	13/10/2020	Soil	x1 Bag			x							
2	RR-Val-20	14/10/2020	Soil	x1 Bag			x							
3	RR-Val-21	14/10/2020	Soil	x1 Bag			x							
4	RR-Val-22	14/10/2020	Soil	x1 Bag			x							
5	RR-Val-23	14/10/2020	Soil	x1 Bag			x							
6	RR-Val-24	15/10/2020	Soil	x1 Bag			x							
7	RR-Val-25	15/10/2020	Soil	x1 Bag			x							
8	RR-Val-26	15/10/2020	Soil	x1 Bag			x							
9														
10														
11														

Environmental Division
Newcastle
Work Order Reference
EN2006955

Telephone : +61 2 4014 2500

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Robin Birua	Date / Time 15/10/2020	Received by AL	Sign	Date / Time 16/10/2020 9:55am	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

Toll: MYTG293326.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2006955**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: sdoherty@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0005 (SY/333/20 V2)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 16-Oct-2020 08:25	Issue Date	: 16-Oct-2020
Client Requested Due Date	: 19-Oct-2020	Scheduled Reporting Date	: **19-Oct-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 8 / 8

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA200G Asbestos Identification in Soils -
EN2006955-001	13-Oct-2020 00:00	RR-Val-19	✓
EN2006955-002	14-Oct-2020 00:00	RR-Val-20	✓
EN2006955-003	14-Oct-2020 00:00	RR-Val-21	✓
EN2006955-004	14-Oct-2020 00:00	RR-Val-22	✓
EN2006955-005	14-Oct-2020 00:00	RR-Val-23	✓
EN2006955-006	15-Oct-2020 00:00	RR-Val-24	✓
EN2006955-007	15-Oct-2020 00:00	RR-Val-25	✓
EN2006955-008	15-Oct-2020 00:00	RR-Val-26	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

J Mcdowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	rbirua@slrconsulting.com

Sarah Doherty

- *AU Certificate of Analysis - NATA (COA)	Email	sdoherty@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sdoherty@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sdoherty@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sdoherty@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	sdoherty@slrconsulting.com
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- EDI Format - ESDAT (ESDAT)	Email	sdoherty@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	sdoherty@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2006955**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 16-Oct-2020 08:25
Order number	: ----	Date Analysis Commenced	: 19-Oct-2020
C-O-C number	: ----	Issue Date	: 19-Oct-2020 14:44
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 8		
No. of samples analysed	: 8		

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. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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*
Alexander Ristoski	Laboratory Technican	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- 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.
- 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**)

Compound	CAS Number	LOR	Unit	Client sample ID	RR-Val-19	RR-Val-20	RR-Val-21	RR-Val-22	RR-Val-23
				Client sampling date / time	13-Oct-2020 00:00	14-Oct-2020 00:00	14-Oct-2020 00:00	14-Oct-2020 00:00	14-Oct-2020 00:00
					EN2006955-001	EN2006955-002	EN2006955-003	EN2006955-004	EN2006955-005
					Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--		**-**	**-**	**-**	**-**	**-**
Sample weight (dry)	----	0.01	g		**74.0**	**73.4**	**69.0**	**69.5**	**56.5**
APPROVED IDENTIFIER:	----	-	--		**A. RISTOSKI**	**A. RISTOSKI**	**A. RISTOSKI**	**A. RISTOSKI**	**A. RISTOSKI**
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg		**No**	**No**	**No**	**No**	**No**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	RR-Val-24	RR-Val-25	RR-Val-26	----	----
				Client sampling date / time	15-Oct-2020 00:00	15-Oct-2020 00:00	15-Oct-2020 00:00	----	----
Compound	CAS Number	LOR	Unit		EN2006955-006	EN2006955-007	EN2006955-008	--------	--------
					Result	Result	Result	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	**No**	**No**	**----**	**----**
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	**No**	**No**	**----**	**----**
Asbestos Type	1332-21-4	-	--		**-**	**-**	**-**	**----**	**----**
Sample weight (dry)	----	0.01	g		**56.9**	**79.9**	**62.7**	**----**	**----**
APPROVED IDENTIFIER:	----	-	--		**A. RISTOSKI**	**A. RISTOSKI**	**A. RISTOSKI**	**----**	**----**
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	**No**	**No**	**----**	**----**
Organic Fibre	----	0.1	g/kg		**No**	**No**	**No**	**----**	**----**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-Val-19 - 13-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-20 - 14-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-21 - 14-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-22 - 14-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-23 - 14-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-24 - 15-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-25 - 15-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-26 - 15-Oct-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2006955**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 16-Oct-2020
Order number	: ----	Date Analysis Commenced	: 19-Oct-2020
C-O-C number	: ----	Issue Date	: 19-Oct-2020
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 8		
No. of samples analysed	: 8		

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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*
Alexander Ristoski	Laboratory Technican	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2006955**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Sarah Doherty	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 16-Oct-2020
Site	: ----	Issue Date	: 19-Oct-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 8
Order number	: ----	No. of samples analysed	: 8

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
RR-Val-19	**13-Oct-2020**	**----**	----	----	**19-Oct-2020**	11-Apr-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
RR-Val-20, RR-Val-21, RR-Val-22, RR-Val-23	**14-Oct-2020**	**----**	----	----	**19-Oct-2020**	12-Apr-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
RR-Val-24, RR-Val-25, RR-Val-26	**15-Oct-2020**	**----**	----	----	**19-Oct-2020**	13-Apr-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)
- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 66 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	LABORATORY: ALS
PROJECT: John Stokes Square- Road Reserve Validation	LABORATORY ADDRESS:
PROJECT NUMBER: 680.10679	SAMPLER: Robin Birua
PROJECT MANAGER: Julie McDowell	SAMPLER CONTACT No: 0482 680 165
PM CONTACT No: 0482 680 165	Email Reports and Invoices to: sdoherty@slrconsulting.com; pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com

Turnaround Time (TAT): ☒ Standard TAT ☐ Non Standard or Urgent TAT

COC Number: 1 of 1

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP (S-26, S-12, EA200F)	VAL (S-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any grass contamination or specific requirements)
1	RR-Wall-01	11/11/2020	Soil	x1 Bag				x					x	
2	RR-Wall-02	11/11/2020	Soil	x1 Bag									x	
3	RR-Wall-03	11/11/2020	Soil	x1 Bag									x	
4	RR-Wall-04	11/11/2020	Soil	x1 Bag				x						
5	RR-Wall-05	11/11/2020	Soil	x1 Bag				x						
6	RR-Wall-06	11/11/2020	Soil	x1 Bag									x	
7	RR-Wall-07	11/11/2020	Soil	x1 Bag									x	
8	RR-Wall-08	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-09	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-10	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-11	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-12	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-13	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-14	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-15	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-16	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-17	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-18	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-19	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-20	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-21	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-22	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-23	11/11/2020	Soil	x1 Bag				x						
9	RR-Wall-24	11/11/2020	Soil	x1 Bag				x						
10	RR-Wall-25	11/11/2020	Soil	x1 Bag									x	
11	RR-Wall-26	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-27	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-28	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-29	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-30	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-31	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-32	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-33	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-34	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-35	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-36	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-37	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-38	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-39	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-40	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-41	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-42	11/11/2020	Soil	x1 Bag				x						
	RR-Wall-43	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-44	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-45	11/11/2020	Soil	x1 Bag									x	
	RR-Wall-56	11/11/2020	Soil	x1 Bag				x						

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sample:	Robin Birua	Date / Time	11/11/2020	Received by	Sign: AL	Date / Time: 12/11/2020	Temperature Received: 9:55am
Relinquished By	Sign	Date / Time		Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time		Received by	Sign	Date / Time	

Environmental Division
Newcastle
Work Order Reference
EN2007662

Telephone : +61 2 4014 2500

Toll: MYT6507465

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2007662**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: jmcdowell@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Page	: 1 of 4
Order number	: ----	Quote number	: ES2020HEGAUS0005 (SY/333/20 V2)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 12-Nov-2020 09:55	Issue Date	: 16-Nov-2020
Client Requested Due Date	: 16-Nov-2020	Scheduled Reporting Date	: **16-Nov-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 46 / 25

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
EN2007662-001	11-Nov-2020 00:00	RR-Wall-01		✓
EN2007662-002	11-Nov-2020 00:00	RR-Wall-02	✓	
EN2007662-003	11-Nov-2020 00:00	RR-Wall-03	✓	
EN2007662-004	11-Nov-2020 00:00	RR-Wall-04		✓
EN2007662-005	11-Nov-2020 00:00	RR-Wall-05		✓
EN2007662-006	11-Nov-2020 00:00	RR-Wall-06	✓	
EN2007662-007	11-Nov-2020 00:00	RR-Wall-07	✓	
EN2007662-008	11-Nov-2020 00:00	RR-Wall-08	✓	
EN2007662-009	11-Nov-2020 00:00	RR-Wall-11	✓	
EN2007662-010	11-Nov-2020 00:00	RR-Wall-12		✓
EN2007662-011	11-Nov-2020 00:00	RR-Wall-13	✓	
EN2007662-012	11-Nov-2020 00:00	RR-Wall-14	✓	
EN2007662-013	11-Nov-2020 00:00	RR-Wall-15		✓
EN2007662-014	11-Nov-2020 00:00	RR-Wall-16		✓
EN2007662-015	11-Nov-2020 00:00	RR-Wall-17	✓	
EN2007662-016	11-Nov-2020 00:00	RR-Wall-18		✓
EN2007662-017	11-Nov-2020 00:00	RR-Wall-19	✓	
EN2007662-018	11-Nov-2020 00:00	RR-Wall-20		✓
EN2007662-019	11-Nov-2020 00:00	RR-Wall-21		✓
EN2007662-020	11-Nov-2020 00:00	RR-Wall-22		✓
EN2007662-021	11-Nov-2020 00:00	RR-Wall-23		✓
EN2007662-022	11-Nov-2020 00:00	RR-Wall-24		✓
EN2007662-023	11-Nov-2020 00:00	RR-Wall-25	✓	
EN2007662-024	11-Nov-2020 00:00	RR-Wall-26		✓
EN2007662-025	11-Nov-2020 00:00	RR-Wall-27	✓	
EN2007662-026	11-Nov-2020 00:00	RR-Wall-28		✓
EN2007662-027	11-Nov-2020 00:00	RR-Wall-29	✓	
EN2007662-028	11-Nov-2020 00:00	RR-Wall-30	✓	
EN2007662-029	11-Nov-2020 00:00	RR-Wall-31		✓
EN2007662-030	11-Nov-2020 00:00	RR-Wall-32		✓
EN2007662-031	11-Nov-2020 00:00	RR-Wall-33		✓
EN2007662-032	11-Nov-2020 00:00	RR-Wall-34		✓
EN2007662-033	11-Nov-2020 00:00	RR-Wall-35		✓
EN2007662-034	11-Nov-2020 00:00	RR-Wall-36		✓
EN2007662-035	11-Nov-2020 00:00	RR-Wall-37		✓

			(On Hold) SOIL No analysis requested	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
EN2007662-036	11-Nov-2020 00:00	RR-Wall-38		✓
EN2007662-037	11-Nov-2020 00:00	RR-Wall-39		✓
EN2007662-038	11-Nov-2020 00:00	RR-Wall-40	✓	
EN2007662-039	11-Nov-2020 00:00	RR-Wall-41	✓	
EN2007662-040	11-Nov-2020 00:00	RR-Wall-42		✓
EN2007662-041	11-Nov-2020 00:00	RR-Wall-43	✓	
EN2007662-042	11-Nov-2020 00:00	RR-Wall-44	✓	
EN2007662-043	11-Nov-2020 00:00	RR-Wall-45	✓	
EN2007662-044	11-Nov-2020 00:00	RR-Wall-56		✓
EN2007662-045	11-Nov-2020 00:00	RR-Wall-09	✓	
EN2007662-046	11-Nov-2020 00:00	RR-Wall-10	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

Julie McDowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	rbirua@slrconsulting.com

Sarah Doherty

- *AU Certificate of Analysis - NATA (COA)	Email	sdoherty@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sdoherty@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sdoherty@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sdoherty@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	sdoherty@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	sdoherty@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	sdoherty@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	sdoherty@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	sdoherty@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2007662**	Page	: 1 of 8
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 12-Nov-2020 09:55
Order number	: ----	Date Analysis Commenced	: 16-Nov-2020
C-O-C number	: ----	Issue Date	: 16-Nov-2020 12:33
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 46		
No. of samples analysed	: 25		

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. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- 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)			Client sample ID	RR-Wall-01	RR-Wall-04	RR-Wall-05	RR-Wall-12	RR-Wall-15
			Client sampling date / time	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007662-001	EN2007662-004	EN2007662-005	EN2007662-010	EN2007662-013
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**654**	**612**	**673**	**629**	**687**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.654**	**0.612**	**0.673**	**0.629**	**0.687**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	RR-Wall-16	RR-Wall-18	RR-Wall-20	RR-Wall-21	RR-Wall-22
			Client sampling date / time	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007662-014	EN2007662-016	EN2007662-018	EN2007662-019	EN2007662-020
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**707**	**844**	**861**	**886**	**787**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.707**	**0.844**	**0.861**	**0.886**	**0.787**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	RR-Wall-23	RR-Wall-24	RR-Wall-26	RR-Wall-28	RR-Wall-31
			Client sampling date / time	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007662-021	EN2007662-022	EN2007662-024	EN2007662-026	EN2007662-029
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**721**	**724**	**768**	**769**	**772**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.721**	**0.724**	**0.768**	**0.769**	**0.772**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	RR-Wall-32	RR-Wall-33	RR-Wall-34	RR-Wall-35	RR-Wall-36
			Client sampling date / time	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007662-030	EN2007662-031	EN2007662-032	EN2007662-033	EN2007662-034
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**776**	**684**	**663**	**874**	**673**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.776**	**0.684**	**0.663**	**0.874**	**0.673**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	RR-Wall-37	RR-Wall-38	RR-Wall-39	RR-Wall-42	RR-Wall-56
			Client sampling date / time	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00	11-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007662-035	EN2007662-036	EN2007662-037	EN2007662-040	EN2007662-044
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**894**	**801**	**970**	**773**	**834**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.894**	**0.801**	**0.970**	**0.773**	**0.834**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-Wall-01 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-04 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-05 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-12 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-15 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-16 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-18 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-20 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-21 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-22 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-23 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-24 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-26 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-28 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-31 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-32 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-33 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-34 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-35 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-36 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-37 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-38 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-39 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-42 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-56 - 11-Nov-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2007662**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 12-Nov-2020
Order number	: ----	Date Analysis Commenced	: 16-Nov-2020
C-O-C number	: ----	Issue Date	: 16-Nov-2020
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 46		
No. of samples analysed	: 25		

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. 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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2007662**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 12-Nov-2020
Site	: ----	Issue Date	: 16-Nov-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 46
Order number	: ----	No. of samples analysed	: 25

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag: Separate bag received (EA200)							
RR-Wall-01, RR-Wall-04, RR-Wall-05, RR-Wall-12, RR-Wall-15, RR-Wall-16, RR-Wall-18, RR-Wall-20, RR-Wall-21, RR-Wall-22, RR-Wall-23, RR-Wall-24, RR-Wall-26, RR-Wall-28, RR-Wall-31, RR-Wall-32, RR-Wall-33, RR-Wall-34, RR-Wall-35, RR-Wall-36, RR-Wall-37, RR-Wall-38, RR-Wall-39, RR-Wall-42, RR-Wall-56	**11-Nov-2020**	**----**	----	----	**16-Nov-2020**	10-May-2021	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag: Separate bag received (EA200N)							
RR-Wall-01, RR-Wall-04, RR-Wall-05, RR-Wall-12, RR-Wall-15, RR-Wall-16, RR-Wall-18, RR-Wall-20, RR-Wall-21, RR-Wall-22, RR-Wall-23, RR-Wall-24, RR-Wall-26, RR-Wall-28, RR-Wall-31, RR-Wall-32, RR-Wall-33, RR-Wall-34, RR-Wall-35, RR-Wall-36, RR-Wall-37, RR-Wall-38, RR-Wall-39, RR-Wall-42, RR-Wall-56	**11-Nov-2020**	**----**	----	----	**16-Nov-2020**	10-May-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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).

SLR

Toll - MYTG542420

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	LABORATORY: ALS	Turnaround Time (TAT)	COC Number 1 of 1
PROJECT: John Stokes Square- Road Reserve Validation	LABORATORY ADDRESS:	☐ Standard TAT	
PROJECT NUMBER: 680.10679	SAMPLER: Robin Birua	☐ Non Standard or Urgent TAT	
PROJECT MANAGER: Julie McDowell	SAMPLER CONTACT No: 0482 680 165		
PM CONTACT No: 0435 359 720	Email Reports and Invoices to: pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com		

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP (S-26, S-12, EA200F)	VAL (S-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	RR-Wall-53	13/11/2020	Soil	x1 Bag				X						
2	RR-Wall-54	13/11/2020	Soil	x1 Bag				X						
3	RR-Wall-55	13/11/2020	Soil	x1 Bag				X						
4	RR-Wall-57	13/11/2020	Soil	x1 Bag				X						
5	RR-Wall-QA01	13/11/2020	Soil	x1 Bag				X						
6	RR-Wall-QA02	13/11/2020	Soil	x1 Bag				X						
7	RR-Wall-QA03	13/11/2020	Soil	x1 Bag				X						

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Robin Birua	Date / Time 16/11/2020	Received by	Sign MM	Date / Time 18/11/20	Temperature Received: 9-20am
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

Environmental Division
Newcastle
Work Order Reference
EN2007722

Telephone : +61 2 4014 2500

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2007722**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: jmcdowell@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Validation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0005 (SY/333/20 V2)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	:		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 18-Nov-2020 09:20	Issue Date	: 18-Nov-2020
Client Requested Due Date	: 20-Nov-2020	Scheduled Reporting Date	: **20-Nov-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 7 / 7

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
EN2007722-001	13-Nov-2020 00:00	RR-Wall-53	✓
EN2007722-002	13-Nov-2020 00:00	RR-Wall-54	✓
EN2007722-003	13-Nov-2020 00:00	RR-Wall-55	✓
EN2007722-004	13-Nov-2020 00:00	RR-Wall-57	✓
EN2007722-005	13-Nov-2020 00:00	RR-Wall-QA01	✓
EN2007722-006	13-Nov-2020 00:00	RR-Wall-QA02	✓
EN2007722-007	13-Nov-2020 00:00	RR-Wall-QA03	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

Julie McDowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	rbirua@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2007722**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Validation	Date Samples Received	: 18-Nov-2020 09:20
Order number	: ----	Date Analysis Commenced	: 18-Nov-2020
C-O-C number	: ----	Issue Date	: 19-Nov-2020 13:53
Sampler	: ROBIN BIRUA		
Site	:		
Quote number	: SY/333/20 V2		
No. of samples received	: 7		
No. of samples analysed	: 7		

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. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- 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)			Client sample ID	RR-Wall-53	RR-Wall-54	RR-Wall-55	RR-Wall-57	RR-Wall-QA01
			Client sampling date / time	13-Nov-2020 00:00	13-Nov-2020 00:00	13-Nov-2020 00:00	13-Nov-2020 00:00	13-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007722-001	EN2007722-002	EN2007722-003	EN2007722-004	EN2007722-005
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**804**	**737**	**742**	**736**	**749**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.804**	**0.737**	**0.742**	**0.736**	**0.749**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	RR-Wall-QA02	RR-Wall-QA03	----	----	----
			Client sampling date / time	13-Nov-2020 00:00	13-Nov-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EN2007722-006	EN2007722-007	--------	--------	--------
				Result	Result	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	----	----	----
Asbestos Type	1332-21-4	-	--	**-**	**-**	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	----	----	----
Sample weight (dry)	----	0.01	g	**805**	**665**	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	----	----	----
Organic Fibre	----	0.1	g/kg	**No**	**No**	----	----	----
APPROVED IDENTIFIER:	----	-	--	**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	----	----	----
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	----	----	----
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.805**	**0.665**	----	----	----
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-Wall-53 - 13-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-54 - 13-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-55 - 13-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-57 - 13-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-QA01 - 13-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-QA02 - 13-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-QA03 - 13-Nov-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2007722**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Validation	Date Samples Received	: 18-Nov-2020
Order number	: ----	Date Analysis Commenced	: 18-Nov-2020
C-O-C number	: ----	Issue Date	: 19-Nov-2020
Sampler	: ROBIN BIRUA		
Site	:		
Quote number	: SY/333/20 V2		
No. of samples received	: 7		
No. of samples analysed	: 7		

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. 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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2007722**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Validation	Date Samples Received	: 18-Nov-2020
Site	:	Issue Date	: 19-Nov-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
RR-Wall-53, RR-Wall-54, RR-Wall-55, RR-Wall-57, RR-Wall-QA01, RR-Wall-QA02, RR-Wall-QA03	**13-Nov-2020**	**----**	----	----	**18-Nov-2020**	12-May-2021	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
RR-Wall-53, RR-Wall-54, RR-Wall-55, RR-Wall-57, RR-Wall-QA01, RR-Wall-QA02, RR-Wall-QA03	**13-Nov-2020**	**----**	----	----	**18-Nov-2020**	12-May-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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).

SP-090

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 30 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR Consulting	**LABORATORY: ALS**
PROJECT: John Stokes Square- Road Reserve Validation	**LABORATORY ADDRESS:**
PROJECT NUMBER: 680.10679	**SAMPLER: Robin Birua**
PROJECT MANAGER: Julie McDowell	**SAMPLER CONTACT No: 0482 680 165**
PM CONTACT No: 0435 359 720	**Email Reports and Invoices to: pturyn@slrconsulting.com; rbirua@slrconsulting.com; jmcdowell@slrconsulting.com**

Turnaround Time (TAT)

- ☐ Standard TAT
- ☒ Non Standard or Urgent TAT

COC Number 1 of 1

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote SY-333-20 SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	STP (S-26, S-12, EA200F)	VAL (S-26, S-12, EA200)	Asbestos P/A in soil (EA200)	NEPM asbestos in soil only (EA200F)	NEPM asbestos in soil + bulk (EA200N)	Asbestos Bulk ID (EA200B)	Potential bonded ACM fragment (EA200B)	Rinsates (W-05, W-12)	Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	RR-Wall-46	11/11/2020	Soil	x1 Bag				x						
2	RR-Wall-47	11/11/2020	Soil	x1 Bag									x	
3	RR-Wall-48	11/11/2020	Soil	x1 Bag									x	
4	RR-Wall-49	11/11/2020	Soil	x1 Bag									x	
5	RR-Wall-50	11/11/2020	Soil	x1 Bag									x	
6	RR-Wall-51	11/11/2020	Soil	x1 Bag				x						
7	RR-Wall-52	11/11/2020	Soil	x1 Bag									x	
8														
8	RR-Val-27	15/10/2020	Soil	x1 Bag			x							
9	RR-Val-28	16/10/2020	Soil	x1 Bag			x							
10	RR-Val-29	20/10/2020	Soil	x1 Bag			x							
11	RR-Val-30	20/10/2020	Soil	x1 Bag			x							
12	RR-Val-31	28/10/2020	Soil	x1 Bag			x							
13	RR-Val-32	28/10/2020	Soil	x1 Bag			x							
14	RR-Val-33	28/10/2020	Soil	x1 Bag			x							
15	RR-Val-34	28/10/2020	Soil	x1 Bag			x							

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	**Robin Birua**	Date / Time 12/11/2020	**Received by**	Sign	Date / Time 16/11/2020 4:30pm	**Temperature Received:**	K3 internals.
Relinquished By	Sign	Date / Time	**Received by**	Sign	Date / Time		
Relinquished By	Sign	Date / Time	**Received by**	Sign	Date / Time		

Environmental Division
Newcastle
Work Order Reference
EN2007718

Telephone : + 61 2 4014 2500

SLR Consulting Australia Pty Ltd

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2007718**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: jmcdowell@slrconsulting.com	E-mail	:
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0005 (SY/333/20 V2)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 16-Nov-2020 16:30	Issue Date	: 16-Nov-2020
Client Requested Due Date	: 18-Nov-2020	Scheduled Reporting Date	: **18-Nov-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 15 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
EN2007718-001	11-Nov-2020 00:00	RR-Wall-46			✓
EN2007718-002	11-Nov-2020 00:00	RR-Wall-47	✓		
EN2007718-003	11-Nov-2020 00:00	RR-Wall-48	✓		
EN2007718-004	11-Nov-2020 00:00	RR-Wall-49	✓		
EN2007718-005	11-Nov-2020 00:00	RR-Wall-50	✓		
EN2007718-006	11-Nov-2020 00:00	RR-Wall-51			✓
EN2007718-007	11-Nov-2020 00:00	RR-Wall-52	✓		
EN2007718-008	15-Oct-2020 00:00	RR-Val-27		✓	
EN2007718-009	16-Oct-2020 00:00	RR-Val-28		✓	
EN2007718-010	20-Oct-2020 00:00	RR-Val-29		✓	
EN2007718-011	20-Oct-2020 00:00	RR-Val-30		✓	
EN2007718-012	28-Oct-2020 00:00	RR-Val-31		✓	
EN2007718-013	28-Oct-2020 00:00	RR-Val-32		✓	
EN2007718-014	28-Oct-2020 00:00	RR-Val-33		✓	
EN2007718-015	28-Oct-2020 00:00	RR-Val-34		✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

Julie McDowell

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ENMRG (ENMRG)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com
- EDI Format - XTab (XTAB)	Email	rbirua@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2007718**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 16-Nov-2020 16:30
Order number	: ----	Date Analysis Commenced	: 17-Nov-2020
C-O-C number	: ----	Issue Date	: 18-Nov-2020 11:04
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 15		
No. of samples analysed	: 10		

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. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- 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)			Client sample ID	RR-Wall-46	RR-Wall-51	RR-Val-27	RR-Val-28	RR-Val-29
			Client sampling date / time	11-Nov-2020 00:00	11-Nov-2020 00:00	15-Oct-2020 00:00	16-Oct-2020 00:00	20-Oct-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007718-001	EN2007718-006	EN2007718-008	EN2007718-009	EN2007718-010
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**804**	**933**	**66.4**	**76.7**	**52.9**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**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	----	----	----
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	----	----	----
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.804**	**0.933**	----	----	----
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	RR-Val-30	RR-Val-31	RR-Val-32	RR-Val-33	RR-Val-34
			Client sampling date / time	20-Oct-2020 00:00	28-Oct-2020 00:00	28-Oct-2020 00:00	28-Oct-2020 00:00	28-Oct-2020 00:00
Compound	CAS Number	LOR	Unit	EN2007718-011	EN2007718-012	EN2007718-013	EN2007718-014	EN2007718-015
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**61.2**	**63.3**	**70.2**	**68.0**	**73.2**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	RR-Val-27 - 15-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-28 - 16-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-29 - 20-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-30 - 20-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-31 - 28-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-32 - 28-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-33 - 28-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Val-34 - 28-Oct-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-46 - 11-Nov-2020 00:00	Mid brown soil.
EA200: Description	RR-Wall-51 - 11-Nov-2020 00:00	Mid brown soil.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2007718**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Contact	:
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 16-Nov-2020
Order number	: ----	Date Analysis Commenced	: 17-Nov-2020
C-O-C number	: ----	Issue Date	: 18-Nov-2020
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: SY/333/20 V2		
No. of samples received	: 15		
No. of samples analysed	: 10		

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. 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	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2007718**	Page	: 1 of 4
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: Julie McDowell	Telephone	: +61 2 4014 2500
Project	: 680.10679 John Stokes Square - Road Reserve Remediation	Date Samples Received	: 16-Nov-2020
Site	: ----	Issue Date	: 18-Nov-2020
Sampler	: ROBIN BIRUA	No. of samples received	: 15
Order number	: ----	No. of samples analysed	: 10

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) RR-Val-27	**15-Oct-2020**	**----**	----	----	**17-Nov-2020**	13-Apr-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) RR-Val-28	**16-Oct-2020**	**----**	----	----	**17-Nov-2020**	14-Apr-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) RR-Val-29, RR-Val-30	**20-Oct-2020**	**----**	----	----	**17-Nov-2020**	18-Apr-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) RR-Val-31, RR-Val-32, RR-Val-33, RR-Val-34	**28-Oct-2020**	**----**	----	----	**17-Nov-2020**	26-Apr-2021	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) RR-Wall-46, RR-Wall-51	**11-Nov-2020**	**----**	----	----	**17-Nov-2020**	10-May-2021	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N) RR-Wall-46, RR-Wall-51	**11-Nov-2020**	**----**	----	----	**17-Nov-2020**	10-May-2021	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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).

Greencap Pty Ltd
ABN: 76 006 318 010
Unit 11 Winnellie Central | 14 Winnellie Road
Winnellie NT 0820
Australia
T: 08 7906 1300

Report Date: Monday, 12/10/2020

Our ref: C110151:NT84961

Robin Birua
SLR Consulting Pty Ltd
21 Parap Road
PARAP NT 0820

Dear Robin,

Re: Asbestos Identification Analysis - John Stokes Square, 47 Progress Drive, Nightcliff NT 0810

This letter presents the results of asbestos fibre identification analysis performed on 1 sample as received by Greencap on Monday, 12 October 2020. The sample was stated to be from John Stokes Square, 47 Progress Drive, Nightcliff NT 0810.

All sample analysis was performed using polarised light microscopy, including dispersion staining in our Darwin Laboratory by the method of Australian Standard AS4964-2004 and supplementary work instruction in house method LAB04 Asbestos Identification by PLM. Any and all services carried out by Greencap for the Client are subject to the Terms and Conditions listed on the Greencap website at https://www.greencap.com.au/terms-conditions and are governed by our statements of limitation available at https://www.greencap.com.au/statements-limitation .

The analysis was completed on Monday, 12 October 2020.

The sample will be kept for three months and then disposed of, unless otherwise directed.

The results of the asbestos identification analysis are presented in the appended table. Accreditation covers testing activities only, sampling activity is outside the scope of ISO 17025 accreditation. Results relate only to the items tested and are for the sole use by the client.

Should you require further information please contact Darren Kenny.

Yours sincerely,
Greencap

Darren Kenny : Approved Identifier

Darren Kenny : Approved Signatory

This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing.
Accreditation No. 5450, Site No. 24550 Darwin Laboratory.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards.

Sampling was not conducted by Greencap and is therefore outside the scope of our NATA accreditation.

Report Date: Monday, 12/10/2020 Our ref: C110151:NT84961

Site Location:	John Stokes Square, 47 Progress Drive, Nightcliff NT 0810		
	Sample ID	Sample Location/Description/Weight or Size	Analysis Result
1	NT84961 - 001	As Received - "Stormwater pipe" Unpainted, dirty, dark grey concrete material ~ 65x35x15mm	No Asbestos Detected

* Shaded row with bolded text indicates sample contains a positive Analysis Result for asbestos.
If Synthetic Mineral Fibre and Organic Fibre are not stated in Analysis Results, it implies not detected.
PLEASE NOTE The sample in this report is 'As Received'. Greencap does not take responsibility for the sampling procedure or accuracy of the sample location descriptions which have been provided by the client.

APPENDIX G

Air Quality Monitoring Reports

SLR Consulting Australia Laboratory Services - Darwin Office
ABN: 29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

This report replaces the previous report No: 680.10679.00100-JLP-62

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-62(R1)
Date of Issue: Tuesday, 6 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
1/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
1/10/2020	JLP-233	10	24	1.00	1.00	1.00	07:20	16:49	569	100	0	<0.01	
1/10/2020	JLP-234	10	22	1.00	1.00	1.00	07:18	16:46	568	100	0	<0.01	109832
1/10/2020	JLP-235	10	20	1.00	1.00	1.00	07:12	16:40	568	100	0	<0.01	
1/10/2020	JLP-236	10	21	1.00	1.00	1.00	07:14	16:44	570	100	0	<0.01	

Monitoring Locations :

0 Blank
20 Northeast boundary of road reserve work area
21 Southeast boundary of road reserve work area
22 Southwest boundary of road reserve work area
24 West of road reserve work area, on Lot B1

Sample Types:

10 Control

Remarks:

109832 Reject sample - pump failure

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

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Approved Counter:

Approved Fibre Counter: Gemma Sheridan

Approved Signatory:

Approved Fibre Signatory: Gemma Sheridan

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This report replaces the previous report No: 680.10679.00100-JLP-63

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-63(R1)
Date of Issue: Tuesday, 6 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
2/10/2020	**Blank**		0				N/A	N/A		100	1	N/A	
2/10/2020	JLP-237	10	23	1.00	1.00	1.00	07:30	16:47	557	100	1	<0.01	
2/10/2020	JLP-238	10	22	1.00	1.00	1.00	07:25	16:45	560	100	0	<0.01	109836
2/10/2020	JLP-239	10	20	1.00	1.00	1.00	07:21	16:40	559	100	2.5	<0.01	
2/10/2020	JLP-240	10	21	1.00	1.00	1.00	07:23	16:43	560	100	1.5	<0.01	

Monitoring Locations :

0 Blank
20 Northeast boundary of road reserve work area
21 Southeast boundary of road reserve work area
22 Southwest boundary of road reserve work area
23 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

109836 Reject sample - filter obscured by grit

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-64
Date of Issue: Monday, 5 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
5/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
5/10/2020	JLP-241	10	20	1.00	1.00	1.00	07:50	16:41	531	100	1	<0.01	
5/10/2020	JLP-242	10	21	1.00	1.00	1.00	07:54	16:43	529	100	0	<0.01	
5/10/2020	JLP-243	10	22	1.00	1.00	1.00	07:56	16:46	530	100	0	<0.01	
5/10/2020	JLP-244	10	23	1.00	1.00	1.00	07:52	16:50	538	100	1	<0.01	

Monitoring Locations :

0 Blank
20 Northeast boundary of road reserve work area
21 Southeast boundary of road reserve work area
22 Southwest boundary of road reserve work area
23 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-65
Date of Issue: Tuesday, 6 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
6/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
6/10/2020	JLP-245	10	25	1.00	1.00	1.00	08:59	16:10	431	100	0	<0.01	
6/10/2020	JLP-246	10	26	1.00	1.00	1.00	09:03	16:14	431	100	0	<0.01	
6/10/2020	JLP-247	10	27	1.00	1.00	1.00	09:07	16:16	429	100	0	<0.01	
6/10/2020	JLP-248	10	28	1.00	.95	.98	09:05	16:19	434	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types: **Remarks:**

10 Control

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-66
Date of Issue: Wednesday, 7 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
7/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
7/10/2020	JLP-249	10	25	1.00	1.00	1.00	07:22	15:52	510	100	0	<0.01	
7/10/2020	JLP-250	10	26	1.00	1.00	1.00	07:25	15:49	504	100	0	<0.01	
7/10/2020	JLP-251	10	27	1.00	1.00	1.00	07:27	15:47	500	100	1	<0.01	
7/10/2020	JLP-252	10	28	1.00	1.00	1.00	07:20	15:45	505	100	0	<0.01	109906

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

109906 Reject sample - filter damaged (rain)

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-67
Date of Issue: Friday, 9 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
9/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
9/10/2020	JLP-253	10	25	1.00	1.00	1.00	07:10	16:26	556	100	0	<0.01	
9/10/2020	JLP-254	10	26	1.00	1.00	1.00	07:12	16:28	556	100	0	<0.01	
9/10/2020	JLP-255	10	27	1.00	1.00	1.00	07:17	16:32	555	100	1	<0.01	
9/10/2020	JLP-256	10	28	1.00	1.00	1.00	07:14	16:30	556	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-68
Date of Issue: Monday, 12 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
12/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
12/10/2020	JLP-257	10	25	1.00	1.00	1.00	07:45	16:26	521	100	0	<0.01	
12/10/2020	JLP-258	10	26	1.00	1.00	1.00	07:51	16:49	538	100	0	<0.01	
12/10/2020	JLP-259	10	27	1.00	.95	.98	07:49	16:51	542	100	0	<0.01	
12/10/2020	JLP-260	10	28	1.00	1.00	1.00	07:47	16:30	523	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types: **Remarks:**

10 Control

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-69
Date of Issue: Tuesday, 13 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
13/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
13/10/2020	JLP-261	10	25	1.00	1.00	1.00	07:26	16:44	558	100	0	<0.01	
13/10/2020	JLP-262	10	26	1.00	1.00	1.00	07:32	16:48	556	100	0.5	<0.01	
13/10/2020	JLP-263	10	27	1.00	1.00	1.00	07:30	16:47	557	100	0	<0.01	
13/10/2020	JLP-264	10	28	1.00	1.00	1.00	07:28	16:45	557	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-70
Date of Issue: Wednesday, 14 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
14/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
14/10/2020	JLP-265	10	25	1.00	1.00	1.00	07:18	17:08	590	100	1	<0.01	
14/10/2020	JLP-266	10	26	1.00	1.00	1.00	07:14	17:06	592	100	0	<0.01	
14/10/2020	JLP-267	10	27	1.00	1.00	1.00	07:12	17:02	590	100	1	<0.01	
14/10/2020	JLP-268	10	28	1.00	1.00	1.00	07:16	17:10	594	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-71
Date of Issue: Thursday, 15 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
15/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
15/10/2020	JLP-269	10	25	1.00	1.00	1.00	07:25	16:47	562	100	0	<0.01	
15/10/2020	JLP-270	10	26	1.00	1.00	1.00	07:27	16:52	565	100	0	<0.01	
15/10/2020	JLP-271	10	27	1.00	1.00	1.00	07:21	16:45	564	100	1	<0.01	
15/10/2020	JLP-272	10	28	1.00	1.00	1.00	07:22	16:59	577	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-72
Date of Issue: Friday, 16 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
16/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
16/10/2020	JLP-273	10	25	1.00	1.00	1.00	07:32	15:28	476	100	0	<0.01	
16/10/2020	JLP-274	10	26	1.00	1.00	1.00	07:31	15:30	479	100	0	<0.01	
16/10/2020	JLP-275	10	27	1.00	1.00	1.00	07:36	15:24	468	100	0	<0.01	
16/10/2020	JLP-276	10	28	1.00	1.00	1.00	07:34	15:26	472	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-73
Date of Issue: Tuesday, 20 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
19/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
19/10/2020	JLP-277	10	25	1.00	1.00	1.00	07:18	16:46	568	100	1	<0.01	
19/10/2020	JLP-278	10	28	1.00	1.00	1.00	07:20	16:48	568	100	0	<0.01	
19/10/2020	JLP-279	10	27	1.00	1.00	1.00	07:23	16:49	566	100	0	<0.01	
19/10/2020	JLP-280	10	26	1.00	1.00	1.00	07:25	16:51	566	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types: **Remarks:**

10 Control

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Counter:

Approved Fibre Counter: Paul Turyn

Approved Signatory:

Approved Fibre Signatory: Paul Turyn

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-74
Date of Issue: Wednesday, 21 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
20/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
20/10/2020	JLP-281	10	26	1.00	1.00	1.00	07:16	16:50	574	100	0	<0.01	
20/10/2020	JLP-282	10	25	1.00	1.00	1.00	07:18	16:52	574	100	2	<0.01	
20/10/2020	JLP-283	10	28	1.00	1.00	1.00	07:20	16:59	579	100	0	<0.01	
20/10/2020	JLP-284	10	27	1.00	1.00	1.00	07:23	17:09	586	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Counter:

Approved Fibre Counter: Liam Munro

Approved Signatory:

Approved Fibre Signatory: Liam Munro

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http://www.slrconsulting.com

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-75
Date of Issue: Wednesday, 21 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
21/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
21/10/2020	JLP-285	10	25	1.00	1.00	1.00	07:07	16:41	574	100	1	<0.01	
21/10/2020	JLP-286	10	26	1.00	1.00	1.00	07:09	16:32	563	100	0	<0.01	
21/10/2020	JLP-287	10	27	1.00	1.00	1.00	07:10	16:31	561	100	0	<0.01	
21/10/2020	JLP-288	10	28	1.00	1.00	1.00	07:05	16:42	577	100	2	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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This report replaces the previous report No: 680.10679.00100-JLP-76

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-76(R1)
Date of Issue: Tuesday, 27 October 2020
Removal Contractor: **Northern Trade Solutions Pty Ltd**
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address:N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
22/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
22/10/2020	JLP-289	10	28	1.00	1.00	1.00	07:21	16:25	544	100	0	<0.01	
22/10/2020	JLP-290	10	26	1.00	1.00	1.00	07:23	16:27	544	100	0	<0.01	
22/10/2020	JLP-291	10	27	1.00	1.00	1.00	07:26	16:50	564	100	0	<0.01	
22/10/2020	JLP-292	10	25	1.00	1.00	1.00	07:28	16:52	564	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types: **Remarks:**

10 Control

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Liam Munro

Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-77
Date of Issue: Monday, 26 October 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
23/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
23/10/2020	JLP-293	10	25	1.00	1.00	1.00	07:30	17:00	570	100	0	<0.01	
23/10/2020	JLP-294	10	26	1.00	1.00	1.00	07:32	17:02	570	100	0	<0.01	
23/10/2020	JLP-295	10	27	1.00	1.00	1.00	07:17	16:54	577	100	0	<0.01	
23/10/2020	JLP-296	10	28	1.00	1.00	1.00	07:19	16:52	573	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-78
Date of Issue: Tuesday, 27 October 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
26/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
26/10/2020	JLP-297	10	28	1.00	1.00	1.00	07:45	17:01	556	100	0	<0.01	
26/10/2020	JLP-298	10	26	1.00	1.00	1.00	07:46	17:03	557	100	0	<0.01	
26/10/2020	JLP-299	10	25	1.00	1.00	1.00	07:48	17:05	557	100	1	<0.01	
26/10/2020	JLP-300	10	27	1.00	1.00	1.00	07:50	17:07	557	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Gemma Sheridan

Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-79
Date of Issue: Monday, 2 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
27/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
27/10/2020	JLP-301	10	28	1.00	1.00	1.00	07:25	17:06	581	100	0	<0.01	110259
27/10/2020	JLP-302	10	25	1.00	1.00	1.00	07:23	16:58	575	100	0	<0.01	
27/10/2020	JLP-303	10	26	1.00	1.00	1.00	07:17	17:02	585	100	1	<0.01	
27/10/2020	JLP-304	10	27	1.00	1.00	1.00	07:21	17:01	580	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

110259 Rejected - Filter damaged by rain

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Liam Munro

Approved Fibre Signatory: Liam Munro

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-80
Date of Issue: Tuesday, 3 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
28/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
28/11/2020	JLP-305	10	27	1.00	1.00	1.00	06:55	16:20	565	100	0	<0.01	
28/10/2020	JLP-306	10	26	1.00	1.00	1.00	07:00	16:22	562	100	1	<0.01	
28/10/2020	JLP-307	10	25	1.00	1.00	1.00	07:04	16:25	561	100	0	<0.01	
28/10/2020	JLP-308	10	28	1.00	1.00	1.00	07:02	16:27	565	100	2	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Liam Munro

Approved Fibre Signatory: Liam Munro

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-81
Date of Issue: Tuesday, 3 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
29/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
29/10/2020	JLP-309	5	27	1.00	1.00	1.00	07:18	17:01	583	100	0	<0.01	
29/10/2020	JLP-310	5	26	1.00	1.00	1.00	07:20	17:02	582	100	0	<0.01	
29/10/2020	JLP-311	5	25	1.00	1.00	1.00	07:21	17:04	583	100	0	<0.01	
29/10/2020	JLP-312	5	28	1.00	1.00	1.00	07:25	17:05	580	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

5 Background

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Liam Munro

Approved Fibre Signatory: Liam Munro

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-82
Date of Issue: Monday, 2 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
30/10/2020	**Blank**		0				N/A	N/A		100	0	N/A	
30/10/2020	JLP-313	5	27	1.00	1.00	1.00	07:01	16:40	579	100	0	<0.01	
30/10/2020	JLP-314	5	26	1.00	1.00	1.00	07:03	16:30	567	100	0	<0.01	
30/10/2020	JLP-315	5	25	1.00	1.00	1.00	07:05	16:25	560	100	0	<0.01	
30/10/2020	JLP-316	5	28	1.00	1.00	1.00	07:08	16:22	554	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

5 Background

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Liam Munro

Approved Fibre Signatory: Liam Munro

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-83
Date of Issue: Tuesday, 3 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
2/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
2/11/2020	JLP-317	10	27	1.00	1.00	1.00	07:36	16:59	563	100	2	<0.01	
2/11/2020	JLP-318	10	28	1.00	1.00	1.00	07:38	17:02	564	100	1	<0.01	
2/11/2020	JLP-319	10	25	1.00	1.00	1.00	07:41	17:04	563	100	0	<0.01	
2/11/2020	JLP-320	10	26	1.00	1.00	1.00	07:45	17:05	560	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-84
Date of Issue: Thursday, 5 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
3/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
3/11/2020	JLP-321	10	28	1.00	1.00	1.00	07:24	16:57	573	100	1	<0.01	
3/11/2020	JLP-322	10	26	1.00	1.10	1.05	07:27	16:55	568	100	0	<0.01	
3/11/2020	JLP-323	10	25	1.00	1.00	1.00	07:29	16:48	559	100	0	<0.01	
3/11/2020	JLP-324	10	27	1.00	1.00	1.00	07:33	16:51	558	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types: 10 Control

Remarks:

Notes On Sampling:
The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-85
Date of Issue: Sunday, 8 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
4/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
4/11/2020	JLP-325	10	25	1.00	1.00	1.00	07:30	16:55	565	100	0	<0.01	
4/11/2020	JLP-326	10	26	1.00	1.00	1.00	07:24	16:59	575	100	0	<0.01	
4/11/2020	JLP-327	10	27	1.00	1.00	1.00	07:21	17:00	579	100	0	<0.01	
4/11/2020	JLP-328	10	28	1.00	1.00	1.00	07:18	17:02	584	100	0	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types: 10 Control

Remarks:

Notes On Sampling:
The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

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Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-86
Date of Issue: Sunday, 8 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
5/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
5/11/2020	JLP-329	10	28	1.00	.00	.50	07:16	16:47	571	100	0	<0.02	110442
5/11/2020	JLP-330	10	27	1.00	1.00	1.00	07:19	16:51	572	100	0	<0.01	
5/11/2020	JLP-331	10	25	1.00	1.00	1.00	07:26	16:51	565	100	0	<0.01	
5/11/2020	JLP-332	10	26	1.00	1.00	1.00	07:21	16:49	568	100	1	<0.01	

Monitoring Locations :

0 Blank
25 North boundary of road reserve work area
26 East boundary of road reserve work area
27 South boundary of road reserve work area
28 West boundary of road reserve work area

Sample Types:

10 Control

Remarks:

110442 Reject sample - pump failure

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025 - Testing.
This report cannot be reproduced except in full.

Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

SLR Consulting Australia Laboratory Services - Darwin Office
ABN: 29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-87
Date of Issue: Monday, 9 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
6/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
6/11/2020	JLP-333	10	7	1.00	1.00	1.00	07:18	16:48	570	100	0	<0.01	
6/11/2020	JLP-334	10	6	1.00	1.00	1.00	07:20	16:49	569	100	0	<0.01	
6/11/2020	JLP-335	10	5	1.00	1.00	1.00	07:30	16:52	562	100	0	<0.01	
6/11/2020	JLP-336	10	8	1.00	1.00	1.00	07:32	16:54	562	100	2	<0.01	

Monitoring Locations :

0 Blank
5 North boundary of work area
6 East boundary of work area
7 South boundary of work area
8 West boundary of work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025 - Testing.
This report cannot be reproduced except in full.

Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

SLR Consulting Australia Laboratory Services - Darwin Office
ABN: 29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-88
Date of Issue: Monday, 16 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
9/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
9/11/2020	JLP-337	10	32	1.00	1.00	1.00	07:29	17:01	572	100	3	<0.01	
9/11/2020	JLP-338	10	33	1.00	1.00	1.00	07:31	17:03	572	100	1	<0.01	
9/11/2020	JLP-339	10	34	1.00	1.00	1.00	07:34	17:04	570	100	2.5	<0.01	
9/11/2020	JLP-340	10	35	1.00	1.00	1.00	07:38	17:07	569	100	1	<0.01	

Monitoring Locations :

0 Blank
32 North boundary of Lot C work area
33 East boundary of Lot C work area
34 South boundary of Lot C work area
35 West boundary of Lot C work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025 - Testing.
This report cannot be reproduced except in full.

Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

SLR Consulting Australia Laboratory Services - Darwin Office
ABN: 29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-89
Date of Issue: Monday, 16 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
10/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
10/11/2020	JLP-341	10	34	1.00	1.00	1.00	07:32	16:49	557	100	0	<0.01	
10/11/2020	JLP-342	10	35	1.00	1.00	1.00	07:22	16:47	565	100	0	<0.01	
10/11/2020	JLP-343	10	33	1.00	1.00	1.00	07:35	16:52	557	100	0	<0.01	
10/11/2020	JLP-344	10	32	1.00	1.00	1.00	07:20	16:45	565	100	0	<0.01	

Monitoring Locations :

0 Blank
32 North boundary of Lot C work area
33 East boundary of Lot C work area
34 South boundary of Lot C work area
35 West boundary of Lot C work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025 - Testing.
This report cannot be reproduced except in full.

Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Paul Turyn

SLR Consulting Australia Laboratory Services - Darwin Office
ABN: 29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-90
Date of Issue: Monday, 16 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
11/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
11/11/2020	JLP-345	10	32	1.00	1.00	1.00	07:02	17:02	600	100	2	<0.01	
11/11/2020	JLP-346	10	35	1.00	1.00	1.00	07:15	16:55	580	100	0	<0.01	
11/11/2020	JLP-347	10	34	1.00	1.00	1.00	07:18	16:58	580	100	0	<0.01	
11/11/2020	JLP-348	10	33	1.00	1.00	1.00	07:14	16:49	575	100	0	<0.01	

Monitoring Locations :

0 Blank
32 North boundary of Lot C work area
33 East boundary of Lot C work area
34 South boundary of Lot C work area
35 West boundary of Lot C work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025 - Testing.
This report cannot be reproduced except in full.

Approved Fibre Counter: Paul Turyn

Approved Fibre Signatory: Gemma Sheridan

SLR Consulting Australia Laboratory Services - Darwin Office
ABN: 29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00100-JLP-91
Date of Issue: Monday, 16 November 2020
Removal Contractor: N/A
Job Location: John Stokes Square 47 Progress Drive Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Unit 3, 29 Miles Road
Berrimah
NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min)			TIME			Count		CONC'N	REM
				ON	OFF	AVGE	ON	OFF	TOTAL(min)	Fields	Fibres	(fibres/mL)	
13/11/2020	**Blank**		0				N/A	N/A		100	0	N/A	
13/11/2020	JLP-349	10	33	1.00	1.00	1.00	07:10	16:45	575	100	2	<0.01	
13/11/2020	JLP-350	10	32	1.00	1.00	1.00	07:13	16:46	573	100	0	<0.01	
13/11/2020	JLP-351	10	35	1.00	1.00	1.00	07:15	16:48	573	100	0	<0.01	
13/11/2020	JLP-352	10	34	1.00	1.00	1.00	07:18	16:50	572	100	0	<0.01	

Monitoring Locations :

0 Blank
32 North boundary of Lot C work area
33 East boundary of Lot C work area
34 South boundary of Lot C work area
35 West boundary of Lot C work area

Sample Types:

10 Control

Remarks:

Notes On Sampling:

The above results only relate to the samples tested. This report confirms preliminary report _N/A

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025 - Testing.
This report cannot be reproduced except in full.

Approved Fibre Counter: Paul Turyn

Sheridan

Approved Fibre Signatory: Gemma Sheridan

APPENDIX H

Shoal Bay Waste Management Facility Receipts

Carl
John stokes

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113040-SB
Voucher No:

Time In: 1/10/2020 9:57:01 AM
Time Out: 1/10/2020 9:57:01 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 02-A1905
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.10t
TARE Weight:	11.78t
NET Weight:	12.32t
Chargeable Weight:	12.32t
Council Fee:	$4,670.40
EPA Levy:	$0.00
GST :	$467.04
Temporary Acc:	$0.00
Total Price:	$5,137.44
Payments:	
ACCOUNT	$5,137.44
Total Amount Tendered:	$5,137.44
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80127485>œ

John Stokes
Nathan

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113181-SB
Voucher No:

Time In: 1/10/2020 2:25:10 PM
Time Out: 1/10/2020 2:25:10 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.45t
TARE Weight:	11.78t
NET Weight:	10.67t
Chargeable Weight:	10.67t
Council Fee:	$4,044.90
EPA Levy:	$0.00
GST :	$404.49
Temporary Acc:	$0.00
Total Price:	$4,449.39
Payments:	
ACCOUNT	$4,449.39
Total Amount Tendered:	$4,449.39
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š801276377œ

John Stokes
Nathan

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113146-SB
Voucher No:

Time In: 1/10/2020 1:31:43 PM
Time Out: 1/10/2020 1:31:43 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.25t
TARE Weight:	11.78t
NET Weight:	12.47t
Chargeable Weight:	12.47t
Council Fee:	$4,727.26
EPA Levy:	$0.00
GST :	$472.73
Temporary Acc:	$0.00
Total Price:	$5,199.99
Payments:	
ACCOUNT	$5,199.99
Total Amount Tendered:	$5,199.99
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80127601Yœ

John Stokes Nathan

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113123-SB
Voucher No:

Time In: 1/10/2020 12:36:51 PM
Time Out: 1/10/2020 12:36:51 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.45t
TARE Weight:	11.78t
NET Weight:	13.67t
Chargeable Weight:	13.67t
Council Fee:	$5,182.17
EPA Levy:	$0.00
GST :	$518.22
Temporary Acc:	$0.00
Total Price:	$5,700.39
Payments:	
ACCOUNT	$5,700.39
Total Amount Tendered:	$5,700.39
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80127578Uœ

Carl
John stoke ©

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113081-SB
Voucher No:

Time In: 1/10/2020 11:10:28 AM
Time Out: 1/10/2020 11:10:28 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 02-A1905
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.35t
TARE Weight:	11.78t
NET Weight:	14.57t
Chargeable Weight:	14.57t
Council Fee:	$5,523.35
EPA Levy:	$0.00
GST :	$552.34
Temporary Acc:	$0.00
Total Price:	$6,075.69
Payments:	
ACCOUNT	$6,075.69
Total Amount Tendered:	$6,075.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80127529:œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113403-SB
Voucher No:	
Time In:	2/10/2020 12:31:07 PM
Time Out:	2/10/2020 12:31:07 PM
Vehicle Rego:	CD99YR-10
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1946
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Price
ASBESTOS	$379.09

Each Items	Qty	Price
GROSS Weight:		23.05t
TARE Weight:		12.70t
NET Weight:		10.35t
Chargeable Weight:		10.35t
Council Fee:		$3,923.59
EPA Levy:		$0.00
GST :		$392.36
Temporary Acc:		$0.00
Total Price:		$4,315.95

Payments:	
ACCOUNT	$4,315.95
Total Amount Tendered:	$4,315.95
Change Given:	$0.00

Driver:

Operator: Dennis

š80127900cœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113376-SB
Voucher No:	
Time In:	2/10/2020 11:39:31 AM
Time Out:	2/10/2020 11:39:31 AM
Vehicle Rego:	CD99YR-12
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Price
ASBESTOS	$379.09

Each Items	Qty	Price
GROSS Weight:		25.70t
TARE Weight:		12.36t
NET Weight:		13.34t
Chargeable Weight:		13.34t
Council Fee:		$5,057.07
EPA Levy:		$0.00
GST :		$505.71
Temporary Acc:		$0.00
Total Price:		$5,562.78

Payments:	
ACCOUNT	$5,562.78
Total Amount Tendered:	$5,562.78
Change Given:	$0.00

Driver:

Operator: Sam

š80127869hœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113347-SB
Voucher No:	
Time In:	2/10/2020 10:43:25 AM
Time Out:	2/10/2020 10:43:25 AM
Vehicle Rego:	CD99YR-12
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Price
ASBESTOS	$379.09

Each Items	Qty	Price
GROSS Weight:		25.80t
TARE Weight:		12.36t
NET Weight:		13.44t
Chargeable Weight:		13.44t
Council Fee:		$5,094.98
EPA Levy:		$0.00
GST :		$509.50
Temporary Acc:		$0.00
Total Price:		$5,604.48

Payments:	
ACCOUNT	$5,604.48
Total Amount Tendered:	$5,604.48
Change Given:	$0.00

Driver:

Operator: Sam

š80127837cœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113315-SB
Voucher No:	
Time In:	2/10/2020 9:42:46 AM
Time Out:	2/10/2020 9:42:46 AM
Vehicle Rego:	CD99YR-10
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Price
ASBESTOS	$379.09

Each Items	Qty	Price
GROSS Weight:		23.70t
TARE Weight:		12.70t
NET Weight:		11.00t
Chargeable Weight:		11.00t
Council Fee:		$4,170.00
EPA Levy:		$0.00
GST :		$417.00
Temporary Acc:		$0.00
Total Price:		$4,587.00

Payments:	
ACCOUNT	$4,587.00
Total Amount Tendered:	$4,587.00
Change Given:	$0.00

Driver:

Operator: Sam

š80127793Gœ

Carl
Johnstokes

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113296-SB
Voucher No:	
Time In:	2/10/2020 9:08:52 AM
Time Out:	2/10/2020 9:08:52 AM
Vehicle Rego:	CD36BZ-12
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Price
ASBESTOS	$379.09

Each Items	Qty	Price
GROSS Weight:		23.35t
TARE Weight:		11.78t
NET Weight:		11.57t
Chargeable Weight:		11.57t
Council Fee:		$4,386.08
EPA Levy:		$0.00
GST :		$438.61
Temporary Acc:		$0.00
Total Price:		$4,824.69

Payments:	
ACCOUNT	$4,824.69
Total Amount Tendered:	$4,824.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80127770!œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113320-SB
Voucher No:	
Time In:	2/10/2020 9:59:04 AM
Time Out:	2/10/2020 9:59:04 AM
Vehicle Rego:	CB06AH-12
Client:	VEOLIA ENVIRONMENTAL SERVIC
Approval no.	20-A1900
Order Number:	
Contract:	VEOLIA ENVIRONMENTAL SERV

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.15t
TARE Weight:	15.50t
NET Weight:	10.65t
Chargeable Weight:	10.65t
Council Fee:	$4,037.32
EPA Levy:	$0.00
GST :	$403.73
Temporary Acc:	$0.00
Total Price:	$4,441.05

Payments:	
ACCOUNT	$4,441.05
Total Amount Tendered:	$4,441.05
Change Given:	$0.00

Driver:

Operator: Sam

š80127801e

John Stokes

Nathan

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113489-SB
Voucher No:	
Time In:	2/10/2020 2:36:27 PM
Time Out:	2/10/2020 2:36:27 PM
Vehicle Rego:	CD99YR-12
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.25t
TARE Weight:	12.36t
NET Weight:	12.89t
Chargeable Weight:	12.89t
Council Fee:	$4,886.48
EPA Levy:	$0.00
GST :	$488.65
Temporary Acc:	$0.00
Total Price:	$5,375.13

Payments:	
ACCOUNT	$5,375.13
Total Amount Tendered:	$5,375.13
Change Given:	$0.00

Driver:

Operator: Dennis

š80127998{

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80113445-SB
Voucher No:	
Time In:	2/10/2020 1:42:19 PM
Time Out:	2/10/2020 1:42:19 PM
Vehicle Rego:	CD99YR-12
Client:	NORTHERN TRADE SOLUTIONS PT
Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.10t
TARE Weight:	12.36t
NET Weight:	10.74t
Chargeable Weight:	10.74t
Council Fee:	$4,071.44
EPA Levy:	$0.00
GST :	$407.14
Temporary Acc:	$0.00
Total Price:	$4,478.58

Payments:	
ACCOUNT	$4,478.58
Total Amount Tendered:	$4,478.58
Change Given:	$0.00

Driver:

Operator: Dennis

š80127951'

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001693-SB
Voucher No:

Time In: 3/11/2020 8:24:59 AM
Time Out: 3/11/2020 8:24:59 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no.
Order Number: 31-A1932
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		25.62t
TARE Weight:		12.36t
NET Weight:		13.26t
Chargeable Weight:		13.26t
Council Fee:		$5,026.75
EPA Levy:		$0.00
GST :		$502.67
Temporary Acc:		$0.00
Total Price:		$5,529.42

Payments:
ACCOUNT
Total Amount Tendered: $5,529.42
Change Given: $5,529.42
$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001745-SB.2
Voucher No:

Time In: 3/11/2020 9:52:21 AM
Time Out: 3/11/2020 9:52:21 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no.
Order Number: 31-A1932
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		26.18t
TARE Weight:		12.36t
NET Weight:		13.82t
Chargeable Weight:		13.82t
Council Fee:		$5,239.04
EPA Levy:		$0.00
GST :		$523.90
Temporary Acc:		$0.00
Total Price:		$5,762.94

Payments:
ACCOUNT
Total Amount Tendered: $5,762.94
Change Given: $5,762.94
$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001784-SB
Voucher No:

Time In: 3/11/2020 11:00:24 AM
Time Out: 3/11/2020 11:00:24 AM

Vehicle Rego: CD99YR-6

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no.
Order Number: 31-a1932
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		19.64t
TARE Weight:		11.80t
NET Weight:		7.84t
Chargeable Weight:		7.84t
Council Fee:		$2,972.07
EPA Levy:		$0.00
GST :		$297.21
Temporary Acc:		$0.00
Total Price:		$3,269.28

Payments:
ACCOUNT
Total Amount Tendered: $3,269.28
Change Given: $3,269.28
$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001807-SB
Voucher No:

Time In: 3/11/2020 11:39:06 AM
Time Out: 3/11/2020 11:39:06 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no.
Order Number: 31-A1932
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		20.34t
TARE Weight:		12.36t
NET Weight:		7.98t
Chargeable Weight:		7.98t
Council Fee:		$3,025.15
EPA Levy:		$0.00
GST :		$302.51
Temporary Acc:		$0.00
Total Price:		$3,327.66

Payments:
ACCOUNT
Total Amount Tendered: $3,327.66
Change Given: $3,327.66
$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001854-SB
Voucher No:

Time In: 3/11/2020 12:53:32 PM
Time Out: 3/11/2020 12:53:32 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no.
Order Number: 31-A1932
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		26.14t
TARE Weight:		12.36t
NET Weight:		13.78t
Chargeable Weight:		13.78t
Council Fee:		$5,223.87
EPA Levy:		$0.00
GST :		$522.39
Temporary Acc:		$0.00
Total Price:		$5,746.26

Payments:
ACCOUNT
Total Amount Tendered: $5,746.26
Change Given: $5,746.26
$0.00

Driver:

Operator: Dennis

š100002125qœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001893-SB
Voucher No:

Time In: 3/11/2020 1:52:52 PM
Time Out: 3/11/2020 1:52:52 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.28t
TARE Weight:	12.36t
NET Weight:	13.92t
Chargeable Weight:	13.92t
Council Fee:	$5,276.95
EPA Levy:	$0.00
GST :	$527.69
Temporary Acc:	$0.00
Total Price:	$5,804.64

Payments:	
ACCOUNT	$5,804.64
Total Amount Tendered:	$5,804.64
Change Given:	$0.00

Driver:

Operator: Dennis

$100002164

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100001918-SB
Voucher No:

Time In: 3/11/2020 2:28:37 PM
Time Out: 3/11/2020 2:28:37 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.36t
TARE Weight:	12.36t
NET Weight:	12.00t
Chargeable Weight:	12.00t
Council Fee:	$4,549.09
EPA Levy:	$0.00
GST :	$454.91
Temporary Acc:	$0.00
Total Price:	$5,004.00

Payments:	
ACCOUNT	$5,004.00
Total Amount Tendered:	$5,004.00
Change Given:	$0.00

Driver:

Operator: Dennis

$100002190

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002155-SB.2
Voucher No:

Time In: 4/11/2020 12:01:21 PM
Time Out: 4/11/2020 12:01:21 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract;

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		
ASBESTOS		Price $379.09
Each Items	Qty	Price

GROSS Weight:	22.68t
TARE Weight:	12.36t
NET Weight:	10.32t
Chargeable Weight:	10.32t
Council Fee:	$3,912.22
EPA Levy:	$0.00
GST :	$391.22
Temporary Acc:	$0.00
Total Price:	$4,303.44

Payments:	
ACCOUNT	$4,303.44
Total Amount Tendered:	$4,303.44
Change Given:	$0.00

Driver:

Operator: (4) Dennis

š10000246460œ

GSG John Stokes Card PR000609

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002092-SB
Voucher No:

Time In: 4/11/2020 10:36:27 AM
Time Out: 4/11/2020 10:36:27 AM

Vehicle Rego: CD99YR-6

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		
ASBESTOS		Price $379.09
Each Items	Qty	Price

GROSS Weight:	20.28t
TARE Weight:	11.80t
NET Weight:	8.48t
Chargeable Weight:	8.48t
Council Fee:	$3,214.69
EPA Levy:	$0.00
GST :	$321.47
Temporary Acc:	$0.00
Total Price:	$3,536.16

Payments:	
ACCOUNT	$3,536.16
Total Amount Tendered:	$3,536.16
Change Given:	$0.00

Driver:

Operator: (5) Dennis

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GSG, John Stokes Card PR000609

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002060-SB
Voucher No:

Time In: 4/11/2020 9:37:57 AM
Time Out: 4/11/2020 9:37:57 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		
ASBESTOS		Price $379.09
Each Items	Qty	Price

GROSS Weight:	25.86t
TARE Weight:	12.36t
NET Weight:	13.50t
Chargeable Weight:	13.50t
Council Fee:	$5,117.73
EPA Levy:	$0.00
GST :	$511.77
Temporary Acc:	$0.00
Total Price:	$5,629.50

Payments:	
ACCOUNT	$5,629.50
Total Amount Tendered:	$5,629.50
Change Given:	$0.00

Driver:

Operator: (6) Dennis

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GSG, John Stokes Card PR000609

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002027-SB
Voucher No:

Time In: 4/11/2020 8:24:16 AM
Time Out: 4/11/2020 8:24:16 AM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		
ASBESTOS		Price $379.09
Each Items	Qty	Price

GROSS Weight:	24.58t
TARE Weight:	12.70t
NET Weight:	11.88t
Chargeable Weight:	11.88t
Council Fee:	$4,503.60
EPA Levy:	$0.00
GST :	$450.36
Temporary Acc:	$0.00
Total Price:	$4,953.96

Payments:	
ACCOUNT	$4,953.96
Total Amount Tendered:	$4,953.96
Change Given:	$0.00

Driver:

Operator: (7) Dennis

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002280-SB
Voucher No:

Time In: 4/11/2020 2:48:50 PM
Time Out: 4/11/2020 2:48:50 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		
ASBESTOS		Price $379.09
Each Items	Qty	Price

GROSS Weight:	27.08t
TARE Weight:	12.36t
NET Weight:	14.72t
Chargeable Weight:	14.72t
Council Fee:	$5,580.22
EPA Levy:	$0.00
GST :	$558.02
Temporary Acc:	$0.00
Total Price:	$6,138.24

Payments:	
ACCOUNT	$6,138.24
Total Amount Tendered:	$6,138.24
Change Given:	$0.00

Driver:

Operator: (8) Dave Yates

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002226-SB
Voucher No:

Time In: 4/11/2020 1:42:21 PM
Time Out: 4/11/2020 1:42:21 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.78t
TARE Weight:	12.36t
NET Weight:	14.42t
Chargeable Weight:	14.42t
Council Fee:	$5,466.49
EPA Levy:	$0.00
GST :	$546.65
Temporary Acc:	$0.00
Total Price:	$6,013.14

Payments:	
ACCOUNT	$6,013.14
Total Amount Tendered:	$6,013.14
Change Given:	$0.00

Driver: (3)

Operator: Dave Yates

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113854-SB
Voucher No:

Time In: 5/10/2020 12:12:50 PM
Time Out: 5/10/2020 12:12:50 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.30t
TARE Weight:	12.36t
NET Weight:	12.94t
Chargeable Weight:	12.94t
Council Fee:	$4,905.44
EPA Levy:	$0.00
GST :	$490.54
Temporary Acc:	$0.00
Total Price:	$5,395.98

Payments:	
ACCOUNT	$5,395.98
Total Amount Tendered:	$5,395.98
Change Given:	$0.00

Driver:

Operator: Dennis

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113899-SB
Voucher No:

Time In: 5/10/2020 1:15:57 PM
Time Out: 5/10/2020 1:15:57 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.05t
TARE Weight:	12.36t
NET Weight:	12.69t
Chargeable Weight:	12.69t
Council Fee:	$4,810.66
EPA Levy:	$0.00
GST :	$481.07
Temporary Acc:	$0.00
Total Price:	$5,291.73

Payments:	
ACCOUNT	$5,291.73
Total Amount Tendered:	$5,291.73
Change Given:	$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113970-SB
Voucher No:

Time In: 5/10/2020 2:40:13 PM
Time Out: 5/10/2020 2:40:13 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.85t
TARE Weight:	12.36t
NET Weight:	10.49t
Chargeable Weight:	10.49t
Council Fee:	$3,976.66
EPA Levy:	$0.00
GST :	$397.67
Temporary Acc:	$0.00
Total Price:	$4,374.33

Payments:	
ACCOUNT	$4,374.33
Total Amount Tendered:	$4,374.33
Change Given:	$0.00

Driver:

Operator: Michael

š801285180œ

Carl

John Stoka

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113948-SB
Voucher No:

Time In: 5/10/2020 2:15:39 PM
Time Out: 5/10/2020 2:15:39 PM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.80t
TARE Weight:	12.08t
NET Weight:	9.72t
Chargeable Weight:	9.72t
Council Fee:	$3,684.76
EPA Levy:	$0.00
GST :	$368.48
Temporary Acc:	$0.00
Total Price:	$4,053.24

Payments:	
ACCOUNT	$4,053.24
Total Amount Tendered:	$4,053.24
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š801284922œ

Carl

John Stokes

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113897-SB
Voucher No:

Time In: 5/10/2020 1:12:13 PM
Time Out: 5/10/2020 1:12:13 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.85t
TARE Weight:	11.78t
NET Weight:	15.07t
Chargeable Weight:	15.07t
Council Fee:	$5,712.90
EPA Levy:	$0.00
GST :	$571.29
Temporary Acc:	$0.00
Total Price:	$6,284.19

Payments:	
ACCOUNT	$6,284.19
Total Amount Tendered:	$6,284.19
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113747-SB
Voucher No:

Time In: 5/10/2020 8:53:41 AM
Time Out: 5/10/2020 8:53:41 AM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.20t
TARE Weight:	12.70t
NET Weight:	10.50t
Chargeable Weight:	10.50t
Council Fee:	$3,980.45
EPA Levy:	$0.00
GST :	$398.05
Temporary Acc:	$0.00
Total Price:	$4,378.50

Payments:	
ACCOUNT	$4,378.50
Total Amount Tendered:	$4,378.50
Change Given:	$0.00

Driver:

Operator: Dennis

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113820-SB
Voucher No:

Time In: 5/10/2020 11:23:37 AM
Time Out: 5/10/2020 11:23:37 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.20t
TARE Weight:	12.36t
NET Weight:	11.84t
Chargeable Weight:	11.84t
Council Fee:	$4,488.44
EPA Levy:	$0.00
GST :	$448.84
Temporary Acc:	$0.00
Total Price:	$4,937.28

Payments:	
ACCOUNT	$4,937.28
Total Amount Tendered:	$4,937.28
Change Given:	$0.00

Driver:

Operator: Dennis

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113798-SB
Voucher No:

Time In: 5/10/2020 10:36:10 AM
Time Out: 5/10/2020 10:36:10 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.90t
TARE Weight:	12.36t
NET Weight:	11.54t
Chargeable Weight:	11.54t
Council Fee:	$4,374.71
EPA Levy:	$0.00
GST :	$437.47
Temporary Acc:	$0.00
Total Price:	$4,812.18

Payments:	
ACCOUNT	$4,812.18
Total Amount Tendered:	$4,812.18
Change Given:	$0.00

Driver:

Operator: Dennis

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80113777-SB
Voucher No:

Time In: 5/10/2020 9:44:58 AM
Time Out: 5/10/2020 9:44:58 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.20t
TARE Weight:	12.36t
NET Weight:	11.84t
Chargeable Weight:	11.84t
Council Fee:	$4,488.44
EPA Levy:	$0.00
GST :	$448.84
Temporary Acc:	$0.00
Total Price:	$4,937.28

Payments:	
ACCOUNT	$4,937.28
Total Amount Tendered:	$4,937.28
Change Given:	$0.00

Driver:

Operator: Dennis

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GSC, J. Stok Ca

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002435-SB
Voucher No:

Time In: 5/11/2020 9:40:27 AM
Time Out: 5/11/2020 9:40:27 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	28.08t
TARE Weight:	12.36t
NET W	15.72t
Chargeable Weight:	15.72t
Council Fee:	$5,959.31
EPA Levy:	$0.00
GST :	$595.93
Temporary Acc:	$0.00
Total Price:	$6,555.24

Payments:	
ACCOUNT	$6,555.24
Total Amount Tendered:	$6,555.24
Change Given:	$0.00

Driver:

Operator: (10) Dennis

š10000274 6Mœ

J&G J. Stokes Card

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002470-SB
Voucher No:

Time In: 5/11/2020 10:45:12 AM
Time Out: 5/11/2020 10:45:12 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.24t
TARE Weight:	12.36t
NET Weight:	14.88t
Chargeable Weight:	14.88t
Council Fee:	$5,640.87
EPA Levy:	$0.00
GST :	$564.09
Temporary Acc:	$0.00
Total Price:	$6,204.96

Payments:	
ACCOUNT	$6,204.96
Total Amount Tendered:	$6,204.96
Change Given:	$0.00

Driver:

Operator: (11) Dennis

š10000278 5dœ

GSG J. Stok Ca

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002515-SB
Voucher No:

Time In: 5/11/2020 11:43:38 AM
Time Out: 5/11/2020 11:43:38 AM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.74t
TARE Weight:	12.70t
NET Weight:	11.04t
Chargeable Weight:	11.04t
Council Fee:	$4,185.16
EPA Levy:	$0.00
GST :	$418.52
Temporary Acc:	$0.00
Total Price:	$4,603.68

Payments:	
ACCOUNT	$4,603.68
Total Amount Tendered:	$4,603.68
Change Given:	$0.00

Driver:

Operator: (12) Dennis

š10000283 6Lœ

GSG, J/Stokes, Card

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002574-SB
Voucher No:

Time In: 5/11/2020 1:15:17 PM
Time Out: 5/11/2020 1:15:17 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.00t
TARE Weight:	12.36t
NET Weight:	14.64t
Chargeable Weight:	14.64t
Council Fee:	$5,549.89
EPA Levy:	$0.00
GST :	$554.99
Temporary Acc:	$0.00
Total Price:	$6,104.88

Payments:	
ACCOUNT	$6,104.88
Total Amount Tendered:	$6,104.88
Change Given:	$0.00

Driver:

Operator: (13) Michael

š100002897-œ

GSG J/John Stokes Card

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002622-SB
Voucher No:

Time In: 5/11/2020 2:21:11 PM
Time Out: 5/11/2020 2:21:11 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.88t
TARE Weight:	12.36t
NET Weight:	15.52t
Chargeable Weight:	15.52t
Council Fee:	$5,883.49
EPA Levy:	$0.00
GST :	$588.35
Temporary Acc:	$0.00
Total Price:	$6,471.84

Payments:	
ACCOUNT	$6,471.84
Total Amount Tendered:	$6,471.84
Change Given:	$0.00

Driver:

Operator: (14) Michael

š10000295 16œ

886 J/Stokes Card

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002386-SB
Voucher No:

Time In: 5/11/2020 8:27:12 AM
Time Out: 5/11/2020 8:27:12 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.04t
TARE Weight:	12.36t
NET Weight:	13.68t
Chargeable Weight:	13.68t
Council Fee:	$5,185.96
EPA Levy:	$0.00
GST :	$518.60
Temporary Acc:	$0.00
Total Price:	$5,704.56

Payments:

ACCOUNT	$5,704.56
Total Amount Tendered:	$5,704.56
Change Given:	$0.00

Driver: 9

Operator: Dennis

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JOHN STOKES SQUARE
ASBESTOS
G.S.G.
STEWART

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114300-SB
Voucher No:

Time In: 6/10/2020 2:35:50 PM
Time Out: 6/10/2020 2:35:50 PM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.00t
TARE Weight:	12.70t
NET Weight:	10.30t
Chargeable Weight:	10.30t
Council Fee:	$3,904.64
EPA Levy:	$0.00
GST :	$390.46
Temporary Acc:	$0.00
Total Price:	$4,295.10

Payments:	
ACCOUNT	$4,295.10
Total Amount Tendered:	$4,295.10
Change Given:	$0.00

Driver:

Operator: Michael

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JOHN STOKES SQUARE
ASBESTOS
G.S.G.
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114243-SB
Voucher No:

Time In: 6/10/2020 1:17:28 PM
Time Out: 6/10/2020 1:17:28 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.60t
TARE Weight:	12.36t
NET Weight:	14.24t
Chargeable Weight:	14.24t
Council Fee:	$5,398.25
EPA Levy:	$0.00
GST :	$539.83
Temporary Acc:	$0.00
Total Price:	$5,938.08

Payments:	
ACCOUNT	$5,938.08
Total Amount Tendered:	$5,938.08
Change Given:	$0.00

Driver:

Operator: Michael

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JOHN STOKES SQUARE
ASBESTOS
G.S.G.
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114164-SB
Voucher No:

Time In: 6/10/2020 11:23:49 AM
Time Out: 6/10/2020 11:23:49 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.90t
TARE Weight:	12.36t
NET Weight:	13.54t
Chargeable Weight:	13.54t
Council Fee:	$5,132.89
EPA Levy:	$0.00
GST :	$513.29
Temporary Acc:	$0.00
Total Price:	$5,646.18

Payments:	
ACCOUNT	$5,646.18
Total Amount Tendered:	$5,646.18
Change Given:	$0.00

Driver:

Operator: Dennis

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114110-SB
Voucher No:

Time In: 6/10/2020 9:45:43 AM
Time Out: 6/10/2020 9:45:43 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no.
Order Number:
Contract:

DestinationLF: Cell Stage 5 (Putres

Weighed Waste		Price
COMMERCIAL WASTE		$89.09/
Each Items	Qty	Price

GROSS Weight:	17.85t
TARE Weight:	12.36t
NET Weight:	5.49t
Chargeable Weight:	5.49t
Council Fee:	$489.11
EPA Levy:	$0.00
GST :	$48.91
Temporary Acc:	$0.00
Total Price:	$538.02

Payments:	
ACCOUNT	$538.02
Total Amount Tendered:	$538.02
Change Given:	$0.00

Driver:

Operator: Dennis

š80128680'œ

GSG Carl John's

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114291-SB
Voucher No:

Time In: 6/10/2020 2:21:56 PM
Time Out: 6/10/2020 2:21:56 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.05t
TARE Weight:	11.78t
NET Weight:	11.27t
Chargeable Weight:	11.27t
Council Fee:	$4,272.35
EPA Levy:	$0.00
GST :	$427.24
Temporary Acc:	$0.00
Total Price:	$4,699.59

Payments:	
ACCOUNT	$4,699.59
Total Amount Tendered:	$4,699.59
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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GSG Carl John's

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114205-SB
Voucher No:

Time In: 6/10/2020 12:16:25 PM
Time Out: 6/10/2020 12:16:25 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.05t
TARE Weight:	11.78t
NET Weight:	14.27t
Chargeable Weight:	14.27t
Council Fee:	$5,409.63
EPA Levy:	$0.00
GST :	$540.96
Temporary Acc:	$0.00
Total Price:	$5,950.59

Payments:	
ACCOUNT	$5,950.59
Total Amount Tendered:	$5,950.59
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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GSG Carl John's

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114155-SB.2
Voucher No:

Time In: 6/10/2020 10:56:58 AM
Time Out: 6/10/2020 10:56:58 AM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.00t
TARE Weight:	12.08t
NET Weight:	9.92t
Chargeable Weight:	9.92t
Council Fee:	$3,760.58
EPA Levy:	$0.00
GST :	$376.06
Temporary Acc:	$0.00
Total Price:	$4,136.64

Payments:	
ACCOUNT	$4,136.64
Total Amount Tendered:	$4,136.64
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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GSG Carl John's

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114124-SB
Voucher No:

Time In: 6/10/2020 9:58:35 AM
Time Out: 6/10/2020 9:58:35 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.75t
TARE Weight:	11.78t
NET Weight:	9.97t
Chargeable Weight:	9.97t
Council Fee:	$3,779.54
EPA Levy:	$0.00
GST :	$377.95
Temporary Acc:	$0.00
Total Price:	$4,157.49

Payments:	
ACCOUNT	$4,157.49
Total Amount Tendered:	$4,157.49
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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GSG Carl John's

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114076-SB
Voucher No:

Time In: 6/10/2020 8:54:43 AM
Time Out: 6/10/2020 8:54:43 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.40t
TARE Weight:	11.78t
NET Weight:	12.62t
Chargeable Weight:	12.62t
Council Fee:	$4,784.13
EPA Levy:	$0.00
GST :	$478.41
Temporary Acc:	$0.00
Total Price:	$5,262.54

Payments:	
ACCOUNT	$5,262.54
Total Amount Tendered:	$5,262.54
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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NTS, 12 Carl
Asbestos C10
John Stokes

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002807-SB
Voucher No:

Time In: 6/11/2020 10:32:04 AM
Time Out: 6/11/2020 10:32:04 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	28.78t
TARE Weight:	12.36t
NET Weight:	16.42t
Chargeable Weight:	16.42t
Council Fee:	$6,224.67
EPA Levy:	$0.00
GST :	$622.47
Temporary Acc:	$0.00
Total Price:	$6,847.14

Payments:	
ACCOUNT	$6,847.14
Total Amount Tendered:	$6,847.14
Change Given:	$0.00

Driver:

Operator: (18) Dennis

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NTS 12 Carl
Asbestos
John Stokes

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002897-SB
Voucher No:

Time In: 6/11/2020 12:58:59 PM
Time Out: 6/11/2020 12:58:59 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.36t
TARE Weight:	12.36t
NET Weight:	15.00t
Chargeable Weight:	15.00t
Council Fee:	$5,686.36
EPA Levy:	$0.00
GST :	$568.64
Temporary Acc:	$0.00
Total Price:	$6,255.00

Payments:	
ACCOUNT	$6,255.00
Total Amount Tendered.	$6,255.00
Change Given:	$0.00

Driver:

Operator: (17) Michael

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GSG John Stokes
Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002856-SB
Voucher No:

Time In: 6/11/2020 11:52:04 AM
Time Out: 6/11/2020 11:52:04 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	28.84t
TARE Weight:	12.36t
NET Weight:	16.48t
Chargeable Weight:	16.48t
Council Fee:	$6,247.42
EPA Levy:	$0.00
GST :	$624.74
Temporary Acc:	$0.00
Total Price:	$6,872.16

Payments:	
ACCOUNT	$6,872.16
Total Amount Tendered:	$6,872.16
Change Given:	$0.00

Driver:

Operator: (16) Dennis

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NTS 12 Carl
Asbestos
John Stokes

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100002928-SB
Voucher No:

Time In: 6/11/2020 1:52:18 PM
Time Out: 6/11/2020 1:52:18 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	19.32t
TARE Weight:	12.36t
NET Weight:	6.96t
Chargeable Weight:	6.96t
Council Fee:	$2,638.47
EPA Levy:	$0.00
GST :	$263.85
Temporary Acc:	$0.00
Total Price:	$2,902.32

Payments:	
ACCOUNT	$2,902.32
Total Amount Tendered:	$2,902.32
Change Given:	$0.00

Driver:

Operator: (15) Michael

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GSG Johnstokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114444-SB
Voucher No:

Time In: 7/10/2020 10:07:42 AM
Time Out: 7/10/2020 10:07:42 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.45t
TARE Weight:	11.78t
NET Weight:	12.67t
Chargeable Weight:	12.67t
Council Fee:	$4,803.08
EPA Levy:	$0.00
GST :	$480.31
Temporary Acc:	$0.00
Total Price:	$5,283.39

Payments:	
ACCOUNT	$5,283.39
Total Amount Tendered:	$5,283.39
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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GSG John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114488-SB
Voucher No:

Time In: 7/10/2020 11:26:52 AM
Time Out: 7/10/2020 11:26:52 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.05t
TARE Weight:	11.78t
NET Weight:	13.27t
Chargeable Weight:	13.27t
Council Fee:	$5,030.54
EPA Levy:	$0.00
GST :	$503.05
Temporary Acc:	$0.00
Total Price:	$5,533.59

Payments:	
ACCOUNT	$5,533.59
Total Amount Tendered:	$5,533.59
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80129096?œ

GSG John Stokes, Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114572-SB
Voucher No:

Time In: 7/10/2020 1:36:44 PM
Time Out: 7/10/2020 1:36:44 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.50t
TARE Weight:	11.78t
NET Weight:	11.72t
Chargeable Weight:	11.72t
Council Fee:	$4,442.95
EPA Levy:	$0.00
GST :	$444.29
Temporary Acc:	$0.00
Total Price:	$4,887.24

Payments:	
ACCOUNT	$4,887.24
Total Amount Tendered:	$4,887.24
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80129188Nœ

GSG John Stokes, Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114521-SB
Voucher No:

Time In: 7/10/2020 12:35:24 PM
Time Out: 7/10/2020 12:35:24 PM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.65t
TARE Weight:	12.08t
NET Weight:	9.57t
Chargeable Weight:	9.57t
Council Fee:	$3,627.90
EPA Levy:	$0.00
GST :	$362.79
Temporary Acc:	$0.00
Total Price:	$3,990.69

Payments:	
ACCOUNT	$3,990.69
Total Amount Tendered:	$3,990.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80129134rœ

GSG, Johnstokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114416-SB
Voucher No:

Time In: 7/10/2020 8:58:36 AM
Time Out: 7/10/2020 8:58:36 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.95t
TARE Weight:	11.78t
NET Weight:	12.17t
Chargeable Weight:	12.17t
Council Fee:	$4,613.54
EPA Levy:	$0.00
GST :	$461.35
Temporary Acc:	$0.00
Total Price:	$5,074.89

Payments:	
ACCOUNT	$5,074.89
Total Amount Tendered:	$5,074.89
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114616-SB
Voucher No:

Time In: 7/10/2020 2:42:20 PM
Time Out: 7/10/2020 2:42:20 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1931
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Qty	Price
ASBESTOS		$379.09
Each Items		Price

GROSS Weight:	26.25t
TARE Weight:	12.36t
NET Weight:	13.89t
Chargeable Weight:	13.89t
Council Fee:	$5,265.57
EPA Levy:	$0.00
GST :	$526.56
Temporary Acc:	$0.00
Total Price:	$5,792.13

Payments:	
ACCOUNT	$5,792.13
Total Amount Tendered:	$5,792.13
Change Given:	$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114618-SB
Voucher No:

Time In: 7/10/2020 2:45:47 PM
Time Out: 7/10/2020 2:45:47 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Qty	Price
ASBESTOS		$379.09
Each Items		Price

GROSS Weight:	25.30t
TARE Weight:	11.78t
NET Weight:	13.52t
Chargeable Weight:	13.52t
Council Fee:	$5,125.31
EPA Levy:	$0.00
GST :	$512.53
Temporary Acc:	$0.00
Total Price:	$5,637.84

Payments:	
ACCOUNT	$5,637.84
Total Amount Tendered:	$5,637.84
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80129241gœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114411-SB
Voucher No:

Time In: 7/10/2020 8:52:05 AM
Time Out: 7/10/2020 8:52:05 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Qty	Price
ASBESTOS		$379.09
Each Items		Price

GROSS Weight:	21.35t
TARE Weight:	12.36t
NET Weight:	8.99t
Chargeable Weight:	8.99t
Council Fee:	$3,408.03
EPA Levy:	$0.00
GST :	$340.80
Temporary Acc:	$0.00
Total Price:	$3,748.83

Payments:	
ACCOUNT	$3,748.83
Total Amount Tendered:	$3,748.83
Change Given:	$0.00

Driver:

Operator: Dennis

š80129009'œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114448-SB
Voucher No:

Time In: 7/10/2020 10:12:00 AM
Time Out: 7/10/2020 10:12:00 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Qty	Price
ASBESTOS		$379.09
Each Items		Price

GROSS Weight:	24.20t
TARE Weight:	12.36t
NET Weight:	11.84t
Chargeable Weight:	11.84t
Council Fee:	$4,488.44
EPA Levy:	$0.00
GST :	$448.84
Temporary Acc:	$0.00
Total Price:	$4,937.28

Payments:	
ACCOUNT	$4,937.28
Total Amount Tendered:	$4,937.28
Change Given:	$0.00

Driver:

Operator: Dennis

š80129051bœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114518-SB
Voucher No:

Time In: 7/10/2020 12:25:54 PM
Time Out: 7/10/2020 12:25:54 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste	Qty	Price
ASBESTOS		$379.09
Each Items		Price

GROSS Weight:	22.90t
TARE Weight:	12.36t
NET Weight:	10.54t
Chargeable Weight:	10.54t
Council Fee:	$3,995.62
EPA Levy:	$0.00
GST :	$399.56
Temporary Acc:	$0.00
Total Price:	$4,395.18

Payments:	
ACCOUNT	$4,395.18
Total Amount Tendered:	$4,395.18
Change Given:	$0.00

Driver:

Operator: Michael

š80129131zœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114571-SB
Voucher No:

Time In: 7/10/2020 1:35:59 PM
Time Out: 7/10/2020 1:35:59 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.70t
TARE Weight:	12.36t
NET Weight:	13.34t
Chargeable Weight:	13.34t
Council Fee:	$5,057.07
EPA Levy:	$0.00
GST :	$505.71
Temporary Acc:	$0.00
Total Price:	$5,562.78

Payments:	
ACCOUNT	$5,562.78
Total Amount Tendered:	$5,562.78
Change Given:	$0.00

Driver:

Operator: Michael

š80129187Fœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114491-SB
Voucher No:

Time In: 7/10/2020 11:30:31 AM
Time Out: 7/10/2020 11:30:31 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.20t
TARE Weight:	12.36t
NET Weight:	12.84t
Chargeable Weight:	12.84t
Council Fee:	$4,867.53
EPA Levy:	$0.00
GST :	$486.75
Temporary Acc:	$0.00
Total Price:	$5,354.28

Payments:	
ACCOUNT	$5,354.28
Total Amount Tendered:	$5,354.28
Change Given:	$0.00

Driver:

Operator: Dennis

š80129099Wœ

JOHN STOKES SQUARE
G.S.G.
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114771-SB
Voucher No:

Time In: 8/10/2020 11:48:40 AM
Time Out: 8/10/2020 11:48:40 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.25t
TARE Weight:	11.78t
NET Weight:	13.47t
Chargeable Weight:	13.47t
Council Fee:	$5,106.35
EPA Levy:	$0.00
GST :	$510.64
Temporary Acc:	$0.00
Total Price:	$5,616.99

Payments:

ACCOUNT	$5,616.99
Total Amount Tendered:	$5,616.99
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80129418/œ

JOHN STOKES SQUARE
G.S.G.
STEWART

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114790-SB
Voucher No:

Time In: 8/10/2020 12:33:55 PM
Time Out: 8/10/2020 12:33:55 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.60t
TARE Weight:	11.78t
NET Weight:	13.82t
Chargeable Weight:	13.82t
Council Fee:	$5,239.04
EPA Levy:	$0.00
GST :	$523.90
Temporary Acc:	$0.00
Total Price:	$5,762.94

Payments:

ACCOUNT	$5,762.94
Total Amount Tendered:	$5,762.94
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80129442{œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115064-SB
Voucher No:

Time In: 9/10/2020 12:05:09 PM
Time Out: 9/10/2020 12:05:09 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.80t
TARE Weight:	11.78t
NET Weight:	13.02t
Chargeable Weight:	13.02t
Council Fee:	$4,935.76
EPA Levy:	$0.00
GST :	$493.58
Temporary Acc:	$0.00
Total Price:	$5,429.34

Payments:	
ACCOUNT	
Total Amount Tendered:	$5,429.34
Change Given:	$5,429.34
	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80129742&œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80114986-SB
Voucher No:

Time In: 9/10/2020 9:41:42 AM
Time Out: 9/10/2020 9:41:42 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.15t
TARE Weight:	11.78t
NET Weight:	12.37t
Chargeable Weight:	12.37t
Council Fee:	$4,689.35
EPA Levy:	$0.00
GST :	$468.94
Temporary Acc:	$0.00
Total Price:	$5,158.29

Payments:	
ACCOUNT	
Total Amount Tendered:	$5,158.29
Change Given:	$5,158.29
	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80129655?œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115026-SB
Voucher No:

Time In: 9/10/2020 10:52:16 AM
Time Out: 9/10/2020 10:52:16 AM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.55t
TARE Weight:	12.08t
NET Weight:	9.47t
Chargeable Weight:	9.47t
Council Fee:	$3,589.99
EPA Levy:	$0.00
GST :	$359.00
Temporary Acc:	$0.00
Total Price:	$3,948.99

Payments:	
ACCOUNT	
Total Amount Tendered:	$3,948.99
Change Given:	$3,948.99
	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80129698sœ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115114-SB
Voucher No:

Time In: 9/10/2020 1:27:46 PM
Time Out: 9/10/2020 1:27:46 PM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.45t
TARE Weight:	11.50t
NET Weight:	10.95t
Chargeable Weight:	10.95t
Council Fee:	$4,151.05
EPA Levy:	$0.00
GST :	$415.10
Temporary Acc:	$0.00
Total Price:	$4,566.15

Payments:	
ACCOUNT	
Total Amount Tendered:	$4,566.15
Change Given:	$4,566.15
	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80129799"œ

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115134-SB
Voucher No:

Time In: 9/10/2020 1:57:30 PM
Time Out: 9/10/2020 1:57:30 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.45t
TARE Weight:	12.36t
NET Weight:	11.09t
Chargeable Weight:	11.09t
Council Fee:	$4,204.12
EPA Levy:	$0.00
GST :	$420.41
Temporary Acc:	$0.00
Total Price:	$4,624.53

Payments:	
ACCOUNT	
Total Amount Tendered:	$4,624.53
Change Given:	$4,624.53
	$0.00

Driver:

Operator: Michael

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GSG John, Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115176-SB
Voucher No:

Time In: 9/10/2020 2:45:03 PM
Time Out: 9/10/2020 2:45:03 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.35t
TARE Weight:	11.78t
NET Weight:	13.57t
Chargeable Weight:	13.57t
Council Fee:	$5,144.26
EPA Levy:	$0.00
GST :	$514.43
Temporary Acc:	$0.00
Total Price:	$5,658.69

Payments:	
ACCOUNT	$5,658.69
Total Amount Tendered:	$5,658.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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š80129867bœ

Nts. R10 Tony
Asbestos
John Stokes

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100003293-SB
Voucher No:

Time In: 9/11/2020 9:46:22 AM
Time Out: 9/11/2020 9:46:22 AM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.00t
TARE Weight:	12.70t
NET Weight:	13.30t
Chargeable Weight:	13.30t
Council Fee:	$5,041.91
EPA Levy:	$0.00
GST :	$504.19
Temporary Acc:	$0.00
Total Price:	$5,546.10

Payments:	
ACCOUNT	$5,546.10
Total Amount Tendered:	$5,546.10
Change Given:	$0.00

Driver:

Operator: 22 Michael

š100003694bœ

Nts. 12 Tony
Asbestos
John Stokes

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100003390-SB
Voucher No:

Time In: 9/11/2020 12:07:11 PM
Time Out: 9/11/2020 12:07:11 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.38t
TARE Weight:	12.36t
NET Weight:	14.02t
Chargeable Weight:	14.02t
Council Fee:	$5,314.85
EPA Levy:	$0.00
GST :	$531.49
Temporary Acc:	$0.00
Total Price:	$5,846.34

Payments:	
ACCOUNT	$5,846.34
Total Amount Tendered:	$5,846.34
Change Given:	$0.00

Driver:

Operator: 23 Michael

š100003803`œ

Nts. 12 Tony
Asbestos
PIU
John Stokes

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100003344-SB
Voucher No:

Time In: 9/11/2020 10:57:58 AM
Time Out: 9/11/2020 10:57:58 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.04t
TARE Weight:	12.36t
NET Weight:	14.68t
Chargeable Weight:	14.68t
Council Fee:	$5,565.05
EPA Levy:	$0.00
GST :	$556.51
Temporary Acc:	$0.00
Total Price:	$6,121.56

Payments:	
ACCOUNT	$6,121.56
Total Amount Tendered:	$6,121.56
Change Given:	$0.00

Driver:

Operator: 24 Michael

š100003750%œ

Carl, OSB, John Stokes

PR000609

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100004015-SB
Voucher No:

Time In: 11/11/2020 11:49:12 AM
Time Out: 11/11/2020 11:49:12 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.26t
TARE Weight:	12.36t
NET Weight:	13.90t
Chargeable Weight:	13.90t
Council Fee:	$5,269.36
EPA Levy:	$0.00
GST :	$526.94
Temporary Acc:	$0.00
Total Price:	$5,796.30

Payments:
ACCOUNT $5,796.30
Total Amount Tendered: $5,796.30
Change Given: $0.00

Driver:

Operator: 29 Sam

$100004464B

GSG, John Stokes, Carl

PR000609

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100003951-SB
Voucher No:

Time In: 11/11/2020 10:05:36 AM
Time Out: 11/11/2020 10:05:36 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.74t
TARE Weight:	12.36t
NET Weight:	15.38t
Chargeable Weight:	15.38t
Council Fee:	$5,830.42
EPA Levy:	$0.00
GST :	$583.04
Temporary Acc:	$0.00
Total Price:	$6,413.46

Payments:
ACCOUNT $6,413.46
Total Amount Tendered: $6,413.46
Change Given: $0.00

Driver:

Operator: 28 Sam

$100004396e

GSG, John Stokes, Carl

PR000609

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100004118-SB
Voucher No:

Time In: 11/11/2020 2:08:36 PM
Time Out: 11/11/2020 2:08:36 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	19.16t
TARE Weight:	12.36t
NET Weight:	6.80t
Chargeable Weight:	6.80t
Council Fee:	$2,577.82
EPA Levy:	$0.00
GST :	$257.78
Temporary Acc:	$0.00
Total Price:	$2,835.60

Payments:
ACCOUNT $2,835.60
Total Amount Tendered: $2,835.60
Change Given: $0.00

Driver:

Operator: 27 Michael

$100004582G

GSG, John Stokes, Carl

PR000609

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100004069-SB
Voucher No:

Time In: 11/11/2020 1:08:15 PM
Time Out: 11/11/2020 1:08:15 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	19.94t
TARE Weight:	12.36t
NET Weight:	7.58t
Chargeable Weight:	7.58t
Council Fee:	$2,873.51
EPA Levy:	$0.00
GST :	$287.35
Temporary Acc:	$0.00
Total Price:	$3,160.86

Payments:
ACCOUNT $3,160.86
Total Amount Tendered: $3,160.86
Change Given: $0.00

Driver:

Operator: 26 Michael

$100004529V

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115541-SB
Voucher No:

Time In: 12/10/2020 11:19:41 AM
Time Out: 12/10/2020 11:19:41 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-a1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.45t
TARE Weight:	12.36t
NET Weight:	8.09t
Chargeable Weight:	8.09t
Council Fee:	$3,066.85
EPA Levy:	$0.00
GST :	$306.68
Temporary Acc:	$0.00
Total Price:	$3,373.53

Payments:	
ACCOUNT	$3,373.53
Total Amount Tendered:	$3,373.53
Change Given:	$0.00

Driver:

Operator: Michael

š80130305Hœ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115702-SB
Voucher No:

Time In: 12/10/2020 2:54:43 PM
Time Out: 12/10/2020 2:54:43 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.30t
TARE Weight:	11.78t
NET Weight:	14.52t
Chargeable Weight:	14.52t
Council Fee:	$5,504.40
EPA Levy:	$0.00
GST :	$550.44
Temporary Acc:	$0.00
Total Price:	$6,054.84

Payments:	
ACCOUNT	$6,054.84
Total Amount Tendered:	$6,054.84
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80130481fœ

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115445-SB
Voucher No:

Time In: 12/10/2020 8:59:45 AM
Time Out: 12/10/2020 8:59:45 AM

Vehicle Rego: CB43EK-12 DIPL

Client: DEPT INFRASTRUCTURE PLANNIN
Approval no. 14-A1941
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	28.10t
TARE Weight:	16.01t
NET Weight:	12.09t
Chargeable Weight:	12.09t
Council Fee:	$4,583.21
EPA Levy:	$0.00
GST :	$458.32
Temporary Acc:	$0.00
Total Price:	$5,041.53

Payments:	
ACCOUNT	$5,041.53
Total Amount Tendered:	$5,041.53
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80130190Sœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115491-SB
Voucher No:

Time In: 12/10/2020 10:03:10 AM
Time Out: 12/10/2020 10:03:10 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.55t
TARE Weight:	12.36t
NET Weight:	13.19t
Chargeable Weight:	13.19t
Council Fee:	$5,000.21
EPA Levy:	$0.00
GST :	$500.02
Temporary Acc:	$0.00
Total Price:	$5,500.23

Payments:	
ACCOUNT	$5,500.23
Total Amount Tendered:	$5,500.23
Change Given:	$0.00

Driver:

Operator: Michael

š80130250=œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115533-SB
Voucher No:

Time In: 12/10/2020 11:06:09 AM
Time Out: 12/10/2020 11:06:09 AM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-a1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.95t
TARE Weight:	12.08t
NET Weight:	9.87t
Chargeable Weight:	9.87t
Council Fee:	$3,741.63
EPA Levy:	$0.00
GST :	$374.16
Temporary Acc:	$0.00
Total Price:	$4,115.79

Payments:	
ACCOUNT	$4,115.79
Total Amount Tendered:	$4,115.79
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80130296"œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115441-SB.2
Voucher No:

Time In: 12/10/2020 8:47:13 AM
Time Out: 12/10/2020 8:47:13 AM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.10t
TARE Weight:	11.50t
NET Weight:	10.60t
Chargeable Weight:	10.60t
Council Fee:	$4,018.36
EPA Levy:	$0.00
GST :	$401.84
Temporary Acc:	$0.00
Total Price:	$4,420.20

Payments:	
ACCOUNT	$4,420.20
Total Amount Tendered:	$4,420.20
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115533-SB
Voucher No:

Time In: 12/10/2020 11:06:09 AM
Time Out: 12/10/2020 11:06:09 AM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-a1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.95t
TARE Weight:	12.08t
NET Weight:	9.87t
Chargeable Weight:	9.87t
Council Fee:	$3,741.63
EPA Levy:	$0.00
GST :	$374.16
Temporary Acc:	$0.00
Total Price:	$4,115.79

Payments:	
ACCOUNT	$4,115.79
Total Amount Tendered:	$4,115.79
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80130296"œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115590-SB
Voucher No:

Time In: 12/10/2020 12:20:08 PM
Time Out: 12/10/2020 12:20:08 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.50t
TARE Weight:	11.78t
NET Weight:	12.72t
Chargeable Weight:	12.72t
Council Fee:	$4,822.04
EPA Levy:	$0.00
GST :	$482.20
Temporary Acc:	$0.00
Total Price:	$5,304.24

Payments:	
ACCOUNT	$5,304.24
Total Amount Tendered:	$5,304.24
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80130358•œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115632-SB
Voucher No:

Time In: 12/10/2020 1:29:38 PM
Time Out: 12/10/2020 1:29:38 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.00t
TARE Weight:	11.78t
NET Weight:	13.22t
Chargeable Weight:	13.22t
Council Fee:	$5,011.58
EPA Levy:	$0.00
GST :	$501.16
Temporary Acc:	$0.00
Total Price:	$5,512.74

Payments:	
ACCOUNT	$5,512.74
Total Amount Tendered:	$5,512.74
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80130407^œ

GSG, John Stokes, Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115490-SB
Voucher No:

Time In: 12/10/2020 10:01:47 AM
Time Out: 12/10/2020 10:01:47 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.20t
TARE Weight:	11.78t
NET Weight:	12.42t
Chargeable Weight:	12.42t
Council Fee:	$4,708.31
EPA Levy:	$0.00
GST :	$470.83
Temporary Acc:	$0.00
Total Price:	$5,179.14

Payments:	
ACCOUNT	$5,179.14
Total Amount Tendered:	$5,179.14
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80130249~œ

(2)

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115443-SB.2
Voucher No:

Time In: 12/10/2020 8:53:30 AM
Time Out: 12/10/2020 8:53:30 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.20t
TARE Weight:	12.36t
NET Weight:	13.84t
Chargeable Weight:	13.84t
Council Fee:	$5,246.62
EPA Levy:	$0.00
GST :	$524.66
Temporary Acc:	$0.00
Total Price:	$5,771.28

Payments:	
ACCOUNT	$5,771.28
Total Amount Tendered:	$5,771.28
Change Given:	$0.00

Driver:

Operator: Michael

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116066-SB
Voucher No:

Time In: 13/10/2020 2:46:33 PM
Time Out: 13/10/2020 2:46:33 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.50t
TARE Weight:	11.78t
NET Weight:	13.72t
Chargeable Weight:	13.72t
Council Fee:	$5,201.13
EPA Levy:	$0.00
GST :	$520.11
Temporary Acc:	$0.00
Total Price:	$5,721.24

Payments:	
ACCOUNT	$5,721.24
Total Amount Tendered:	$5,721.24
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80130912[œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116014-SB
Voucher No:

Time In: 13/10/2020 1:53:04 PM
Time Out: 13/10/2020 1:53:04 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.55t
TARE Weight:	11.78t
NET Weight:	14.77t
Chargeable Weight:	14.77t
Council Fee:	$5,599.17
EPA Levy:	$0.00
GST :	$559.92
Temporary Acc:	$0.00
Total Price:	$6,159.09

Payments:	
ACCOUNT	$6,159.09
Total Amount Tendered:	$6,159.09
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80130855"œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115967-SB
Voucher No:

Time In: 13/10/2020 12:46:26 PM
Time Out: 13/10/2020 12:46:26 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.05t
TARE Weight:	11.78t
NET Weight:	13.27t
Chargeable Weight:	13.27t
Council Fee:	$5,030.54
EPA Levy:	$0.00
GST :	$503.05
Temporary Acc:	$0.00
Total Price:	$5,533.59

Payments:	
ACCOUNT	$5,533.59
Total Amount Tendered:	$5,533.59
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80130803Vœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115917-SB
Voucher No:

Time In: 13/10/2020 11:30:10 AM
Time Out: 13/10/2020 11:30:10 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.75t
TARE Weight:	11.78t
NET Weight:	13.97t
Chargeable Weight:	13.97t
Council Fee:	$5,295.90
EPA Levy:	$0.00
GST :	$529.59
Temporary Acc:	$0.00
Total Price:	$5,825.49

Payments:	
ACCOUNT	$5,825.49
Total Amount Tendered:	$5,825.49
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80130732]œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80115890-SB
Voucher No:

Time In: 13/10/2020 10:34:50 AM
Time Out: 13/10/2020 10:34:50 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.50t
TARE Weight:	11.78t
NET Weight:	14.72t
Chargeable Weight:	14.72t
Council Fee:	$5,580.22
EPA Levy:	$0.00
GST :	$558.02
Temporary Acc:	$0.00
Total Price:	$6,138.24

Payments:	
ACCOUNT	$6,138.24
Total Amount Tendered:	$6,138.24
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80115801-SB
Voucher No:	
Time In:	13/10/2020 8:22:48 AM
Time Out:	13/10/2020 8:22:48 AM
Vehicle Rego:	CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT

Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.35t
TARE Weight:	11.78t
NET Weight:	15.57t
Chargeable Weight:	15.57t
Council Fee:	$5,902.45
EPA Levy:	$0.00
GST :	$590.24
Temporary Acc:	$0.00
Total Price:	$6,492.69

Payments:	
ACCOUNT	$6,492.69
Total Amount Tendered:	$6,492.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN:	11503313301
Ticket No:	80115851-SB
Voucher No:	
Time In:	13/10/2020 9:34:17 AM
Time Out:	13/10/2020 9:34:17 AM
Vehicle Rego:	CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT

Approval no.	31-A1932
Order Number:	
Contract:	

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.35t
TARE Weight:	11.78t
NET Weight:	13.57t
Chargeable Weight:	13.57t
Council Fee:	$5,144.26
EPA Levy:	$0.00
GST :	$514.43
Temporary Acc:	$0.00
Total Price:	$5,658.69

Payments:	
ACCOUNT	$5,658.69
Total Amount Tendered:	$5,658.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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JOAN STOKES
G S G
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116355-SB
Voucher No:

Time In: 14/10/2020 2:28:17 PM
Time Out: 14/10/2020 2:28:17 PM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.55t
TARE Weight:	12.70t
NET Weight:	8.85t
Chargeable Weight:	8.85t
Council Fee:	$3,354.95
EPA Levy:	$0.00
GST :	$335.50
Temporary Acc:	$0.00
Total Price:	$3,690.45

Payments:	
ACCOUNT	$3,690.45
Total Amount Tendered:	$3,690.45
Change Given:	$0.00

Driver:

Operator: Dennis

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JOAN STOKES
G S G
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116293-SB
Voucher No:

Time In: 14/10/2020 1:12:03 PM
Time Out: 14/10/2020 1:12:03 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.75t
TARE Weight:	12.36t
NET Weight:	13.39t
Chargeable Weight:	13.39t
Council Fee:	$5,076.03
EPA Levy:	$0.00
GST :	$507.60
Temporary Acc:	$0.00
Total Price:	$5,583.63

Payments:	
ACCOUNT	$5,583.63
Total Amount Tendered:	$5,583.63
Change Given:	$0.00

Driver:

Operator: Dennis

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JOAN STOKES
G S G
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116262-SB
Voucher No:

Time In: 14/10/2020 12:17:53 PM
Time Out: 14/10/2020 12:17:53 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.45t
TARE Weight:	12.36t
NET Weight:	13.09t
Chargeable Weight:	13.09t
Council Fee:	$4,962.30
EPA Levy:	$0.00
GST :	$496.23
Temporary Acc:	$0.00
Total Price:	$5,458.53

Payments:	
ACCOUNT	$5,458.53
Total Amount Tendered:	$5,458.53
Change Given:	$0.00

Driver:

Operator: Dennis

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JOAN STOKES
G S G
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116228-SB.2
Voucher No:

Time In: 14/10/2020 11:16:57 AM
Time Out: 14/10/2020 11:16:57 AM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.10t
TARE Weight:	12.70t
NET Weight:	11.40t
Chargeable Weight:	11.40t
Council Fee:	$4,321.64
EPA Levy:	$0.00
GST :	$432.16
Temporary Acc:	$0.00
Total Price:	$4,753.80

Payments:	
ACCOUNT	$4,753.80
Total Amount Tendered:	$4,753.80
Change Given:	$0.00

Driver:

Operator: Michael

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JOAN STOKES
G S G
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116196-SB
Voucher No:

Time In: 14/10/2020 10:16:17 AM
Time Out: 14/10/2020 10:16:17 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.45t
TARE Weight:	12.36t
NET Weight:	13.09t
Chargeable Weight:	13.09t
Council Fee:	$4,962.30
EPA Levy:	$0.00
GST :	$496.23
Temporary Acc:	$0.00
Total Price:	$5,458.53

Payments:	
ACCOUNT	$5,458.53
Total Amount Tendered:	$5,458.53
Change Given:	$0.00

Driver:

Operator: Michael

š80131070Dœ

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116190-SB
Voucher No:

Time In: 14/10/2020 10:03:01 AM
Time Out: 14/10/2020 10:03:01 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.40t
TARE Weight:	11.78t
NET Weight:	15.62t
Chargeable Weight:	15.62t
Council Fee:	$5,921.40
EPA Levy:	$0.00
GST :	$592.14
Temporary Acc:	$0.00
Total Price:	$6,513.54

Payments:	
ACCOUNT	$6,513.54
Total Amount Tendered:	$6,513.54
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80131064]œ

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116224-SB
Voucher No:

Time In: 14/10/2020 11:05:23 AM
Time Out: 14/10/2020 11:05:23 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.90t
TARE Weight:	11.78t
NET Weight:	13.12t
Chargeable Weight:	13.12t
Council Fee:	$4,973.67
EPA Levy:	$0.00
GST :	$497.37
Temporary Acc:	$0.00
Total Price:	$5,471.04

Payments:	
ACCOUNT	$5,471.04
Total Amount Tendered:	$5,471.04
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š80131100'œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116268-SB
Voucher No:

Time In: 14/10/2020 12:25:42 PM
Time Out: 14/10/2020 12:25:42 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.70t
TARE Weight:	11.78t
NET Weight:	14.92t
Chargeable Weight:	14.92t
Council Fee:	$5,656.04
EPA Levy:	$0.00
GST :	$565.60
Temporary Acc:	$0.00
Total Price:	$6,221.64

Payments:	
ACCOUNT	$6,221.64
Total Amount Tendered:	$6,221.64
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80131150<œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116312-SB
Voucher No:

Time In: 14/10/2020 1:38:45 PM
Time Out: 14/10/2020 1:38:45 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.70t
TARE Weight:	11.78t
NET Weight:	13.92t
Chargeable Weight:	13.92t
Council Fee:	$5,276.95
EPA Levy:	$0.00
GST :	$527.69
Temporary Acc:	$0.00
Total Price:	$5,804.64

Payments:	
ACCOUNT	$5,804.64
Total Amount Tendered:	$5,804.64
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80131196!œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116376-SB
Voucher No:

Time In: 14/10/2020 2:46:36 PM
Time Out: 14/10/2020 2:46:36 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.15t
TARE Weight:	11.78t
NET Weight:	14.37t
Chargeable Weight:	14.37t
Council Fee:	$5,447.54
EPA Levy:	$0.00
GST :	$544.75
Temporary Acc:	$0.00
Total Price:	$5,992.29

Payments:	
ACCOUNT	$5,992.29
Total Amount Tendered:	$5,992.29
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80131264iœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116160-SB
Voucher No:

Time In: 14/10/2020 9:00:39 AM
Time Out: 14/10/2020 9:00:39 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.35t
TARE Weight:	11.78t
NET Weight:	14.57t
Chargeable Weight:	14.57t
Council Fee:	$5,523.35
EPA Levy:	$0.00
GST :	$552.34
Temporary Acc:	$0.00
Total Price:	$6,075.69

Payments:

ACCOUNT	$6,075.69
Total Amount Tendered:	$6,075.69
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

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$80131030(œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116649-SB
Voucher No:

Time In: 15/10/2020 2:11:04 PM
Time Out: 15/10/2020 2:11:04 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		26.05t
TARE Weight:		11.78t
NET Weight:		14.27t
Chargeable Weight:		14.27t
Council Fee:		$5,409.63
EPA Levy:		$0.00
GST :		$540.96
Temporary Acc:		$0.00
Total Price:		$5,950.59
Payments:		
ACCOUNT		$5,950.59
Total Amount Tendered:		$5,950.59
Change Given:		$0.00

Driver:
MANUAL TICKET
Operator: Sam

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š80131561cœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116544-SB
Voucher No:

Time In: 15/10/2020 11:24:50 AM
Time Out: 15/10/2020 11:24:50 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		25.50t
TARE Weight:		11.78t
NET Weight:		13.72t
Chargeable Weight:		13.72t
Council Fee:		$5,201.13
EPA Levy:		$0.00
GST :		$520.11
Temporary Acc:		$0.00
Total Price:		$5,721.24
Payments:		
ACCOUNT		$5,721.24
Total Amount Tendered:		$5,721.24
Change Given:		$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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š80131448€œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116586-SB
Voucher No:

Time In: 15/10/2020 12:32:35 PM
Time Out: 15/10/2020 12:32:35 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		25.45t
TARE Weight:		11.78t
NET Weight:		13.67t
Chargeable Weight:		13.67t
Council Fee:		$5,182.17
EPA Levy:		$0.00
GST :		$518.22
Temporary Acc:		$0.00
Total Price:		$5,700.39
Payments:		
ACCOUNT		$5,700.39
Total Amount Tendered:		$5,700.39
Change Given:		$0.00

Driver:
MANUAL TICKET
Operator: Sam

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š80131493"œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116618-SB
Voucher No:

Time In: 15/10/2020 1:23:27 PM
Time Out: 15/10/2020 1:23:27 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		26.15t
TARE Weight:		11.78t
NET Weight:		14.37t
Chargeable Weight:		14.37t
Council Fee:		$5,447.54
EPA Levy:		$0.00
GST :		$544.75
Temporary Acc:		$0.00
Total Price:		$5,992.29
Payments:		
ACCOUNT		$5,992.29
Total Amount Tendered:		$5,992.29
Change Given:		$0.00

Driver:
MANUAL TICKET
Operator: Sam

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š80131528'œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116489-SB.2
Voucher No:

Time In: 15/10/2020 9:52:01 AM
Time Out: 15/10/2020 9:52:01 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste ASBESTOS Each Items	Qty	Price $379.09 Price
GROSS Weight:		26.90t
TARE Weight:		12.36t
NET Weight:		14.54t
Chargeable Weight:		14.54t
Council Fee:		$5,511.98
EPA Levy:		$0.00
GST :		$551.20
Temporary Acc:		$0.00
Total Price:		$6,063.18
Payments:		
ACCOUNT		$6,063.18
Total Amount Tendered:		$6,063.18
Change Given:		$0.00

Driver:

Operator: Dennis

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š8013139750œ

John STOKES Tony
C/O
Green Space
Asbestos

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116793-SB
Voucher No:

Time In: 16/10/2020 9:22:52 AM
Time Out: 16/10/2020 9:22:52 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.75t
TARE Weight:	11.78t
NET Weight:	13.97t
Chargeable Weight:	13.97t
Council Fee:	$5,295.90
EPA Levy:	$0.00
GST :	$529.59
Temporary Acc:	$0.00
Total Price:	$5,825.49

Payments:	
ACCOUNT	$5,825.49
Total Amount Tendered:	$5,825.49
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80131714dœ

John STOKES Tony
C/O
Green Space
Asbestos

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116758-SB
Voucher No:

Time In: 16/10/2020 8:24:01 AM
Time Out: 16/10/2020 8:24:01 AM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.00t
TARE Weight:	11.50t
NET Weight:	8.50t
Chargeable Weight:	8.50t
Council Fee:	$3,222.27
EPA Levy:	$0.00
GST :	$322.23
Temporary Acc:	$0.00
Total Price:	$3,544.50

Payments:	
ACCOUNT	$3,544.50
Total Amount Tendered:	$3,544.50
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š801316779œ

John STOKES Tony
C/O
Green Space
Asbestos

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116936-SB
Voucher No:

Time In: 16/10/2020 1:11:22 PM
Time Out: 16/10/2020 1:11:22 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.75t
TARE Weight:	11.78t
NET Weight:	10.97t
Chargeable Weight:	10.97t
Council Fee:	$4,158.63
EPA Levy:	$0.00
GST :	$415.86
Temporary Acc:	$0.00
Total Price:	$4,574.49

Payments:	
ACCOUNT	$4,574.49
Total Amount Tendered:	$4,574.49
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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John STOKES Tony
C/O
Green Space
Asbestos

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116894-SB
Voucher No:

Time In: 16/10/2020 12:02:34 PM
Time Out: 16/10/2020 12:02:34 PM

Vehicle Rego: CD36BZ-R10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.25t
TARE Weight:	12.08t
NET Weight:	11.17t
Chargeable Weight:	11.17t
Council Fee:	$4,234.45
EPA Levy:	$0.00
GST :	$423.44
Temporary Acc:	$0.00
Total Price:	$4,657.89

Payments:	
ACCOUNT	$4,657.89
Total Amount Tendered:	$4,657.89
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

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Tony
Green Space
Asbestos
John
STOKES C/O

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116824-SB
Voucher No:

Time In: 16/10/2020 10:12:32 AM
Time Out: 16/10/2020 10:12:32 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.10t
TARE Weight:	11.78t
NET Weight:	14.32t
Chargeable Weight:	14.32t
Council Fee:	$5,428.58
EPA Levy:	$0.00
GST :	$542.86
Temporary Acc:	$0.00
Total Price:	$5,971.44

Payments:	
ACCOUNT	$5,971.44
Total Amount Tendered:	$5,971.44
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80131746"œ

Green Space
John Stokes
C/O
Asbestos
Tony

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116858-SB
Voucher No:

Time In: 16/10/2020 11:06:07 AM
Time Out: 16/10/2020 11:06:07 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.70t
TARE Weight:	11.78t
NET Weight:	14.92t
Chargeable Weight:	14.92t
Council Fee:	$5,656.04
EPA Levy:	$0.00
GST :	$565.60
Temporary Acc:	$0.00
Total Price:	$6,221.64
Payments:	
ACCOUNT	$6,221.64
Total Amount Tendered:	$6,221.64
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Sam

š80131781}œ

John Stokes
C/O
Green Space
Asbestos
Tony

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80116966-SB
Voucher No:

Time In: 16/10/2020 2:08:15 PM
Time Out: 16/10/2020 2:08:15 PM

Vehicle Rego: CD36BZ-6

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 5 (Putres

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	12.10t
TARE Weight:	11.34t
NET Weight:	0.76t
Chargeable Weight:	0.76t
Council Fee:	$288.11
EPA Levy:	$0.00
GST :	$28.81
Temporary Acc:	$0.00
Total Price:	$316.92
Payments:	
ACCOUNT	$316.92
Total Amount Tendered:	$316.92
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š80131896Kœ

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80117377-SB
Voucher No:

Time In: 19/10/2020 11:45:03 AM
Time Out: 19/10/2020 11:45:03 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.20t
TARE Weight:	12.36t
NET Weight:	13.84t
Chargeable Weight:	13.84t
Council Fee:	$5,246.62
EPA Levy:	$0.00
GST :	$524.66
Temporary Acc:	$0.00
Total Price:	$5,771.28

Payments:	
ACCOUNT	$5,771.28
Total Amount Tendered:	$5,771.28
Change Given:	$0.00

Driver:

Operator: Michael

š80132366-œ

GSG, Carl, John stokes

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80117327-SB
Voucher No:

Time In: 19/10/2020 10:22:56 AM
Time Out: 19/10/2020 10:22:56 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	27.85t
TARE Weight:	12.36t
NET Weight:	15.49t
Chargeable Weight:	15.49t
Council Fee:	$5,872.12
EPA Levy:	$0.00
GST :	$587.21
Temporary Acc:	$0.00
Total Price:	$6,459.33

Payments:	
ACCOUNT	$6,459.33
Total Amount Tendered:	$6,459.33
Change Given:	$0.00

Driver:

Operator: Michael

š80132314Qœ

GSG, John stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80117283-SB
Voucher No:

Time In: 19/10/2020 9:14:03 AM
Time Out: 19/10/2020 9:14:03 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.30t
TARE Weight:	12.36t
NET Weight:	10.94t
Chargeable Weight:	10.94t
Council Fee:	$4,147.25
EPA Levy:	$0.00
GST :	$414.73
Temporary Acc:	$0.00
Total Price:	$4,561.98

Payments:	
ACCOUNT	$4,561.98
Total Amount Tendered:	$4,561.98
Change Given:	$0.00

Driver:

Operator: Michael

š80132267`œ

GSG, John stokes, Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80117441-SB
Voucher No:

Time In: 19/10/2020 1:17:07 PM
Time Out: 19/10/2020 1:17:07 PM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-a1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.15t
TARE Weight:	12.70t
NET Weight:	9.45t
Chargeable Weight:	9.45t
Council Fee:	$3,582.41
EPA Levy:	$0.00
GST :	$358.24
Temporary Acc:	$0.00
Total Price:	$3,940.65

Payments:	
ACCOUNT	$3,940.65
Total Amount Tendered:	$3,940.65
Change Given:	$0.00

Driver:

Operator: Sam

š80132434eœ

GSG John stokes, Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 80117484-SB
Voucher No:

Time In: 19/10/2020 2:24:06 PM
Time Out: 19/10/2020 2:24:06 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.50t
TARE Weight:	12.36t
NET Weight:	13.14t
Chargeable Weight:	13.14t
Council Fee:	$4,981.25
EPA Levy:	$0.00
GST :	$498.13
Temporary Acc:	$0.00
Total Price:	$5,479.38

Payments:	
ACCOUNT	$5,479.38
Total Amount Tendered:	$5,479.38
Change Given:	$0.00

Driver:

Operator: Sam

š80132484!œ

GSG, John stokes Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 90000045-SB.2
Voucher No:

Time In: 20/10/2020 8:38:53 AM
Time Out: 20/10/2020 8:38:53 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.80t
TARE Weight:	12.36t
NET Weight:	11.44t
Chargeable Weight:	11.44t
Council Fee:	$4,336.80
EPA Levy:	$0.00
GST :	$433.68
Temporary Acc:	$0.00
Total Price:	$4,770.48

Payments:	
ACCOUNT	$4,770.48
Total Amount Tendered:	$4,770.48
Change Given:	$0.00

Driver:

Operator: Michael

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GSG, John stokes Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 90000201-SB
Voucher No:

Time In: 20/10/2020 12:46:41 PM
Time Out: 20/10/2020 12:46:41 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.16t
TARE Weight:	12.36t
NET Weight:	12.80t
Chargeable Weight:	12.80t
Council Fee:	$4,852.36
EPA Levy:	$0.00
GST :	$485.24
Temporary Acc:	$0.00
Total Price:	$5,337.60

Payments:	
ACCOUNT	$5,337.60
Total Amount Tendered:	$5,337.60
Change Given:	$0.00

Driver:

Operator. Sam

§90000252?

GSG, Shen stokes Carl

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 90000247-SB
Voucher No:

Time In: 20/10/2020 1:48:29 PM
Time Out: 20/10/2020 1:48:29 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.96t
TARE Weight:	12.36t
NET Weight:	11.60t
Chargeable Weight:	11.60t
Council Fee:	$4,397.45
EPA Levy:	$0.00
GST :	$439.75
Temporary Acc:	$0.00
Total Price:	$4,837.20

Payments:	
ACCOUNT	$4,837.20
Total Amount Tendered:	$4,837.20
Change Given:	$0.00

Driver:

Operator: Sam

§90000303?

GSG, John stokes Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 90000110-SB
Voucher No:

Time In: 20/10/2020 10:26:31 AM
Time Out: 20/10/2020 10:26:31 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.70t
TARE Weight:	12.36t
NET Weight:	11.34t
Chargeable Weight:	11.34t
Council Fee:	$4,298.89
EPA Levy:	$0.00
GST :	$429.89
Temporary Acc:	$0.00
Total Price:	$4,728.78

Payments:	
ACCOUNT	$4,728.78
Total Amount Tendered:	$4,728.78
Change Given:	$0.00

Driver:

Operator: Michael

90000145J

GSG, John stokes Carl

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone 8930 0471

ABN: 11503313301

Ticket No: 90000156-SB
Voucher No:

Time In: 20/10/2020 11:35:01 AM
Time Out: 20/10/2020 11:35:01 AM

Vehicle Rego: CD99YR-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.78t
TARE Weight:	12.70t
NET Weight:	8.08t
Chargeable Weight:	8.08t
Council Fee:	$3,063.05
EPA Levy:	$0.00
GST :	$306.31
Temporary Acc:	$0.00
Total Price:	$3,369.36

Payments:	
ACCOUNT	$3,369.36
Total Amount Tendered:	$3,369.36
Change Given:	$0.00

Driver:

Operator: Michael

§90000200s

JOHN STOKES SQUARE
GSG ASBESTOS
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No. 90000452-SB
Voucher No:

Time In: 21/10/2020 10:21:34 AM
Time Out: 21/10/2020 10:21:34 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.22t
TARE Weight:	12.36t
NET Weight:	11.86t
Chargeable Weight:	11.86t
Council Fee:	$4,496.02
EPA Levy:	$0.00
GST :	$449.60
Temporary Acc:	$0.00
Total Price:	$4,945.62

Payments:	
ACCOUNT	$4,945.62
Total Amount Tendered:	$4,945.62
Change Given:	$0.00

Driver:

Operator: Dennis

š900005281œ

JOHN STOKES SQUARE
GSG ASBESTOS
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 90000489-SB
Voucher No:

Time In: 21/10/2020 11:22:55 AM
Time Out: 21/10/2020 11:22:55 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	25.76t
TARE Weight:	12.36t
NET Weight:	13.40t
Chargeable Weight:	13.40t
Council Fee:	$5,079.82
EPA Levy:	$0.00
GST :	$507.98
Temporary Acc:	$0.00
Total Price:	$5,587.80

Payments:	
ACCOUNT	$5,587.80
Total Amount Tendered:	$5,587.80
Change Given:	$0.00

Driver:

Operator: Dennis

š90000565pœ

JOHN STOKES SQUARE
GSG ASBESTOS
STEWART

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 90000521-SB
Voucher No:

Time In: 21/10/2020 12:15:38 PM
Time Out: 21/10/2020 12:15:38 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 31-A1932
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.44t
TARE Weight:	12.36t
NET Weight:	12.08t
Chargeable Weight:	12.08t
Council Fee:	$4,579.42
EPA Levy:	$0.00
GST :	$457.94
Temporary Acc:	$0.00
Total Price:	$5,037.36

Payments:	
ACCOUNT	$5,037.36
Total Amount Tendered:	$5,037.36
Change Given:	$0.00

Driver:

Operator: Sam

š90000597.œ

CITY OF DARWIN

Delivery Docket
REPRINT

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100000430-SB
Voucher No:

Time In: 28/10/2020 12:33:12 PM
Time Out: 28/10/2020 12:33:12 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	13.58t
TARE Weight:	11.78t
NET Weight:	1.80t
Chargeable Weight:	1.80t
Council Fee:	$682.36
EPA Levy:	$0.00
GST :	$68.24
Temporary Acc:	$0.00
Total Price:	$750.60

Payments:	
ACCOUNT	$750.60
Total Amount Tendered:	$750.60
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š100000531eœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100000477-SB
Voucher No:

Time In: 28/10/2020 1:45:33 PM
Time Out: 28/10/2020 1:45:33 PM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.12t
TARE Weight:	11.50t
NET Weight:	12.62t
Chargeable Weight:	12.62t
Council Fee:	$4,784.13
EPA Levy:	$0.00
GST :	$478.41
Temporary Acc:	$0.00
Total Price:	$5,262.54

Payments:	
ACCOUNT	$5,262.54
Total Amount Tendered:	$5,262.54
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Michael

š100000587\œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100000309-SB
Voucher No:

Time In: 28/10/2020 8:24:24 AM
Time Out: 28/10/2020 8:24:24 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.14t
TARE Weight:	11.78t
NET Weight:	11.36t
Chargeable Weight:	11.36t
Council Fee:	$4,306.47
EPA Levy:	$0.00
GST :	$430.65
Temporary Acc:	$0.00
Total Price:	$4,737.12

Payments:	
ACCOUNT	$4,737.12
Total Amount Tendered:	$4,737.12
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š1000003932œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0471

ABN: 11503313301

Ticket No: 100000342-SB
Voucher No:

Time In: 28/10/2020 9:37:29 AM
Time Out: 28/10/2020 9:37:29 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PTY LTD
Approval no. 31-A1932
Order Number:
Contract:

Destination LF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.20t
TARE Weight:	11.78t
NET Weight:	14.42t
Chargeable Weight:	14.42t
Council Fee:	$5,466.49
EPA Levy:	$0.00
GST :	$546.65
Temporary Acc:	$0.00
Total Price:	$6,013.14

Payments:	
ACCOUNT	$6,013.14
Total Amount Tendered:	$6,013.14
Change Given:	$0.00

Driver:
MANUAL TICKET
Operator: Dennis

š1000004297œ

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SEWER EASEMENT REMEDIATION AND VALIDATION REPORT

John Stokes Square Redevelopment
Road Reserve and Lot C

Prepared for:

HK Solutions (on behalf of Department of Infrastructure, Planning and Logistics)
Building 2, Level 1, 631 Stuart Highway
Berrimah, NT 0828

(Report to be in conjunction with the report titled: "Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C", SLR Consulting (Australia) Pty Ltd, November 2021 (reference: 680.10679.00200_R06))

SLR Ref: 680.10679.00200-R12
Version No: -v1.0
December 2021

PREPARED BY

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E: darwin@slrconsulting.com www.slrconsulting.com

BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with HK Solutions (on behalf of Department of Infrastructure, Planning and Logistics) (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
680.10679.00200-R12-v1.0	5 December 2021	Julie McDowell	Julie McDowell	Paul Turyn

EXECUTIVE SUMMARY

The Department of Infrastructure, Planning and Logistics (DIPL), through Project Management Consultants HK Solutions Pty Ltd, have engaged SLR Consulting Australia Pty Ltd (SLR) to provide environmental consultancy services relating to the redevelopment of John Stokes Square, located at 47 Progress Drive, Nightcliff, Darwin, Northern Territory (NT) (herein referred to as the "Project Area").

The Project Area is planned to be subdivided as part of the redevelopment project, with varying land use classifications including high density residential, public open space, community and commercial. Works were undertaken across the Project Area to characterise, remediate and validate the newly defined land parcels to ensure suitability for the proposed land uses.

This addendum report outlines the remediation and validation works that were undertaken for the sewer easement located along the southern boundary of the proposed land parcels defined as the Road Reserve (5,448 m^2) and Lot C (860 m^2) (herein referred to as the "Site"). The aforementioned land parcels will be gifted to the City of Darwin (CoD) and will be utilised as a combined road corridor and public open space. SLR understands that CoD requires the land to be "unencumbered" and remediated so that no ongoing contamination management will be required.

This addendum report has been prepared for endorsement by the appointed Auditor (as defined in Part 9 of the *Waste Management Pollution Control Act, 1998*) for the Site – Jean-Paul Pearce (Australian Environmental Auditor, "the Auditor") and in accordance with the *"Northern Territory Contaminated Land Guideline"*, NT Environmental Protection Authority (EPA), June 2017, Version 1.0. The main role of the Auditor is to evaluate the environmental conditions of the Site at the date of signing the certificate of statement and to form an opinion, on which others can rely upon, regarding the suitability of the Site for future land uses. In doing so, the Auditor is required to review the environmental site assessments and validation works undertaken by environmental consultants in relation to site contamination to confirm the remediation objectives have been met prior to redevelopment of the Site.

The remediation works undertaken within the larger portion of the Site were conducted in accordance with the strategy outlined in the Auditor endorsed report titled "*Remediation Action Plan, John Stokes Square Redevelopment, Road Reserve and Lot C"*, August 2020 (ref: 680.10679-R04-v5.0, "SLR RAP 2020"). Remediation works conducted involved the following key activities.

- Excavation of asbestos containing material (ACM) debris and associated fill material from a predefined area of the Site, under asbestos conditions, for appropriate offsite disposal by a Class A licenced asbestos removal contractor. The final extent of the area excavated was guided by visual assessments undertaken by a suitably qualified Environmental Consultant and supported by analytical results received for validation samples collected from the base and walls of the excavation.
- Removal of abandoned underground services that were present across the Site. After the abandoned underground services were removed, a suitably qualified Environmental Consultant inspected the resultant trenches for visual signs of asbestos contamination. The depth of all trenches extended down into the natural soil material. The lateral extent of the trenches was guided by visual assessments undertaken by the Environmental Consultant and supported by analytical results received for validation samples collected from the walls of the trenches. Where underground services were identified as being constructed out of ACM, the service and surrounding bedding soils were removed by a licenced asbestos removal contractor for appropriate offsite disposal.

Remediation and validation work conducted within the wider portion of the Site are detailed in the report titled *"Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C"* (SLR reference: 680.10679.00200-R06, "SLR VAL 2021") and is to be read in conjunction with this addendum report.

Even though all known asbestos impact had been removed from the Site, remediation works undertaken within the larger portion of the Site did not extend into the deeper fill material surrounding the "live" sewer mains that were present at the time of these works. Contractors conducting works associated with the removal/upgrade of these "live" services were advised to employ precautionary measures such as having safe work method statements and/or work-specific management plans addressing exposure to potentially asbestos impacted soils, unexpected finds protocol and associated training, to ensure workers understood the controls required to be implemented in the unlikely event unexpected asbestos was encountered.

This report outlines the results of the remediation and validation works that were overseen by SLR that were associated with the removal of shallow fill material and services made from ACM, during the upgrade of the sewer main along the southern boundary of the Site. The remediation works were completed in two phases, details of which are provided below.

- The first phase of the works involved the removal of the shallow fill material within the sewer easement located along the southern boundary of the Site. This fill material and any associated ACM debris were placed directly into skip bins and removed under asbestos conditions for appropriate offsite disposal by a Class A licenced asbestos removal contractor. The final extent of the area excavated was guided by visual assessments undertaken by a suitably qualified Environmental Consultant and supported by analytical results received for validation samples collected from the base and walls of the excavation.
- The second phase of the works involved overseeing the removal of the deeper reworked natural soil material and bedding sands used to backfill the sewer during its original installation, and the removal of sewer related infrastructure (i.e. pipes, risers) constructed with ACM. Following the completion of the excavation and removal of the sewer, the resultant excavation's surfaces (bases and walls) were visually inspected by a suitably qualified Environmental Consultant for the presence of asbestos debris. Validation samples were not collected from the base and walls of the resultant excavation associated with the second phase of the remediation works as:
  - the resultant trench extended into the Site's red natural soils;
  - ACM pipe and debris fragments encountered were bonded; and
  - the method of removal minimised the "breaking" of the ACM services.
- Spoil removed during the second phase of the works were inspected for the presence of asbestos contamination during its removal and reinspected when stockpiled adjacent to the trench. If visual observations found ACM debris, then the debris and surrounding spoil were transported to the lined skip bins for appropriate offsite disposal by a Class A licenced asbestos removal contractor.
- Imported soil material was used to backfill the resultant excavation within the sewer easement. SLR were engaged to characterise the imported soil material to ensure its quality from a contaminated land perspective, met the remediation objectives for the Site.

Based on the field observations and analytical results obtained for the remediation and validation activities conducted at the Site by SLR, SLR considers that the Road Reserve and Lot C have been suitably remediated and validated for the proposed land use (public open space, roadway), subject to the considerations outlined in this addendum report and the main validation report (SLR, VAL 2021).

CONTENTS

1 INTRODUCTION 7
1.1 Objectives 7
1.2 Scope of Work 8
1.3 Legislative Framework 9
2 BACKGROUND INFORMATION 9
2.1 Site Identification 9
2.2 Surrounding Environment 10
2.3 Previous Environmental Investigations 10
2.4 Source of Asbestos Impact – Site including the Sewer Easement 11
3 REMEDIATION AND VALIDATION METHODOLOGY 12
3.1 Remediation Strategy 12
3.1.1 Removal of Uncontrolled Fill Material 12
3.1.2 Removal of Sewer Services 13
3.2 Soil Sampling Methodology 14
3.3 Decontamination of Equipment 14
3.4 Analytical Assessment 15
3.5 Screening Criteria 15
3.6 Air monitoring 15
4 RESULTS 16
4.1 Field Observations 17
4.2 Summary of Analytical Results 18
4.3 Clearance Inspections 20
4.4 Soil Movement and Disposal of Underground Services 20
4.5 Air Monitoring 20
5 CONCEPTUAL SITE MODEL 20
6 CONCLUSION 24
7 LIMITATIONS 24
8 REFERENCES 24

DOCUMENT REFERENCES

TABLES

Table 1 Site Information Details 9
Table 2 Soil Sampling Methodologies 14
Table 3 Air Monitoring Action Levels 16
Table 4 Summary of Validation Samples 19
Table 5 Conceptual Site Model 22

APPENDICES

Appendix A Figures
Appendix B Clearance Certificates
Appendix C Photograhic Logs
Appendix D Analytical Tables
Appendix E Certified Laboratory Documentation
Appendix F Shoal Bay Waste Management Facility Receipts
Appendix G Imported Fill Soil Characterisation Report
Appendix H Air Quality Monitoring Reports

1 Introduction

The Department of Infrastructure, Planning and Logistics (DIPL), through Project Management Consultants HK Solutions Pty Ltd and Principal Contractor Halikos Pty Ltd (Halikos), have engaged SLR Consulting Australia Pty Ltd (SLR) to provide environmental consultancy services relating to the redevelopment of John Stokes Square, located at 47 Progress Drive, Nightcliff, Darwin, Northern Territory (NT) (herein referred to as the "Project Area"). The location of the Project Area is shown in **Figure 1 (Appendix A)**.

The Project Area is planned to be subdivided as part of the redevelopment project, with varying land use classifications as shown in **Figure 2 (Appendix A)**. Works were undertaken to characterise, remediate and validate the newly defined land parcels to ensure suitability for the proposed land use.

This addendum report outlines the remediation and validation works that were undertaken for the sewer easement located along the southern boundary of the proposed land parcels defined as the Road Reserve (5,448 m^2) and Lot C (860 m^2) (herein referred to as the "Site"). The aforementioned land parcels will be gifted to the City of Darwin (CoD) and will be utilised as a combined road corridor and open space. SLR understands that CoD requires the land to be "unencumbered" and remediated so that no ongoing contamination management will be required.

This addendum report has been prepared for endorsement by the appointed Auditor (as defined in Part 9 of the *Waste Management Pollution Control Act, 1998*) for the Site – Jean-Paul Pearce (Australian Environmental Auditor, "the Auditor") and in accordance with the *"Northern Territory Contaminated Land Guideline"*, NT Environmental Protection Authority (EPA), June 2017, Version 1.0. The main role of the Auditor is to evaluate the environmental conditions of the Site at the date of signing the certificate of statement and to form an opinion, on which others can rely upon, regarding the suitability of the Site for future land uses. In doing so, the Auditor is required to review the outcome of environmental site assessments and validation works undertaken by environmental consultants in relation to site contamination to confirm the remediation objectives have been met prior to redevelopment of the Site.

The remediation and validation work undertaken within the larger portion of the Site were conducted in accordance with the strategy presented in the Auditor endorsed report titled "*Remediation Action Plan, John Stokes Square Redevelopment, Road Reserve and Lot C"*, August 2020 (ref: 680.10679-R04-v5.0, "SLR RAP 2020"). The results of the remediation and validation works conducted within the wider portion of the Site is detailed in the report titled *"Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C*" (SLR reference: 680.10679.00200-R06, "SLR VAL 2021") and is to be read in conjunction with this report.

Results of the remediation and validation works undertaken within other areas of the Project Area are included under separate cover in the reports titled *"Validation Assessment, John Stokes Square Redevelopment, Lot A"* (SLR ref: 680.10679.00100-R02), and *"Validation Report, John Stokes Square Redevelopment, Proposed Residential Lots B1, B2 and B3"* (SLR ref: 680.10679.00100-R05).

1.1 Objectives

The purpose of this report is to document the remediation and validation works undertaken within the sewer easement located along the southern boundary of the Site.

Even though all known asbestos impact had been removed from the Site (SLR VAL 2021), remediation works undertaken within the larger portion of the Site did not extend into the deeper fill material surrounding the "live" sewer mains that were present at the time of these works. Contractors conducting works associated with the removal/upgrade of these "live" services were advised to employ precautionary measures such as having safe work method statements and/or work-specific management plans addressing exposure to potentially asbestos impacted soils, unexpected finds protocol and associated training, to ensure workers understood the controls required to be implemented in the unlikely event unexpected asbestos was encountered.

This report outlines the results of the remediation and validation works, that were overseen by SLR, associated with the removal of shallow fill material and services made from asbestos containing material (ACM) during the upgrade/replacement of the sewer main along the southern boundary of the Site. Remediation works were undertaken to meet CoD's requirements for land quality.

1.2 Scope of Work

The following scope of work was undertaken by a suitably qualified and experienced SLR environmental consultant to meet the objectives of the RAP developed for the Site.

- Oversaw the removal of uncontrolled fill material within the sewer easement located along the southern boundary of the Site.
- Oversaw the removal of sewer pipes, risers, vents and manholes, and visually inspected the services, spoil, and resultant excavations for evidence of ACM.
- Visually inspected and collected validation samples of the remediated areas of the Site (i.e., resultant excavation/trench). Collated details of the areas remediated including the extent and depth of excavation, validation sample locations, sample identification labels, date sampled and photographic logs.
- Oversaw the removal of ACM and soil impacted with asbestos from the Site by licenced asbestos waste removal contractors for appropriate offsite disposal.
- Samples were collected and analysed for asbestos (presence/absence and/or asbestos fines (AF)/fibrous asbestos (FA)) at a National Association of Testing Authorities (NATA) accredited laboratory.
- Comparison of analytical results with relevant investigation levels (ILs) as prescribed in the RAP.
- Air quality monitoring for the presence of air borne asbestos fibres was conducted during all remediation works undertaken at the Site.
- Collection of soil samples to determine the contamination status of fill material proposed to be brought onto the Site to backfill the resultant excavation within the sewer easement.
- Collation of all field notes, photographic logs, certified laboratory reports, location of underground services, asbestos clearance certificates, waste disposal documentation and air quality monitoring results.
- Preparation of this addendum validation report documenting all remediation and validation works undertaken at the Site.

1.3 Legislative Framework

The soil remediation and validation works were undertaken in accordance with the following regulatory requirements.

- ASC NEPM 2013, "National Environmental Protection (Assessment of Site Contamination) Measures 1999", (as amended on 16 May 2013).
- Western Australian (WA) Department of Health (DOH) 2009, "Guideline for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia".
- Standards Australia AS 4482.1-2005, "Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil. Part 1 Non-volatile and semi volatile compounds".
- New South Wales (NSW) Environmental Protection Authority (EPA) 2014, "Resource Recovery Order under Part 9, Clause 93 of the protection of the Environment Operations (Waste) Regulation 2014- the excavated natural material order 2014".
- NSW EPA 2014b, "Waste Classification Guidelines, Part 1: Classifying Waste".
- NT EPA 2017, "Northern Territory Contaminated Land Guidelines".
- NT EPA 2016, "Waste Management and Pollution Control Act".
- Safe Work Australia 2020, "How to manage and control asbestos in the workplace Code of Practice".

2 Background Information

2.1 Site Identification

The proposed remediation and validation works presented in this report are applicable to the sewer easement located along the southern boundary of two specific land areas outlined below.

- Road Reserve, which covers a total area of 5448 m^2
- Lot C, which covers an area of 860 m^2.

A summary of Site information is detailed in **Table 1**. A Site Locality Plan is provided in **Figure 1 (Appendix A).** **Figure 2 (Appendix A)** shows the extent and boundary definition for the Site (i.e., Road Reserve and Lot C areas).

Table 1 Site Information Details

Site Information	Details
Site Owner	Northern Territory Government, Department of Local Government Housing and Community Development
Site Address	47 Progress Drive Nightcliff, Darwin, NT
Parcel Reference	Prior to subdivision, Lot 9077 Town of Nightcliff
Project Area Extents (approximate)	18,900 m^2
Road Reserve Area	5,448 m^2
Lot C Area	860 m^2
Current Occupier	DIPL
Current Land Use	Currently unoccupied, under redevelopment

Site Information	Details
Future Land Use	Police Station (Lot A), High Density Residential (B Lots), Road Reserve, Parking and Public Open Space (Lot C)
Current Zoning	Rezoned from Medium Density Residential to Specific Use Zone to facilitate the redevelopment of the broader site for a mix commercial, community, residential and public open space purposes.
Central GPS Coordinates (latitude and longitude)	-12.388828°, 130.851451°

2.2 Surrounding Environment

Additional information regarding surrounding land uses and activities, regional geology, regional topography, registered ground water bore information and acid sulphate soils have been outlined in the in the SLR report titled *"Detailed Site Investigation, John Stokes Square Redevelopment, Road Reserve and Lot C"*, September 2020 (ref: 680.10679-R03) (SLR DSI 2020).

2.3 Previous Environmental Investigations

SLR understands that DIPL commenced demolition of former public housing buildings in mid-2019, which were distributed across the wider Project Area. Majority of demolition wastes from the Site were removed and a portion of crushed concrete rubble was screened and spread across the Site as general fill. The EPA raised concerns that pesticides may have been historically used under the building's foundations, and that ACM contaminated fill material may have been historically imported to the Site. As such, the first limited site investigation was undertaken by Greencap Pty Ltd (Greencap) in June 2019 to assess the presence of contamination associated with termite control chemicals at the building block located in the northwest corner of the Project Area, and potential ACM, AF/FA contamination at the footprints of demolished building blocks. Furthermore, a DSI was undertaken by Greencap in September 2019 to assess the nature and broader extent of contamination associated with pesticides residue and ACM identified in fill material across the Site.

To further facilitate the environmental audit report for the Site, in February 2020 Agon Environmental Pty Ltd (Agon) conducted additional investigations and remediation works within the Project Area to address previously identified asbestos and pesticide-related contamination.

Investigations conducted prior to SLR's engagement involved limited testing within the Site itself (i.e., Lot C and the Road Reserve). As such, SLR were engaged to undertake a gap analysis of the environmental site assessment works conducted to date and undertake further investigations to address any gaps identified (SLR DSI 2020).

Based on the results of this DSI, a RAP (SLR RAP 2020) was prepared for the Site to meet the CoD's remediation objectives – at handover, the land is to be "unencumbered" and remediated so that no ongoing contamination management will be required.

Between 29 September and 13 November 2020, remediation and validation work were undertaken at the Site in accordance with the RAP. Remediation works conducted involved the following key activities.

- Excavation of ACM debris and associated fill material from a predefined area of the Site, under asbestos conditions, for appropriate offsite disposal by a Class A licenced asbestos removal contractor. The final extent of the area excavated was guided by visual assessments undertaken by a suitably qualified Environmental Consultant and supported by analytical results received for validation samples collected from the base and walls of the excavation.

- Removal of abandoned underground services that were present across the Site. After the abandoned underground services were removed, a suitably qualified Environmental Consultant inspected the resultant trenches for visual signs of asbestos contamination. The depth of all trenches extended down into the natural soil material. The lateral extent of the trenches was guided by visual assessments undertaken by the Environmental Consultant and supported by analytical results received for validation samples collected from the walls of the trenches. Where underground services were identified as being constructed out of ACM, the service and surrounding bedding soils were removed by a licenced asbestos removal contractor for appropriate offsite disposal.

Even though all known asbestos impact had been removed from the Site, remediation works undertaken within the larger portion of the Site did not extend into the deeper fill material surrounding the "live" sewer mains that were present at the time of these works. Contractors conducting works associated with the removal/upgrade of these "live" services were advised to employ precautionary measures such as having safe work method statements and/or work-specific management plans addressing exposure to potentially asbestos impacted soils, unexpected finds protocol and associated training, to ensure workers understood the controls required to be implemented in the unlikely event unexpected asbestos was encountered.

Remediation and validation work conducted within the wider portion of the Site is detailed in the report titled *"Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C*" (SLR VAL 2021) and is to be read in conjunction with this report. A detailed review of previous investigations undertaken at the Site is also presented in the aforementioned report (SLR VAL 2021).

2.4 Source of Asbestos Impact – Site including the Sewer Easement

In summary, based on the results from previous investigations and observations noted during remediation works conducted across the Site including the sewer easement along the southern boundary, identified asbestos impact appears to have resulted from a number of sources as described below.

- Asbestos impact identified within the uncontrolled fill material present across the Project Area (including the Site), appears to be residential building debris (mainly fragments of ACM sheeting). The presence of asbestos debris within surface soils is a common feature in Darwin due to the widespread damage caused by Cyclone Tracy in December 1974. The 1975 aerial imagery covering the Project Area, clearly shows the presence of scattered debris post Cyclone Tracy.
- Sheeting made from ACM appeared to be used as forming during the installation/construction of some of the concrete stormwater risers encountered along the boundaries between the Road Reserve, and Residential Lot B2 and Lot B3. ACM debris was also identified in the rework material around these stormwater risers.
- Asbestos impacted fill material was also identified between layers of asphalt found in the Road Reserve, which suggests that fill material impacted with asbestos debris had been used to construct (or upgrade) the road system within the Project Area.
- Pipes made from ACM products were used for the Project Area's water distribution system and in some instances used as a conduit for communications cables, and as such, are considered additional primary source of asbestos impact. Asbestos pipes were found in the middle (Road Reserve) to the southern portion of the Project Area (Residential Lot B2).
- Sewer pipes made from ACM were located within the sewer trench located within the easement located along the southern and eastern boundaries of the Project Area.

3 Remediation and Validation Methodology

3.1 Remediation Strategy

Remediation and validation activities conducted at the Site were completed in general accordance with the Auditor endorsed RAP (SLR RAP 2020, ref: 680.10679.R04-v5.0).

The remediation strategy was developed in general accordance with the following guidelines and standards.

- ASC NEPM 2013.
- Australian Standard AS 4482.1-2005, "Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and semi-volatile compounds".
- WA DOH 2019, "Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, Consultation Draft" November 2019.
- NT EPA 2017, "Northern Territory Contaminated Land Guidelines".

In addition, SLR's Standard Operating Procedures (SOPs) were followed to ensure integrity was maintained and sampling procedures were completed in general accordance with the relevant guidelines and standards.

The remediation and validation activities that were carried out within the sewer easement located along the southern boundary of the Site were conducted in two phases, which are detailed in the following sections.

3.1.1 Removal of Uncontrolled Fill Material

The first phase of the remediation works was managed by the Principal Contractor Greenspace Pty Ltd and involved the following activities.

- The removal of the shallower fill material within the sewer easement located along the southern boundary of the Site were removed in accordance with the *Code of Practice How to Safely Remove Asbestos 2011*.
- This fill material and any associated ACM debris encountered were placed directly into lined skip bins and removed under asbestos conditions for appropriate offsite disposal by a Class A licenced asbestos removal contractor.
- The lateral and vertical extent of the excavated area was guided by visual assessments undertaken by a suitably qualified SLR Environmental Consultant.
- The walls and base of the resultant excavation were visually inspected, and validation samples were collected, at a minimum sampling density of 1:25 m^2.
- The depth of the resultant excavation extended down into natural soils or reworked natural soils used to backfill the sewer line during its original installation.
- Details of the area remediated at the Site were collected and included the extent and depth of excavation, validation sample locations, sample identification labels, date sampled and photographic logs. Validation samples were collected and analysed by a NATA accredited laboratory in accordance with the methodology outlined in **Section 3.2.**
- Water for dust suppression was made available throughout the remediation activities undertaken at the Site.

- Air quality monitoring was undertaken during all remediation activities conducted at the Site to determine the presence of air borne asbestos fibres.
- Asbestos removal, including excavation and transport of asbestos impacted soils, was undertaken by a Class A licenced asbestos removal contractor under an approved asbestos removal control plan.
- Analytical results obtained for soil samples collected at the Site were compared to relevant ILs. If validation samples returned results above the ILs, further excavation and validation sampling would have been undertaken to ensure the Site's remediation objectives were achieved.
- All field notes, photographic logs, certified laboratory reports, asbestos clearance certificates, waste disposal documentation and air quality monitoring results were collated.
- Clearance certificates and this addendum validation report were prepared, documenting all remediation and validation works undertaken within the sewer easement located along the southern boundary of the Site.

3.1.2 Removal of Sewer Services

Once a clearance certificate for the first phase of works was received, the second phase of remediation works within the sewer easement along the southern boundary of the Site was managed by the Headworks Project's Principal Contractor (Halikos Pty Ltd). The sewer replacement/upgrade scope of works was conducted by Power and Water Corporation's contractor (Mousellis and Sons Pty Ltd). The second phase included the following activities.

- SLR oversaw the removal of spoil from the sewer trench, and the removal of the disused sewer lines. Spoil material removed was largely reworked natural soils and bedding sands that were used to backfill the sewer pipe during its original installation.
- Spoil removed from the trench was placed adjacent to the trench and visually inspected for the presence of asbestos contamination. If visual observations found ACM debris, then the ACM debris and surrounding spoil were transported to the lined skip bins for appropriate offsite disposal by a licenced asbestos removal contractor.
- As part of these asbestos clearance works, the spoil material was inspected by a suitably qualified Environmental Consultant when it was being removed from the trench, inspected when it was stockpiled adjacent to the trench and reinspected while backfilling the visually cleared trench, for evidence of asbestos contamination.
- Underground services constructed out of ACM products were removed by excavating down to the sandy bedding material surrounding these services. The sandy bedding material was then removed by a shovel, to minimise damage to the asbestos pipes. The pipes were then carefully removed by the licenced asbestos removal contractor.
- The depth of the trench extended down into natural soils. After the abandoned underground services were removed, a suitably qualified environmental consultant inspected the walls and base of the resultant trench for visual signs of asbestos contamination.
- Plastic sheeting was cut and placed next to the excavation to catch any debris when removing the targeted asbestos pipe from the trench. The high-density polyethylene (HDPE) plastic was then used to wrap the ACM pipe prior to being removed from the Site for appropriate offsite disposal by a licenced asbestos removal contractor.

- Details of the area remediated at the Site were collected and included the extent and depth of excavation, date inspected and photographic logs.
- Water for dust suppression was made available throughout the remediation activities undertaken at the Site.
- Air quality monitoring was undertaken during all remediation activities conducted at the Site to determine the presence of air borne asbestos fibres.
- Asbestos removal, including excavation and transport of ACM pipes, ACM debris and potentially asbestos impacted soils, was undertaken by a licenced asbestos removal contractor under an approved asbestos removal control plan.
- All field notes, photographic logs, asbestos clearance certificates, waste disposal documentation and air quality monitoring results were collated.
- Clearance certificates and this addendum validation report were prepared, documenting all remediation and validation works undertaken within the sewer easement located along the southern boundary of the Site.

3.2 Soil Sampling Methodology

Soil validation sampling was undertaken in accordance with the RAP, the details of which are provided in **Table 2**.

Table 2 Soil Sampling Methodologies

Activity	Comment / Details
Soil sampling frequencies	• Base and walls of excavation/trench in red natural soils –visual validation only. Clearance certificates supplied by a suitably qualified Environmental Consultant. • Walls of excavation including fill material without asbestos contamination – Validation samples collected at a rate of 1:25 m^2, with a minimum of one sample per excavation wall and base (base only where excavation depth did not extend into natural soils). • Coordinates of sample locations recorded with a handheld GPS or similar device.
Sample analysis	• Validation samples analysed for percentage weight/weight asbestos content in accordance with the WA DoH guidelines.
Sample collection	• Sample collection undertaken in general accordance with WA DoH guidelines and SLR SOPs. Dedicated disposable nitrile gloves and laboratory supplied sample containers were used for sample collection.
Sample submission	• Chain of custody (COC) documentation completed at the time of sample collection and accompanied the samples to the nominated laboratory. • All samples submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis (where possible).

3.3 Decontamination of Equipment

A 20-ton excavator was used to remove contaminated asbestos soil and abandoned underground services in the sewer easement located along the southern boundary of the Site. The excavator was solely used for the earthworks at the Site and decontamination procedures were followed. The excavator bucket was washed within asbestos stockpile footprints area and the ground surface was visually inspected and validation samples were collected to assess the contamination from the excavator.

3.4 Analytical Assessment

Validation samples were submitted to a NATA accredited laboratory (ALS Pty Ltd [ALS}) for the analyses performed.

Scheduled samples were analysed for asbestos in soils - presence/absence and FA/AF. The DSI previously undertaken by SLR (SLR DSI 2020) confirmed that asbestos impact, when identified, appeared to be confined to the fill material overlaying the natural deeper red silty clay soil material.

Samples collected from the wall and base of the excavation associated with Phase 1 of the remediation works were collected and analysed for both presence/absence and FA/AF to verify whether asbestos impact was adequately removed.

As detailed in the RAP, the SLR DSI 2020 determined that, aside from the asbestos impacts, the material outside the defined "Known Asbestos Impact Area" was considered low risk and excess spoil could be disposed of as "General Solid Waste" (non-putrescible) with reference go the NSW Waste Classification Guidelines 2014. As such, validation samples collected from the Site as part of these remediation works were only analysed for asbestos.

3.5 Screening Criteria

Due to the land quality requirements stipulated by CoD, AF/FA or bonded asbestos concentrations less than the laboratory's limit of reporting is the required validation criteria i.e. <0.001% w/w FA/AF and "no asbestos detected", respectively.

3.6 Air monitoring

Air monitoring was conducted for the duration of the remediation activities conducted at the Site as a precautionary measure. The airborne asbestos monitoring was conducted at the boundaries of the Site (north, south, east and west) and were static locations.

Monitors were set up at the commencement of the shift (approximately 0700) and collected at the completion of Site works (ranges from 1600 – 1700 on weekday and from 12 noon -1300 on Saturday).

Each monitor was calibrated as per SLR's internal NATA accredited procedure and set at a flow rate of 1 L/minute Monday to Friday and 2 L/min on Saturday (as the work shift is shorter, 0700 – 1300, so the flow rate is increased to ensure an appropriate sampling volume is achieved over the shorter shift).

SLR is NATA accredited in our Darwin laboratory to conduct all sampling and analysis of filters. SLR's accreditation number is 3130**.** Air monitoring was conducted in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust, 2nd Edition [NOHSC: 3003 (2005)].

All air monitoring results were compared to the public health exposure standard of 0.01 fibres/mL.

Consideration was given to the asbestos air-quality limit of 0.01 fibres/mL, for protecting the public around contaminated sites as endorsed by the enHealth Council in Management of asbestos in the non-occupational environment 2005 document (enHealth 2005).

In the event results of the airborne asbestos monitoring showed respirable asbestos fibre levels in excess of the levels outlined in **Table 3**, action was taken immediately.

Table 3 Air Monitoring Action Levels

Action Level	Control	Action
Less than 0.01 fibres/ml	No new control measures are necessary	• Continue with current control measures.
At 0.01 fibres/ml or more than 0.01 fibres/ml but less than or equal to 0.02 fibres/ml	1. Review	• Review control measures.
	2. Investigate	• Investigate the cause.
	3. Implement	• Implement additional or alternative controls to eliminate or minimise exposure and prevent further releases. • Communicate any additional controls during daily pre-start meeting.
More than 0.02 fibres/ml	4. Stop removal work	• Cease excavation / transport of material.
	5. Notify Regulator	• Notify the Head Contractor, followed by the regulator (NT WorkSafe) both verbally and in written communication.
	6. Investigate the cause	• Conduct a thorough assessment across the Site to determine the cause. • Consult with all personnel involved in the works. • Determine ongoing mitigation measures. • Continue to carry out air-monitoring to ensure further controls have mitigated the problem.

Table adopted from the Code of Practice under Section 274 of *the Work Health and Safety (National Uniform Legislation) Act 2011 (the WHS Act): How to safely remove Asbestos*

4 Results

The remediation and validation activities undertaken at the Site were completed in two phases. Phase 1 was conducted between 25 and 30 August 2021, whilst the second phase was conducted between 13 and 17 September 2021. A photographic log of the remediation works is provided in **Appendix C.** The extent of excavation works completed as part of the remediation activities undertaken at the Site are shown in **Figure 3 (Appendix A)**.

Civil works associated with Phase 1 were completed in general accordance with the Principal contractor's (Greenspace Pty Ltd) Construction Environmental Management Plan (CEMP) T20-1056_V2.0. THE Mining Pty Ltd was engaged by the Principal Contractor to undertake earthworks across the Site. Earthworks were required to remove uncontrolled fill material identified within the sewer easement along the southern boundary of of the Site. Northern Trade Solutions Pty Ltd (NTS) were engaged to appropriately remove and dispose of ACM debris and asbestos impacted soils during the Phase 1 works. NTS holds a Class A Licence in asbestos removal and demolition.

Phase 2 civil works were completed in general accordance with the Headworks Project's Principal contractor's (Halikos Pty Ltd) CEMP. Sewer replacement/upgrade works were completed by Mousellis and Sons Pty Ltd who were engaged by Power and Water Corporation. Mousellis and Sons Pty Ltd were also engaged to appropriately remove bonded ACM products and ACM debris during the Phase 2 works. Mousells and Sons Pty Ltd holds a Class B Licence in asbestos removal and demolition.

Field observations and summaries of the analytical results obtained for the remediation and validation activities undertaken within the sewer easement at the Site are provided below.

4.1 Field Observations

Key field observations noted during the remediation works at the Site are summarised as follows.

Phase 1:

- Depth of the resultant excavation ranged from 0.3 m to 0.7 m below ground surface.
- The extent of the final area excavated during Phase 1 was approximately 3.0 m wide and approximately 80 m long.
- Near surface soils across the sewer easement consisted typically of fill material comprising of reddish -yellowish brown to light grey, fine sandy and gravelly sandy silts.
- The deeper excavation depths were within the existing sewer trench. ACM debris was found at various depths ranging from 0.3 m to 0.6 m. ACM debris was noted more in the sewer easement located in the Road Reserve section (i.e. not in Lot C). The ACM debris was primarily fragments of asbestos sheeting.
- Asbestos debris encountered and surrounding fill material were loaded directly into lined skip bins and removed by a licensed Class A asbestos removal contractor (NTS) for appropriate offsite disposal to the Shoal Bay Waste Management Facility (SBWMF).
- For the purpose of minimising dust generation, the area to be excavated was wetted down prior to commencing excavation works. This included ripping the ground surface to facilitate water penetration into the deeper soil profile. During the excavation and skip bin loading, the spoil was sprayed continuously with water to further control dust generation and to stop potential release of asbestos fibres.
- Existing sewer pits had already been completed in the area (depths of 1.2 and 2.7m, respectively). The surfaces of these pits were also inspected for evidence of ACM debris.
- Following the completion of the excavations works, the resultant excavation's surfaces (walls and bases) were visually inspected by a suitably qualified environmental consultant on 30 August 2021 for the presence of asbestos debris by systematically walking over the area.
- During this process, asbestos debris was found in two areas (Val-N-01 – 0.4m and VAL-N-04-0.4m). Further excavation occurred to remove the asbestos debris found in these areas, before validation soil samples were collected to confirm adequate asbestos removal.
- Validation soil samples were collected from the walls and base of the resultant excavation on 30 August 2021. Validation samples were then submitted to a NATA accredited laboratory for asbestos analyses. Wall samples (along the property boundary) targeting the uncontrolled fill material were submitted for presence/absence and AF/F analyses. Samples collected from the base of the excavation, including that above the existing sewer trench were also analysed for AF/FA.
- Locations and extent of resultant excavation are shown on **Figure 3 (Appendix A).**
- No stained or odorous soils were identified during the remediation works and removal of underground services works.

Phase 2:

- The extent of the final area trenched during Phase 2 of the remediation works was approximately 1.0 wide and approximately 52 m long. The maximum depth of the final trench was 2.0 m below ground surface.
- Spoil material removed from the trench was largely reworked natural soils and bedding sands used to backfill the sewer pipe during its original installation. As part of the asbestos clearance works, the spoil material was inspected when it was being removed from the excavation, inspected when it was stockpiled adjacent to the trench and reinspected while backfilling the cleared excavation.
- Fragments of bonded ACM were noted in the spoil material removed from around and underneath the recently removed sewer manhole. The ACM fragments were bonded and in "good" condition and appeared to be part of a broken asbestos pipe (different to the one that was being removed). The fragments and surrounding soil material were removed and placed into a lined skip bin for appropriate offsite disposal. Visual inspection of the remaining spoil material confirmed no further fragments were present.
- A second asbestos pipe (appeared to be an old sewer vent) was also removed when removing the sewer manhole. Bonded fragments of asbestos piping were noted around the manhole. These fragments were also considered to be bonded and in "good" condition. The fragments and surrounding soil material were removed and placed into a lined skip bin for appropriate offsite disposal.
- To minimising dust generation, the area to be excavated was wetted down prior to commencing excavation works. During the trenching works and skip bin loading, spoil was sprayed with water to control dust generation and to stop potential release of asbestos fibres.
- Plastic sheeting was cut and placed next to the trench to catch any debris when removing the targeted asbestos pipe from the trench. HDPE plastic was then used to wrap the ACM pipe prior to being removed from the site for appropriate offsite disposal by a licenced asbestos removalist (Mousellis and Sons Pty Ltd).
- Following the completion of the trenching works and removal of the sewer infrastructure, the resultant trench's surfaces (bases and walls) were visually inspected where safe to do so by a suitably qualified environmental consultant for the presence of asbestos debris.
- Validation samples were not collected from the base and walls of the resultant trench, as they (walls and base) of the trench extended into the red natural soils. The bonded nature of the ACM fragments encountered, and careful methodology adopted when removing the ACM pipe, also supported the strategy of only providing a visual clearance of the resultant trench's surfaces.
- Visual inspection of the final trench and spoil material confirmed no further fragments were present.
- No stained or odorous soils were identified during the remediation works and removal of underground services works.

4.2 Summary of Analytical Results

A tabulated summary of the analytical laboratory results is included in **Appendix D** and certified laboratory certificates are provided in **Appendix E**.

A summary of the validation samples collected during Phase 1 of the remediation works conducted within the sewer easement of the Site is provided in **Table 4.** Sample locations are shown on **Figure 3 (Appendix A)**.

As stated in **Section 4.1**, validation samples were not collected from the base and walls of the resultant trench as they (walls and base) extended into the red natural soils. The bonded nature of the ACM fragments encountered, and careful methodology adopted when removing the ACM pipe, also supported the strategy of only providing a visual clearance of the resultant trench's surfaces.

Table 4 Summary of Validation Samples

Sample Type	Sample Identification	Analysis
Base samples – northern bench (red natural soils)	Val-N-01_0.4, Val-N-02_0.3, Val-N-03_0.4, Val-N-04_0.4, Val-N-05_0.4, Val-N-06_0.3, Val-N-07_0.35, Val-N-08_0.3, Val-N-09_0.4, Val-N-10_0.4	*Presence/absence of asbestos in soils *FA/AF
Base samples – backfill sewer trench area	Val-B-01_0.4, Val-B-02_0.4, Val-B-03_0.4, Val-B-04_0.4, Val-B-05_0.5, Val-B-06_0.5, Val-B-07_0.5, Val-B-08_0.35, Val-B-09_0.6	*Presence/absence of asbestos in soils *FA/AF
Wall samples – southern property boundary	Val-S-01_0.4, Val-S-02_0.4, Val-S-03_0.4, Val-S-04_0.4, Val-S-05_0.25, Val-S-06-0.3, Val-S-07_0.3, Val-S-08_0.4, Val-S-09_0.4, Val-S-10_0.45	*Presence/absence of asbestos in soils *FA/AF
Bulk ID	Bulk-01	*Asbestos identification within bulk sample

A summary of analytical results is as follows.

- A total of 29 soil samples were collected from the excavation area associated with the removal of uncontrolled fill material found within the sewer easement within Lot C and the Road Reserve.
- Validation samples from the external wall (southern property boundary) are represented by the samples with prefix: "Val-S". A total of ten samples were collected along this portion of the Project Area's southern boundary.
- A total of 19 validation samples collected from the base of the excavation are represented by samples with the following prefix:
  - "Val-N" which were collected from the surface of the northern bench (natural soil material) – ten samples; and
  - "Val-B" which were collected from the backfill material within the sewer trench – nine samples.
- Potential ACM debris found when inspecting the area near sample location Val-N-01-0.4, was collected and submitted for identification purposes (Bulk-01). This area was further excavated and reinspected before collecting soil sample Val-N-01-0.4.
- The weathered fibre cement debris submitted for identification purposes was confirmed to be ACM (Chrysotile).
- Asbestos was not detected in any of the soil samples collected and submitted for laboratory analysis (presence/absence, AF/FA).

4.3 Clearance Inspections

Visual inspections were conducted for all excavations and trenches created at the Site as a result of the remediation activities outlined herein. No ACM debris were found during any of the clearance inspections. **Appendix B** includes the Clearance Certificates provided for visually validated areas at the Site.

4.4 Soil Movement and Disposal of Underground Services

Spoil removed during Phase 1 of the remediation works within the sewer easement located along the southern boundary of the Site were placed directly into lined skip bins for appropriate disposal to the SBWMF by a licenced asbestos removal contractor (NTS). Approximately 309 tonnes (or 170 m^3 based on an assumed soil density of 1.8 for silty clayey soils) of ACM and ACM contaminated soil was disposed of to the SBWMF.

During Phase 2 of the remediation works, approximately 2.64 tonnes (or 1.5 m^3 based on an assumed soil density of 1.8 for silty clayey soils) of ACM pipe and potentially impacted spoil material were removed from the Site for appropriate disposal to the SBWMF by a licenced asbestos removal contractor (Mousellis and Sons Pty Ltd).

The SBWMF disposal receipts have been included in **Appendix F**.

Spoil from the trench created when removing the abandoned sewer line were visually inspected by the Environmental Consultant for the presence of ACM. As per the Auditor endorsed RAP, spoil that was visually cleared as not being impacted with ACM debris, was used to backfill the service trenches created as part of the remediation activities conducted at the Site.

Additional fill material was also brought onto the Site to backfill the resultant excavation/sewer created as part of the remediation works conducted within the sewer easement. This material was characterised from a soil contamination perspective. Details of the characterisation works have been included in **Appendix G**.

4.5 Air Monitoring

Air monitoring for airborne fibres was conducted for each day intrusive works were carried out as part of the remediation works (25 to 28 August 2021, 13, 14, 16 and 17 September 2021). Monitoring results did not report airborne fibres above the detection limit of the method used, which is 0.01 fibres/ml. Air monitoring reports are included in **Appendix H.**

5 Conceptual Site Model

The Site's Conceptual Site Model (CSM) has been updated taking into account the remediation and validation works conducted at the Site (and presented in this addendum report), as well as the results from remediation works and environmental investigations undertaken at the Site.

The CSM prepared for the Site and surrounds is presented below in **Table 5** in tabulated form.

In developing the CSM, the following points were considered.

- All known asbestos impact at the Site has been remediated and resultant excavations have been validated through either soil and/or visual clearance inspections, as detailed in this addendum report and the report titled *"Validation Report, John Stokes Square Redevelopment, Road Reserve and Lot C*" (SLR VAL 2021), which is to be read in conjunction with this report.
- Soil samples collected from the SLR test pits completed across the Site in 2020 (SLR DSI 2020) did not report any pesticide impact above the nominated ILs specified for residential land use and public open space scenarios. Pesticide impact was not detected above the nominated ILs in any of the soil samples collected from the Site during previous investigations undertaken by Greencap and Agon. As such, pesticides are not considered COPC for the Site.
- During the DSI completed by SLR, heavy metals such as arsenic, copper, lead, nickel, zinc and total chromium were detected in soil samples collected from the majority of test pits advanced across the Site (SLR DSI 2020). None of the concentrations detected exceeded the health-based and/or ecological ILs specified for residential land use and public open space scenarios. Elevated arsenic and total chromium concentrations were reported across the Site, however further analyses confirmed that concentrations detected are indicative of natural soil conditions (SLR DSI 2020). Heavy metal impact was not detected in any of the soil samples collected from the Site during previous investigations undertaken by Greencap and Agon. As a result of these investigations, heavy metals are not considered COPC for the Site.
- Groundwater beneath the wider Project Area was intersected at depths between 2.69 and 3.72 mbgl and inferred to flow in a westerly direction towards coastal mangrove community and outer estuary of Darwin Harbor (located approximately 160 m from the Project Area) (Agon DSI 2020). According to the Agon DSI report (2020), groundwater samples reported dissolved heavy metal concentrations above the nominated ILs adopted for assessing potential impacts to groundwater users and marine aquatic ecosystems.
- Future users of the Site will not extract and use groundwater from beneath the Site and as such groundwater impact in the form of dissolved heavy metals, is not considered to pose an exposure risk to future users of the Road Reserve and Lot C.

Table 5 Conceptual Site Model

Sources		Exposure	Receptors			Complete Source-Pathway-Receptor Linkage
Primary Source	Secondary Sources	Transport Mechanism Possible and Routes of Exposure	Person or Ecological Receptor Potentially Exposed	Receptor Present		
				On-site	Off-site	
None – all known primary sources of impact (i.e. uncontrolled fill, building material and services made out of ACM) have been removed from the Site.	Soil contamination: • None. All known soil impacts (i.e. asbestos) have been removed and resultant excavations validated.	Dispersion • Uptake via plants • Dermal contact • Incidental ingestion • Leaching via percolation Wind Erosion: • Inhalation of dusts Volatilisation • Inhalation	Residents	×	✓	× *does not exist as all known sources have been removed
			Commercial workers	×	✓	× *does not exist as all known sources have been removed
			Intrusive workers	✓	✓	× *does not exist as all known sources have been removed
			People in open spaces	✓	✓	× *does not exist as all known sources have been removed
			Ecological receptors (terrestrial biota)	✓	✓	× *does not exist as all known sources have been removed
	Groundwater Contamination: • Heavy metals	Migration of groundwater and its extraction • Dermal contact • Incidental ingestion • Inhalation • Terrestrial/ aquatic	Residents	×	✓	× *although bores exist within the locality, the SPR linkage is not considered viable as groundwater within the locality is not expected to be used for domestic purposes especially given the availability of a reticulated, treated (mains) water supply and low groundwater yield..
			Commercial workers	×	✓	× *although bores exist within the locality, the SPR linkage is not considered viable as groundwater within the locality is not expected to be used for commercial purposes especially given the availability of a reticulated, treated (mains) water supply and low groundwater yield. There is no design to establish a bore onsite for future users of the Site.

Sources		Exposure	Receptors			Complete Source-Pathway-Receptor Linkage
Primary Source	Secondary Sources	Transport Mechanism Possible and Routes of Exposure	Person or Ecological Receptor Potentially Exposed	Receptor Present		
				On-site	Off-site	
		Groundwater impact is not volatile and therefore exposure pathway associated with the "migration of groundwater – volatilisation – inhalation" is not considered to exist.	Intrusive workers	✓	✓	✗ *does not exist as groundwater is located at depths greater than 2.69 mbgl and as such is unlikely to enter typical excavations/underground service pits located either on site or within the surrounding locality.
			People in open spaces	✓	✓	✗ *does not exist as groundwater is not expected to be used by users of public open spaces.
			Ecological receptors (terrestrial and aquatic biota)	✗ (terrestrial only)	✓	**Potentially Complete** *possible that ground impact (dissolved heavy metals) could migrate offsite to the coastal mangrove communities located approximately 160 m west of the Project Area.

6 Conclusion

Based on the field observations and analytical results obtained for the remediation and validation activities conducted at the Site by SLR, SLR considers that the Road Reserve and Lot C have been suitably remediated and validated for the proposed land use (public open space, roadway), subject to the considerations outlined in this addendum report and the main validation report (SLR, VAL 2021).

7 Limitations

The following information will assist in understanding the uncertainties relating to the interpretation of the data obtained during this investigation and the recommendations presented in the report and help with assessment and interpretation of the report.

SLR assumes no responsibility for the quality or accuracy of data obtained from external sources, or for occurrences outside the scope of works defined in this report.

All work conducted, and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR, is suitable for a specific objective.

Services were conducted in a conscientious and professional manner. The nature of the task, however, and the likely disproportion between any damage or loss which might arise from the work and any report prepared as a result and the cost of our services is such that SLR cannot guarantee that all issues of concern/contamination have been identified.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

8 References

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SLR RAP 2020, "*Remediation Action Plan, John Stokes Square Redevelopment, Road Reserve and Lot C"*, August 2020 (ref: 680.10679-R04-v5.0).

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WA DOH 2019 *"Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, Consultation Draft".*

APPENDIX A

Figures

H:\Projects-SLR\680-DRW\680-DRW\680.10679 DIPL John Stokes Square ERA\06 SLR Data\01 CAD\GIS\GIS\DS\-RRandLotC.mxd

SLR

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Project No.:	680.10679
Date:	24-Jun-2020
Drawn by:	Sarah Doherty
Scale:	1:4,000
Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 52

LEGEND

Project Area

Site Area

N
W
E
S

Imagery sourced from Nearmaps June 2020

Figure 1

0 35 70 140 Metres

John Stokes Square - Project Area Locality

0 10 20 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:1,000 at A4
Project Number:	680.10679
Date:	06-May-2021
Drawn by:	JG

Live Sewer Main

Future Land Use

- Commercial/Industrial
- Public Space
- Residential

JOHN STOKES SQUARE

Location of the Site

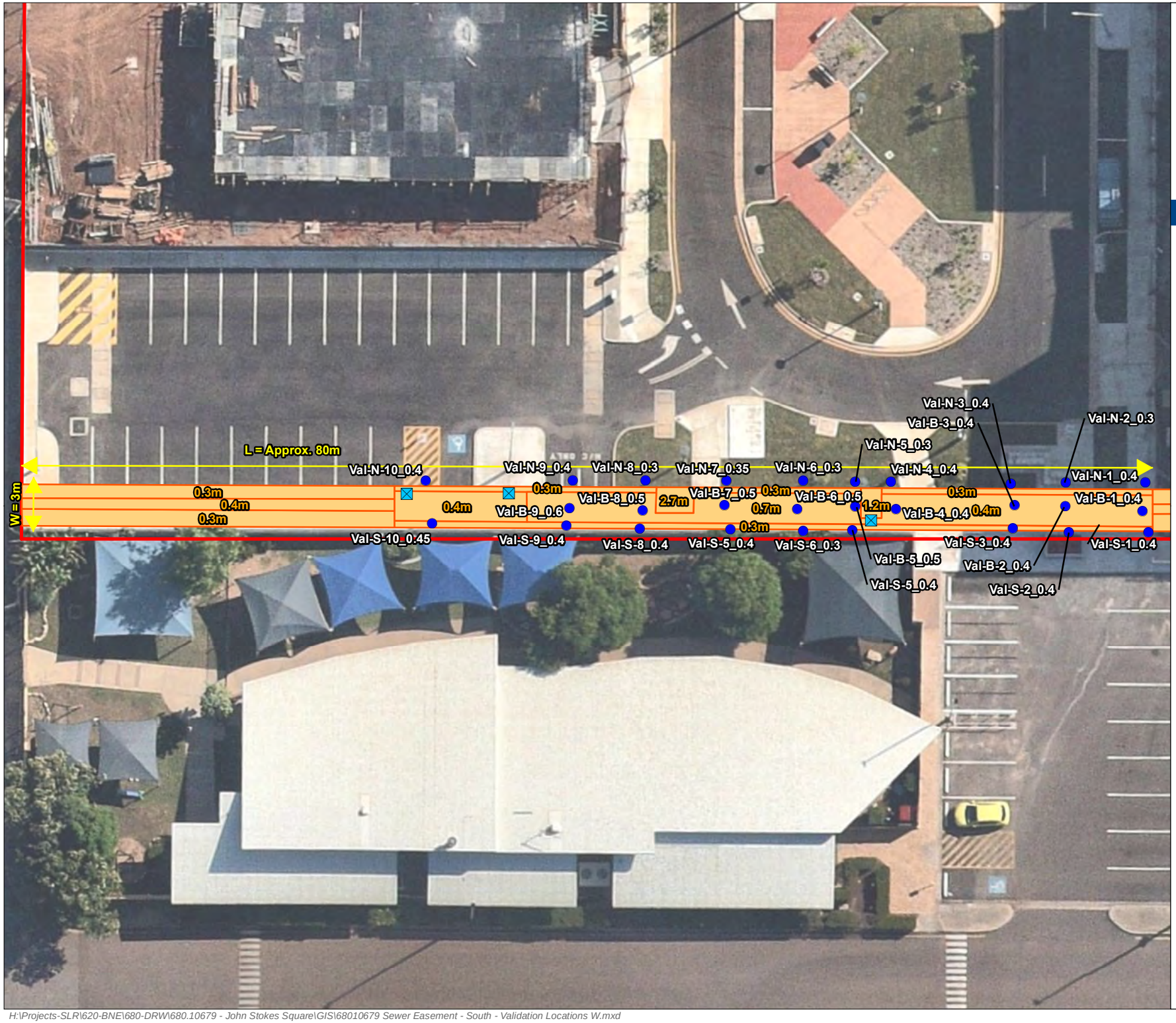
FIGURE 2

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\680.10679 Location of the Site.mxd

JOHN STOKES SQUARE

Validation Locations (West)

FIGURE 3



- Manhole
- Vent
- Validation Locations
- Sewer Easement
- Project Area

0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:360 at A4
Project Number:	680.10679
Date:	18-May-2022
Drawn by:	JG

SLR

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\68010679 Sewer Easement - South - Validation Locations W.mxd

APPENDIX B

Clearance Certificates

ASBESTOS CLEARANCE CERTIFICATE

Job Number:	680.10679.00200	Document Ref:	680.10679.00200-R08-v1.0-CLR-20210903.docx
Date of Issue:	3 September 2021	Signatures:	
Clearance Inspection Undertaken By and Competency:	Robin Birua Environmental Scientist		

1	CLIENT DETAILS	
1.1	Client Name:	HK Solutions Pty Ltd on behalf of Department of Infrastructure, Planning and Logistics.
1.2	Client Contact Name:	Tony Hopkinson
1.3	Client Address:	Building 2, Level 1 631 Stuart Highway Berrimah NT 0828
1.4	Client Telephone Number:	0410 824 575

2	ASBESTOS REMOVAL DETAILS			
2.1	Date of Clearance Inspections:	28 and 30 August 2021	Time of Clearance Inspections:	1200 (30 August 2021)
2.2	Site Address:	47 Progress Drive, Nightcliff, Darwin, Northern Territory (the Project Area)		
2.3	Asbestos Removal Location:	• Uncontrolled fill material that has historically contained debris of asbestos containing material (ACM) was present in the uncontrolled fill material present in the sewer easement located on the southern and eastern boundaries of the Project Area. • SLR were engaged to oversee the removal of this uncontrolled fill material down to natural soils or backfill material in the area where the existing sewer trench is located (i.e. mostly reworked natural soils). • The removal of uncontrolled fill material within the sewer easement will be undertaken in three phases. This clearance report has been prepared with respect to the first phase, which includes the removal of uncontrolled fill from the sewer easement within the new allotments referred to as Lot C and Road Reserve. • The extent of the excavation that this Clearance Certificate applies to is shown in Appendix A. • The removal of the uncontrolled fill material containing ACM debris was undertaken by a licensed asbestos removalist, Northern Trade Solutions (NTS) under asbestos conditions. Removal works commenced on 25 August and was completed on 30 August 2021 for Phase 1 of the proposed works. • The material excavated was placed directly into skip bins for appropriate offsite disposal to a licensed waste management facility (Shoal Bay Waste Management Facility) (SBWMF)). Disposal dockets have been included in Appendix E.		

2	ASBESTOS REMOVAL DETAILS	
		• On 30 August 2021, once the uncontrolled fill material had been removed, SLR visually inspected the surfaces of the excavation for evidence of ACM debris and collected validation soil samples from the walls and base. • During this process, asbestos debris was found in two areas (Val-N-01 – 0.4m and VAL-N-04-0.4m). Further excavation occurred to remove the asbestos debris found in these areas, and they were then sampled to confirm adequate asbestos removal. • Appendix A shows the locations of the validation samples collected. • Samples were submitted to a NATA accredited laboratory for analysis (ALS Pty Ltd).
2.4	Asbestos Removal Contractor Company & Licence Number:	Northern Trade Solutions (NTS) EPL 225
2.5	Asbestos Removal Contractor Supervisor & Licence Number:	Tony Karambetis CPCCDE3015A
2.6	Details of Asbestos Removal Activities and Areas Inspected:	Uncontrolled Fill Material Oversight (25 – 28 and 30 August 2021): • The removal of uncontrolled fill material, including asbestos debris, was conducted on 25 – 28 and 30 August 2021 and were excavated in accordance with the NT WorkSafe "Code of Practice How to Safely Remove Asbestos 2011". • Depth of the resultant excavation ranged from 0.3 m to 0.7 m below ground surface. • The deeper excavation depths were within the existing sewer trench. ACM debris was found a various depths ranging from 0.3 m to 0.6 m. ACM debris was noted more in the sewer easement located in the Road Reserve section (i.e. not in Lot C). The ACM debris was primarily fragments of asbestos sheeting. • The extent of the final area excavated was approximately 3.0 m wide and approximately 80 m long. • Existing pits had already been completed in the area (depths of 1.2 and 2.7m, respectively). The surfaces of these pits were also inspected for evidence of ACM debris. • For the purpose of minimising dust generation, the area to be excavated was wetted down prior to commencing excavation works. This included ripping the ground surface to facilitate water penetration into the deeper soil profile. • Asbestos debris encountered and surrounding fill material were loaded directly into lined skip bins and removed by a licensed "Class A" asbestos removalist (NTS) for appropriate offsite disposal to the SBWMF. • During the excavation and skip bin loading, the spoil was sprayed continuously with water to control dust generation and to stop potential release of asbestos fibres. • As part of these works, approximately 170 m^3 of asbestos impacted uncontrolled fill material including asbestos debris were removed from the site for appropriate offsite disposal.

2	ASBESTOS REMOVAL DETAILS	
		• One excavator was used solely for the excavation of ACM debris and potentially asbestos impacted soil between 25 and 28, and 30 August 2021. This excavator was then moved to the eastern boundary of the Project Area to remove uncontrolled fill material in this area (Phase 2). • Following the completion of the excavations works, the resultant excavation's surfaces (walls and bases) were visually inspected by a suitably qualified environmental consultant for the presence of asbestos debris by systematically walking over the area. • Validation soil samples were collected from walls and base of the resultant excavation on 30 August 2021. Validation samples were then submitted to a National Association of Testing Authorities (NATA) accredited laboratory for asbestos analyses. Wall samples (along the property boundary) targeting the uncontrolled fill material were submitted for presence/absence and asbestos fines/fibrous asbestos (AF/FA) analyses. Samples collected from the backfill material within the existing sewer trench were also analysed for AF/FA.

3	CLEARANCE INSPECTIONS – VISUAL	
3.1	Method:	• Visual inspections of the excavated areas created due to the removal of asbestos debris and impacted soils at the site were undertaken by a suitably qualified environmental consultant from SLR. • The base and walls of the excavation were visually inspected for ACM debris and representative soil samples were also collected from the excavation's surfaces (i.e. walls and base). • Asbestos material encountered during the removal of fill material were removed in accordance with the Code of Practice How to Safely Remove Asbestos 2011. Refer to Appendix A for details of the area where visual clearance for asbestos related impact have been undertaken at the site.
3.2	Visual Summary:	It is the opinion of Robin Birua of SLR that the excavated area associated with the removal of ACM and potentially asbestos impacted soil as detailed in Section 2.6 of this Clearance Certificate, have been visually inspected, as far as reasonably practicable and are free from visible ACM in the fill layer, unless specified otherwise in Section 2.6. Representative photographs of the area inspected, following removal of asbestos impacted soil, are provided at Appendix B.

3	CLEARANCE INSPECTIONS – VISUAL	
3.3	Limitations:	It should however be noted that: • The Visual Clearance Inspection and Clearance Certificate are limited to accessible visible surfaces as detailed in Section 2.6 only. • Inspections are conducted in a conscientious and professional manner. The nature of the task and the likely disproportion between any damage or loss which might arise from the work or Clearance Certificate prepared and the cost of our services, is such that SLR cannot guarantee that all asbestos materials/issues of concern have been identified and/or addressed. • Unless specified in this Clearance Certificate, this Clearance Certificate does not guarantee that the dust present in or around those areas mentioned in Section 2.3 and Section 2.6 of this Clearance Certificate are free of asbestos contamination. The inspection is for visible ACM as detailed in Section 2.6 only. • It is possible that ACM are present in areas that were inaccessible/visually obscured during the inspection. If any ACM or assumed ACM fragments are encountered on site, access to the materials should be appropriately restricted and advice sought from a suitably qualified and experienced consultant. • The inspections were carried out at the times of the completion of the remediation works and were dependent upon site conditions at that time. • SLR accepts no responsibility or liability for the completeness of the removal by the appointed licensed asbestos removal contractor. The appointed licensed asbestos removal contractor is responsible for ensuring all work is conducted in a safe and competent manner by suitably trained staff, the necessary approvals are obtained from regulatory authorities prior to starting any asbestos removal or maintenance activities (if applicable) and that work methods and procedures comply with the relevant legislation, codes of practice and industry standards, as required.

4	CLEARANCE INSPECTION - ASBESTOS AIRBORNE FIBRE MONITORING	
4.1	Background Monitoring:	Air monitoring for airborne fibres was conducted for each day of intrusive works were carried out as part of the asbestos removal works. Four monitoring stations were setup at the boundary of the excavation area, positioned in line with adjacent sensitive receptors (residents). Control (as required) and background airborne fibre monitoring was conducted, in general accordance with Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust, 2nd Edition [NOHSC: 3003 (2005)] and SLR's in-house technical procedures.
4.2	Clearance Monitoring:	Clearance airborne fibre monitoring was not requested and does not form a part of this clearance certificate.
4.3	Results:	The analysis of all asbestos airborne fibre monitoring was undertaken by SLR at our NATA accredited laboratory. All airborne asbestos monitoring results showed less than the minimum detection limit of the method used which is 0.01 fibres/mL (refer to the SLR Airborne Asbestos Monitoring Reports ref: 680.10679.00200-AADZ-1 through to 680.10679.00200-AADZ-5 that are included in Appendix C.

5	VALIDATION SAMPLE RESULTS	
5.1	Method:	• Validation samples were collected from the base and external wall (southern property boundary) of the excavation at a minimum rate of one sample per 25m^2 and one sample per five linear metres. • Samples were collected in general accordance with AS4482.1-2005 and SLR's standard operating procedures (SOPs). Dedicated disposable nitrile gloves, a decontaminated trowel and laboratory supplied sample containers were used for sample collection. • Validation soil samples were collected from the base and external wall (southern property boundary) of the resultant excavation, as detailed in Section 2.3, Section 2.6 and locations are shown in Appendix A. The purpose of these samples was to confirm that ACM impacted soil material had been removed from the area to a satisfactory standard. • All samples were submitted to a NATA accredited laboratory (ALS Pty Ltd) for analysis. • Wall samples were collected along the property boundary, targeting the uncontrolled fill material layer that extends offsite. The base samples were collected from the different benches (natural soil material) and from the backfill material within the sewer trench. • At each wall sample location, a 10 L sample was collected in a bucket and passed through a 7mm grid sieve. The material that did not pass through the sieve was inspected for the presence of any potential ACM debris and if found, samples of the fragments were collected and submitted to a NATA accredited laboratory for identification purposes. • Following a visual inspection of the less than 7 mm fraction of sieved soil, a sub-sample (at least 500 mL) was collected and submitted for laboratory analyses. Asbestos analysis for the wall samples included presence/absence and AF/FA in general accordance with the Western Australia Department of Health's Guidelines for the Assessment, Remediation and Management of Asbestos-Contamination Sites in Western Australia (WA DoH 2009).

5.2	Results:	• The certified laboratory report received for the soil samples collected during this clearance is included in Appendix D.
		• A total of 29 soil samples were collected from the excavation area associated with the removal of uncontrolled fill material found within the sewer easement within Lot C and the Road Reserve.
		• Validation samples from the external wall (property boundary) are represented by the samples with prefix: "Val-S". A total of 10 samples were collected along this portion of the Project Area's southern boundary.
		• A total of 19 validation samples collected from the base of the excavation are represented by samples with the following prefix:
		  ◦ "Val-N" which were collected from the surface of the northern bench (natural soil material) – 10 samples; and
		  ◦ "Val-B" which were collected from the backfill material within the sewer trench – 9 samples.
		• Potential ACM debris found when inspecting the area near sample location Val-N-01-0.4, was collected and submitted for identification purposes (Bulk-01). This area was further excavated and reinspected before collecting soil sample Val-N-01-0.4.
		• The weathered fibre cement debris submitted for identification purposes was confirmed to be ACM (Chrysotile).
		• Asbestos was not detected in any of the soil samples collected and submitted for laboratory analysis (presence/absence, AF/FA).

6	RE-OCCUPATION
6.1	It is the opinion of SLR that the areas detailed in Section 2.3 and outlined in Appendix A of this Clearance Certificate are fit for re-occupation and for normal excavation works to proceed. The asbestos removal work area and the surrounding area have been inspected, as far as reasonably practicable, and are considered to be free of visible assumed or suspected asbestos debris, unless specified otherwise in Section 2.6. Within the scope of works executed, all asbestos impacted soil materials have been stripped from the area of excavation as per Section 2.6 of this Clearance Certificate (please note the limitations in Section 3.3). While SLR carries out the work to the best of our ability, we totally exclude any loss or damages which may arise from services provided to the Client and/or associated parties. This Clearance Certificate and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

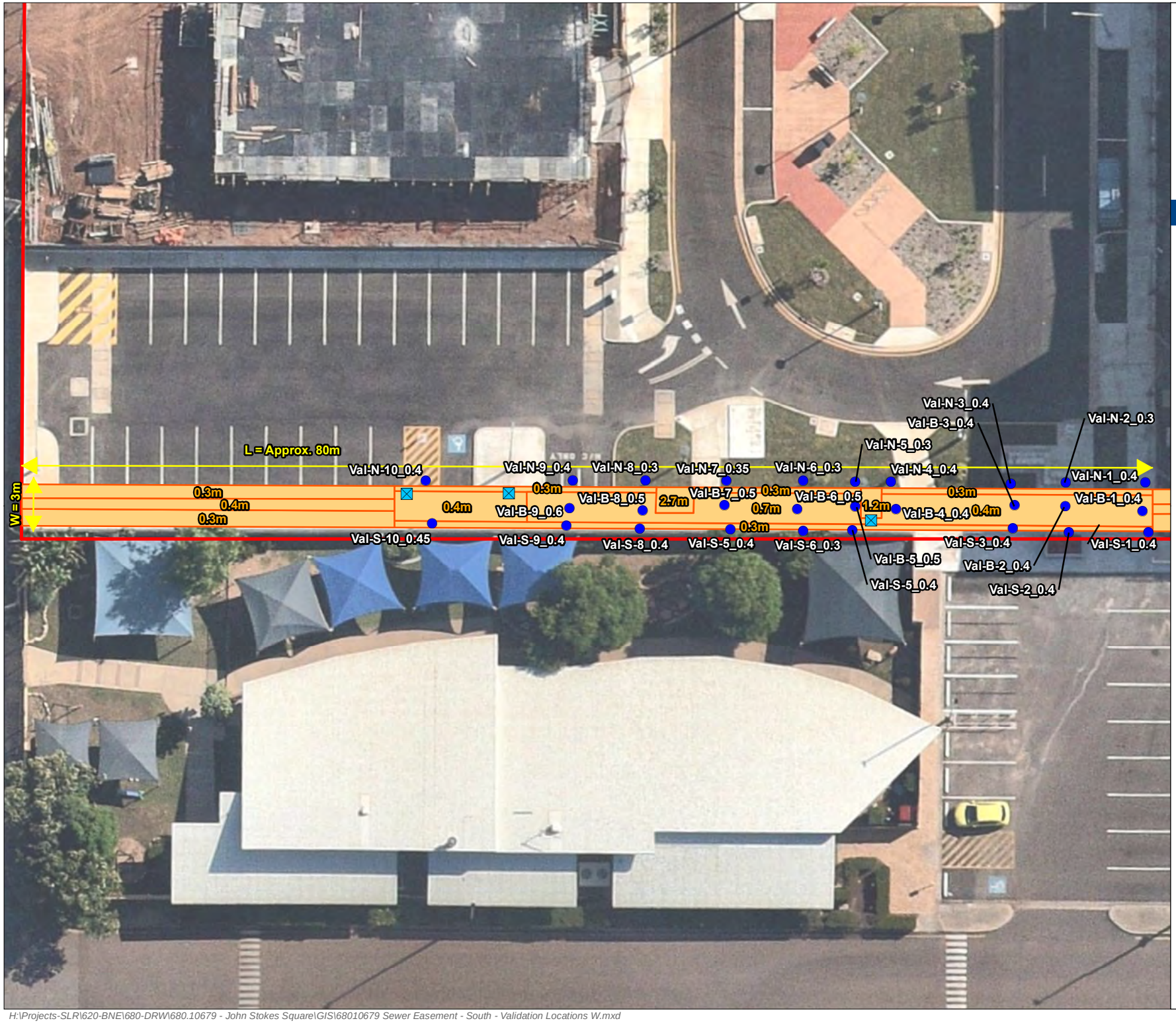
APPENDIX A

Approximate extent of removal work area and area visually inspected

JOHN STOKES SQUARE

Validation Locations (West)

FIGURE 2



- Manhole
- Vent
- Validation Locations
- Sewer Easement
- Project Area

0 2.5 5 m

Coordinate System:	GDA 1994 MGA Zone 52
Scale:	1:360 at A4
Project Number:	680.10679
Date:	18-May-2022
Drawn by:	JG

SLR

H:\Projects-SLR\620-BNE\680-DRW\680.10679 - John Stokes Square\GIS\68010679 Sewer Easement - South - Validation Locations W.mxd

APPENDIX B

Representative Photographic log

Removal of uncontrolled fill material – 25 – 26 August 2021	
 Photo 01 – 25/8/201 - Photo of the sewer easement from the south western corner of the Project Area – looking east along the southern boundary.	 Photo 02 -– 25/8/201 - Removal of the uncontrolled fill material from within the sewer easement into lined skip bins for offsite disposal
 Photo 03 – – 25/8/201 - ACM debris encounered in the uncontrolled fill material prior to being removed of offsite.	 Photo 04– 25/8/201 – Removal of uncontrolled fill material from sewer easement within Lot C. Photograher is facing west. Note: sediment retention basin excavated to the right of the photograph (not part of this clearance certificate).
 Photo 05– 25/8/201 - View of the excavation commenced around the sewer manhole within Lot C	 Photo 06 – 26/8/2021 – View of the excavation after uncontrolled fill mateiral had been rmoved from Lot C. Photograher is facing west. Note: sediment retention basin excavated to the right of the photograph.

Visual Clearance of Excavation – 30 August 2021	
 Photo 07 – Excavation area from the south western corner facing east. View along the southern boundary of Lot C.	 Photo 07 – Soil profile of Lot C southern boundary.
 Photo 08 – Final excavation looking from boundary of Road Reserve and Lot B2 – looking west. View along southern boundary of the proposed Road Reserve.	 Photo 09 – Photo of the final excavation within the Road Reserve. Photographer is facing east.

APPENDIX C

Airborne Asbestos Monitoring Reports

SLR Consulting Australia Laboratory Services - Darwin Office
ABN:29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-1
Date of Issue: Friday, 27 August 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
25/08/2021	**Blank**		0				N/A	N/A		100	0	N/A
25/08/2021	AADZ-1	Control	1	1.00	1.00	1.00	07:47	16:48	541	100	2.5	<0.01
25/08/2021	AADZ-2	Control	2	1.00	1.10	1.05	07:46	16:46	540	100	2	<0.01
25/08/2021	AADZ-3	Control	3	1.00	1.00	1.00	07:49	16:44	535	100	4	<0.01
25/08/2021	AADZ-4	Control	4	1.00	1.00	1.00	07:52	16:42	530	100	6	<0.01

Monitoring Locations:

0 Blank
1 Southwest boundary of Lot C work area
2 Northwest boundary of Lot C work area
3 Northeast boundary of Lot C work area
4 Southeast boundary of Lot C work area

Notes:

1) The results contained within this report relate only to the samples submitted for testing.
2) The report and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025-Testing. This report cannot be reproduced except in full.

Approved Fibre Counter: Gemma Sheridan
Approved Fibre Signatory: Gemma Sheridan

SLR Consulting Australia Laboratory Services - Darwin Office
ABN:29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-2
Date of Issue: Friday, 27 August 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
26/08/2021	**Blank**		0				N/A	N/A		100	0	N/A
26/08/2021	AADZ-5	Control	1	1.00	1.10	1.05	07:40	17:02	562	100	2	<0.01
26/08/2021	AADZ-6	Control	2	1.00	0.90	0.95	07:42	17:03	561	100	1	<0.01
26/08/2021	AADZ-7	Control	3	1.00	1.00	1.00	07:45	17:06	561	100	-	N/A (see note 3)
26/08/2021	AADZ-8	Control	4	1.00	0.90	0.95	07:50	17:10	560	100	1	<0.01

Monitoring Locations:

0 Blank
1 Northeast boundary of Lot C work area
2 Southeast boundary of Lot C work area
3 Northwest boundary of Lot C work area
4 Southwest boundary of Lot C work area

Notes:

1) The results contained within this report relate only to the samples submitted for testing.
2) The report and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.
3) Sample AADZ-7 rejected – filter obscured by grit.

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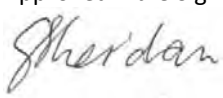
Approved Fibre Counter: Flynn Mackley
Approved Fibre Signatory: Gemma Sheridan



SLR Consulting Australia Laboratory Services - Darwin Office
ABN:29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-3
Date of Issue: Monday, 30 August 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
27/08/2021	**Blank**		0				N/A	N/A		100	1	N/A
27/08/2021	AADZ-9	Control	1	1.00	0.90	0.95	07:31	17:17	586	100	2	<0.01
27/08/2021	AADZ-10	Control	2	1.00	1.00	1.00	07:32	17:19	587	100	1	<0.01
27/08/2021	AADZ-11	Control	3	1.00	0.90	0.95	07:34	17:20	586	100	1.5	<0.01
27/08/2021	AADZ-12	Control	4	1.00	1.10	1.05	07:35	17:23	588	100	1	<0.01

Monitoring Locations:

0 Blank
1 Southeast boundary of Lot C / Road Reserve work area
2 Northeast boundary of Lot C / Road Reserve work area
3 Northwest boundary of Lot C / Road Reserve work area
4 Southwest boundary of Lot C / Road Reserve work area

Notes:

1) The results contained within this report relate only to the samples submitted for testing.
2) The report and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.

NATA ACCREDITED LABORATORY NUMBER:3130

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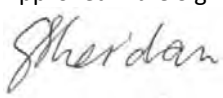
Approved Fibre Counter: Flynn Mackley
Approved Fibre Signatory: Gemma Sheridan



SLR Consulting Australia Laboratory Services - Darwin Office
ABN:29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-4(R1)
Date of Issue: Thursday, 2 September 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
28/08/2021	**Blank**		0				N/A	N/A		100	0	N/A
28/08/2021	AADZ-13	Control	1	2.00	1.96	1.98	7:05	13:42	397	100	0	<0.01
28/08/2021	AADZ-14	Control	2	2.00	2.00	2.00	7:07	13:43	396	100	0	<0.01
28/08/2021	AADZ-15	Control	3	2.00	2.00	2.00	7:10	13:44	394	100	0	<0.01
28/08/2021	AADZ-16	Control	4	2.00	1.70	1.85	7:12	13:45	393	100	0	N/A (see Note 3)

Monitoring Locations:

0 Blank
1 Northeast boundary of Lot C / Road Reserve work area
2 Southeast boundary of Lot C / Road Reserve work area
3 Northwest boundary of Lot C / Road Reserve work area
4 Southwest boundary of Lot C / Road Reserve work area

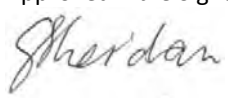
Notes:

1) The results contained within this report relate only to the samples submitted for testing.
2) The report and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.
3) Sample AADZ-16 was rejected due to flow fault

NATA ACCREDITED LABORATORY NUMBER:3130

Accredited for compliance with ISO/IEC 17025-Testing. This report cannot be reproduced except in full.

Approved Fibre Counter: Gemma Sheridan
Approved Fibre Signatory: Gemma Sheridan



APPENDIX D

Certified laboratory reports

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

CLIENT: HK Solutions	LABORATORY: ALS- Newcastle	Turnaround Time (TAT)	COC Number 1 of 1
PROJECT: John Stokes Square- Lot C and Road Reserve Easement Remediation	LABORATORY ADDRESS:	☐ Standard TAT	
PROJECT NUMBER: 680.10679.00200	SAMPLER: Robin Birua	☒ Non Standard or Urgent TAT	
PROJECT MANAGER: Julie McDowell	SAMPLER CONTACT No: 0482 680 165		
PM CONTACT No: 0435 359 720	Email Reports and Invoices to: pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com		

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote to SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	NEPM asbestos in soil only (EA200F)	Asbestos Bulk ID (EA210D)	Hold	Additional information (Comment on any goods contamination or specific requirements)
1	Val-N-01_0.4	30/08/2021	Soil	x1 Bag	x			Same Day TAT
2	Val-N-02_0.3	30/08/2021	Soil	x1 Bag	x			
3	Val-N-03_0.4	30/08/2021	Soil	x1 Bag	x			
4	Val-N-04_0.4	30/08/2021	Soil	x1 Bag	x			
5	Val-N-05_0.4	30/08/2021	Soil	x1 Bag	x			
6	Val-N-06_0.3	30/08/2021	Soil	x1 Bag	x			
7	Val-N-07_0.35	30/08/2021	Soil	x1 Bag	x			
8	Val-N-08_0.3	30/08/2021	Soil	x1 Bag	x			
9	Val-N-09_0.4	30/08/2021	Soil	x1 Bag	x			
10	Val-S-01_0.4	30/08/2021	Soil	x1 Bag	x			
11	Val-S-02_0.4	3/08/2021	Soil	x1 Bag	x			
12	Val-S-03_0.4	30/08/2021	Soil	x1 Bag	x			
13	Val-S-04_0.4	30/08/2021	Soil	x1 Bag	x			
14	Val-S-05_0.25	30/08/2021	Soil	x1 Bag	x			
15	Val-S-06_0.3	30/08/2021	Soil	x1 Bag	x			
16	Val-S-07_0.3	30/08/2021	Soil	x1 Bag	x			
17	Val-S-08_0.4	30/08/2021	Soil	x1 Bag	x			
18	Val-S-09_0.4	30/08/2021	Soil	x1 Bag	x			
19	Val-S-10_0.45	30/08/2021	Soil	x1 Bag	x			
20	Val-B-01_0.4	30/08/2021	Soil	x1 Bag	x			
21	Val-B-02_0.4	30/08/2021	Soil	x1 Bag	x			
22	Val-B-03_0.4	30/08/2021	Soil	x1 Bag	x			
23	Val-B-04_0.4	30/08/2021	Soil	x1 Bag	x			
24	Val-B-05_0.5	30/08/2021	Soil	x1 Bag	x			
25	Val-B-06_0.5	30/08/2021	Soil	x1 Bag	x			
26	Val-B-07_0.5	30/08/2021	Soil	x1 Bag	x			
27	Val-B-08_0.35	30/08/2021	Soil	x1 Bag	x			
28	Val-B-09_0.6	30/08/2021	Soil	x1 Bag	x			
29	Val-B-10_0.5	30/08/2021	Soil	x1 Bag	x			
30	Bulk-01	30/08/2021	Building Material	x1 Bag		x		

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Flynn Mackey	Date / Time 30/08/2021	Received by	Sign Flynn	Date / Time 1/9/21 8:10	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time 1/9/21 5pm	K3
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

Environmental Division
Newcastle
Work Order Reference
EN2107616

Telephone : + 61 2 4014 2500

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2107616**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Contact	: Hannah White
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: jmcdowell@slrconsulting.com	E-mail	: Hannah.White@alsglobal.com
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0012 (EN/032/20 Primary Work Only)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 01-Sep-2021 16:30	Issue Date	: 01-Sep-2021
Client Requested Due Date	: 02-Sep-2021	Scheduled Reporting Date	: **02-Sep-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	: Sample Val-B-10_0.5 missing, Julie confirmed this. Extra sample Val-N-10_0.4 received has been added as an extra sample as per Julie.	No. of samples received / analysed	: 30 / 30
		No. of samples NOT collected	1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
EN2107616-001	30-Aug-2021 00:00	Val-N-01_0.4	✓
EN2107616-002	30-Aug-2021 00:00	Val-N-02_0.3	✓
EN2107616-003	30-Aug-2021 00:00	Val-N-03_0.4	✓
EN2107616-004	30-Aug-2021 00:00	Val-N-04_0.4	✓
EN2107616-005	30-Aug-2021 00:00	Val-N-05_0.4	✓
EN2107616-006	30-Aug-2021 00:00	Val-N-06_0.3	✓
EN2107616-007	30-Aug-2021 00:00	Val-N-07_0.35	✓
EN2107616-008	30-Aug-2021 00:00	Val-N-08_0.3	✓
EN2107616-009	30-Aug-2021 00:00	Val-N-09_0.4	✓
EN2107616-010	30-Aug-2021 00:00	Val-S-01_0.4	✓
EN2107616-011	30-Aug-2021 00:00	Val-S-02_0.4	✓
EN2107616-012	30-Aug-2021 00:00	Val-S-03_0.4	✓
EN2107616-013	30-Aug-2021 00:00	Val-S-04_0.4	✓
EN2107616-014	30-Aug-2021 00:00	Val-S-05_0.25	✓
EN2107616-015	30-Aug-2021 00:00	Val-S-06_0.3	✓
EN2107616-016	30-Aug-2021 00:00	Val-S-07_0.3	✓
EN2107616-017	30-Aug-2021 00:00	Val-S-08_0.4	✓
EN2107616-018	30-Aug-2021 00:00	Val-S-09_0.4	✓
EN2107616-019	30-Aug-2021 00:00	Val-S-10_0.45	✓
EN2107616-020	30-Aug-2021 00:00	Val-B-01_0.4	✓
EN2107616-021	30-Aug-2021 00:00	Val-B-02_0.4	✓
EN2107616-022	30-Aug-2021 00:00	Val-B-03_0.4	✓
EN2107616-023	30-Aug-2021 00:00	Val-B-04_0.4	✓
EN2107616-024	30-Aug-2021 00:00	Val-B-05_0.5	✓
EN2107616-025	30-Aug-2021 00:00	Val-B-06_0.5	✓
EN2107616-026	30-Aug-2021 00:00	Val-B-07_0.5	✓
EN2107616-027	30-Aug-2021 00:00	Val-B-08_0.35	✓
EN2107616-028	30-Aug-2021 00:00	Val-B-09_0.6	✓
EN2107616-031	30-Aug-2021 00:00	Val-N-10_0.4	✓

Matrix: **SOLID**

Laboratory sample ID	Sampling date / time	Sample ID	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding
EN2107616-030	30-Aug-2021 00:00	Bulk-01	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

JULIE McDOWELL

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2107616**	Page	: 1 of 10
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Contact	: Hannah White
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Date Samples Received	: 01-Sep-2021 16:30
Order number	: ----	Date Analysis Commenced	: 01-Sep-2021
C-O-C number	: ----	Issue Date	: 02-Sep-2021 13:11
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: EN/032/20 Primary Work Only		
No. of samples received	: 31		
No. of samples analysed	: 30		

ilac-MRA NATA
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

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*
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- 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: 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 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- 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.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-N-01_0.4	Val-N-02_0.3	Val-N-03_0.4	Val-N-04_0.4	Val-N-05_0.4
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-001	EN2107616-002	EN2107616-003	EN2107616-004	EN2107616-005
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**680**	**587**	**540**	**586**	**581**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**Yes**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.680**	**0.587**	**0.540**	**0.586**	**0.581**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-N-06_0.3	Val-N-07_0.35	Val-N-08_0.3	Val-N-09_0.4	Val-S-01_0.4
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-006	EN2107616-007	EN2107616-008	EN2107616-009	EN2107616-010
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**677**	**621**	**734**	**754**	**592**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**Yes**	**Yes**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.677**	**0.621**	**0.734**	**0.754**	**0.592**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-S-02_0.4	Val-S-03_0.4	Val-S-04_0.4	Val-S-05_0.25	Val-S-06_0.3
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-011	EN2107616-012	EN2107616-013	EN2107616-014	EN2107616-015
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**572**	**604**	**579**	**565**	**646**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.572**	**0.604**	**0.579**	**0.565**	**0.646**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-S-07_0.3	Val-S-08_0.4	Val-S-09_0.4	Val-S-10_0.45	Val-B-01_0.4
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-016	EN2107616-017	EN2107616-018	EN2107616-019	EN2107616-020
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**585**	**704**	**734**	**579**	**418**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**Yes**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.585**	**0.704**	**0.734**	**0.579**	**0.418**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-B-02_0.4	Val-B-03_0.4	Val-B-04_0.4	Val-B-05_0.5	Val-B-06_0.5
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-021	EN2107616-022	EN2107616-023	EN2107616-024	EN2107616-025
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**550**	**609**	**494**	**566**	**524**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.550**	**0.609**	**0.494**	**0.566**	**0.524**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-B-07_0.5	Val-B-08_0.35	Val-B-09_0.6	Val-N-10_0.4	----
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	----
Compound	CAS Number	LOR	Unit	EN2107616-026	EN2107616-027	EN2107616-028	EN2107616-031	--------
				Result	Result	Result	Result	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**----**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**----**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**----**
Sample weight (dry)	----	0.01	g	**453**	**724**	**844**	**648**	**----**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**----**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**----**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**----**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	**----**
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	**----**
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.453**	**0.724**	**0.844**	**0.648**	**----**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	**----**

Analytical Results

Sub-Matrix: **SOLID** (Matrix: **SOLID**)			Sample ID	**Bulk-01**	**----**	**----**	**----**	**----**
			Sampling date / time	30-Aug-2021 00:00	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EN2107616-030**	**--------**	**--------**	**--------**	**--------**
				Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**Yes**	**----**	**----**	**----**	**----**
Asbestos Type	1332-21-4	-	--	**Ch**	**----**	**----**	**----**	**----**
Asbestos (Trace)	1332-21-4	5	Fibres	**N/A**	**----**	**----**	**----**	**----**
Sample weight (dry)	----	0.01	g	**3.39**	**----**	**----**	**----**	**----**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**----**	**----**	**----**	**----**
Organic Fibre	----	0.1	g/kg	**Yes**	**----**	**----**	**----**	**----**
APPROVED IDENTIFIER:	----	-	--	**J.SPOONER**	**----**	**----**	**----**	**----**

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	Val-N-01_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-02_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-03_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-04_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-05_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-N-06_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-07_0.35 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-08_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-09_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-S-01_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-S-02_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-03_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-04_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-05_0.25 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-06_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-07_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-08_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-09_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-10_0.45 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-01_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-B-02_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-03_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-04_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-05_0.5 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-06_0.5 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-07_0.5 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-08_0.35 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-09_0.6 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-10_0.4 - 30-Aug-2021 00:00	A soil sample.

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	Bulk-01 - 30-Aug-2021 00:00	One piece of asbestos fibre board approximately 50x20x5mm.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2107616**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Contact	: Hannah White
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Date Samples Received	: 01-Sep-2021
Order number	: ----	Date Analysis Commenced	: 01-Sep-2021
C-O-C number	: ----	Issue Date	: 02-Sep-2021
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: EN/032/20 Primary Work Only		
No. of samples received	: 31		
No. of samples analysed	: 30		

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*
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, 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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2107616**	Page	: 1 of 5
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Telephone	: +61 2 4014 2500
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Date Samples Received	: 01-Sep-2021
Site	: ----	Issue Date	: 02-Sep-2021
Sampler	: ROBIN BIRUA	No. of samples received	: 31
Order number	: ----	No. of samples analysed	: 30

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
Val-N-01_0.4, Val-N-02_0.3, Val-N-03_0.4, Val-N-04_0.4, Val-N-05_0.4, Val-N-06_0.3, Val-N-07_0.35, Val-N-08_0.3, Val-N-09_0.4, Val-S-01_0.4, Val-S-02_0.4, Val-S-03_0.4, Val-S-04_0.4, Val-S-05_0.25, Val-S-06_0.3, Val-S-07_0.3, Val-S-08_0.4, Val-S-09_0.4, Val-S-10_0.45, Val-B-01_0.4, Val-B-02_0.4, Val-B-03_0.4, Val-B-04_0.4, Val-B-05_0.5, Val-B-06_0.5, Val-B-07_0.5, Val-B-08_0.35, Val-B-09_0.6, Val-N-10_0.4	**30-Aug-2021**	**----**	----	----	**01-Sep-2021**	26-Feb-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
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
Val-N-01_0.4, Val-N-02_0.3, Val-N-03_0.4, Val-N-04_0.4, Val-N-05_0.4, Val-N-06_0.3, Val-N-07_0.35, Val-N-08_0.3, Val-N-09_0.4, Val-S-01_0.4, Val-S-02_0.4, Val-S-03_0.4, Val-S-04_0.4, Val-S-05_0.25, Val-S-06_0.3, Val-S-07_0.3, Val-S-08_0.4, Val-S-09_0.4, Val-S-10_0.45, Val-B-01_0.4, Val-B-02_0.4, Val-B-03_0.4, Val-B-04_0.4, Val-B-05_0.5, Val-B-06_0.5, Val-B-07_0.5, Val-B-08_0.35, Val-B-09_0.6, Val-N-10_0.4	**30-Aug-2021**	**----**	----	----	**01-Sep-2021**	26-Feb-2022	✓

Matrix: **SOLID**

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
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
Bulk-01	**30-Aug-2021**	**----**	----	----	**01-Sep-2021**	26-Feb-2022	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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).
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining

APPENDIX E

Shoal Bay Waste Management Facility Waste Disposal Dockets

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164466-SB
Voucher No:

Time In: 25/08/2021 2:44:55 PM
Time Out: 25/08/2021 3:02:39 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.14t
TARE Weight:	11.94t
NET Weight:	14.20t
Chargeable Weight:	14.20t
Council Fee:	$5,383.09
EPA Levy:	$0.00
GST :	$538.31
Temporary Acc:	$0.00
Total Price:	$5,921.40

Payments:	
ACCOUNT	$5,921.40
Total Amount Tendered:	$5,921.40
Change Given:	$0.00

Driver:

Operator: Michael

$80183178A@

Green space

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164299-SB
Voucher No:

Time In: 25/08/2021 10:16:06 AM
Time Out: 25/08/2021 10:36:40 AM

Vehicle Rego: CD99YR-6

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.22t
TARE Weight:	11.96t
NET Weight:	8.26t
Chargeable Weight:	8.26t
Council Fee:	$3,131.29
EPA Levy:	$0.00
GST :	$313.13
Temporary Acc:	$0.00
Total Price:	$3,444.42

Payments:	
ACCOUNT	$3,444.42
Total Amount Tendered:	$3,444.42
Change Given:	$0.00

Driver:

Operator: Dennis

$80182996j@

Green space

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164365-SB
Voucher No:

Time In: 25/08/2021 12:10:47 PM
Time Out: 25/08/2021 12:35:28 PM

Vehicle Rego: CD99YR-6

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.66t
TARE Weight:	11.94t
NET Weight:	8.72t
Chargeable Weight:	8.72t
Council Fee:	$3,305.67
EPA Levy:	$0.00
GST :	$330.57
Temporary Acc:	$0.00
Total Price:	$3,636.24

Payments:	
ACCOUNT	$3,636.24
Total Amount Tendered:	$3,636.24
Change Given:	$0.00

Driver:

Operator: Michael

80183066@

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164387-SB
Voucher No:

Time In: 25/08/2021 12:48:15 PM
Time Out: 25/08/2021 1:18:45 PM

Vehicle Rego: CD67GB

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.76t
TARE Weight:	14.88t
NET Weight:	8.88t
Chargeable Weight:	8.88t
Council Fee:	$3,366.33
EPA Levy:	$0.00
GST :	$336.63
Temporary Acc:	$0.00
Total Price:	$3,702.96

Payments:	
ACCOUNT	$3,702.96
Total Amount Tendered:	$3,702.96
Change Given:	$0.00

Driver:

Operator: Michael

$80183090p@

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164578-SB
Voucher No:

Time In: 26/08/2021 8:59:18 AM
Time Out: 26/08/2021 9:15:07 AM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinacionLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.48t
TARE Weight:	12.34t
NET Weight:	11.14t
Chargeable Weight:	11.14t
Council Fee:	$4,223.07
EPA Levy:	$0.00
GST :	$422.31
Temporary Acc:	$0.00
Total Price:	$4,645.38

Payments:	
ACCOUNT	$4,645.38
Total Amount Tendered:	$4,645.38
Change Given:	$0.00

Driver:

Operator: Dennis

$80183298Uœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164761-SB
Voucher No:

Time In: 26/08/2021 2:41:07 PM
Time Out: 26/08/2021 2:56:09 PM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.14t
TARE Weight:	12.24t
NET Weight:	8.90t
Chargeable Weight:	8.90t
Council Fee:	$3,373.91
EPA Levy:	$0.00
GST :	$337.39
Temporary Acc:	$0.00
Total Price:	$3,711.30

Payments:	
ACCOUNT	$3,711.30
Total Amount Tendered:	$3,711.30
Change Given:	$0.00

Driver:

Operator: Michael

$80183497Yœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164620-SB
Voucher No:

Time In: 26/08/2021 10:26:29 AM
Time Out: 26/08/2021 10:39:26 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.86t
TARE Weight:	11.86t
NET Weight:	10.00t
Chargeable Weight:	10.00t
Council Fee:	$3,790.91
EPA Levy:	$0.00
GST :	$379.09
Temporary Acc:	$0.00
Total Price:	$4,170.00

Payments:	
ACCOUNT	$4,170.00
Total Amount Tendered:	$4,170.00
Change Given:	$0.00

Driver:

Operator: Dennis

$80183343wœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 1150331[illegible]01

Ticket No: 80164687-SB
Voucher No:

Time In: 26/08/2021 12:10:58 PM
Time Out: 26/08/2021 12:34:16 PM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.44t
TARE Weight:	12.30t
NET Weight:	10.14t
Chargeable Weight:	10.14t
Council Fee:	$3,843.98
EPA Levy:	$0.00
GST :	$384.40
Temporary Acc:	$0.00
Total Price:	$4,228.38

Payments:	
ACCOUNT	$4,228.38
Total Amount Tendered:	$4,228.38
Change Given:	$0.00

Driver:

Operator: Michael

$80183413hœ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164736-SB
Voucher No:

Time In: 26/08/2021 1:54:58 PM
Time Out: 26/08/2021 2:11:42 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.72t
TARE Weight:	12.22t
NET Weight:	11.50t
Chargeable Weight:	11.50t
Council Fee:	$4,359.55
EPA Levy:	$0.00
GST :	$435.95
Temporary Acc:	$0.00
Total Price:	$4,795.50

Payments:	
ACCOUNT	$4,795.50
Total Amount Tendered:	$4,795.50
Change Given:	$0.00

Driver:

Operator: Michael

$80183472#œ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164706-SB
Voucher No:

Time In: 26/08/2021 12:52:55 PM
Time Out: 26/08/2021 1:11:38 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.18t
TARE Weight:	12.30t
NET Weight:	8.88t
Chargeable Weight:	8.88t
Council Fee:	$3,366.33
EPA Levy:	$0.00
GST :	$336.63
Temporary Acc:	$0.00
Total Price:	$3,702.96

Payments:	
ACCOUNT	$3,702.96
Total Amount Tendered:	$3,702.96
Change Given:	$0.00

Driver:

Operator: Michael

$80183438?œ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164659-SB
Voucher No:

Time In: 26/08/2021 11:32:32 AM
Time Out: 26/08/2021 11:48:22 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.82t
TARE Weight:	12.30t
NET Weight:	10.52t
Chargeable Weight:	10.52t
Council Fee:	$3,988.04
EPA Levy:	$0.00
GST :	$398.80
Temporary Acc:	$0.00
Total Price:	$4,386.84

Payments:	
ACCOUNT	$4,386.84
Total Amount Tendered:	$4,386.84
Change Given:	$0.00

Driver:

Operator: Dennis

80183382œ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164574-SB
Voucher No:

Time In: 26/08/2021 8:48:24 AM
Time Out: 26/08/2021 9:13:07 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.62t
TARE Weight:	12.28t
NET Weight:	11.34t
Chargeable Weight:	11.34t
Council Fee:	$4,298.89
EPA Levy:	$0.00
GST :	$429.89
Temporary Acc:	$0.00
Total Price:	$4,728.78

Payments:	
ACCOUNT	$4,728.78
Total Amount Tendered:	$4,728.78
Change Given:	$0.00

Driver:

Operator: Dennis

80183294œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164864-SB
Voucher No:

Time In: 27/08/2021 9:29:24 AM
Time Out: 27/08/2021 9:48:14 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.58t
TARE Weight:	11.96t
NET Weight:	11.62t
Chargeable Weight:	11.62t
Council Fee	$4,405.04
EPA Levy:	$0.00
GST :	$440.50
Temporary Acc:	$0.00
Total Price:	$4,845.54

Payments:	
ACCOUNT	$4,845.54
Total Amount Tendered:	$4,845.54
Change Given:	$0.00

Driver:

Operator: Dennis

$80183606-œ

G-S-H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164932-SB
Voucher No:

Time In: 27/08/2021 11:54:53 AM
Time Out: 27/08/2021 12:13:17 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.50t
TARE Weight:	12.26t
NET Weight:	12.24t
Chargeable Weight:	12.24t
Council Fee:	$4,640.07
EPA Levy:	$0.00
GST :	$464.01
Temporary Acc:	$0.00
Total Price:	$5,104.08

Payments:	
ACCOUNT	$5,104.08
Total Amount Tendered:	$5,104.08
Change Given:	$0.00

Driver:

Operator: Michael

$80183675Gœ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165022-SB
Voucher No:

Time In: 27/08/2021 2:27:52 PM
Time Out: 27/08/2021 2:49:33 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.86t
TARE Weight:	12.34t
NET Weight.	11.52t
Chargeable Weight:	11.52t
Council Fee:	$4,367.13
EPA Levy:	$0.00
GST :	$436.71
Temporary Acc:	$0.00
Total Price:	$4,803.84

Payments:	
ACCOUNT	$4,803.84
Total Amount Tendered:	$4,803.84
Change Given:	$0.00

Driver:

Operator: Michael

$80183767Vœ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No. 80164874-SB
Voucher No:

Time In: 27/08/2021 9:46:07 AM
Time Out: 27/08/2021 10:04:01 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	14.94t
TARE Weight:	12.30t
NET Weight:	2.64t
Chargeable Weight:	2.64t
Council Fee:	$1,000.80
EPA Levy:	$0.00
GST :	$100.08
Temporary Acc:	$0.00
Total Price:	$1,100.88

Payments:	
ACCOUNT	$1,100.88
Total Amount Tendered:	$1,100.88
Change Given:	$0.00

Driver:

Operator: Dennis

$80183616%œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164999-SB
Voucher No:

Time In: 27/08/2021 2:00:15 PM
Time Out: 27/08/2021 2:18:43 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.98t
TARE Weight:	11.90t
NET Weight:	13.08t
Chargeable Weight:	13.08t
Council Fee:	$4,958.51
EPA Levy:	$0.00
GST :	$495.85
Temporary Acc:	$0.00
Total Price:	$5,454.36

Payments:	
ACCOUNT	$5,454.36
Total Amount Tendered:	$5,454.36
Change Given:	$0.00

Driver:

Operator: Michael

$80183744Oa

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164943-SB
Voucher No:

Time In: 27/08/2021 12:10:23 PM
Time Out: 27/08/2021 12:29:44 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.86t
TARE Weight:	11.88t
NET Weight:	12.98t
Chargeable Weight:	12.98t
Council Fee:	$4,920.60
EPA Levy:	$0.00
GST :	$492.06
Temporary Acc:	$0.00
Total Price:	$5,412.66

Payments:	
ACCOUNT	$5,412.66
Total Amount Tendered:	$5,412.66
Change Given:	$0.00

Driver:

Operator: Michael

$80183687Aa

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165289-SB
Voucher No:

Time In: 30/08/2021 9:50:24 AM
Time Out: 30/08/2021 10:06:05 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.70t
TARE Weight:	12.34t
NET Weight:	12.36t
Chargeable Weight:	12.36t
Council Fee:	$4,685.56
EPA Levy:	$0.00
GST :	$468.56
Temporary Acc:	$0.00
Total Price:	$5,154.12

Payments:	
ACCOUNT	$5,154.12
Total Amount Tendered:	$5,154.12
Change Given:	$0.00

Driver:

Operator: Dave Yates

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G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165356-SB
Voucher No:

Time In: 30/08/2021 12:04:08 PM
Time Out: 30/08/2021 12:20:45 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.68t
TARE Weight:	12.26t
NET Weight:	11.42t
Chargeable Weight:	11.42t
Council Fee:	$4,329.22
EPA Levy:	$0.00
GST :	$432.92
Temporary Acc:	$0.00
Total Price:	$4,762.14

Payments:	
ACCOUNT	$4,762.14
Total Amount Tendered:	$4,762.14
Change Given:	$0.00

Driver:

Operator: Sam

š80184131Yœ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165399-SB
Voucher No:

Time In: 30/08/2021 1:09:08 PM
Time Out: 30/08/2021 1:25:49 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.60t
TARE Weight:	12.28t
NET Weight:	12.32t
Chargeable Weight:	12.32t
Council Fee:	$4,670.40
EPA Levy:	$0.00
GST :	$467.04
Temporary Acc:	$0.00
Total Price:	$5,137.44

Payments:	
ACCOUNT	$5,137.44
Total Amount Tendered:	$5,137.44
Change Given:	$0.00

Driver:

Operator: Sam

š80184182-œ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165452-SB
Voucher No:

Time In: 30/08/2021 2:20:40 PM
Time Out: 30/08/2021 2:44:54 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.70t
TARE Weight:	12.24t
NET Weight:	12.46t
Chargeable Weight:	12.46t
Council Fee:	$4,723.47
EPA Levy:	$0.00
GST :	$472.35
Temporary Acc:	$0.00
Total Price:	$5,195.82

Payments:	
ACCOUNT	$5,195.82
Total Amount Tendered:	$5,195.82
Change Given:	$0.00

Driver:

Operator: Sam

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CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165449-SB
Voucher No:

Time In: 30/08/2021 2:18:39 PM
Time Out: 30/08/2021 2:35:23 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.52t
TARE Weight:	11.76t
NET Weight:	10.76t
Chargeable Weight:	10.76t
Council Fee:	$4,079.02
EPA Levy:	$0.00
GST :	$407.90
Temporary Acc:	$0.00
Total Price:	$4,486.92

Payments:	
ACCOUNT	$4,486.92
Total Amount Tendered:	$4,486.92
Change Given:	$0.00

Driver:

Operator: Sam

§80184232gœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165418-SB
Voucher No:

Time In: 30/08/2021 1:38:16 PM
Time Out: 30/08/2021 1:53:43 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.52t
TARE Weight:	11.72t
NET Weight:	12.80t
Chargeable Weight:	12.80t
Council Fee:	$4,852.36
EPA Levy:	$0.00
GST :	$485.24
Temporary Acc:	$0.00
Total Price:	$5,337.60

Payments:	
ACCOUNT	$5,337.60
Total Amount Tendered:	$5,337.60
Change Given:	$0.00

Driver:

Operator: Sam

§80184201Jœ

G·S·H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165263-SB
Voucher No:

Time In: [illegible] 8:50:51 AM
Time Out: [illegible] 9:08:00 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number.
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.60t
TARE Weight:	12.36t
NET Weight:	12.24t
Chargeable Weight:	12.24t
Council Fee:	$4,640.07
EPA Levy:	$0.00
GST :	$464.01
Temporary Acc:	$0.00
Total Price:	$5,104.08

Payments:	
ACCOUNT	$5,104.08
Total Amount Tendered:	$5,104.08
Change Given:.	$0.00

Driver:

Operator: Dave Yates

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G·S·H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165319-SB
Voucher No:

Time In: 30/08/2021 10:50:31 AM
Time Out: 30/08/2021 11:06:53 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.10t
TARE Weight:	12.26t
NET Weight:	11.84t
Chargeable Weight:	11.84t
Council Fee:	$4,488.44
EPA Levy:	$0.00
GST :	$448.84
Temporary Acc:	$0.00
Total Price:	$4,937.28

Payments:	
ACCOUNT	$4,937.28
Total Amount Tendered:	$4,937.28
Change Given:	$0.00

Driver:

Operator: Dave Yates

§80184088Gœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165347-SB
Voucher No:

Time In: 30/08/2021 11:49:56 AM
Time Out: 30/08/2021 12:03:49 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.02t
TARE Weight:	11.84t
NET Weight:	12.18t
Chargeable Weight:	12.18t
Council Fee:	$4,617.33
EPA Levy:	$0.00
GST :	$461.73
Temporary Acc:	$0.00
Total Price:	$5,079.06

Payments:	
ACCOUNT	$5,079.06
Total Amount Tendered:	$5,079.06
Change Given:	$0.00

Driver:

Operator: Dave Yates

§80184121R

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165376-SB
Voucher No:

Time In: 30/08/2021 12:34:40 PM
Time Out: 30/08/2021 12:46:57 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.16t
TARE Weight:	11.78t
NET Weight:	14.38t
Chargeable Weight:	14.38t
Council Fee:	$5,451.33
EPA Levy:	$0.00
GST :	$545.13
Temporary Acc:	$0.00
Total Price:	$5,996.46

Payments:	
ACCOUNT	$5,996.46
Total Amount Tendered:	$5,996.46
Change Given:	$0.00

Driver:

Operator: Sam

§80184157R

ASIA PACIFIC OFFICES

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APPENDIX C

Photographic Logs

Removal of uncontrolled fill material – 25 – 26 August 2021

Photo 01 – 25/8/201 - Photo of the sewer easement from the south western corner of the Project Area – looking east along the southern boundary.

Photo 02 -– 25/8/201 - Removal of the uncontrolled fill material from within the sewer easement into lined skip bins for offsite disposal

Photo 03 – – 25/8/201 - ACM debris encounered in the uncontrolled fill material prior to being removed of offsite.

Photo 04– 25/8/201 – Removal of uncontrolled fill material from sewer easement within Lot C. Photograher is facing west. Note: sediment retention basin excavated to the right of the photograph (not part of this clearance certificate).

Photo 05– 25/8/201 - View of the excavation commenced around the sewer manhole within Lot C

Photo 06 – 26/8/2021 – View of the excavation after uncontrolled fill mateiral had been rmoved from Lot C. Photograher is facing west. Note: sediment retention basin excavated to the right of the photograph.

Visual Clearance of Excavation – 30 August 2021

Photo 07 – Excavation area from the south western corner facing east. View along the southern boundary of Lot C.

Photo 08 – Soil profile of Lot C southern boundary.

Photo 09 – Final excavation looking from boundary of Road Reserve and Lot B2 – looking west. View along southern boundary of the proposed Road Reserve.

Photo 10 – Photo of the final excavation within the Road Reserve. Photographer is facing east.

Phase 2 Remediation works – 13 – 17 September 2021	
 Photo 11: Photograph of spoil material being placed on geofabric ready for inspection	 Photo 12: Asbestos pipe, wrapped in HDPE prior to being placed into skip bins for offsite disposal ...
 Photo 13: Representative of soil lithology being encountered during excavation. Water hose available to minimise dust generation.	 Photo 14: Area of stockpile material to be removed due to the presence of ACM debris being present.

Phase 2 Remediation works – 13 – 17 September 2021

Photo 15: Photograph of the asbestos pipe insitu that was removed.

Photo 16: Photograph of the excavation facing west on 16 September 2016 ...

Photo 17: Photograph of the excavation facing east 16 September 2016

Photo 18: Photograph of the lined skip bins used to place asbestos contaminated spoil and ACM debris.

APPENDIX D

Analytical Tables

Table 01 Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation Addendum - Road Reserve and Lot C

		Field_ID		Val-N-01_0.4	Val-N-02_0.3	Val-N-03_0.4	Val-N-04_0.4	Val-N-05-0.4	Val-N-06_0.3	Val-N-07_0.35	Val-N-08_0.3	Val-N-09_0.4
		Sampled_Date		30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021
		Lab_Report_Number		EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616
Analytes	Units	LOR	IL (1)									
Weight of sample	mg	0.01	-	680	587	540	586	581	677	621	734	754
Asbestos Detected	g/kg	0.1	<0.1 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	<5 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

Table 01 Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation Addendum - Road Reserve and Lot C

		Field_ID		Val-N-10_0.4	Val-S-01_0.4	Val-S-02_0.4	Val-S-03_0.4	Val-S-04_0.4	Val-S-05_0.25	Val-S-06_0.3	Val-S-07-0.3	Val-S-08_0.4
		Sampled_Date		30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021
		Lab_Report_Number		EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616
Analytes	Units	LOR	IL (1)									
Weight of sample	mg	0.01	-	648	592	572	604	579	565	646	585	704
Asbestos Detected	g/kg	0.1	<0.1 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	<5 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

Table 01 Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation Addendum - Road Reserve and Lot C

		Field_ID		Val-S-09_0.4	Val-S-10_0.45	Val-B-01_0.4	Val-B-02_0.4	Val-B-03_0.4	Val-B-04_0.4	Val-B-05_0.5	Val-B-06_0.5	Val-B-07_0.5
		Sampled_Date		30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021	30-Aug-2021
		Lab_Report_Number		EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616	EN2107616
Analytes	Units	LOR	IL (1)									
Weight of sample	mg	0.01	-	734	579	418	550	609	494	566	524	453
Asbestos Detected	g/kg	0.1	<0.1 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos (Trace)	Fibres	5	<5 (ND)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

ND - non-detect

Table 01 Analytical Results
John Stokes Square Redevelopment Project
Remediatoin and Validation Addendum - Road Reserve and Lot C

		Field_ID		Val-B-08_0.35	Val-B-09_0.6
		Sampled_Date		30-Aug-2021	30-Aug-2021
		Lab_Report_Number		EN2107616	EN2107616
Analytes	Units	LOR	IL (1)		
Weight of sample	mg	0.01	-	724	844
Asbestos Detected	g/kg	0.1	<0.1 (ND)	ND	ND
Asbestos (Trace)	Fibres	5	<5 (ND)	ND	ND
Asbestos in Soil (AF+FA<7mm)	%w/w	0.001	<0.001	<0.001	<0.001

ND - non-detect

APPENDIX E

Certified Laboratory Documentation

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

CLIENT: HK Solutions	LABORATORY: ALS- Newcastle	Turnaround Time (TAT)	COC Number 1 of 1
PROJECT: John Stokes Square- Lot C and Road Reserve Easement Remediation	LABORATORY ADDRESS:	☐ Standard TAT	
PROJECT NUMBER: 680.10679.00200	SAMPLER: Robin Birua	☒ Non Standard or Urgent TAT	
PROJECT MANAGER: Julie McDowell	SAMPLER CONTACT No: 0482 680 165		
PM CONTACT No: 0435 359 720	Email Reports and Invoices to: pturyn@slrconsulting.com; rbirua@slrconsulting.com;jmcdowell@slrconsulting.com		

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS quote to SLR

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	NEPM asbestos in soil only (EA200F)	Asbestos Bulk ID (EA210D)	Hold	Additional information (Comment on any goods contamination or specific requirements)
1	Val-N-01_0.4	30/08/2021	Soil	x1 Bag	x			Same Day TAT
2	Val-N-02_0.3	30/08/2021	Soil	x1 Bag	x			
3	Val-N-03_0.4	30/08/2021	Soil	x1 Bag	x			
4	Val-N-04_0.4	30/08/2021	Soil	x1 Bag	x			
5	Val-N-05_0.4	30/08/2021	Soil	x1 Bag	x			
6	Val-N-06_0.3	30/08/2021	Soil	x1 Bag	x			
7	Val-N-07_0.35	30/08/2021	Soil	x1 Bag	x			
8	Val-N-08_0.3	30/08/2021	Soil	x1 Bag	x			
9	Val-N-09_0.4	30/08/2021	Soil	x1 Bag	x			
10	Val-S-01_0.4	30/08/2021	Soil	x1 Bag	x			
11	Val-S-02_0.4	3/08/2021	Soil	x1 Bag	x			
12	Val-S-03_0.4	30/08/2021	Soil	x1 Bag	x			
13	Val-S-04_0.4	30/08/2021	Soil	x1 Bag	x			
14	Val-S-05_0.25	30/08/2021	Soil	x1 Bag	x			
15	Val-S-06_0.3	30/08/2021	Soil	x1 Bag	x			
16	Val-S-07_0.3	30/08/2021	Soil	x1 Bag	x			
17	Val-S-08_0.4	30/08/2021	Soil	x1 Bag	x			
18	Val-S-09_0.4	30/08/2021	Soil	x1 Bag	x			
19	Val-S-10_0.45	30/08/2021	Soil	x1 Bag	x			
20	Val-B-01_0.4	30/08/2021	Soil	x1 Bag	x			
21	Val-B-02_0.4	30/08/2021	Soil	x1 Bag	x			
22	Val-B-03_0.4	30/08/2021	Soil	x1 Bag	x			
23	Val-B-04_0.4	30/08/2021	Soil	x1 Bag	x			
24	Val-B-05_0.5	30/08/2021	Soil	x1 Bag	x			
25	Val-B-06_0.5	30/08/2021	Soil	x1 Bag	x			
26	Val-B-07_0.5	30/08/2021	Soil	x1 Bag	x			
27	Val-B-08_0.35	30/08/2021	Soil	x1 Bag	x			
28	Val-B-09_0.6	30/08/2021	Soil	x1 Bag	x			
29	Val-B-10_0.5	30/08/2021	Soil	x1 Bag	x			
30	Bulk-01	30/08/2021	Building Material	x1 Bag		x		

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Flynn Mackey	Date / Time 30/08/2021	Received by	Sign Flynn	Date / Time 1/9/21 8:10	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time 1/9/21 5pm	K3
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

Environmental Division
Newcastle
Work Order Reference
EN2107616

Telephone : + 61 2 4014 2500

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN2107616**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Contact	: Hannah White
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: jmcdowell@slrconsulting.com	E-mail	: Hannah.White@alsglobal.com
Telephone	: ----	Telephone	: +61 2 4014 2500
Facsimile	: ----	Facsimile	: +61 2 4967 7382
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020HEGAUS0012 (EN/032/20 Primary Work Only)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ROBIN BIRUA		

Dates

Date Samples Received	: 01-Sep-2021 16:30	Issue Date	: 01-Sep-2021
Client Requested Due Date	: 02-Sep-2021	Scheduled Reporting Date	: **02-Sep-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	: Sample Val-B-10_0.5 missing, Julie confirmed this. Extra sample Val-N-10_0.4 received has been added as an extra sample as per Julie.	No. of samples received / analysed	: 30 / 30
		No. of samples NOT collected	1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
EN2107616-001	30-Aug-2021 00:00	Val-N-01_0.4	✓
EN2107616-002	30-Aug-2021 00:00	Val-N-02_0.3	✓
EN2107616-003	30-Aug-2021 00:00	Val-N-03_0.4	✓
EN2107616-004	30-Aug-2021 00:00	Val-N-04_0.4	✓
EN2107616-005	30-Aug-2021 00:00	Val-N-05_0.4	✓
EN2107616-006	30-Aug-2021 00:00	Val-N-06_0.3	✓
EN2107616-007	30-Aug-2021 00:00	Val-N-07_0.35	✓
EN2107616-008	30-Aug-2021 00:00	Val-N-08_0.3	✓
EN2107616-009	30-Aug-2021 00:00	Val-N-09_0.4	✓
EN2107616-010	30-Aug-2021 00:00	Val-S-01_0.4	✓
EN2107616-011	30-Aug-2021 00:00	Val-S-02_0.4	✓
EN2107616-012	30-Aug-2021 00:00	Val-S-03_0.4	✓
EN2107616-013	30-Aug-2021 00:00	Val-S-04_0.4	✓
EN2107616-014	30-Aug-2021 00:00	Val-S-05_0.25	✓
EN2107616-015	30-Aug-2021 00:00	Val-S-06_0.3	✓
EN2107616-016	30-Aug-2021 00:00	Val-S-07_0.3	✓
EN2107616-017	30-Aug-2021 00:00	Val-S-08_0.4	✓
EN2107616-018	30-Aug-2021 00:00	Val-S-09_0.4	✓
EN2107616-019	30-Aug-2021 00:00	Val-S-10_0.45	✓
EN2107616-020	30-Aug-2021 00:00	Val-B-01_0.4	✓
EN2107616-021	30-Aug-2021 00:00	Val-B-02_0.4	✓
EN2107616-022	30-Aug-2021 00:00	Val-B-03_0.4	✓
EN2107616-023	30-Aug-2021 00:00	Val-B-04_0.4	✓
EN2107616-024	30-Aug-2021 00:00	Val-B-05_0.5	✓
EN2107616-025	30-Aug-2021 00:00	Val-B-06_0.5	✓
EN2107616-026	30-Aug-2021 00:00	Val-B-07_0.5	✓
EN2107616-027	30-Aug-2021 00:00	Val-B-08_0.35	✓
EN2107616-028	30-Aug-2021 00:00	Val-B-09_0.6	✓
EN2107616-031	30-Aug-2021 00:00	Val-N-10_0.4	✓

Matrix: **SOLID**

Laboratory sample ID	Sampling date / time	Sample ID	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding
EN2107616-030	30-Aug-2021 00:00	Bulk-01	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

JULIE McDOWELL

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com

PAUL TURYN

- *AU Certificate of Analysis - NATA (COA)	Email	pturyn@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pturyn@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pturyn@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pturyn@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	pturyn@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	pturyn@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	pturyn@slrconsulting.com

ROBIN BIRUA

- *AU Certificate of Analysis - NATA (COA)	Email	rbirua@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rbirua@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rbirua@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rbirua@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	rbirua@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	rbirua@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	rbirua@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2107616**	Page	: 1 of 10
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Contact	: Hannah White
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Date Samples Received	: 01-Sep-2021 16:30
Order number	: ----	Date Analysis Commenced	: 01-Sep-2021
C-O-C number	: ----	Issue Date	: 02-Sep-2021 13:11
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: EN/032/20 Primary Work Only		
No. of samples received	: 31		
No. of samples analysed	: 30		

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

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*
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, 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 Contact 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.

- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- 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: 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 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- 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.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-N-01_0.4	Val-N-02_0.3	Val-N-03_0.4	Val-N-04_0.4	Val-N-05_0.4
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-001	EN2107616-002	EN2107616-003	EN2107616-004	EN2107616-005
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**680**	**587**	**540**	**586**	**581**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**Yes**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.680**	**0.587**	**0.540**	**0.586**	**0.581**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-N-06_0.3	Val-N-07_0.35	Val-N-08_0.3	Val-N-09_0.4	Val-S-01_0.4
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-006	EN2107616-007	EN2107616-008	EN2107616-009	EN2107616-010
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**677**	**621**	**734**	**754**	**592**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**Yes**	**Yes**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.677**	**0.621**	**0.734**	**0.754**	**0.592**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-S-02_0.4	Val-S-03_0.4	Val-S-04_0.4	Val-S-05_0.25	Val-S-06_0.3
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-011	EN2107616-012	EN2107616-013	EN2107616-014	EN2107616-015
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**572**	**604**	**579**	**565**	**646**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.572**	**0.604**	**0.579**	**0.565**	**0.646**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-S-07_0.3	Val-S-08_0.4	Val-S-09_0.4	Val-S-10_0.45	Val-B-01_0.4
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-016	EN2107616-017	EN2107616-018	EN2107616-019	EN2107616-020
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**585**	**704**	**734**	**579**	**418**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**Yes**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.585**	**0.704**	**0.734**	**0.579**	**0.418**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-B-02_0.4	Val-B-03_0.4	Val-B-04_0.4	Val-B-05_0.5	Val-B-06_0.5
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00
Compound	CAS Number	LOR	Unit	EN2107616-021	EN2107616-022	EN2107616-023	EN2107616-024	EN2107616-025
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**550**	**609**	**494**	**566**	**524**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.550**	**0.609**	**0.494**	**0.566**	**0.524**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Val-B-07_0.5	Val-B-08_0.35	Val-B-09_0.6	Val-N-10_0.4	----
			Sampling date / time	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	30-Aug-2021 00:00	----
Compound	CAS Number	LOR	Unit	EN2107616-026	EN2107616-027	EN2107616-028	EN2107616-031	--------
				Result	Result	Result	Result	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**----**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**----**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	**No**	**----**
Sample weight (dry)	----	0.01	g	**453**	**724**	**844**	**648**	**----**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**----**
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	**No**	**----**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**----**
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	**----**
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	**----**
ø **Weight Used for % Calculation**	----	0.0001	kg	**0.453**	**0.724**	**0.844**	**0.648**	**----**
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	**----**

Analytical Results

Sub-Matrix: **SOLID** (Matrix: **SOLID**)			Sample ID	**Bulk-01**	**----**	**----**	**----**	**----**
			Sampling date / time	30-Aug-2021 00:00	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EN2107616-030**	**--------**	**--------**	**--------**	**--------**
				Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**Yes**	**----**	**----**	**----**	**----**
Asbestos Type	1332-21-4	-	--	**Ch**	**----**	**----**	**----**	**----**
Asbestos (Trace)	1332-21-4	5	Fibres	**N/A**	**----**	**----**	**----**	**----**
Sample weight (dry)	----	0.01	g	**3.39**	**----**	**----**	**----**	**----**
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**----**	**----**	**----**	**----**
Organic Fibre	----	0.1	g/kg	**Yes**	**----**	**----**	**----**	**----**
APPROVED IDENTIFIER:	----	-	--	**J.SPOONER**	**----**	**----**	**----**	**----**

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	Val-N-01_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-02_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-03_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-04_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-05_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-N-06_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-07_0.35 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-08_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-09_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-S-01_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-S-02_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-03_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-04_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-05_0.25 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-06_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-07_0.3 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-08_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-09_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-S-10_0.45 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-01_0.4 - 30-Aug-2021 00:00	A soil sample containing a collection of synthetic mineral fibre insulation.
EA200: Description	Val-B-02_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-03_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-04_0.4 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-05_0.5 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-06_0.5 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-07_0.5 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-08_0.35 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-B-09_0.6 - 30-Aug-2021 00:00	A soil sample.
EA200: Description	Val-N-10_0.4 - 30-Aug-2021 00:00	A soil sample.

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	Bulk-01 - 30-Aug-2021 00:00	One piece of asbestos fibre board approximately 50x20x5mm.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2107616**	Page	: 1 of 3
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Contact	: Hannah White
Address	: Unit 5 21 Parap Rd DARWIN 0800	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Date Samples Received	: 01-Sep-2021
Order number	: ----	Date Analysis Commenced	: 01-Sep-2021
C-O-C number	: ----	Issue Date	: 02-Sep-2021
Sampler	: ROBIN BIRUA		
Site	: ----		
Quote number	: EN/032/20 Primary Work Only		
No. of samples received	: 31		
No. of samples analysed	: 30		

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*
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, 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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2107616**	Page	: 1 of 5
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Newcastle
Contact	: JULIE McDOWELL	Telephone	: +61 2 4014 2500
Project	: 680.10679.00200 - John Stokes Square- Lot C and Road Reserve Easement Remediation	Date Samples Received	: 01-Sep-2021
Site	: ----	Issue Date	: 02-Sep-2021
Sampler	: ROBIN BIRUA	No. of samples received	: 31
Order number	: ----	No. of samples analysed	: 30

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
Val-N-01_0.4, Val-N-02_0.3, Val-N-03_0.4, Val-N-04_0.4, Val-N-05_0.4, Val-N-06_0.3, Val-N-07_0.35, Val-N-08_0.3, Val-N-09_0.4, Val-S-01_0.4, Val-S-02_0.4, Val-S-03_0.4, Val-S-04_0.4, Val-S-05_0.25, Val-S-06_0.3, Val-S-07_0.3, Val-S-08_0.4, Val-S-09_0.4, Val-S-10_0.45, Val-B-01_0.4, Val-B-02_0.4, Val-B-03_0.4, Val-B-04_0.4, Val-B-05_0.5, Val-B-06_0.5, Val-B-07_0.5, Val-B-08_0.35, Val-B-09_0.6, Val-N-10_0.4	**30-Aug-2021**	**----**	----	----	**01-Sep-2021**	26-Feb-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
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
Val-N-01_0.4, Val-N-02_0.3, Val-N-03_0.4, Val-N-04_0.4, Val-N-05_0.4, Val-N-06_0.3, Val-N-07_0.35, Val-N-08_0.3, Val-N-09_0.4, Val-S-01_0.4, Val-S-02_0.4, Val-S-03_0.4, Val-S-04_0.4, Val-S-05_0.25, Val-S-06_0.3, Val-S-07_0.3, Val-S-08_0.4, Val-S-09_0.4, Val-S-10_0.45, Val-B-01_0.4, Val-B-02_0.4, Val-B-03_0.4, Val-B-04_0.4, Val-B-05_0.5, Val-B-06_0.5, Val-B-07_0.5, Val-B-08_0.35, Val-B-09_0.6, Val-N-10_0.4	**30-Aug-2021**	**----**	----	----	**01-Sep-2021**	26-Feb-2022	✓

Matrix: **SOLID**

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
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
Bulk-01	**30-Aug-2021**	**----**	----	----	**01-Sep-2021**	26-Feb-2022	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

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
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).
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining

APPENDIX F

Shoal Bay Waste Management Facility Receipts

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164466-SB
Voucher No:

Time In: 25/08/2021 2:44:55 PM
Time Out: 25/08/2021 3:02:39 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.14t
TARE Weight:	11.94t
NET Weight:	14.20t
Chargeable Weight:	14.20t
Council Fee:	$5,383.09
EPA Levy:	$0.00
GST :	$538.31
Temporary Acc:	$0.00
Total Price:	$5,921.40

Payments:	
ACCOUNT	$5,921.40
Total Amount Tendered:	$5,921.40
Change Given:	$0.00

Driver:

Operator: Michael

$80183178A@

Green space

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164299-SB
Voucher No:

Time In: 25/08/2021 10:16:06 AM
Time Out: 25/08/2021 10:36:40 AM

Vehicle Rego: CD99YR-6

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.22t
TARE Weight:	11.96t
NET Weight:	8.26t
Chargeable Weight:	8.26t
Council Fee:	$3,131.29
EPA Levy:	$0.00
GST :	$313.13
Temporary Acc:	$0.00
Total Price:	$3,444.42

Payments:	
ACCOUNT	$3,444.42
Total Amount Tendered:	$3,444.42
Change Given:	$0.00

Driver:

Operator: Dennis

$80182996j@

Green space

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164365-SB
Voucher No:

Time In: 25/08/2021 12:10:47 PM
Time Out: 25/08/2021 12:35:28 PM

Vehicle Rego: CD99YR-6

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	20.66t
TARE Weight:	11.94t
NET Weight:	8.72t
Chargeable Weight:	8.72t
Council Fee:	$3,305.67
EPA Levy:	$0.00
GST :	$330.57
Temporary Acc:	$0.00
Total Price:	$3,636.24

Payments:	
ACCOUNT	$3,636.24
Total Amount Tendered:	$3,636.24
Change Given:	$0.00

Driver:

Operator: Michael

80183066@

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164387-SB
Voucher No:

Time In: 25/08/2021 12:48:15 PM
Time Out: 25/08/2021 1:18:45 PM

Vehicle Rego: CD67GB

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.76t
TARE Weight:	14.88t
NET Weight:	8.88t
Chargeable Weight:	8.88t
Council Fee:	$3,366.33
EPA Levy:	$0.00
GST :	$336.63
Temporary Acc:	$0.00
Total Price:	$3,702.96

Payments:	
ACCOUNT	$3,702.96
Total Amount Tendered:	$3,702.96
Change Given:	$0.00

Driver:

Operator: Michael

$80183090p@

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164578-SB
Voucher No:

Time In: 26/08/2021 8:59:18 AM
Time Out: 26/08/2021 9:15:07 AM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinacionLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.48t
TARE Weight:	12.34t
NET Weight:	11.14t
Chargeable Weight:	11.14t
Council Fee:	$4,223.07
EPA Levy:	$0.00
GST :	$422.31
Temporary Acc:	$0.00
Total Price:	$4,645.38

Payments:	
ACCOUNT	$4,645.38
Total Amount Tendered:	$4,645.38
Change Given:	$0.00

Driver:

Operator: Dennis

$80183298Uœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164761-SB
Voucher No:

Time In: 26/08/2021 2:41:07 PM
Time Out: 26/08/2021 2:56:09 PM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.14t
TARE Weight:	12.24t
NET Weight:	8.90t
Chargeable Weight:	8.90t
Council Fee:	$3,373.91
EPA Levy:	$0.00
GST :	$337.39
Temporary Acc:	$0.00
Total Price:	$3,711.30

Payments:	
ACCOUNT	$3,711.30
Total Amount Tendered:	$3,711.30
Change Given:	$0.00

Driver:

Operator: Michael

$80183497Yœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164620-SB
Voucher No:

Time In: 26/08/2021 10:26:29 AM
Time Out: 26/08/2021 10:39:26 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.86t
TARE Weight:	11.86t
NET Weight:	10.00t
Chargeable Weight:	10.00t
Council Fee:	$3,790.91
EPA Levy:	$0.00
GST :	$379.09
Temporary Acc:	$0.00
Total Price:	$4,170.00

Payments:	
ACCOUNT	$4,170.00
Total Amount Tendered:	$4,170.00
Change Given:	$0.00

Driver:

Operator: Dennis

$80183343wœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 1150331[illegible]01

Ticket No: 80164687-SB
Voucher No:

Time In: 26/08/2021 12:10:58 PM
Time Out: 26/08/2021 12:34:16 PM

Vehicle Rego: CD36BZ-10

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract: NORTHERN TRADE SOLUTIONS

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.44t
TARE Weight:	12.30t
NET Weight:	10.14t
Chargeable Weight:	10.14t
Council Fee:	$3,843.98
EPA Levy:	$0.00
GST :	$384.40
Temporary Acc:	$0.00
Total Price:	$4,228.38

Payments:	
ACCOUNT	$4,228.38
Total Amount Tendered:	$4,228.38
Change Given:	$0.00

Driver:

Operator: Michael

$80183413hœ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164736-SB
Voucher No:

Time In: 26/08/2021 1:54:58 PM
Time Out: 26/08/2021 2:11:42 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.72t
TARE Weight:	12.22t
NET Weight:	11.50t
Chargeable Weight:	11.50t
Council Fee:	$4,359.55
EPA Levy:	$0.00
GST :	$435.95
Temporary Acc:	$0.00
Total Price:	$4,795.50

Payments:	
ACCOUNT	$4,795.50
Total Amount Tendered:	$4,795.50
Change Given:	$0.00

Driver:

Operator: Michael

$80183472#œ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164706-SB
Voucher No:

Time In: 26/08/2021 12:52:55 PM
Time Out: 26/08/2021 1:11:38 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	21.18t
TARE Weight:	12.30t
NET Weight:	8.88t
Chargeable Weight:	8.88t
Council Fee:	$3,366.33
EPA Levy:	$0.00
GST :	$336.63
Temporary Acc:	$0.00
Total Price:	$3,702.96

Payments:	
ACCOUNT	$3,702.96
Total Amount Tendered:	$3,702.96
Change Given:	$0.00

Driver:

Operator: Michael

$80183438?œ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164659-SB
Voucher No:

Time In: 26/08/2021 11:32:32 AM
Time Out: 26/08/2021 11:48:22 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.82t
TARE Weight:	12.30t
NET Weight:	10.52t
Chargeable Weight:	10.52t
Council Fee:	$3,988.04
EPA Levy:	$0.00
GST :	$398.80
Temporary Acc:	$0.00
Total Price:	$4,386.84

Payments:	
ACCOUNT	$4,386.84
Total Amount Tendered:	$4,386.84
Change Given:	$0.00

Driver:

Operator: Dennis

80183382œ

G.S.H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164574-SB
Voucher No:

Time In: 26/08/2021 8:48:24 AM
Time Out: 26/08/2021 9:13:07 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.62t
TARE Weight:	12.28t
NET Weight:	11.34t
Chargeable Weight:	11.34t
Council Fee:	$4,298.89
EPA Levy:	$0.00
GST :	$429.89
Temporary Acc:	$0.00
Total Price:	$4,728.78

Payments:	
ACCOUNT	$4,728.78
Total Amount Tendered:	$4,728.78
Change Given:	$0.00

Driver:

Operator: Dennis

80183294œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164864-SB
Voucher No:

Time In: 27/08/2021 9:29:24 AM
Time Out: 27/08/2021 9:48:14 AM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.58t
TARE Weight:	11.96t
NET Weight:	11.62t
Chargeable Weight:	11.62t
Council Fee	$4,405.04
EPA Levy:	$0.00
GST :	$440.50
Temporary Acc:	$0.00
Total Price:	$4,845.54

Payments:	
ACCOUNT	$4,845.54
Total Amount Tendered:	$4,845.54
Change Given:	$0.00

Driver:

Operator: Dennis

$80183606-œ

G-S-H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164932-SB
Voucher No:

Time In: 27/08/2021 11:54:53 AM
Time Out: 27/08/2021 12:13:17 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.50t
TARE Weight:	12.26t
NET Weight:	12.24t
Chargeable Weight:	12.24t
Council Fee:	$4,640.07
EPA Levy:	$0.00
GST :	$464.01
Temporary Acc:	$0.00
Total Price:	$5,104.08

Payments:	
ACCOUNT	$5,104.08
Total Amount Tendered:	$5,104.08
Change Given:	$0.00

Driver:

Operator: Michael

$80183675Gœ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165022-SB
Voucher No:

Time In: 27/08/2021 2:27:52 PM
Time Out: 27/08/2021 2:49:33 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.86t
TARE Weight:	12.34t
NET Weight.	11.52t
Chargeable Weight:	11.52t
Council Fee:	$4,367.13
EPA Levy:	$0.00
GST :	$436.71
Temporary Acc:	$0.00
Total Price:	$4,803.84

Payments:	
ACCOUNT	$4,803.84
Total Amount Tendered:	$4,803.84
Change Given:	$0.00

Driver:

Operator: Michael

$80183767Vœ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No. 80164874-SB
Voucher No:

Time In: 27/08/2021 9:46:07 AM
Time Out: 27/08/2021 10:04:01 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	14.94t
TARE Weight:	12.30t
NET Weight:	2.64t
Chargeable Weight:	2.64t
Council Fee:	$1,000.80
EPA Levy:	$0.00
GST :	$100.08
Temporary Acc:	$0.00
Total Price:	$1,100.88

Payments:	
ACCOUNT	$1,100.88
Total Amount Tendered:	$1,100.88
Change Given:	$0.00

Driver:

Operator: Dennis

$80183616%œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164999-SB
Voucher No:

Time In: 27/08/2021 2:00:15 PM
Time Out: 27/08/2021 2:18:43 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.98t
TARE Weight:	11.90t
NET Weight:	13.08t
Chargeable Weight:	13.08t
Council Fee:	$4,958.51
EPA Levy:	$0.00
GST :	$495.85
Temporary Acc:	$0.00
Total Price:	$5,454.36

Payments:	
ACCOUNT	$5,454.36
Total Amount Tendered:	$5,454.36
Change Given:	$0.00

Driver:

Operator: Michael

$80183744Oa

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80164943-SB
Voucher No:

Time In: 27/08/2021 12:10:23 PM
Time Out: 27/08/2021 12:29:44 PM

Vehicle Rego: CD36BZ-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.86t
TARE Weight:	11.88t
NET Weight:	12.98t
Chargeable Weight:	12.98t
Council Fee:	$4,920.60
EPA Levy:	$0.00
GST :	$492.06
Temporary Acc:	$0.00
Total Price:	$5,412.66

Payments:	
ACCOUNT	$5,412.66
Total Amount Tendered:	$5,412.66
Change Given:	$0.00

Driver:

Operator: Michael

$80183687Aa

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165289-SB
Voucher No:

Time In: 30/08/2021 9:50:24 AM
Time Out: 30/08/2021 10:06:05 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.70t
TARE Weight:	12.34t
NET Weight:	12.36t
Chargeable Weight:	12.36t
Council Fee:	$4,685.56
EPA Levy:	$0.00
GST :	$468.56
Temporary Acc:	$0.00
Total Price:	$5,154.12

Payments:	
ACCOUNT	$5,154.12
Total Amount Tendered:	$5,154.12
Change Given:	$0.00

Driver:

Operator: Dave Yates

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G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165356-SB
Voucher No:

Time In: 30/08/2021 12:04:08 PM
Time Out: 30/08/2021 12:20:45 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	23.68t
TARE Weight:	12.26t
NET Weight:	11.42t
Chargeable Weight:	11.42t
Council Fee:	$4,329.22
EPA Levy:	$0.00
GST :	$432.92
Temporary Acc:	$0.00
Total Price:	$4,762.14

Payments:	
ACCOUNT	$4,762.14
Total Amount Tendered:	$4,762.14
Change Given:	$0.00

Driver:

Operator: Sam

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G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165399-SB
Voucher No:

Time In: 30/08/2021 1:09:08 PM
Time Out: 30/08/2021 1:25:49 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.60t
TARE Weight:	12.28t
NET Weight:	12.32t
Chargeable Weight:	12.32t
Council Fee:	$4,670.40
EPA Levy:	$0.00
GST :	$467.04
Temporary Acc:	$0.00
Total Price:	$5,137.44

Payments:	
ACCOUNT	$5,137.44
Total Amount Tendered:	$5,137.44
Change Given:	$0.00

Driver:

Operator: Sam

š80184182-œ

G S H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165452-SB
Voucher No:

Time In: 30/08/2021 2:20:40 PM
Time Out: 30/08/2021 2:44:54 PM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.70t
TARE Weight:	12.24t
NET Weight:	12.46t
Chargeable Weight:	12.46t
Council Fee:	$4,723.47
EPA Levy:	$0.00
GST :	$472.35
Temporary Acc:	$0.00
Total Price:	$5,195.82

Payments:	
ACCOUNT	$5,195.82
Total Amount Tendered:	$5,195.82
Change Given:	$0.00

Driver:

Operator: Sam

š80184235'œ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165449-SB
Voucher No:

Time In: 30/08/2021 2:18:39 PM
Time Out: 30/08/2021 2:35:23 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	22.52t
TARE Weight:	11.76t
NET Weight:	10.76t
Chargeable Weight:	10.76t
Council Fee:	$4,079.02
EPA Levy:	$0.00
GST :	$407.90
Temporary Acc:	$0.00
Total Price:	$4,486.92

Payments:	
ACCOUNT	$4,486.92
Total Amount Tendered:	$4,486.92
Change Given:	$0.00

Driver:

Operator: Sam

§80184232gœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165418-SB
Voucher No:

Time In: 30/08/2021 1:38:16 PM
Time Out: 30/08/2021 1:53:43 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.52t
TARE Weight:	11.72t
NET Weight:	12.80t
Chargeable Weight:	12.80t
Council Fee:	$4,852.36
EPA Levy:	$0.00
GST :	$485.24
Temporary Acc:	$0.00
Total Price:	$5,337.60

Payments:	
ACCOUNT	$5,337.60
Total Amount Tendered:	$5,337.60
Change Given:	$0.00

Driver:

Operator: Sam

§80184201Jœ

G·S·H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165263-SB
Voucher No:

Time In: [illegible] 8:50:51 AM
Time Out: [illegible] 9:08:00 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number.
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.60t
TARE Weight:	12.36t
NET Weight:	12.24t
Chargeable Weight:	12.24t
Council Fee:	$4,640.07
EPA Levy:	$0.00
GST :	$464.01
Temporary Acc:	$0.00
Total Price:	$5,104.08

Payments:	
ACCOUNT	$5,104.08
Total Amount Tendered:	$5,104.08
Change Given:.	$0.00

Driver:

Operator: Dave Yates

§80184025]œ

G·S·H

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165319-SB
Voucher No:

Time In: 30/08/2021 10:50:31 AM
Time Out: 30/08/2021 11:06:53 AM

Vehicle Rego: CD99YR-12

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.10t
TARE Weight:	12.26t
NET Weight:	11.84t
Chargeable Weight:	11.84t
Council Fee:	$4,488.44
EPA Levy:	$0.00
GST :	$448.84
Temporary Acc:	$0.00
Total Price:	$4,937.28

Payments:	
ACCOUNT	$4,937.28
Total Amount Tendered:	$4,937.28
Change Given:	$0.00

Driver:

Operator: Dave Yates

§80184088Gœ

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165347-SB
Voucher No:

Time In: 30/08/2021 11:49:56 AM
Time Out: 30/08/2021 12:03:49 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	24.02t
TARE Weight:	11.84t
NET Weight:	12.18t
Chargeable Weight:	12.18t
Council Fee:	$4,617.33
EPA Levy:	$0.00
GST :	$461.73
Temporary Acc:	$0.00
Total Price:	$5,079.06

Payments:	
ACCOUNT	$5,079.06
Total Amount Tendered:	$5,079.06
Change Given:	$0.00

Driver:

Operator: Dave Yates

§80184121R

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80165376-SB
Voucher No:

Time In: 30/08/2021 12:34:40 PM
Time Out: 30/08/2021 12:46:57 PM

Vehicle Rego: CD36BZ

Client: NORTHERN TRADE SOLUTIONS PT
Approval no. 12-A2151
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	26.16t
TARE Weight:	11.78t
NET Weight:	14.38t
Chargeable Weight:	14.38t
Council Fee:	$5,451.33
EPA Levy:	$0.00
GST :	$545.13
Temporary Acc:	$0.00
Total Price:	$5,996.46

Payments:	
ACCOUNT	$5,996.46
Total Amount Tendered:	$5,996.46
Change Given:	$0.00

Driver:

Operator: Sam

§80184157R

John Stokes.
Square.

CITY OF DARWIN

Delivery Docket

Shoal Bay

Phone: 8930 0408

ABN: 11503313301

Ticket No: 80170426-SB
Voucher No:

Time In: 17/09/2021 1:06:16 PM
Time Out: 17/09/2021 1:26:41 PM

Vehicle Rego: CE03XO

Client: MOUSELLIS & SONS PTY LTD
Approval no. 8-A2147
Order Number:
Contract:

DestinationLF: Cell Stage 2 (Inert)

Weighed Waste		Price
ASBESTOS		$379.09
Each Items	Qty	Price

GROSS Weight:	10.50t
TARE Weight:	7.86t
NET Weight:	2.64t
Chargeable Weight:	2.64t
Council Fee:	$1,000.80
EPA Levy:	$0.00
GST :	$100.08
Temporary Acc:	$0.00
Total Price:	$1,100.88

Payments:

ACCOUNT	$1,100.88
Total Amount Tendered:	$1,100.88
Change Given:	$0.00

Driver:

Operator: Dennis

580189617Kg

APPENDIX G

Imported Fill Soil Characterisation Report

Memorandum

To:	John Mousellis	At:	Mousellis & Sons Pty Ltd
From:	Julie McDowell	At:	SLR Consulting Australia Pty Ltd
Date:	12 October 2021	Ref:	680.30093.00000-M01-v1.0-20211012.docx
Subject:	Fill Characterisation Extractive Mining Pits - MA24585 and MA24642		

CONFIDENTIALITY

This document is confidential and may contain legally privileged information. If you are not a named or authorised recipient you must not read, copy, distribute or act in reliance on it. If you have received this document in error, please telephone our operator immediately and return the document by mail.

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) were commissioned to assess the contamination status of soil/gravel proposed to be used as backfill material for the sewer headworks upgrade project at the John Stokes Square Redevelopment site located at 47 Progress Drive, Nightcliff, Northern Territory (NT).

1.1 Background

Information provided by Mousellis & Sons Pty Ltd (Mousellis) indicated that the material proposed to be used as backfill is from two different sources:

1. Virgin excavated natural material (VENM) from the extractive mining pits operating under licences MA24585 and MA24642.

2. Screened stockpiled soil that had been excavated from other construction worksites within Darwin. Based on the information provided by Mousellis, the soil was not sourced from sites operated by the Department of Defence, Airports and/or other sites where current and historical use of firefighting foam had occurred (i.e. sites typically associated with having a high potential of containing PFAS chemicals).

1.2 Objective

The objective of this assessment is to characterise the contamination status of the soil that is being proposed to backfill excavations at the John Stokes Square Redevelopment site as part of the sewer headworks upgrade project.

1.3 Scope of Works

The following scope of works were undertaken to meet the aforementioned objective.

- SLR mobilised a suitably experienced environmental consultant to collect representative soil samples from the material proposed to be used at the John Stokes Square Redevelopment site. At the time of sampling, the stockpiled material was located at the Mousellis Depot, 16 Willes Road, Berrimah, NT.

- A total of 13 soil samples were collected from the stockpiled material to adequately characterise the soil proposed to be used at the John Stokes Square Redevelopment site. Sampling rate adopted is in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999, revised 2013 (ASC NEPM 2013) - Schedule B2 Guideline on Site Characterisation, and equates to at least one sample per 25 m^3 of soil material with a minimum of three samples collected from each stockpile.
- Samples were submitted and analysed for contaminants of potential concern (COPCs) at a National Association of Testing Authorities (NATA) accredited laboratory. COPCs were deemed to be:
  - Total Recoverable Hydrocarbons (TRH).
  - Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN).
  - Polycyclic aromatic hydrocarbons (PAHs).
  - Total polychlorinated biphenyls (PCBs).
  - Organochlorine and organophosphorus pesticides (OCPs/OPPs).
  - Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury).
  - Phenoxyacid herbicides.
- SLR reviewed the asbestos analytical results provided by the Client (Greencap Pty Ltd, report reference: NT85146).
- Assess the analytical results against the screening criteria specified in the ASC NEPM 2013 guidelines and New South Wales (NSW) Environment Protection Authority (EPA) Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014, The excavated natural material order 2014 (NSW EPA 2014).
- Preparation of this report.

1.4 Limitations

The following information will assist in understanding the uncertainties relating to the interpretation of the data obtained during this investigation and the recommendations presented in the report and help with assessment and interpretation of the report.

SLR assumes no responsibility for the quality or accuracy of data obtained from external sources, or for occurrences outside the scope of works defined in this report.

All work conducted, and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR, is suitable for a specific objective.

Services were conducted in a conscientious and professional manner. The nature of the task, however, and the likely disproportion between any damage or loss which might arise from the work and any report prepared as a result and the cost of our services is such that SLR cannot guarantee that all issues of concern/contamination have been identified.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

2 Methodology

Works undertaken were completed in general accordance with the following guidelines and standards.

- National Environment Protection Council (1999, 2013 revision), National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM 2013).
- Standards Australia AS 4482.1-2005, Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and semi-volatile compounds (AS4482.1-2005).
- NSW EPA Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014, The excavated natural material order 2014 (NSW EPA 2014).
- NT EPA Contaminated Land Guidelines 2017.

In addition, SLR's Standard Operating Procedures (SOPs) were followed to ensure integrity was maintained and sampling procedures were completed in general accordance with the relevant guidelines and standards.

2.1 Soil Sampling Methodology

Soil samples were collected in accordance with the methodology outlined below in Table 1.

Table 1 Summary of soil sampling methodology

Activity	Detail / Comment
Soil sampling	Sample collection was undertaken in general accordance with AS4482.1-2005. Samples were collected in a three-dimensional systematic grid sampling pattern across the stockpile to account for spatial variability. Representative samples were collected from stockpiled material to provide an indication of contamination status. Samples were collected from a least 0.3m below the surface of the stockpile. Samples were collected directly from the stockpiled material by hand (clean nitrile gloves were used for each sample collected) and placed in laboratory supplied sample containers. Environmental samples were collected and handled by an experienced SLR environmental consultant.
Sample preservation	Samples were placed in laboratory supplied jars and bags and were stored as close to 4°C as practicable, in insulated chilled containers while onsite and in transit to the laboratory.
Sample submission	Chain of Custody (COC) documentation were completed at the time of sample collection and accompanied the samples to the laboratory.

Activity	Detail / Comment
Sample analysis	All samples were submitted to a NATA accredited laboratory, ALS Pty Ltd (ALS), and were analysed for the following COPCs. • TRH • BTEXN • OCPs/OPPs • PCBs • PAHs • Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury) • Phenoxy acetic acid herbicides. Samples collected for asbestos analysis were submitted to the Greencap Pty Ltd (Greencap) laboratory, which is NATA accredited for this analysis.

2.2 Nominated Investigation Levels

The nominated investigation levels (ILs) adopted for this assessment included the following.

- ASC NEPM 2013 human health based ILs and human health screening levels specified for residential land use scenarios (HBIL/HSL-A).
- ASC NEPM 2013 ecological ILs and screening levels specified for urban residential and open space land use scenarios (EIL/ESL - URPOS).
- NSW EPA 2014 maximum average and absolute maximum concentrations specified for excavated natural material.

3 Summary of Results

A total of three (3) stockpiles were sampled as part of these works - Stockpile A (approximately 14 m^3), Stockpile B (approximately 25 m^3) and Stockpile C (approximately 56 m^3). Details of these stockpiles are provided below.

- Stockpiles A and B comprise of VENM sourced from extractive mining pits operating under licences MA24585 and MA24642. Stockpiles A and B can be described as red-orange, silty/clayey sandy gravel, where the sandy component was well sorted, and gravel was angular.
- Stockpile C was a mixture of gravel and soil sourced from different worksites operated by Mousellis. Stockpile C is similar to Stockpiles A and B with the addition of "blue metal" gravel. One piece of nylon rope and one piece of reinforced steel ("reo") was noted in this stockpile.

A visual inspection of all three stockpiles did not find any evidence of visible asbestos containing material (ACM), odours and/or stains.

The number of soil samples collected by SLR from each stockpile is listed below.

- Stockpile A – three (3) samples.
- Stockpile B – three (3) samples.
- Stockpile C – seven (7) samples.

A third party collected 16 soil samples for the purpose of investigating asbestos impact.

Laboratory certificates are included in Attachment A. Table 2 below provides a summary of the analytical soil results with respect to the detected analytes and the corresponding nominated ILs.

Table 2 Summary of laboratory results

Analyte	Unit	IL (NSW EPA 2014 VENM)		IL (ASC NEPM 2013)		Range		Samples exceeding IL
		Max. Ave	Abs. Max.	HBIL/HSL – A	EIL/ESL – URPOS	Stockpiles A & B	Stockpile C	
Arsenic	mg/kg	20	40	100	100	<5 – 7	7 – 8	None
Cadmium	mg/kg	0.5	1	20	NA	<1	<1	None
Total chromium (III+VI)	mg/kg	75	150	100 (VI only)	190 (III)	18 - 55	37 – 67	None
Copper	mg/kg	100	200	6000	60	<5 - 17	7 - 12	None
Lead	mg/kg	50	100	300	1100	8 - 12	12 – 19	None
Mercury	mg/kg	0.5	1	40	NA	<0.1	<0.1	None
Nickel	mg/kg	30	60	400	30	<2 – 4	2 – 6	None
Zinc	mg/kg	150	300	4700	70	<5 – 6	12 – 29	None
PCBs	mg/kg	NA	NA	1	NA	<0.1	<0.1	None
OCPs	mg/kg	NA	NA	Various	Various	Non-detect	Non-detect for all except dieldrin	None
OCP (Aldrin and Dieldrin)	mg/kg	NA	NA	6	NA	<0.05	0.05	None
OPPs	mg/kg	NA	NA	Various	Various	Non-detect	Non-detect	None
Benzo(a)pyrene	mg/kg	0.5	1	3	0.7	<0.5	<0.5	None
Naphthalene	mg/kg	NA	NA	3	170	<0.5	<0.5	None
Total PAHs	mg/kg	20	40	300	NA	Non-detect	Non-detect	None
TPH C6-C9	mg/kg	NA	NA	NA	NA	<10	<10	None
TRH F1 – TRH C6-C10	mg/kg	NA	NA	NA	180	<10	<10	None
TRH F1 - TRH C6-C10 minus BTEX	mg/kg	NA	NA	45	NA	<10	<10	None
TPH C10-C14	mg/kg	NA	NA	NA	NA	<50	<50	None
TRH F2 – TRH C10 – C16	mg/kg	NA	NA	NA	120	<50	<50	None
TRH F2 – TRH C10-C16 minus naphthalene	mg/kg	NA	NA	110	NA	<50	<50	None
TPH C15-C28	mg/kg	NA	NA	NA	NA	<100	<100	None
TRH F3 – C16-C34	mg/kg	NA	NA	NA	300	<100	<100	None
TPH C29-C36	mg/kg	NA	NA	NA	NA	<100	<100	None
TRH F4 – C34-C40	mg/kg	NA	NA	NA	2800	<50	<50	None
TPH C10-C36 (Total)	mg/kg	250	500	NA	NA	<50	<50	None
Benzene	mg/kg	NA	0.5	0.5	50	<0.2	<0.2	None
Ethylbenzene	mg/kg	NA	65	55	70	<0.5	<0.5	None
Toluene	mg/kg	NA	25	160	85	<0.5	<0.5	None
Xylene Total	mg/kg	NA	15	40	105	<0.5	<0.5	None
Phenoxy Acetic Acid Herbicides	mg/kg	NA	NA	Various	NA	Non-detect	Non-detect	None

In addition to the analytical results summarised in Table 2 and included in Attachment A, a review of the Greencap analytical report found that asbestos was not detected in any of the 16 soil samples collected and submitted for analysis. The Greencap analytical report is also included in Attachment A.

4 Conclusion

Based on the analytical results obtained, SLR is of the opinion that the contamination status of the stockpiles sampled would not prevent them being used as backfill material for the sewer headworks upgrade project at the John Stokes Square Redevelopment site located at 47 Progress Drive, Nightcliff, NT.

SLR is also of the opinion that the material sourced from extractive mining pits operating under licences MA24585 and MA24642, meets the soil quality requirements required to be classified as VENM.

5 Further Communication

Should you have any queries relating the any of the above information, please do not hesitate to contact myself on 0435 359 720.

Yours sincerely

Julie McDowell

Principal Consultant

Checked/
Authorised by: PT

Attachment A: Laboratory Documentation

ATTACHMENT A – LABORATORY DOCUMENTATION

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ GOLD COAST: 196 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ CANBERRA: CPO 410, Canberra, ACT 2600
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth 4310 NZ

CLIENT: Halikos	LABORATORY: ALS	Turnaround Time (TAT)	COC Number 1 of 2
PROJECT: John Stokes Square Sewage Easment (LOT 9017)	LABORATORY ADDRESS:	Standard TAT	
PROJECT NUMBER: 680.30093	SAMPLER: James Murdoch	Non Standard or Urgent TAT	
PROJECT MANAGER: Jullie McDowell	SAMPLER CONTACT No: 0405966440	Required TAT: 24 hour	
PM CONTACT No: 0435359720	Email Reports and Invoices to: jmurdoch@slrconsulting.com; jmcdowell@slrconsulting.com		

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS EN-032-20-PWO

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	(5-16)	Phenoxy Herbicides (EP202)							Hold	Additional Information (Comment on any gross contamination or specific requirements)
1	STP-A.1	24/09/2021	Soil	1x Medium Soil Jar	x	x								In esky in ALS fridge
2	STP-A.2	24/09/2021	Soil	1x Medium Soil Jar	x	x								Droped off 24-09-2021
3	STP-A.3	24/09/2021	Soil	1x Medium Soil Jar	x	x								
4	STP-B.1	24/09/2021	Soil	1x Medium Soil Jar	x	x								
5	STP-B.2	24/09/2021	Soil	1x Medium Soil Jar	x	x								
6	STP-B.3	24/09/2021	Soil	1x Medium Soil Jar	x	x								
7	STP-C.1	24/09/2021	Soil	1x Medium Soil Jar	x	x								
8	STP-C.2	24/09/2021	Soil	1x Medium Soil Jar	x	x								
9	STP-C.3	24/09/2021	Soil	1x Medium Soil Jar	x	x								
10	STP-C.4	24/09/2021	Soil	1x Medium Soil Jar	x	x								
11	STP-C.5	24/09/2021	Soil	1x Medium Soil Jar	x	x								

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time 24/09/2021	Received by	Sign Kim	Date / Time 28.09.21 6:30am	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

Environmental Division Sydney

Work Order Reference

ES2134625

Telephone : - 61-2-8784 8555

TAT

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 1, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ NELSON: 6 Dalliance Street, Port Nelson, 7010 NZ
- ☐ DARWIN: Unit 5, 21 Parap Road, Parap NT 0820
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ NEW PLYMOUTH: Level 1, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: Halikos	LABORATORY: ALS	Turnaround Time (TAT)	COC Number 2 of 2
PROJECT: John Stokes Square Sewage Easment (LOT 9017)	LABORATORY ADDRESS:	Standard TAT	
PROJECT NUMBER: 680.30093	SAMPLER: James Murdoch	Non Standard or Urgent TAT	
PROJECT MANAGER: Jullie McDowell	SAMPLER CONTACT No: 0405966440	Required TAT: 24 hour	
PM CONTACT No: 0435359720	Email Reports and Invoices to: jmurdoch@slrconsulting.com; jmcdowell@slrconsulting.com		

COMMENTS OR ADDITIONAL DIRECTIONS:

ALS EN-032-20-PWO

REQUESTED ANALYSIS

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	(S-16)	Phenoxy Herbicides (EP202)							Hold	Additional Information (Comment on any gross contamination or specific requirements)
12	STP-C.6	24/09/2021	Soil	1x Medium Soil Jar	x	x								In esky in ALS fridge
13	STP-C.7	24/09/2021	Soil	1x Medium Soil Jar	x	x								Droped off 24-09-2021

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time 24/09/2021	**Received by**	Sign Kim	Date / Time 28.09.21 6.30am	**Temperature Received:**	
Relinquished By	Sign	Date / Time	**Received by**	Sign	Date / Time		
Relinquished By	Sign	Date / Time	**Received by**	Sign	Date / Time		

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2134625**

Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: JULIE McDOWELL	Contact	: Tyler Anderson
Address	: Unit 5 21 Parap Rd PARAP 0820	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: jmcdowell@slrconsulting.com	E-mail	: Tyler.Anderson@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 680.30093 John Stokes Square Sewage Eastment (LOT 9017)	Page	: 1 of 2
Order number	: ----	Quote number	: ES2020HEGAUS0012 (EN/032/20 Primary Work Only)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: JAMES MURDOCH		

Dates

Date Samples Received	: 28-Sep-2021 06:30	Issue Date	: 28-Sep-2021
Client Requested Due Date	: 29-Sep-2021	Scheduled Reporting Date	: **29-Sep-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 6.9' C STD
Receipt Detail	:	No. of samples received / analysed	: 13 / 13

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP202(solids) Phenoxyacetic acids	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES2134625-001	24-Sep-2021 00:00	STP-A.1	✓	✓	✓
ES2134625-002	24-Sep-2021 00:00	STP-A.2	✓	✓	✓
ES2134625-003	24-Sep-2021 00:00	STP-A.3	✓	✓	✓
ES2134625-004	24-Sep-2021 00:00	STP-B.1	✓	✓	✓
ES2134625-005	24-Sep-2021 00:00	STP-B.2	✓	✓	✓
ES2134625-006	24-Sep-2021 00:00	STP-B.3	✓	✓	✓
ES2134625-007	24-Sep-2021 00:00	STP-C.1	✓	✓	✓
ES2134625-008	24-Sep-2021 00:00	STP-C.2	✓	✓	✓
ES2134625-009	24-Sep-2021 00:00	STP-C.3	✓	✓	✓
ES2134625-010	24-Sep-2021 00:00	STP-C.4	✓	✓	✓
ES2134625-011	24-Sep-2021 00:00	STP-C.5	✓	✓	✓
ES2134625-012	24-Sep-2021 00:00	STP-C.6	✓	✓	✓
ES2134625-013	24-Sep-2021 00:00	STP-C.7	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE AU

- A4 - AU Tax Invoice (INV)	Email	accountspayableau@slrconsulting.com

JAMES MURDOCH

- *AU Certificate of Analysis - NATA (COA)	Email	jmurdoch@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmurdoch@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmurdoch@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmurdoch@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmurdoch@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmurdoch@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmurdoch@slrconsulting.com

JULIE McDOWELL

- *AU Certificate of Analysis - NATA (COA)	Email	jmcdowell@slrconsulting.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jmcdowell@slrconsulting.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jmcdowell@slrconsulting.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jmcdowell@slrconsulting.com
- A4 - AU Tax Invoice (INV)	Email	jmcdowell@slrconsulting.com
- Chain of Custody (CoC) (COC)	Email	jmcdowell@slrconsulting.com
- EDI Format - ESDAT (ESDAT)	Email	jmcdowell@slrconsulting.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2134625**	Page	: 1 of 18
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: JULIE McDOWELL	Contact	: Tyler Anderson
Address	: Unit 5 21 Parap Rd PARAP 0820	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 680.30093 John Stokes Square Sewage Eastment (LOT 9017)	Date Samples Received	: 28-Sep-2021 06:30
Order number	: ----	Date Analysis Commenced	: 28-Sep-2021
C-O-C number	: ----	Issue Date	: 29-Sep-2021 16:42
Sampler	: JAMES MURDOCH		
Site	: ----		
Quote number	: EN/032/20 Primary Work Only		
No. of samples received	: 13		
No. of samples analysed	: 13		

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
- 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*
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, 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 Contact 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.

- EP202: Particular samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EP202: Poor matrix spike recoveries for Clopyralid due to matrix effects.
- 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.
- EP068: Positive results have been confirmed by re-extraction and re-analysis.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-A.1	STP-A.2	STP-A.3	STP-B.1	STP-B.2
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-001	ES2134625-002	ES2134625-003	ES2134625-004	ES2134625-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	1.3	3.2	5.8	5.2	5.4
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	<5	5	5	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	26	18	22	26	35
Copper	7440-50-8	5	mg/kg	6	<5	<5	10	17
Lead	7439-92-1	5	mg/kg	10	9	8	8	7
Nickel	7440-02-0	2	mg/kg	4	3	3	<2	<2
Zinc	7440-66-6	5	mg/kg	6	6	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<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	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-A.1	STP-A.2	STP-A.3	STP-B.1	STP-B.2
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-001	ES2134625-002	ES2134625-003	ES2134625-004	ES2134625-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<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	<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	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-A.1	STP-A.2	STP-A.3	STP-B.1	STP-B.2
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-001	ES2134625-002	ES2134625-003	ES2134625-004	ES2134625-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-A.1	STP-A.2	STP-A.3	STP-B.1	STP-B.2
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-001	ES2134625-002	ES2134625-003	ES2134625-004	ES2134625-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	<0.02	<0.04	<0.04
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**104**	**92.8**	**100**	**83.4**	**93.2**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**110**	**96.4**	**102**	**92.3**	**97.9**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**108**	**102**	**116**	**114**	**121**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**81.0**	**98.1**	**88.8**	**96.9**	**102**
2-Chlorophenol-D4	93951-73-6	0.5	%	**80.8**	**96.9**	**85.4**	**93.1**	**92.0**
2.4.6-Tribromophenol	118-79-6	0.5	%	**57.2**	**71.1**	**71.0**	**58.8**	**78.1**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**98.2**	**99.2**	**93.1**	**99.2**	**99.5**
Anthracene-d10	1719-06-8	0.5	%	**93.5**	**81.7**	**97.0**	**95.2**	**111**
4-Terphenyl-d14	1718-51-0	0.5	%	**94.4**	**102**	**95.6**	**98.8**	**85.6**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**119**	**115**	**115**	**113**	**103**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-A.1	STP-A.2	STP-A.3	STP-B.1	STP-B.2
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-001	ES2134625-002	ES2134625-003	ES2134625-004	ES2134625-005
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.2	%	109	107	107	106	91.7
4-Bromofluorobenzene	460-00-4	0.2	%	96.2	96.0	96.3	93.9	83.3
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	57.2	66.6	67.0	62.2	68.6

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-B.3	STP-C.1	STP-C.2	STP-C.3	STP-C.4
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-006	ES2134625-007	ES2134625-008	ES2134625-009	ES2134625-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	5.7	6.7	7.3	6.8	6.5
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	8	7	8	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	55	44	37	67	56
Copper	7440-50-8	5	mg/kg	16	9	8	8	8
Lead	7439-92-1	5	mg/kg	12	14	12	12	13
Nickel	7440-02-0	2	mg/kg	<2	2	2	4	6
Zinc	7440-66-6	5	mg/kg	<5	12	14	13	23
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<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	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-B.3	STP-C.1	STP-C.2	STP-C.3	STP-C.4
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-006	ES2134625-007	ES2134625-008	ES2134625-009	ES2134625-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<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	**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	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-B.3	STP-C.1	STP-C.2	STP-C.3	STP-C.4
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-006	ES2134625-007	ES2134625-008	ES2134625-009	ES2134625-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-B.3	STP-C.1	STP-C.2	STP-C.3	STP-C.4
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-006	ES2134625-007	ES2134625-008	ES2134625-009	ES2134625-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
2.4-DB	94-82-6	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
Dicamba	1918-00-9	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
Mecoprop	93-65-2	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
MCPA	94-74-6	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
2.4-DP	120-36-5	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
2.4-D	94-75-7	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
Triclopyr	55335-06-3	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
2.4.5-T	93-76-5	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
MCPB	94-81-5	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
Picloram	1918-02-1	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
Clopyralid	1702-17-6	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
Fluroxypyr	69377-81-7	0.02	mg/kg	<0.04	<0.02	<0.02	<0.02	<0.02
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**87.1**	**88.1**	**86.6**	**96.0**	**95.8**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**93.4**	**94.8**	**87.9**	**100**	**105**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**116**	**121**	**109**	**110**	**139**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**99.8**	**99.0**	**94.4**	**103**	**89.1**
2-Chlorophenol-D4	93951-73-6	0.5	%	**93.8**	**95.5**	**89.9**	**94.5**	**95.0**
2.4.6-Tribromophenol	118-79-6	0.5	%	**57.8**	**66.7**	**77.9**	**72.0**	**76.8**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**102**	**102**	**96.7**	**87.7**	**95.8**
Anthracene-d10	1719-06-8	0.5	%	**105**	**102**	**108**	**108**	**107**
4-Terphenyl-d14	1718-51-0	0.5	%	**108**	**99.2**	**106**	**99.0**	**101**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**107**	**112**	**109**	**115**	**116**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-B.3	STP-C.1	STP-C.2	STP-C.3	STP-C.4
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00
Compound	CAS Number	LOR	Unit	ES2134625-006	ES2134625-007	ES2134625-008	ES2134625-009	ES2134625-010
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.2	%	**98.8**	**105**	**105**	**108**	**108**
4-Bromofluorobenzene	460-00-4	0.2	%	**86.9**	**98.9**	**91.3**	**93.9**	**94.9**
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	**66.3**	**78.7**	**77.4**	**65.3**	**65.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-C.5	STP-C.6	STP-C.7	----	----
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2134625-011	ES2134625-012	ES2134625-013	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.0	7.7	8.7	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	8	7	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	51	32	53	----	----
Copper	7440-50-8	5	mg/kg	8	12	7	----	----
Lead	7439-92-1	5	mg/kg	19	17	12	----	----
Nickel	7440-02-0	2	mg/kg	3	4	4	----	----
Zinc	7440-66-6	5	mg/kg	28	29	16	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	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	----	----
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	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-C.5	STP-C.6	STP-C.7	----	----
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2134625-011	ES2134625-012	ES2134625-013	--------	--------
				Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
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	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	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	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	STP-C.5	STP-C.6	STP-C.7	----	----
				Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2134625-011	ES2134625-012	ES2134625-013	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-C.5	STP-C.6	STP-C.7	----	----
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2134625-011	ES2134625-012	ES2134625-013	--------	--------
				Result	Result	Result	----	----
EP080: BTEXN - Continued								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	<0.02	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**99.7**	**84.2**	**102**	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**105**	**90.7**	**85.9**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**136**	**116**	**93.8**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**85.6**	**94.1**	**91.5**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**86.1**	**91.7**	**89.1**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**63.8**	**64.5**	**62.6**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**97.2**	**96.4**	**96.4**	----	----
Anthracene-d10	1719-06-8	0.5	%	**95.4**	**101**	**110**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**90.3**	**93.9**	**99.5**	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**118**	**114**	**117**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	STP-C.5	STP-C.6	STP-C.7	----	----
			Sampling date / time	24-Sep-2021 00:00	24-Sep-2021 00:00	24-Sep-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2134625-011	ES2134625-012	ES2134625-013	--------	--------
				Result	Result	Result	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.2	%	**109**	**102**	**105**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%	**95.7**	**91.2**	**95.8**	**----**	**----**
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	**64.5**	**62.4**	**75.2**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
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
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	45	139

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2134625**	Page	: 1 of 12
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: JULIE McDOWELL	Contact	: Tyler Anderson
Address	: Unit 5 21 Parap Rd PARAP 0820	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 680.30093 John Stokes Square Sewage Eastment (LOT 9017)	Date Samples Received	: 28-Sep-2021
Order number	: ----	Date Analysis Commenced	: 28-Sep-2021
C-O-C number	: ----	Issue Date	: 29-Sep-2021
Sampler	: JAMES MURDOCH		
Site	: ----		
Quote number	: EN/032/20 Primary Work Only		
No. of samples received	: 13		
No. of samples analysed	: 13		

ilac-MRA NATA
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*
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, 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: 3926284)									
ES2134625-009	STP-C.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	67	61	9.5	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	4	2	50.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	8	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	12	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	13	12	0.0	No Limit
ES2133910-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	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	10	8	15.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	72	78	7.2	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3925562)									
ES2134200-021	Anonymous	EA055: Moisture Content	----	0.1	%	14.7	14.8	0.0	0% - 20%
ES2134384-016	Anonymous	EA055: Moisture Content	----	0.1	%	14.9	13.4	10.9	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3926034)									
ES2134536-001	Anonymous	EA055: Moisture Content	----	0.1	%	9.2	9.4	2.1	0% - 20%
ES2134536-009	Anonymous	EA055: Moisture Content	----	0.1	%	15.6	15.0	4.1	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3926035)									
ES2134625-011	STP-C.5	EA055: Moisture Content	----	0.1	%	6.0	5.8	2.9	No Limit
ES2134797-005	Anonymous	EA055: Moisture Content	----	0.1	%	37.8	40.0	5.7	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 (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3926287)									
ES2134625-009	STP-C.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2133910-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3925636)									
ES2134625-001	STP-A.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2134625-011	STP-C.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3925635)									
ES2134625-001	STP-A.1	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
		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
ES2134625-011	STP-C.5	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
		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

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: 3925635) - continued									
ES2134625-011	STP-C.5	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
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3925635)									
ES2134625-001	STP-A.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2134625-011	STP-C.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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 (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3925635) - continued									
ES2134625-011	STP-C.5	EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3925634)									
ES2134625-001	STP-A.1	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
ES2134625-011	STP-C.5	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

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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3925634) - continued									
ES2134625-011	STP-C.5	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3925633)									
ES2134625-001	STP-A.1	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
ES2134625-011	STP-C.5	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: 3925652)									
ES2134625-001	STP-A.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2134625-008	STP-C.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3925633)									
ES2134625-001	STP-A.1	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
ES2134625-011	STP-C.5	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: 3925652)									
ES2134625-001	STP-A.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2134625-008	STP-C.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 3925652)									
ES2134625-001	STP-A.1	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
ES2134625-008	STP-C.2	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

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: BTEXN (QC Lot: 3925652) - continued									
ES2134625-008	STP-C.2	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
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 3925543)									
ES2134625-002	STP-A.2	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
ES2134625-011	STP-C.5	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	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: 3926284)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	102	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	88.5	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	101	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	98.6	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	90.3	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	94.9	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	88.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3926287)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	101	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3925636)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	95.4	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 3925635)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	100	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	102	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	104	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	99.7	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	98.6	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3925635)								

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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3925635) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	87.0	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	92.9	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	96.0	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.3	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	68.2	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3925634)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	94.0	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	106	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	99.9	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	101	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	107	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	90.1	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	93.0	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.5	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.1	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	92.6	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	102	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	95.4	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.6	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	90.8	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	105	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3925633)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	105	75.0	129

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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3925633) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	103	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	104	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3925652)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	104	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3925633)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	103	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	102	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	101	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3925652)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	106	68.4	128
EP080: BTEXN (QCLot: 3925652)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	110	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	103	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	99.2	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	100	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	100	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	81.5	63.0	119
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3925543)								
EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	0.1 mg/kg	91.3	54.4	128
EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	0.1 mg/kg	95.3	45.5	130
EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	0.1 mg/kg	99.2	51.7	135
EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	0.1 mg/kg	99.0	60.0	130
EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	0.1 mg/kg	94.8	56.8	131
EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	0.1 mg/kg	94.9	50.0	141
EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	87.9	68.5	131
EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	0.1 mg/kg	99.1	50.8	141
EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	0.1 mg/kg	88.5	40.8	126
EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	0.1 mg/kg	95.9	57.4	139
EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	0.1 mg/kg	94.5	38.9	137
EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	0.1 mg/kg	68.6	48.7	129
EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	0.1 mg/kg	57.1	49.4	106
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	0.1 mg/kg	94.1	53.2	128

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: 3926284)							
ES2133910-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	103	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.6	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	97.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	93.8	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	99.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.8	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	121	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3926287)							
ES2133910-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	117	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3925636)							
ES2134625-001	STP-A.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3925635)							
ES2134625-001	STP-A.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	109	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	92.1	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	101	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	94.4	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	88.8	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	96.3	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3925635)							
ES2134625-001	STP-A.1	EP068: Diazinon	333-41-5	0.5 mg/kg	107	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	98.8	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	89.0	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	90.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	96.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3925634)							
ES2134625-001	STP-A.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	101	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3925633)							
ES2134625-001	STP-A.1	EP071: C10 - C14 Fraction	----	480 mg/kg	114	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	108	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	111	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3925652)							
ES2134625-001	STP-A.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	107	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3925633)							
ES2134625-001	STP-A.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	114	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	107	53.0	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3925633) - continued							
ES2134625-001	STP-A.1	EP071: >C34 - C40 Fraction	----	890 mg/kg	119	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3925652)							
ES2134625-001	STP-A.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	109	70.0	130
EP080: BTEXN (QCLot: 3925652)							
ES2134625-001	STP-A.1	EP080: Benzene	71-43-2	2.5 mg/kg	110	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	101	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	102	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	100	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	100	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	102	70.0	130
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3925543)							
ES2134625-002	STP-A.2	EP202: Mecoprop	93-65-2	0.1 mg/kg	98.6	60.0	140
		EP202: MCPA	94-74-6	0.1 mg/kg	94.8	57.0	143
		EP202: 2.4-D	94-75-7	0.1 mg/kg	89.9	68.0	139
		EP202: Triclopyr	55335-06-3	0.1 mg/kg	96.8	51.0	145
		EP202: 2.4.5-T	93-76-5	0.1 mg/kg	96.1	57.0	142
		EP202: Picloram	1918-02-1	0.1 mg/kg	53.3	49.0	138
		EP202: Clopyralid	1702-17-6	0.1 mg/kg	# 24.7	49.0	149

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2134625**	Page	: 1 of 8
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: JULIE McDOWELL	Telephone	: +61 2 8784 8555
Project	: 680.30093 John Stokes Square Sewage Eastment (LOT 9017)	Date Samples Received	: 28-Sep-2021
Site	: ----	Issue Date	: 29-Sep-2021
Sampler	: JAMES MURDOCH	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

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.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **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.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP202A: Phenoxyacetic Acid Herbicides by LCMS	ES2134625--002	STP-A.2	**Clopyralid**	1702-17-6	24.7 %	49.0-149%	**Recovery less than lower data quality objective**

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)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**----**	----	----	**28-Sep-2021**	08-Oct-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	23-Mar-2022	✓	**28-Sep-2021**	23-Mar-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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	22-Oct-2021	✓	**28-Sep-2021**	22-Oct-2021	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	07-Nov-2021	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	07-Nov-2021	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	07-Nov-2021	✓

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	07-Nov-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	08-Oct-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	08-Oct-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	08-Oct-2021	✓

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
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Soil Glass Jar - Unpreserved (EP202)							
STP-A.1, STP-A.2, STP-A.3, STP-B.1, STP-B.2, STP-B.3, STP-C.1, STP-C.2, STP-C.3, STP-C.4, STP-C.5, STP-C.6, STP-C.7	**24-Sep-2021**	**28-Sep-2021**	08-Oct-2021	✓	**28-Sep-2021**	07-Nov-2021	✓

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	6	55	**10.91**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**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).
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 AS 3550, 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)
Polychlorinated Biphenyls (PCB)	EP066	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 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.
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	SOIL	In house: LCMS (Electrospray in negative mode). Residues of acid herbicides are extracted from soil samples under the alkaline condition. An aliquot of the alkaline aqueous phase is taken and acidified before a SPE cleanup. After eluting off from the SPE cartridge, residues of acid herbicides are dissolved in HPLC mobile phase prior to instrument analysis.

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).
Extraction for Phenoxy Acid Herbicides in Soils.	EP202-PR	SOIL	In-House: Alkaline extract followed by SPE clean up of acidified portion of the sample extract.

Preparation Methods	Method	Matrix	Method Descriptions
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.
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.

Greencap Pty Ltd
ABN: 76 006 318 010
Unit 11 Winnellie Central | 14 Winnellie Road
Winnellie NT 0820
Australia
T: 08 7906 1300

Report Date: Tuesday, 21/09/2021

Our ref: C120472:NT85146

John Mousellis
Mousellis & Sons Pty Ltd
GPO Box 4616
DARWIN NT 0801

Dear John,

Re: Asbestos Identification Analysis - 400m3 Stockpile

This letter presents the results of asbestos fibre identification analysis performed on 16 samples as received by Greencap on Friday, 17 September 2021. The samples were stated to be from 400m3 Stockpile.

All sample analysis was performed using polarised light microscopy, including dispersion staining and trace analysis in our Darwin Laboratory by the method of Australian Standard AS4964-2004 and supplementary work instruction in house method LAB04 Asbestos Identification by PLM. Any and all services carried out by Greencap for the Client are subject to the Terms and Conditions listed on the Greencap website at https://www.greencap.com.au/terms-conditions and are governed by our statements of limitation available at https://www.greencap.com.au/statements-limitation .

The analysis was completed on Tuesday, 21 September 2021.

The samples will be kept for three months and then disposed of, unless otherwise directed.

The results of the asbestos identification analysis are presented in the appended table. Accreditation covers testing activities only, sampling activity is outside the scope of ISO 17025 accreditation. Results relate only to the items tested and are for the sole use by the client.

Should you require further information please contact our Darwin laboratory.

Yours sincerely,
Greencap

Lulu Jones : Approved Identifier

Lulu Jones : Approved Signatory

This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing.
Accreditation No. 5450, Site No. 24550 Darwin Laboratory.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards.

Sampling was not conducted by Greencap and is therefore outside the scope of our NATA accreditation.

Report Date: Tuesday, 21/09/2021 Our ref: C120472:NT85146

Site Location:	400m3 Stockpile		
	Sample ID	**Sample Location/Description/Weight or Size**	**Analysis Result**
1	NT85146 - 001	As received '1' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 827.6 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
2	NT85146 - 002	As received '2' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1102.3 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
3	NT85146 - 003	As received '3' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1219.4 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
4	NT85146 - 004	As received '4' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 922.4 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
5	NT85146 - 005	As received '5' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1228.3 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
6	NT85146 - 006	As received '6' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1496.2 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
7	NT85146 - 007	As received '7' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 873.5 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
8	NT85146 - 008	As received '8' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1492.4 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
9	NT85146 - 009	As received '9' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1191.7 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
10	NT85146 - 010	As received '10' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1905.2 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2

Report Date: Tuesday, 21/09/2021 Our ref: C120472:NT85146

Site Location:	400m3 Stockpile		
	Sample ID	**Sample Location/Description/Weight or Size**	**Analysis Result**
11	NT85146 - 011	As received '11' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1707.4 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
12	NT85146 - 012	As received '12' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1371.4 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
13	NT85146 - 013	As received '13' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1191.5 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
14	NT85146 - 014	As received '14' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1372.4 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
15	NT85146 - 015	As received '15' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1781.8 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2
16	NT85146 - 016	As received '16' Brown non-homogenous fine-grained soil, organic matter & rocks ~ 1548.3 gm	No Asbestos Detected At or Above Reporting Limit Organic Fibres NOTE 1 & 2

*** Shaded row with bolded text indicates sample contains a positive Analysis Result for asbestos.**
If Synthetic Mineral Fibre and Organic Fibre are not stated in Analysis Results, it implies not detected.

PLEASE NOTE The samples in this report are 'As Received'. Greencap does not take responsibility for the sampling procedure or accuracy of the sample location descriptions which have been provided by the client.

NOTE 1 The reporting limit for this non-homogeneous analysis is 0.1g/kg (0.01%). The above result can be interpreted that the sample contains no detectable 'respirable' asbestos fibres (AS4964-2004 Clause 9.5).

NOTE 2 Soil analysis conducted in accordance with WA Guidelines for the assessment, remediation and management of asbestos-contaminated sites (May 2009), Recommended procedures for laboratory analysis of asbestos in soil (June 2011) and NEPM Schedule B1: Guideline on investigation levels for soil & groundwater, Schedule B2: Guideline on site characterisation.
Recommendation of minimum 500mL sample have been analysed as per NEPM Guideline.
Results denoted with * is outside our scope of accreditation.

APPENDIX H

Air Quality Monitoring Reports

SLR Consulting Australia Laboratory Services - Darwin Office
ABN:29 001 584 612
http://www.slrconsulting.com

Unit 5 21 Parap Road NT 0820
T: 61 8 8998 0100 F: 61 2 9427 8200

Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-1
Date of Issue: Friday, 27 August 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
25/08/2021	**Blank**		0				N/A	N/A		100	0	N/A
25/08/2021	AADZ-1	Control	1	1.00	1.00	1.00	07:47	16:48	541	100	2.5	<0.01
25/08/2021	AADZ-2	Control	2	1.00	1.10	1.05	07:46	16:46	540	100	2	<0.01
25/08/2021	AADZ-3	Control	3	1.00	1.00	1.00	07:49	16:44	535	100	4	<0.01
25/08/2021	AADZ-4	Control	4	1.00	1.00	1.00	07:52	16:42	530	100	6	<0.01

Monitoring Locations:

0 Blank
1 Southwest boundary of Lot C work area
2 Northwest boundary of Lot C work area
3 Northeast boundary of Lot C work area
4 Southeast boundary of Lot C work area

Notes:

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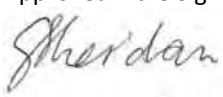
Approved Fibre Signatory: Gemma Sheridan



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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-2
Date of Issue: Friday, 27 August 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
26/08/2021	**Blank**		0				N/A	N/A		100	0	N/A
26/08/2021	AADZ-5	Control	1	1.00	1.10	1.05	07:40	17:02	562	100	2	<0.01
26/08/2021	AADZ-6	Control	2	1.00	0.90	0.95	07:42	17:03	561	100	1	<0.01
26/08/2021	AADZ-7	Control	3	1.00	1.00	1.00	07:45	17:06	561	100	-	N/A (see note 3)
26/08/2021	AADZ-8	Control	4	1.00	0.90	0.95	07:50	17:10	560	100	1	<0.01

Monitoring Locations:

0 Blank
1 Northeast boundary of Lot C work area
2 Southeast boundary of Lot C work area
3 Northwest boundary of Lot C work area
4 Southwest boundary of Lot C work area

Notes:

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3) Sample AADZ-7 rejected – filter obscured by grit.

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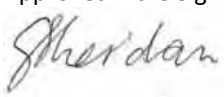

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-3
Date of Issue: Monday, 30 August 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
27/08/2021	**Blank**		0				N/A	N/A		100	1	N/A
27/08/2021	AADZ-9	Control	1	1.00	0.90	0.95	07:31	17:17	586	100	2	<0.01
27/08/2021	AADZ-10	Control	2	1.00	1.00	1.00	07:32	17:19	587	100	1	<0.01
27/08/2021	AADZ-11	Control	3	1.00	0.90	0.95	07:34	17:20	586	100	1.5	<0.01
27/08/2021	AADZ-12	Control	4	1.00	1.10	1.05	07:35	17:23	588	100	1	<0.01

Monitoring Locations:

0 Blank
1 Southeast boundary of Lot C / Road Reserve work area
2 Northeast boundary of Lot C / Road Reserve work area
3 Northwest boundary of Lot C / Road Reserve work area
4 Southwest boundary of Lot C / Road Reserve work area

Notes:

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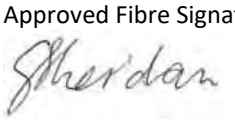

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-4(R1)
Date of Issue: Thursday, 2 September 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Airflow (L/min) On	Off	Avg	Time On	Off	Total (min)	Count Fields	Fibres	Conc'n (fibres/ml)
28/08/2021	**Blank**		0				N/A	N/A		100	0	N/A
28/08/2021	AADZ-13	Control	1	2.00	1.96	1.98	7:05	13:42	397	100	0	<0.01
28/08/2021	AADZ-14	Control	2	2.00	2.00	2.00	7:07	13:43	396	100	0	<0.01
28/08/2021	AADZ-15	Control	3	2.00	2.00	2.00	7:10	13:44	394	100	0	<0.01
28/08/2021	AADZ-16	Control	4	2.00	1.70	1.85	7:12	13:45	393	100	0	N/A (see Note 3)

Monitoring Locations:

0 Blank
1 Northeast boundary of Lot C / Road Reserve work area
2 Southeast boundary of Lot C / Road Reserve work area
3 Northwest boundary of Lot C / Road Reserve work area
4 Southwest boundary of Lot C / Road Reserve work area

Notes:

1) The results contained within this report relate only to the samples submitted for testing.
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3) Sample AADZ-16 was rejected due to flow fault

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Approved Fibre Signatory: Gemma Sheridan

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-15
Date of Issue: Wednesday, 15 September 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Time On	Off	Total (min)	Airflow (L/min) On	Off	Avg	Count Fields	Fibres	Conc'n (fibres/ml)
13/09/2021	**Blank**		0				N/A	N/A		100	0	N/A
13/09/2021	AADZ-57	Control	1	07:33	12:41	308	2.00	2.10	2.05	100	0	<0.01
13/09/2021	AADZ-58	Control	2	07:37	12:29	292	2.00	2.00	2.00	100	1	<0.01
13/09/2021	AADZ-59	Control	3	07:29	12:37	308	2.00	2.00	2.00	100	1.5	<0.01
13/09/2021	AADZ-60	Control	4	07:31	12:43	312	2.00	2.00	2.00	100	2	<0.01

Monitoring Locations:

0 Blank
1 Northwest boundary of Lot B2 work area
2 Southwest boundary of Lot B2 work area
3 Northeast boundary of Lot B2 work area
4 Southeast boundary of Lot B2 work area

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Approved Fibre Signatory: Paul Turyn

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.10679.00200-AADZ-16
Date of Issue: Wednesday, 15 September 2021
Removal Contractor: Northern Trade Solutions Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: HK Solutions
Building 2, Level 1
631 Stuart Highway
Berrimah NT 0828

Date of Test	Sample Code	Type	Mon Loc'n	Time On	Off	Total (min)	Airflow (L/min) On	Off	Avg	Count Fields	Fibres	Conc'n (fibres/ml)
14/09/2021	**Blank**		0				N/A	N/A	N/A	100	1	N/A
14/09/2021	AADZ-61	Control	1	07:18	17:02	584	1.00	0.90	0.95	100	1	<0.01
14/09/2021	AADZ-62	Control	2	07:19	17:03	584	1.00	1.00	1.00	100	2	<0.01
14/09/2021	AADZ-63	Control	3	07:20	17:10	590	1.00	1.00	1.00	100	1	<0.01
14/09/2021	AADZ-64	Control	4	07:23	17:04	581	1.00	1.00	1.00	100	0	<0.01

Monitoring Locations:

0 Blank
1 Northeast boundary of Lot B2 work area
2 Southeast boundary of Lot B2 work area
3 Northwest boundary of Lot B2 work area
4 Southwest boundary of Lot B2 work area

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.30093.00000-AAEE-1
Date of Issue: Friday, 17 September 2021
Removal Contractor: Mousellis & Sons Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: Halikos Group
Level 18/19 Smith St, Darwin City NT 0800

Date of Test	Sample Code	Type	Mon Loc'n	Time On	Off	Total (min)	Airflow (L/min) On	Off	Avg	Count Fields	Fibres	Conc'n (fibres/ml)
16/09/2021	**Blank**		0				N/A	N/A	N/A	100	0	N/A
16/09/2021	AADZ-1	Control	1	11:55	16:20	265	2.00	2.00	2.00	100	1	<0.01
16/09/2021	AADZ-2	Control	2	11:56	16:19	263	2.00	2.00	2.00	100	2	<0.01
16/09/2021	AADZ-3	Control	3	11:57	16:18	261	2.00	2.00	2.00	100	N/A	N/A
16/09/2021	AADZ-4	Control	4	11:58	16:19	261	2.00	2.00	2.00	100	1	<0.01

Monitoring Locations:

0 Blank
1 Southeast end of excavation work area
2 Northeast end of excavation work area
3 Southwest end of excavation work area
4 Northwest end of excavation work area

Notes:

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3)Sample AAEE-3 rejected due to filter being obscured with dust.

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Airborne Asbestos Monitoring Report

Test method in accordance with NOHSC:3003(2005) AP-01.03, AP-02.01, 02.03, 02.04 & AP-03

Reference: 680.30093.00000-AAEE-D2
Date of Issue: Monday, 20 September 2021
Removal Contractor: Mousellis & Sons Pty Ltd
Job Location: John Stokes Square Redevelopment – 47 Progress Drive, Nightcliff NT 0810
Field Lab Address: N/A

Client: Halikos Group
Level 18/19 Smith St, Darwin City NT 0800

Date of Test	Sample Code	Type	Mon Loc'n	Time On	Off	Total (min)	Airflow (L/min) On	Off	Avg	Count Fields	Fibres	Conc'n (fibres/ml)
17/09/2021	**Blank**		0				N/A	N/A	N/A	100	0	N/A
17/09/2021	AADZ-5	Control	1	07:27	15:30	483	1.00	1.00	1.00	100	0	<0.01
17/09/2021	AADZ-6	Control	2	07:28	15:32	484	1.00	1.10	1.05	100	1	<0.01
17/09/2021	AADZ-7	Control	3	07:29	15:34	485	1.00	1.10	1.05	100	1	<0.01
17/09/2021	AADZ-8	Control	4	07:30	15:35	484	1.00	1.00	1.00	100	2	<0.01

Monitoring Locations:

0 Blank
1 Southeast end of excavation work area
2 Northeast end of excavation work area
3 Northwest end of excavation work area
4 Southwest end of excavation work area

Notes:

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Approved Fibre Signatory: Paul Turyn

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Appendix D
Client and Consultant Correspondence

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C1 16 March 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics

Email: sinead.redmond@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

The following documents were reviewed:

- Agon Environmental (29 February 2020) Detailed Site Investigation, John Stokes Square, 47 Progress Drive, Nightcliff (ref. JF1006.DSI)

This letter details the main areas of works that require additional information or clarification. There will likely be additional minor editorial comments to be provided at a later date, however these items were considered a priority.

1) Source of ACM and AF/FA
   a) Previous discussions identified the source of the ACM to be formwork from the building foundations. Greencap report identified that this was not likely to be source as ACM was not observed adhered to the concrete. During inspection of the concrete stockpiles, was ACM observed adhering to the concrete?
   b) Testpits located away from the buildings also contaminated ACM. Is it possible that the ACM is from both imported contaminated fill and formwork from the building foundations?
   c) AF/FA has been identified by Greencap in the soil across the site. A review of the data has found that almost all samples were identified by the laboratory to be weathered cement sheeting, including >7mm, 2-7mm, and <2mm. Two samples of vinyl tiles were also identified. No other asbestos fines or fibrous asbestos has been identified in the laboratory reports; therefore the source of the asbestos is likely to be weathered and degraded ACM.
2) Appendix A1:
   a) The Greencap asbestos in soil calculations were done using a variety of 30%, 80% and 100% asbestos content, though no justification was given other than "based on laboratory assessment" though the laboratory certificates do not mention anything about asbestos content. The standard asbestos content for fibre cement is 15%. When the Greencap data is adjusted to reflect the standard 15% asbestos content (and 25% for vinyl tile as per Health and Safety Executive 'Asbestos: The survey guide, HSG264) only 1 sample exceeds the relevant criteria for AF (TP20, 0.0047%w/w). However, ACM was found in the following test pit logs but was not analysed at the laboratory or

reported as containing asbestos in the text of the report (TP36, TP46, TP55 and TP57) and may therefore also contain asbestos exceeding allowable levels. These areas will require inspection during civil works and then addressed under the unexpected finds process in the CEMP.

3) Section 9.5.1 (asbestos in soil remediation works)
   a) Please identify the 'three locations containing friable asbestos materials' that were disposed to landfill as asbestos contaminated waste, show on a figure, provide volume of soil disposed from each location, landfill dockets and observations during remediation (i.e. was there anything unique about this area or material to explain the contamination?).
   b) Please provide details of the lateral and vertical validation sampling or multiple lines of evidence justifying why this was not considered necessary.
4) Section 9.5.1 (Concrete crushing works)
   a) Please provide details of the segregation and clearance process of the material prior to crushing. For example, were only solid pieces of concrete crushed or were smaller pieces also crushed.
   b) Previous discussions identified old ACM formwork as a source of the ACM contamination of the site. What was done to ensure this material was not crushed or damaged in the mechanical sieve?
   c) Following crushing, the material was stockpiled and sampled. Please provide details of the volumes involved and sampling rates to assess if the sampling density met WA DoH validation density (1 per $70m^3$). Please provide details of the stockpiling and sampling methods to assess if representative samples were collected.
   d) 4 of 67 samples reportedly failed validation sampling. Was this material unique in any way? How was this material kept separate to avoid cross contamination? Please provide the calculation methodology for the samples 'Stockpile 2 Validation 17/10'
   e) The crushed concrete that passed validation sampling was reused in the commercial area. Was this material inspected when spread across the commercial area and if so, can a clearance certificate be provided?
   f) Where were the four uncrushed concrete stockpiles located and was the ground surface validated after their removal?
   g) Where was the mechanical sieve, concrete crusher and stockpiles located and has the ground surface been validated?
5) Road and reserve sampling
   a) Please clarify the extent of the road and reserve and area to be handed back to council. For example, does it include the substation, pedestrian areas, car park in the south west corner, etc. Showing the boundaries of this area on a figure with the sampling locations would assist.
   b) A high density of sampling has been undertaken across the site, but this has focused on areas outside of the road and road reserve with no samples collected from the road. Samples from within the road reserve (TP54) and immediately adjacent (TP39, TP40, TP42, TP43) have identified ACM, though all below acceptable levels. Therefore, if this area is to be handed back to City of Darwin unencumbered, it will require close supervision of civil works (down to natural soils) by a suitably qualified asbestos specialist and remediation and validation when asbestos is identified. The remediation will need to also remove locations of previously identified ACM.
   c) The proposed use of an asbestos unexpected finds protocol within a CEMP may be effective in meeting the previous point provided there is sufficient close supervision of civil works by a suitably qualified asbestos specialist to identify when ACM is observed. A copy of this protocol will need to be provided for review.
   d) If the above strategy is implemented successfully, it may be sufficient to ensure the area is free of known ACM and suitable for the proposed use without a post audit management plan or condition requiring the area capped. However, the only way to guarantee the area is completely free of ACM is for all fill materials to be removed, but I do not require this.
6) ACM has been identified in multiple locations across the site both on the surface and within the fill material. The ACM appears to be weathered, resulting in smaller fragments of ACM and release of

asbestos fibres. Over time, the ACM will continue to weather and potentially result in concentrations above allowance levels. As a precautionary measure, all areas not subject to the close supervision as per item 5c will need to be capped (i.e. permanent hardstand such as paving or building or cleanfill layer) or the fill removed.

7) As there is potential for ACM to be present within the fill across the site, a simple procedure will also be required during occupancy to identify the potential for encountering ACM when undertaking excavation works and what to do if asbestos is encountered. This would be written as a condition or recommendation in the audit report and audit statement rather than a management plan.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C2 24 April 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics

Email: sinead.redmond@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I previously approved a strategy regarding the management of the construction works on Lot A (the police stations site). Following discussions with DIPL we understand that due to the identification of geotechnically unsuitable material during excavations and with the aim of further reducing the level of residual contamination, the proposed strategy has changed. I am supportive of undertaking additional works which will result in a lower level of long term risk to the community.

The following documents were reviewed:

- SLR (22 April 2020) Memorandum: Remediation Strategy, John Stokes Square – Lot A (ref. 680.30002.00000 Remediation Strategy 20200422.docx); and
- Email from SLR (23 April 2020) proposing changes to the sampling strategy due to material types being observed onsite and changes to the depth of excavation.

I provide the following comments:

1. General. Please note that weathered ACM and AF/FA has been identified in previous investigations at the site. How will this material be identified and managed, including risks to onsite workers and if mechanical screening is being used?
2. Section 5.2: Please provide additional detail on the proposed site supervision and how this ties into the objectives of the works. For example, if the objective is to ensure the fill is as completely free of asbestos as possible, then a higher level of supervision would be necessary than if the objective is to remove geotechnically unsuitable material and any asbestos observed with risks from any residual asbestos observed managed via capping, etc.
3. Section 5.3, Table 2:
   a) The sampling density is supported, but please note that EPA Publication IWRG702 also supports lower sampling densities in some circumstances.
   b) Please verify what 'substantial variability' means in terms of decision making on additional analysis.
   c) Where possible, please track and incorporate existing insitu data or include justification why this is not proposed.

d) Is it proposed to sample the existing crushed concrete? If not, it is recommended that some sampling for asbestos would be beneficial to verify the material is free of asbestos as previously reported.
e) Presume that standard NEPM/AS4482.1 QA/QC requirements will be complied with (i.e. duplicate sampling, etc).

4. Section 5.4. Will a broader analyte suite be necessary to facilitate waste classification and offsite disposal? Based on previous sampling, asbestos and OCPs are the key contaminants of concern and any further reduction in analysis should not apply to these contaminants.
5. Section 5.5. Please specify the criteria for ACM (this is specific to land use) and AF/FA.
6. Section 5.6. Please provide additional details regarding the airborne asbestos fibre monitoring such as the locations of monitors, duration of monitoring per day and flow rates to ensure compliance with NOHSC method, and whether personal or static.
7. If static monitoring at site boundaries, then it should be compliant with the DoH public health criteria of 0.01 f/mL.
8. How will the decision regarding material reuse on-site/reuse off-site/disposal be reported?
9. Will the footprint of the stockpile locations be validated?

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C3 27 May 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics

Email: sinead.redmond@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the proposed remediation strategy for the management of the remediation and construction works on Lot B1, B2 and B3 (the residential sites). Following discussions with DIPL we understand that due to the identification of geotechnically unsuitable material during excavations on the commercial lot (Lot A), and with the aim of further reducing the level of residual contamination, the original strategy was changed. I am supportive of undertaking additional works which will result in a lower level of long-term risk to the community.

The following documents were reviewed:

- SLR (14 May 2020) Memorandum: Remediation Strategy, John Stokes Square – Residential Lots (Lots B1, B2 and B3) (ref. Appendix J - DRAFT Remediation Strategy.docx); and
- Halikos Construction (May 2020) Construction Environmental Management Plan Revision 2.0, John Stokes Square, Broad Scale Site Remediation and Construction Preparation Works (ref. Broad Scale Remediation).

I provide the following comments:

Remediation Strategy

1. Section 1, last paragraph. The Agon reports have been reviewed and considered reliable with a note that we are resolving a minor issue regarding the crushed concrete stockpile sampling, reuse and disposal
2. Section 4. Please include NT EPA publications
3. Section 5.1,
   a) Paragraph 2. It should be noted that there is an increased risk of ACM in this material.
   b) Will SLR be inspecting the oversize screened material for ACM?
   c) Tracking of material should be documented and reported by SLR.
   d) Final paragraph. Given the previous identification of ACM and asbestos fines, these controls should be implemented from the start unless additional justification is provided.

4. Section 5.3. As per previous advice, please provide additional detail on the proposed site supervision and how this ties into the objectives of the works. For example, if the objective is to ensure the fill is as completely free of asbestos as possible, then a higher level of supervision would be necessary than if the objective is to remove geotechnically unsuitable material and any asbestos observed with risks from any residual asbestos observed managed via capping, etc.
5. Section 5.7. Air monitoring criteria should be public health (<0.01 f/mL) as monitoring is proposed on the site boundary, the occupational criteria (<0.1 f/mL) is only appropriate for workers.
6. The reuse of soil onsite is understood to be placed down in layers for compaction purposes and each lift is to be inspected for ACM by SLR with a clearance certificate issued for each lift. If ACM is observed, it will need to be removed and validated. Please note that this was the agreed approach for the commercial area, but we understand that this was not undertaken. This process provides an important extra check for ACM and needs to be undertaken for the residential allotments.
7. How will the decision regarding material reuse on-site/reuse off-site/disposal be reported?
8. Due to current COVID-19 travel restrictions, please include photographic record of the works.
9. If unexpected contamination is identified, please call to discuss the management strategy.

Construction Environmental Management Plan (CEMP)

The CEMP details the objectives, key performance indicators and targets, and environmental management measures to be implemented during the remediation and construction works. This includes erosion and sedimentation, dust and air quality, soil, waste, and asbestos management amongst other things. It also details training, including induction training for workers.

1. Due to the presence of asbestos please ensure the site is fenced if this is not already done.
2. Please include an unexpected finds protocol.
3. Appendix I.
    a. The investigations to date have identified asbestos in soil which is understood to remain onsite. The AMP should be revised to reflect this and any other associated implications.
    b. Section 8 proposes a weekly 2 hours inspection for asbestos, this is not consistent with the remediation strategy.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C4 1 June 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics

Email: sinead.redmond@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the proposed sampling and analysis quality plan for the road reserve and Lot C as documented in:

- SLR (22 May 2020) Sampling, Analysis and Quality Plan, Detailed Site Investigation, John Stokes Square (ref. 680.10679-R01-v2.0).

The SAQP is accepted, subject to inclusion of the following comments:

1. Section 5 states that test pits will be excavated to mechanical refusal (estimated to be approximately 1 mbgl), though Table 4 states "samples will be collected …surface, 0.5mbgl, 1.0 mbgl, and every metre thereafter until target depth, intersected groundwater or auger/excavator refusal". Please note that all sampling locations should extend a minimum of 0.5m in to natural soils;
2. Section 8.5, 3rd and 4th dot points. Please ensure ACM identified during field sieving is to be weighed to enable a concentration calculations;
3. Table 5. 1. Due to identified ACM at the site, the fill at each location should be sieved and tested for ACM. Please include pH, CEC, etc to allow for calculation of EIL/ESLs;
4. Section 10. Please include data from relevant sampling locations by Agon and Greencap; and
5. General. Please photograph each test pit and include in the report as we currently can not travel to observe the investigation works.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C5

4 June 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: sinead.redmond@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the following revised documents:

- SLR (3 June 2020) Memorandum: Remediation Strategy, John Stokes Square – Residential Lots (Lots B1, B2 and B3) (ref. 680.10679.00000-M04-v2.0);
- Halikos Construction (June 2020) Construction Environmental Management Plan Revision 3.0, John Stokes Square, Broad Scale Site Remediation and Construction Preparation Works (ref. Broad Scale Remediation v3.0); and
- SLR (3 June 2020) Sampling, Analysis and Quality Plan, Detailed Site Investigation, John Stokes Square (ref. 680.10679-R01-v3.0).. If no a

The above documents have been revised based on comments provided in audit review letter C3 (dated 27 May 2020) and C4 (dated 1 June 2020). The revised reports have addressed the comments and are considered acceptable with the following notes:

- SLR SAQP - Note that Figure 3 is missing and should be included when; and
- SLR SAQP – If no asbestos is observed within the fill materials, please still continue to collect a jar sample for potential asbestos analysis but hold off analysis as proposed. This will provide us the opportunity to undertake the analysis should it be necessary at a later date.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C6

19 August 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: sinead.redmond@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the following document:

- SLR (14 July 2020) Detailed Site Investigation, John Stokes Square Development – Road Reserve and Lot C (ref. 680.10679-R03-v1.0);

The road reserve and Lot C sampling program appears to have been implemented in accordance with the approved SAQP. I provide the following notes for inclusion in the final report:

- Appendix D – laboratory certificate of analysis are missing for samples from TP25 to TP35.
- Appendix E – Sample results are missing for TP26 from Table 1, several sample results are missing from Table 5.

In either the RAP, a revised DSI or overall completion report for the site, we will need figures and tables consolidated all of the data from the various site investigations along with details of samples characterising the final site condition upon which we will base our opinion of site suitability.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C7 19 August 2020

Ms Sinead Redmond
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: sinead.redmond@hksolutions.com.au

Auditor Advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Sinead,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the following document:

- SLR (7 August 2020) Remediation Action Plan, John Stokes Square Redevelopment, Road Reserve and Lot C (ref. 680.10679-R04-v4.0).

The RAP was discussed at a teleconference between SLR, DIPL, HK Solutions and AEA on 17 August 2020, with further details to be provided. The RAP details the remedial strategy for the remediation of the identified 'known asbestos impact area' which covers a small portion of the overall road reserve and Lot C area. The RAP also covers the removal of services. It is understood from the teleconference that the asbestos impacted area and all services will be dug up under asbestos conditions. During removal of all existing services, the excavation trenches will be inspected to determine if any asbestos is present within the material. To ensure adequate characterisation has been achieved, the extent of the services removed will be mapped against the previous investigation locations. If there are any areas that have not been assessed, additional investigation trenches will be completed, and the material inspected. Where any asbestos is identified, this material will be removed under asbestos remediation conditions.

Our current understanding of the site is that the asbestos within the road reserve and Lot C is isolated to the known asbestos impacted area. If during the above works, asbestos is found to be more widespread, then additional remediation works would be necessary, such as the excavation and abatement/disposal of all fill materials within this area.

If further widespread asbestos is not found, then it would be appropriate to proceed with the civil works.

The civil works within the road reserve and Lot C will need to be undertaken under a Construction Environmental Management Plan (CEMP) with appropriate controls in place to protect the site workers from asbestos and unexpected finds protocol.

As discussed at the meeting, there is an element of risk to the project that some asbestos within the road reserve and Lot C may not be identified during the remedial and investigative works and that asbestos may be encountered during civil works. If asbestos is identified during civil works, it is understood that the works in that area will cease, and a suitably experienced environmental consultant/hygienist will be

engaged to advise the process. If asbestos is identified in multiple areas during civil works a strategy may need to be formulated to address the removal, such as further removal of fill materials.

A separate environmental audit report and accompanying statement/certificate will be provided for the road reserve and Lot C following completion of the civil works to allow the auditor to provide ongoing audit services in case of unexpected finds during civil works.

Please update the remediation plan to reflect the above or give us a call to discuss.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C15 28 April 2021

Mr Tony Hopkinson
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: tony.hopkinson@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Tony,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the following document:

- SLR (25 February 2021) Validation Report, John Stokes Square Redevelopment – Lot A (ref. 680.10679-R02-v1.0).

The report is well written and appears reliable for the work undertaken, subject to addressing the following comments:

1. Please include an executive summary.
2. When analysing soil for asbestos (AF/FA) in line with WA DoH guidelines a 500mL (minimum) sample should be provided to the laboratory analysis. It appears that this may not have always been done. Please provide lines of evidence as to why this is acceptable.
3. Previous environmental investigations have been briefly summarised. However, I need consolidated data from all investigations (where sample locations remain following remediation, including historical, validation, stockpiles, imported fill), with details of samples characterising the final site condition. It should also include a table of all suspected material remaining onsite if there is residual uncertainty - i.e. fate of some stockpiles, etc. The other areas may be able to avoid this requirement due to the extensive remediation works undertaken, but as this area has had less remediation completed, incorporation of previous environmental data may be necessary.
4. The deviations to the proposed remediation strategy identified some residual issues regarding the reuse of crushed concrete and potential reuse of impacted soil, and lack of documentation regarding the methodology of reuse or inspection. Please clarify the level of involvement by SLR. As SLR was not present during reinstatement of the screened spoil, additional information will be required by the contractor detailing the inspection and observations of potential ACM during the reinstatement of the screened material.
5. Section 4.1. Was the excavated surface still fill material or natural soil? Was the base and walls of the excavation inspected prior to backfill? Were any underground services encountered or removed and what is the likelihood of any remaining? Please provide additional detail regarding the removal and backfill of any trenches.
6. Section 4.2. Please show 'VAL-A' on a figure.

7. Section 4.3. Additional information is required to determine if the soil stockpiles that reported asbestos concentrations were reused onsite. Therefore documentation regarding any material disposed to landfill, dates and volumes of disposal and disposal dockets and a reconciliation against the impacted stockpiles and volumes would assist in determining if any impacted material was reused.
8. Section 4.3. What volume of material was imported to site?
9. Section 4.3. Imported fill was sourced from a defence site without the auditors knowledge and without the ability to conduct sampling to verify the presence/absence if PFAS contamination. Therefore the PFAS may potentially be present in this material and if the material is to be removed from the site, the material will need to be assessed as per waste characterisation requirements, though the analyte suite will need to include PFAS. The risk to human health and the environment from the PFAS is unlikely to present a risk to proposed site use.
10. Figure – please include a conceptual site model with hydrogeological cross section characterising the final site condition. Either a single plan for the entire site would be sufficient or a CSM for each area.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C15a 16 September 2021

Mr Tony Hopkinson
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: tony.hopkinson@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
47 Progress Drive, Nightcliff, Northern Territory

Dear Tony,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

I have been requested to review the following revised report and spreadsheet in response to Auditor review letter C15 (dated 28 April 2021):

- SLR (24 August 2021) Validation Report, John Stokes Square Redevelopment – Lot A (ref. 680.10679-R02-v2.0); and
- Response spreadsheet (ref. 680.10679.00100-R02-v1.0 Response to Auditor Comments).

The revised report has addressed the majority of our previous comments with the following comments requiring resolution split between those applicable to SLR and those applicable to the Contractor.

Contractor

Previous Comments:

- *The deviations to the proposed remediation strategy identified some residual issues regarding the reuse of crushed concrete and potential reuse of impacted soil, and lack of documentation regarding the methodology of reuse or inspection. Please clarify the level of involvement by SLR. As SLR was not present during reinstatement of the screened spoil, additional information will be required by the contractor detailing the inspection and observations of potential ACM during the reinstatement of the screened material.*
- *Section 4.3. Additional information is required to determine if the soil stockpiles that reported asbestos concentrations were reused onsite. Therefore documentation regarding any material disposed to landfill, dates and volumes of disposal and disposal dockets and a reconciliation against the impacted stockpiles and volumes would assist in determining if any impacted material was reused.*
- *Section 4.3. What volume of material was imported to site?*

SLR has reported on items that they were involved in which is acceptable. However, we require resolution of the following from the Contractor:

1. SLR Exec Summary: *The Civil Contractor reinstated and compacted the excavated areas at the Site without the presence of a SLR Consultant as required in the remediation strategy. Subsequently visual clearance of the surface of each compacted lift during reinstatement of the excavated areas could not be provided.* Did the contractor observe any demolition waste or potential asbestos containing material during their works that were not subsequently removed and how attentive was the contractor during this process?
2. SLR Exec Summary: *Further assessment was recommended by SLR to determine if stockpiled crushed concrete could be reused onsite from a contamination perspective, or at least receive advice/endorsement from the CLA that previous investigation works conducted on this material was sufficient to enable its reuse. The material was reused at the Site without being resampled, prior to CLA advice or endorsement being received. Based on the stockpile characterisation results, SLR recommended further segregation works be undertaken for three stockpiles to ensure their suitability for reuse on Site. As SLR did not receive information from the Civil Contractor on the methodology that they used to reinstate the excavations using stockpiled spoil and/or crushed concrete, it is unclear if the recommended further segregation works were completed.* Contractor to advise if segregation occurred and the location and depth (below base on concrete slab) the material was reused.
3. Please advise of the approximate volume of imported soil from the Larrakeyah Defence Base and the location/depth used.

SLR

Previous Comment: *Section 4.1. Was the excavated surface still fill material or natural soil? Was the base and walls of the excavation inspected prior to backfill? Were any underground services encountered or removed and what is the likelihood of any remaining? Please provide additional detail regarding the removal and backfill of any trenches.* SLR Response: *The final excavation at the Site had an area of approximately 3,620 m2 and generally extended down into the natural red soils to a maximum depth of 0.3 m.*

A. Given Lot A has an area of 3,619 m^2 – the entire footprint was Lot A was excavated. Is this correct?
B. Was the entire Lot A excavated to natural or were there residual fill materials in the base and if so, did the fill materials contain asbestos or construction and demolition wastes? From our discussions with SLR, the geotechnically unsuitable fill material contained the vast majority of the asbestos and all of this fill was removed from Lot A. The final surface comprised the red natural soils which would be a combination of reworked natural and virgin natural soils with no known residual asbestos within these soils. If this is correct, please amend to provide this type of clarification within the report.
C. When the excavation face around the boundary of Lot A was inspected, were any asbestos or construction and demolition wastes observed?
D. Are there any known or potential residual underground services beneath Lot A that could contain asbestos within the fill or asbestos containing services (water pipes, Telstra pits, etc)?

SLR Exec Summary: *Due to deviations from the remediation strategy, SLR does not have sufficient evidence to provide comment on the suitability of material blended and used to backfill the excavated areas within Lot A.*

E. Please calculate the weighted average for the stockpiles assuming the material was reused onsite without removal of the asbestos to help demonstrate the quantum of risk involved for future workers.

SLR Exec Summary: *Likewise, any persons conducting future excavations at the Site (Lot A) may encounter asbestos impacted soils or fragments of ACM debris, if asbestos impacted material was used to*

backfill/reinstate excavated areas within Lot A. As a precautionary measure the following should be included in the workplans of any persons/contractor conducting excavation works at the Site (Lot A) to ensure appropriate controls are implemented in the event unexpected asbestos is encountered.

· Asbestos management plan

· Unexpected finds protocol

· Associated training.

F. Is SLR recommending an asbestos management plan for the site or for the contractor undertaken excavation works to prepare the plan for their specific works? I.e. is it a 'Site' asbestos management plan or a 'Contractor's" asbestos management plan? In your response, please advise how this aligns with WA DOH Asbestos Guidelines and WH&S requirements.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C16 28 April 2021

Mr Tony Hopkinson
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: tony.hopkinson@hksolutions.com.au

DRAFT Auditor advice
John Stokes Square Redevelopment
Lot A
47 Progress Drive, Nightcliff, Northern Territory

Dear Tony,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

As part of my role as auditor, I have reviewed the characterisation, remediation and validation of Lot A (the site), being developed at John Stokes Square. Several phases of investigation were completed which identified asbestos within fill material across the site. The majority of the fill material on the site was progressively excavated, inspected during excavation for asbestos. The soil was screened and stockpiled and any material containing asbestos was to be removed from the site an accredited landfill facility. The reporting provided by SLR has left some uncertainty whether the asbestos impacted material was removed or reinstated with the validated fill material. Additionally, the reinstatement was not inspected by an environmental consultant to provide any clearance that asbestos was not placed back down onto the site. Therefore I am not able to verify if any asbestos remains at the site. However, assuming some asbestos was reinstated, I believe the risk of any human receptors being exposed to this material being is likely to be low if covered by the presence of permanent hardstand or 0.5m of verified asbestos free material. Please confirm the final built form/site coverings, clean fill thickness, etc.

Although there is no known asbestos onsite, there is the potential for residual asbestos to be present as noted above and within the SLR report. It is therefore warranted that an unexpected find protocol be implemented for any subsurface works, to say that asbestos may be encountered if digging. I will likely need to make a notation to this effect in the audit determinations/conditions.

Imported fill was sourced from a defence site without the auditors knowledge and without the ability to conduct verification sampling to determine if PFAS was present, acknowledging the waste classification report noted that known PFAS contamination was segregated. Therefore, PFAS may potentially be present in this material, but at levels that are unlikely to present a risk to human health or the environment at the site. As the imported fill may contain PFAS, any soil removed from this portion of the site may need to include PFAS within the waste classification sampling. This does not apply to other areas of the site (i.e. Road Reserve) unless the imported fill was reused in other areas of the site – please advise.

Regarding my determination of site suitability, I am only permitted to provide this determination within my Environmental Audit Report and accompanying Certificate or Statement of Environmental Audit. However, based on current information and subject to review of the updated SLR report, I am not aware of

contamination issues that would preclude the proposed development, subject to maintaining the surface covering noted above. Due to the uncertainty around the material reinstated following the remediation and validation activities that were completed, specifically the uncertainty around the placement of fill material potentially impacted with asbestos, the site may not be suitable for residential development without additional assessment. The need for these restrictions will be reviewed based on the updated SLR report.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

AUSTRALIAN
ENVIRONMENTAL AUDITORS

AEA Ref: EA0729-C17 3 November 2021

Mr Tony Hopkinson
Project Management Lead, HK Solutions
On behalf of Department of Infrastructure, Planning and Logistics
Email: tony.hopkinson@hksolutions.com.au

Auditor advice
John Stokes Square Redevelopment
Lot A and completed portion of Road Reserve
47 Progress Drive, Nightcliff, Northern Territory

Dear Tony,

I have been commissioned to conduct an environmental audit of the abovementioned site in accordance with Section 53X of the Environment Protection Act 1970 (Vic), pursuant to Part 6 of the Northern Territory's Waste Management and Pollution Control Act.

The audit is in the process of completion with the site investigation and remediation works completed, but awaiting finalisation of your consultants reports before we can complete population of our environmental audit report and statement of environmental audit/

I understand that the police station (Lot A) and the completed northern portion of the road reserve will be utilised prior to completion of the audit. Whilst this is unusual and use is not at our risk, I consider the risk to be minimal for the following reasons:

- The site investigations have identified that the key contaminant of concern is limited to asbestos within fill materials and former underground services (pipes and pits).
- Within Lot A, the majority of the asbestos contaminated fill has been excavated and disposed of offsite. However, there is potential for asbestos to remain within residual reworked natural soils, redundant underground services, and potentially within the backfill material. Based on the environmental works undertaken during investigation and remediation of the site, the potential for residual asbestos is considered low, however as the removal of asbestos within the stockpiles can not be verified it is considered that there is potential for asbestos in the form of ACM and AF/FA to remain within soils and infrastructure onsite. The entire site is covered by concrete, as such there is no exposure risk to site users (i.e. visitors and workers) while this concrete is in place. In the event that subsurface works are required below the concrete, then controls should be implemented on the basis that the workers may encounter ACM in the soils or ACM infrastructure.
- Within the northern portion of the road reserve, all known asbestos has been excavated and disposed of offsite. We have been advised that all of the fill materials within the entire road reserve have been excavated and any identified asbestos removed from site along with removal of all asbestos underground services, with documentation to demonstrate this yet to be finalised. The potential for residual unknown asbestos is therefore considered low. The road reserve comprises bitumen road, concrete foot path and pockets of inground gardens (with at least 0.5m of clean fill present above residual soils), as such there is no exposure risk to site users (i.e. visitors and workers) while these are in place. In the event that subsurface works are required, then controls

should be implemented on the basis that the workers may encounter ACM in the soils or ACM infrastructure, until such time as the Auditor consider documentation proves that this is not necessary.

Please note that this is not a determination of site suitability, as I am only permitted to provide this determination within my Environmental Audit Report and accompanying Certificate or Statement of Environmental Audit. Rather, this is an opinion on the human health risk from site contamination.

Please contact me if you have any questions regarding this letter.

Regards,

Australian Environmental Auditors

Jean Paul Pearce

EPA Appointed Environmental Auditor (Contaminated Land)

NOTIFICATION OF REQUEST TO ISSUE A CERTIFICATE OF ENVIRONMENTAL AUDIT

21 November 2019
Manager – Environmental Audit
NT EPA
GPO Box 3675
Darwin NT 0801
c/o Christopher.coombes@nt.gov.au

I, Jean Paul Pearce, a person appointed as an environmental auditor (contaminated land) by the Environment Protection Authority under s. 53S of the *Environment Protection Act 1970* (Vic.) and in accordance with Part 6 of the Northern Territory's Waste Management and Pollution Control Act, have been requested to issue a certificate of environmental audit for the site; 47 Progress Drive, Nightcliff; Northern Territory. Details are as follows.

Auditor	Jean Paul PEARCE
Auditor account number	101292
Auditor appointment end date	26 November 2022
Auditor's appointment category	CL
Audit Type	53X (site suitability audit)
Name of person requesting audit	Ms Sinead Redmond Project Management Lead Northern Territory Department of Infrastructure, Planning and Logistics Land Development Unit sinead.redmond@hksolutions EPA customer account number (if available). – n/a
Relationship of person requesting audit to site	Authorised representative of site owner
Name of premises owner	DIPL Representative Project Manager
Date of auditor engagement	20/11/2019
Proposed completion date of the audit	1/04/2020
Reason for audit	Due to the identified pesticide and asbestos contamination, we understand EPA has required an Auditor to determine the site is suitable for use;
Audit categorisation	Risk
Environmental Segments	Air, Land, Groundwater, Surface water
If the audit was required by an EPA notice, licence or other, please provide EPA service order number	n/a
Current land use zoning	Zone MR (Medium Density Residential)
EPA Region	Darwin
Municipality	Nightcliff
Dominant Lot on title plan	Lot 9077 Town of Nightcliff
Additional Lot on title plan(s)	
Site/Premises name	John Stokes Square Nightcliff Development
Building/complex sub-unit/Lot No.	--
Street/Lot – Lower No.	47
Street/Lot – Upper No.	
Street Name	Progress,
Street type (road, court, etc)	Drive

Street suffix (North, South etc)	--
Suburb	Nightcliff
Postcode	0810
GIS Coordinate of Site centroid[1] Latitude (GDA94)	-12.388587°
Longitude (GDA94)	130.850751°
Site area (in square metres)	18,900 m^2
Plan of site/premises showing the audit site boundary attached	Yes
Plan of site/premises showing the audit site boundary attached in a spatial data format	No
Proposed support team	Shandel Coleman (internal audit support).
Is this audit report a combined audit and site assessment report?	No

In notifying NT EPA of this request to perform a Contaminated Land Audit, I state that:

- I am not aware of any conflict of interest, which would preclude me from issuing a Certificate or Statement of Environmental Audit for the above site.
- I have not had prior involvement in any assessment or clean-up works at the site, which would preclude me from issuing a Statement of Environmental Audit for the site.

Yours sincerely,

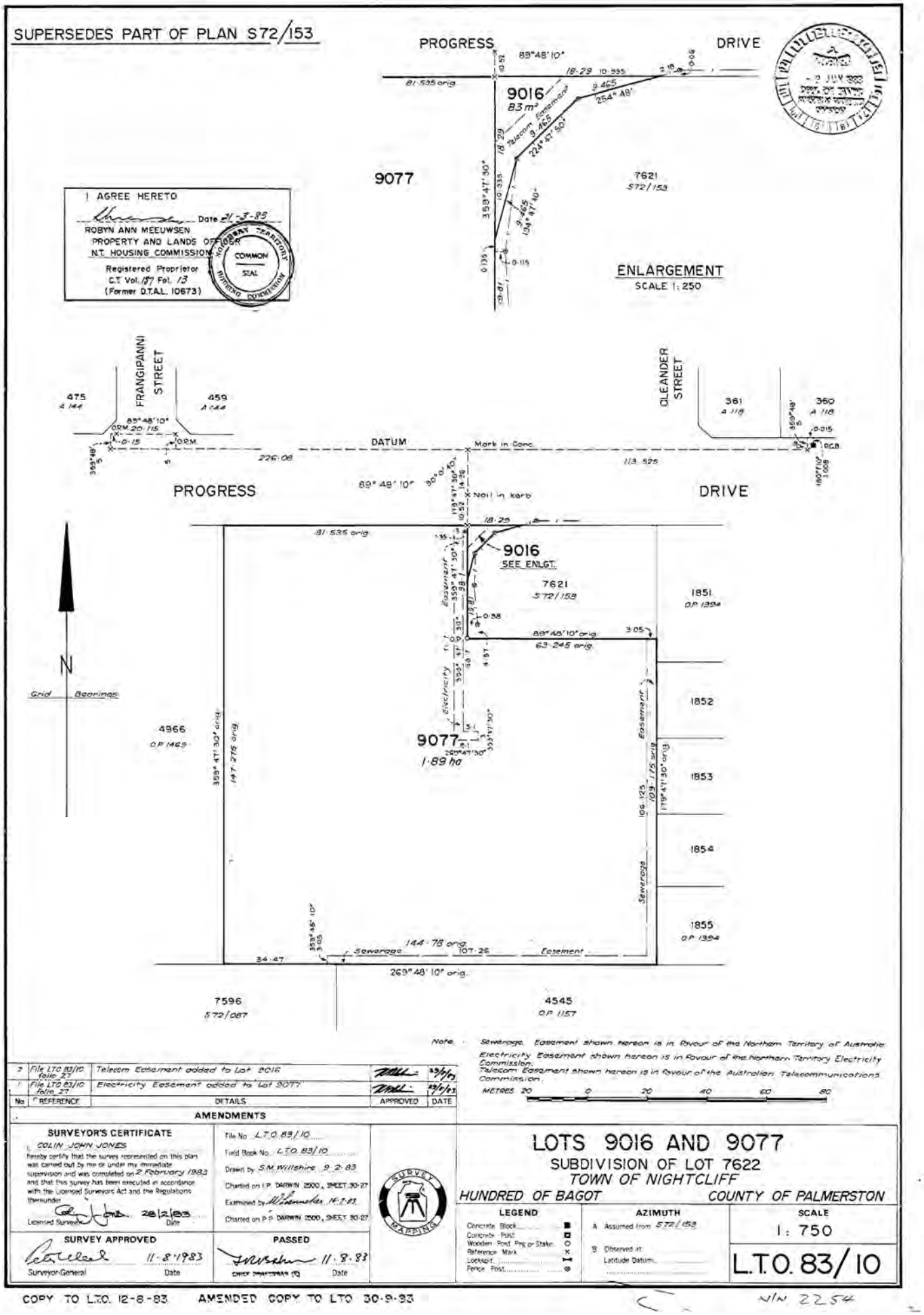
Signed: _____

Jean Paul PEARCE

ENVIRONMENTAL AUDITOR

(APPOINTED PURSUANT TO *THE ENVIRONMENT PROTECTION ACT 1970*)

[1] Longitude and latitude (decimal degrees) coordinates in the 1994 Geocentric Datum of Australia (GDA94) is required to six decimal places.



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13 August 2021

Jean-Paul Pearce

Contaminated Sites Auditor

Australian Environmental Auditors

Dear Jean-Paul,

RE: Inspection of John Stokes Square Development Site, 12 August 2021

The following presents a photolog and notes collected during the Site Inspection of the John Stokes Square redevelopment, on 12 August 2021, undertaken on behalf of Australian Environmental Auditors.

The inspection focussed on the non-residential areas, comprising the Police Station, Road Reserve (Open Space), and Parking Area.

POLICE STATION

The Police Station development is 99% complete, with commissioning and connection of services, and Progress Drive frontage landscaping (external to the audit area) the only outstanding works.

The entire Site is sealed, with external concrete apron surrounding the entire building within the compound, with no internal landscaping features/ exposed soils.

Plate 1 **Police Station frontage along Progress Drive, with exposed soils for frontage landscaping (understood to be external to the audit area).**

Plate 2 **Police Station frontage along Progress Drive, with sealed concrete surfaces extending south through compound along western portion.**

Plate 3 **View looking west into Police Station compound, with sealed concrete surfaces along southern portion.**

ROAD RESERVE

Key observations:

- The majority of the underground infrastructure/ services (stormwater, electrical, etc.) have been installed, with most connection points still exposed pending connections, pit/ manhole install.
- The construction of road along the eastern portion is underway, with a large portion of the ground improvement works complete in the area, and spreading and compaction of imported aggregate base course underway. Appeared significant soil removal works had occurred along the road alignment to reach design levels (with levels below the adjacent landscaping area along the eastern strip).
- Ground works, comprising excavation to box out for landscaping, is still progressing along the western portion. Inspection of a boxed out area observed:
    - A fill layer of approximately 150mm.
    - No foreign materials observed within the in-situ fill excavation side profile of the boxed out area.
    - Inspection of the boxed out spoil however identified foreign inclusions including ceramic tile, concrete fragments, bitumen fragments, PVC, and terracotta pipe.
    - A area that was being excavated at the time of inspection, connected to and extending south from the inspected boxed out area, was subject of an unexpected find (occurred immediately prior to the inspection) with numerous large fragments of cement sheet exposed/ identified from the fill layer.

Plate 4 **View looking south from Progress Drive through the Road Reserve (showing boxing out for landscaping along western verge, and aggregate base course laying along the eastern verge).**

Plate 5 **View looking north, north-east across road construction zone, and spreading/ compaction of base course underway.**

Plate 6 **Boxing out works for landscaping along western portion of Road Reserve (view looking south). Note cordoned off area associated with asbestos unexpected find.**

Plate 7 **Soil profile of boxed out area (north-west portion of Road Reserve) with approx. 150mm surface fill layer.**

Plate 8 **Spoil from boxing out landscape area, with concrete, bitumen, ceramic tile, terracotta pipe, and PVC observed foreign inclusions.**

Plate 9 **Area of unexpected find, during excavation extending south from boxed out area. The find was numerous large fragments of cement sheet (refer to next Plate).**

Plate 10 **Unexpected find, numerous large fragments of cement sheet. Unexpected Find protocols implemented including stop works, cordoning off, awaiting assessment by engaged LAA.**

Plate 11 **Reworked soil profile along western boundary of Road Reserve and the western housing development block.**

PARKING AREA

The parking area has been boxed out in preparation for the install of a large stormwater retention tank. Majority of spoil was excess to Project needs and has been disposed offsite. Reportedly the fill across this zone had largely been removed prior to Head Works, with no unexpected finds encountered, evidenced by the soil profile observed which was natural.

Plate 12 **View looking west from southern portion of Road Reserve across the Parking Area that has been boxed out in prep for the stormwater retention tank install.**

GENERAL

Discussions with DIPL Site personnel revealed around 5 to 7 asbestos related unexpected finds had occurred within the subject sites (Police Station and Road Reserve) during redevelopment works. DIPL can provide the details upon request.

For any further information, please do not hesitate to contact the undersigned on 0408 018 788 or chris.gamble@agonenviro.com.au.

Yours Sincerely,

Chris Gamble

Agon NT Manager

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