Site Audit Report

Clyde Western Area Remediation Project - Stage 2
Audit Area 3 (Lots 56, 58, 61, 62 and Proposed Roadway) – SAR 075-2127799

Viva Energy Australia Pty Ltd

14 June 2022

The Power of Commitment

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List of Acronyms

Acronym	Description
ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Guidelines
AOC	Accidentally Oil Contaminated
AS	Australian Standard
ASC	Assessment of Site Contamination
ASS	Acid Sulphate Soil
BGL	Below Ground Level
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CLM	Contaminated Land Management
COC	Chain of Custody
CoPC	Contaminant of Potential Concern
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
CTCP	Clyde Terminal Conversion Project
DO	Dissolved Oxygen
DPIE	Department of Planning, Industry, and Environment
DQIs	Data Quality Indicators
DQOs	Data Quality Objectives
EC	Electrical Conductivity
EIL	Ecologically Based Investigation Level
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EPA	NSW Environment Protection Authority
EPL	Environment Protection License
ERM	Environmental Resources Management
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
eV	Electron Volt
FA	Fibrous Asbestos
GME	Groundwater Monitoring Event
GMP	Groundwater Management Plan
GWMP	Groundwater Monitoring Plan
Ha	Hectares
HHERA	Human Health and Ecological Risk Assessment

Acronym	Description
HIL	Health-Based Investigation Level
HSL	Health Screening Level
IMW	Intrusive Maintenance Workers
km	kilometre
LEP	Local Environment Plan
LNAPL	Light Non-Aqueous Phase Liquid
LOR	Limit of Reporting
LTEMP	Long Term Environmental Management Plan
m	metre
m AHD	metres Australian Height Datum
m bgl	metres Below Ground Level
m btoc	metres Below Top of Casing
m^3	Cubic metres
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
MW	Monitoring Well
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NSW	New South Wales
OCP	Organochlorine Pesticides
OEH	Office of Environment and Heritage
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PASS	Potential Acid Sulfate Soils
PCB	Polychlorinated Biphenyls
PID	Photo-Ionisation Detector
POEO	Protection of the Environment Operations
PPE	Personal Protective Equipment
PPM	Parts per million
PSI	Preliminary Site Investigation
QA	Quality Assurance
QC	Quality Control
RAP	Remedial Action Plan
EMP	Environmental Management Plan
RLs	Relative Levels
RPD	Relative Percentage Difference
RSI	Remediation Site Investigation
SAQP	Sampling and Analytical Quality Plan
SPOCAS	Suspension Peroxide Oxidation – Combined Acidity and Sulphate
SSD	State Significant Development

Acronym	Description
SSTLs	Site Specific Target Levels
SWL	Standing Water Level
TP	Test Pit
TRH	Total Recoverable Hydrocarbons
USTs	Underground Storage Tank
µg/kg	Micrograms per kilogram
µg/L	Micrograms per litre
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compound
WARP	Western Area Remediation Project
WWTP	Wastewater Treatment Plant

1. Introduction

Mr Andrew Kohlrusch (the auditor) of GHD Pty Ltd (GHD) was commissioned by Viva Energy Australia Pty Ltd (Viva Energy) to conduct an environmental site audit of Audit Area 3 (AA3) within Stage 2 Area of the Western Area Remediation Project (WARP) at Clyde Terminal located at Devon Street, Rosehill NSW.

The Clyde Terminal, including the WARP and Stage 2 Area and the AA3, is shown on Figures F1 and F2 in **Appendix A-1**. The auditor notes that all figures and tables presented in this site audit report (SAR) were extracted from the audit documentation listed in **Section 1.4**.

The WARP comprises approximately 40 hectares of the Clyde Terminal that is no longer required for operational purposes. Viva Energy has commenced remediation of the WARP to facilitate sale and redevelopment for commercial/industrial use in accordance with the site zoning IN3 as per the Parramatta Council Local Environmental Plan (LEP) 2011.

Given the scale of remedial works, the WARP was declared State Significant Development (SSD Nº 9302) and as such to assess the potential environmental impacts from remediation, an Environmental Impact Statement (EIS) containing a Conceptual Remedial Action Plan (RAP) was submitted in late 2019 to Department of Planning, Industry and Environment (DPIE).

This audit is statutory as per Consent Condition B3 for SSD Nº 9302. The site has also been notified to the NSW Environment Protection Authority (EPA) under *Section 60 of the Contaminated Land Management Act 1997*.

The Consent Conditions for SSD Nº 9302 were issued on 7 May 2020. Viva Energy is staging the remediation of the WARP as follows:

– Stage 1 – Former Process West;
– Stage 2 – Former Utilities and Movements; and
– Stage 3 – Former Process East.

The staging of the remediation of the WARP is being conducted as per Consent Condition A9 of SSD Nº 9302. The location of the Stage 2 remediation area and the audit areas (AA1 to AA4) are shown on Figures F1 and F2 in **Appendix A-1**.

In consideration of the redevelopment strategy proposed for Stage 2, the auditor notes that the lots and Proposed Roadway will be subdivided in four audit areas (AA1 to AA4), each of which will be progressively validated, such that Section A Site Audit Statements (SAS) will be prepared for each of the audited areas. The lots as per the subdivision of the WARP approved under SSD Nº 10549 have been grouped as follows:

– AA1: Lots 51 to 55 and adjoining proposed road (remediation completed December 2021).
– AA 2: Lots 59, 60, 63 and adjoining proposed road (remediation completed March 2021).
– AA3: Lots 56, 58, 61, 62 and adjoining proposed road (the subject of this report).
– AA4: Lot 64 (to be completed following implementation of RAP requirements for Area of Environmental Concern (AEC) 4).

1.1 Site audit details

This SAR has been prepared for the WARP AA3 of Stage 2 and incorporates proposed subdivision Lots 56, 58, 61, 62 and an adjacent portion of the Proposed Roadway alignment to the west of Lot 62. The Stage 2 AA3 location is shown on Figure F2 in **Appendix A-1**.

The proposed lots have been defined as part of the Central Sydney Industrial Estate and Sustainable Road Resource Centre Project (SSD Nº 10459) which details plans for future redevelopment of the WARP for commercial/industrial land use. The survey plans of the proposed subdivision are provided in **Appendix A-5**.

This SAR and accompanying SAS have been produced to document the findings of the site audit that incorporated the review of the AA3 Validation report, the AA3 Long Term Management Plan (LTEMP) and other supporting documentation prepared for AA3. The reports reviewed as part of this audit, as well as the relevant background reports are listed in **Section 1.4** and **Section 1.5**.

The site audit details are presented in **Table 1.**

Table 1 Site audit details

Information	Details
Site auditor	Mr. Andrew Kohlrusch
NSW EPA site auditor accreditation nº	0403
NSW EPA Site Audit Statement nº	075-2127799
Stage 2 - Legal property description [1]	Part Lot 100 in Deposit Plan (DP) 1168951
Council	City of Parramatta Council
Proposed lots and proposed road areas	Lot 56: 21,330 m^2 Lot 58: 21,250 m^2 Lot 61: 15,530 m^2 Lot 62: 30,970 m^2 Proposed road: 3,752 m^2
Site occupier	Viva Energy
Current land use	Vacant site
Proposed land use	Commercial/Industrial

Previous site audit statements associated with this SAS are summarised in **Table 2**.

Table 2 Previous audit documentation

Area audited	Purpose of the SAS	SAS number	SAS date
Stage 1 RAP	Comprising an audit of the detailed RAP for Stage 1, including the review and endorsement of the RSI (ERM, 2020a) and HHERA (ERM, 2020b).	043-2127799	22/06/2020
Stage 2 RAP	Comprising an audit of the detailed RAP for Stage 2 (comprising AA1, AA2 and AA3)	065-2127799B	13/08/2021
Stage 2 AA1	Assess Stage 2 AA1 suitability for commercial/industrial land uses following completion of remediation and validation program subject to implementation of an LTEMP	068-2127799	23/12/2021
Stage 2 AA2	Assess Stage 2 AA2 suitability for commercial/industrial land uses following completion of remediation and validation program subject to implementation of an LTEMP	072-2127799	14/04/2022

The auditor concluded in SAS Nº 065-2127799B that:

- *It is the auditor's opinion that following remedial and validation activities discussed in the Stage 2 RAP, the lots will be suitable for the proposed future use (commercial and/or industrial).*
- *In consideration of the redevelopment strategy proposed for the Stage 2 area, the auditor noted that as part of SSD 10459, subdivided lots will be progressively validated such that separate SAS will be prepared for each proposed lot or group of lots.*

[1] The areas and legal property descriptions for each of the proposed lots and road for the AA3 are further discussed in **Section 2.**

This site audit has been conducted in accordance with the requirements of *the Contaminated Land Management Act 1997* (the 'Act'). The Act defines site audit as follows:

"site audit" means a review:

- *(a) that relates to management (whether under this Act or otherwise) of the actual or possible contamination of land, and*
- *(b) that is conducted for the purpose of determining any one or more of the following matters:*

  (i) the nature and extent of any contamination of the land,

  (ii) the nature and extent of any management of actual or possible contamination of the land,

  (iii) whether the land is suitable for any specified use or range of uses,

  (iv) what management remains necessary before the land is suitable for any specified use or range of uses,

  (v) the suitability and appropriateness of a plan of management, long-term management plan or a voluntary management proposal.

Furthermore, the Act provides the following definitions:

- *"Site Audit Report" means a site audit report prepared by a site auditor in accordance with Part 4 [of the Act].*
- *"Site Audit Statement" means a site audit statement prepared by a site auditor in accordance with Part 4 [of the Act].*

1.2 Site audit purpose

The purpose of this site audit is to independently review the AA3 Validation report and AA3 LTEMP prepared by Environmental Resources Management Australia Pty Ltd (ERM) to assess whether:

- The AA3 Validation report and the AA3 LTEMP were prepared in a manner consistent with NSW EPA made or endorsed guidelines listed in **Section 1.6**.
- The Consent Condition B3 of SSD N° 9302 was met (the Groundwater monitoring requirements).
- Condition R4.1 d) of Environment Protection Licence 570 was completed (EPL 570) (the Quality Ambient Air requirements.
- The site is suitable for commercial/industrial land use following completion of remediation and subsequent validation program.

To achieve the audit objectives, the auditor reviewed the works completed by ERM as presented in the reports listed in **Section 1.4** and assessed whether information therein demonstrated that AA3 is suitable for future commercial/industrial uses. Details regarding the lots and the proposed Roadway that comprise AA3 are presented in **Section 2.1**.

1.3 Audit triggers

Following the announcement of the closure of the former Clyde Refinery, on 22 June 2012, the NSW EPA issued a Preliminary Investigation Order to Viva Energy under the CLM Act requesting reports on environmental contamination.

Following receipt of a number of reports, in June 2016, the NSW EPA declared Lot 398 in DP 41324, Lot 2 in DP 224288, Lot 1 in DP 383675, Lot 101 in DP 809340 and, Lot 100 DP in 1168951 (which includes AA3) as contaminated land under the CLM Act (Declaration N° 20131110).

1.3.1 Consent Conditions SSD N° 9302

The NSW DPIE on 7 May 2020 issued the Conditions of Consent for the remediation of contaminated soils and management of contaminated groundwater in the WARP to enable future commercial/industrial land uses. Conditions of Consent SSD N° 9302 (relevant to the audit) stated the following:

The development may only be carried out:

(a) in compliance with the conditions of this consent;

(b) in accordance with all written directions of the Planning Secretary;

(c) in accordance with the EIS and RtS;

(d) in accordance with the Detailed RAP;

(e) in accordance with the Development Layout in Appendix 1. and

(f) in accordance with the management and mitigation measures in Appendix 2.

Part B of the Conditions of Consent SSD 9302 specified the environmental conditions for the remediation, which included the following:

Prior to the commencement of preparation works, the Applicant must prepare a Detailed RAP for the development, in consultation with the EPA and to the satisfaction of the Site Auditor and the Planning Secretary. The Detailed RAP must:

- *be prepared by a suitably qualified and experienced person in accordance with Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (OEH, 2011).* The auditor notes that this Guideline was updated in April 2020 and is currently referenced as NSW EPA (2020) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.
- *be reviewed by the Site Auditor in accordance with the requirements of Condition B3.*
- *be approved by the Site Auditor and Planning Secretary, prior to the commencement of preparation works.*
- *be submitted to the EPA for reference once approved and prior to the commencement of preparation works.*
- *detail all final remediation methods and technologies including layouts and design.*
- *detail the decision protocol for determining which remediation method applies to different materials.*
- *incorporate the recommendations of the Air Emissions Verification Report approved in accordance with condition B15.*
- *include triggers for contingency actions and alternate treatment methods to ensure the remediation objectives are achieved.*
- *detail all procedures and plans to be implemented to reduce risks to an acceptable level for the proposed final land use.*

The SSD Condition B6 states that within six months of the completion of demobilisation, or as otherwise agreed with the Planning Secretary, the auditor must submit a Validation Report to the EPA, Council, and the Planning Secretary.

The SSD Condition B7 states that the site auditor must within 12 months of the completion of demobilisation, or as otherwise agreed with the Planning Secretary, submit a SAR and Section A, Site Audit Statement to the EPA, Council and the Planning Secretary. The reports must be prepared in accordance with relevant guidelines produced or approved under the CLM Act and confirm that the remedial works approved under the consent have been completed in accordance with the remediation objectives listed in the Detailed RAP and the risks to human health and the environment have been addressed in accordance with the objectives of the Detailed RAP.

The SSD Condition B8 states that prior to the finalisation of the SAS and SAR, a Long-Term Environmental Management Plan (LTEMP) should be prepared to the satisfaction of the auditor and the Planning Secretary. Subsequent to the issue of SSD Nº 9302, Viva Energy reviewed its approach to remediating the WARP and resolved to conduct the remediation in three stages based on geographical portions of the WARP. DPIE was informed of the staging of remediation on 19 May 2020. A letter containing relevant documentation required by the Consent Conditions for the WARP was submitted for the stages. DPIE on 3 June 2020 approved the proposed staging of remediation as follows:

- *The Department has carefully reviewed the Staging Plan and is satisfied with the proposed approach.*

– *Accordingly, the Planning Secretary has approved the Staging Plan, dated 19 May 2020. You are advised that if the staged remediation works result in any additional impacts to those assessed under SSD 9302, you may be required to provide further information and additional mitigation controls to demonstrate the impacts can be managed. This may require supporting advice from technical experts.*

1.3.2 Sydney Central Industrial Estate and Downer sustainable road resource centre (SSD Nº 10459)

The Stage 2 Area (including AA3) is within the extent of site redevelopment works proposed to be completed as per SSD Nº 10459. ERM reported in the Stage 2 RAP that while remediation activities are not subject to the SSD Nº 10459 and associated consent conditions, consideration of the proposed subdivision of the Stage 2 Area for commercial/industrial land used had been incorporated into aspects of remedial planning and approaches outlined within the Stage 2 RAP.

1.4 Audited documentation

This SAR has been prepared following review of information presented in the documents outlined below:

– ERM (2021f). *Clyde Western Area Remediation Project, Stage 2 Groundwater Monitoring – Remediation Phase – Month 1*, 8 November 2021 (the **Remediation GME 1**).

– ERM (2021g). *Clyde Western Area Remediation Project, Stage 2 Groundwater Monitoring – Remediation Phase – Month 2*, 20 December 2021 (the **Remediation GME 2**).

– ERM (2022a). *Clyde Western Area Remediation Project, Stage 2 Remediation – Ambient Air Quality Summary*, 21 February 2022 (the **Stage 2 AAQ**).

– ERM (2022b). *Clyde Western Area Remediation Project, Stage 2 Validation Report (Audit Area 3)*, 7 June 2022 (the **AA3 Validation**).

– ERM (2022c). *Clyde Western Area Remediation Project Proposed Lots 56, 58, 61 and 62 – Long Term Environmental Management Plan*, 27 May 2022 (the **AA3 LTEMP**).

The outcome of the reviews of aforementioned documents associated with the remediation and validation of Stage 2 AA3 was presented in interim audit advice letters (IAA) or tracked in an audit commentary spreadsheet. Copies of IAAs and the audit spreadsheet in which the review of the aforementioned reports is documented are presented in **Appendix B**.

1.5 Background reports

Given the nature of the works completed at the WARP, the auditor also considered the following documents as background information, much of which had been considered in preparing the SAS and SAR related to the Stage 2 RAP.

– ERM (2018). *Clyde Terminal Durham Street Rosehill NSW, PFAS Conceptual Site Model and Model and Flux Assessment*, 20 December 2018 (the **PFAS CSM**).

– AECOM (2019). *Viva Energy Clyde Western Area Remediation Project – Appendix C: Conceptual Remedial Action Plan*, 21 January 2019 (the **CRAP**).

– ERM (2020a). *Clyde Western Area Remediation Project - Remediation Site Investigation*, 7 February 2020 (the **RSI**).

– ERM (2020b). *Clyde Western Area Remediation Project, Human Health and Ecological Risk Assessment*, 16 February 2020 (the **HHERA**).

– ERM (2021a). *Clyde Western Area Remediation Project, Stage 2 Air Emission Verification Report*, June 2021 (the **Stage 2 AEVR**).

– ERM (2021b). *Clyde Western Area Remediation Project – Stage 2 Drainage Decommissioning Validation Report*, 17 June 2021 (the **Stage 2 Drainage**).

– ERM (2021c). *Clyde Western Area Remediation Project – Stage 2 Environmental Site Assessment*, 17 June 2021 (the **Stage 2 ESA**).

– ERM (2021d). *Clyde Western Area Remediation Project, Stage 2 - Detailed Remediation Action Plan*, 9 June 2021 (the **Stage 2 RAP**).

– ERM (2021e). *Clyde Western Area Remediation Project,* Stage 2 Stockpile Validation Report, April 2021 (the **Stage 2 Stockpile validation**).

The auditor notes that all reports listed above were subjected to review and commentary presented in previous site audit reports and statements. The previous SARs and SASs issued for the Stage 2 remediation areas are summarised in **Table 2**.

1.6 Regulatory guidelines

This SAR was prepared with reference to the following guidelines which have been made or approved for use by NSW EPA under s.105 of the Act at the time of the site audit include:

– NSW EPA (2020). *Contaminated sites: Guidelines for Consultants Reporting on Contaminated sites* (the **Consultant Guidelines**).

– NSW EPA (2020). *Assessment and Management of Hazardous Ground Gases* (the **Ground Gas Guidelines**).

– NSW EPA (2017). *Contaminated Land Management: Guidelines for the New South Wales Site Auditor Scheme 3rd (edition)* (the **Auditor Guidelines**).

– NSW DECC (2015). Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997.

– NSW DEC (2007). *Guidelines for the Assessment and Management of Groundwater Contamination* (the **Groundwater Guidelines**).

– NSW EPA (1995). *Sampling Design Guidelines* (the **Sampling Guidelines**).

Other NSW regulatory endorsed documents considered in reviewing documents reviewed as part of the site audit included:

– NSW EPA (2014). *Waste Classification Guidelines Part 1: Classifying Waste, NSW EPA* (the **Waste Guidelines**).

– WA Department of Health (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (the **Asbestos Guidelines**).

– CRC Care (2015). *A Practitioner's guide for the analysis, management and remediation of LNAPL. Technical Report Nº 34.*

– NEPC (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended by the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (Nº 1),* National Environment Protection Council, May 2013 (the **ASC NEPM**).

– ANZECC/ARMCANZ (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, Paper No 4, 2000.*

– NHRMC/NRMMC (2011). *Australian Drinking Water Guidelines. National Health and Medical Research Council and Natural Resource Management Ministerial Council.*

1.7 Permitted land uses

The Stage 2 AA3 is zoned as IN3 – Heavy Industrial under the Parramatta Council Local Environmental Plan 2011. Permissible uses allowed under this zoning (with consent), include the following:

Agricultural produce industries; Building identification signs; Business identification signs; Depots; Freight transport facilities; General industries; Hardware and building supplies; Hazardous storage establishments; Heavy industries; Horticulture; Kiosks; Medical centres; Offensive storage establishments; Pubs; Roads; Rural supplies; Sawmill or log processing works; Take away food and drink premises; Timber yards; Warehouse or distribution centres; Water storage facilities.

1.8 Site visit

The auditor has undertaken a number of site inspections since being commissioned in 2018. The most recent site inspection (relevant to AA3) was undertaken on 4 November 2021, observations from which are summarised below. The Stage 2 AA3 has no current formal use. Access to the AA3 is restricted and controlled by Viva Energy.

A site walkover within proposed Lots 56, 58, 61, 62 and a portion of the Proposed Roadway, that comprises the Stage 2 AA3 was conducted by GHD (site auditor and auditor assistant), ERM, Enviropacific (EP) and Viva Energy.

Remedial works across the Stage 2 had been completed and excavations were open and could be inspected. There were no odours observed at any of the remedial excavation areas. Screening for the biopiles had commenced – slight odours were noted at these locations which dissipated about 20 metres from the processing area.

The auditor noted that AA3 was relatively flat with a gradual slope to the south towards Duck River. Apart from some shallow, man-made surface water drainage features, the site no longer contained any infrastructure associated with the former activities conducted at the site. The following photographs were taking during the site inspection in November 2021.

Figure 1 Overall view Stage 2 area and former Stage 1 remediation Area (in the background)

Figure 2 Overall view of Stage 2 Area looking north

Figure 3 Overall view of Stage 2 Area looking east

Figure 4 **Boundary between Former Stage 1 Remediation Area and Stage 2 Area**

Figure 5 **Temporary stockpile**

Figure 6 **Material being screened for biopiling**

Figure 7 **Biopile area soil vapour extraction system in the foreground**

1.9 Site audit report structure

This SAR documents the audit of the reports referenced in **Section 1.4.** Where the auditor has provided comments on the work, these are highlighted in blue shaded dialogue boxes. The remainder of this report is organised as follows:

Section 2 Site conditions and environmental setting

Section 3 Historical land use

Section 4 Previous characterisation reports

Section 5 Stage 2 Remedial Action Plan

Section 6 Stage 2 Ambient Air Quality Summary

Section 7 Implementation of Stage 2 RAP for AA3

Section 8 Stockpiles management and biopiling validation

Section 9 Groundwater monitoring events - Consent Condition B22

Section 10 Evaluation of quality assurance and quality control

Section 11 Conceptual site model post remediation

Section 12 AA3 Long Term Environmental Management Plan

Section 13 Other considerations

Section 14 Compliance with regulatory requirements

Section 15 Audit conclusions

Section 16 Disclaimer

1.10 Site audit report limitations

The information and opinions given in this SAR are based on reviewing information presented in the documentation referenced in **Section 1.4** and other supporting information provided by Viva Energy and the consultant.

The auditor has not carried out any independent investigations in relation to the condition of the site. This audit is subject to the limitations presented in **Section 16**.

The auditor assumes no responsibility or liability for any errors or omissions in the information provided in the reports reviewed or that the consultant did not confer any reliance on the reports to the auditor.

The purpose of this SAR is to assess if the AA3 Validation report (and relevant accompanying reports) was prepared in accordance with guidelines made or endorsed by the NSW EPA, complied with relevant Consent Conditions required by the DPIE as previously discussed in **Section 1.3** and whether it demonstrated the site was suitable for commercial/industrial land uses. No other warranties, expressed or implied, are made.

This SAR relates only to the subsurface to define the nature and extent of contamination at the site, and related identified off-site impacts from surface water, groundwater, or soil vapour. It does not comment on the evaluation of geotechnical issues, or any other issues associated with the site.

2. Site conditions and environmental setting

A summary of the site conditions and environmental settings discussed by ERM in the AA3 Validation report or in the background reports listed in **Section 1.5** is discussed below.

2.1 Site identification

The AA3 is in the central portion of the WARP and extends from Devon Street in the north to the Duck River to the southern boundary.

The WARP location and the AA3 layout are shown on Figures F1, F2 and F3 in **Appendix A-1**. The site identification information along with the proposed lots and road is summarised in **Table 1**.

2.2 AA3 description prior remediation

ERM outlined in the AA3 Validation report the following key features across the Stage 2 AA3 prior to remediation:

- **Lot 56**:
  - Vacant
- **Lot 58:**
  - AEC-14a - Petroleum hydrocarbon impacted soils to be excavated and validated;
  - Stockpiles SP31, SP34 and SP35 - Demolition waste, predominantly concrete and bricks, sourced from demolition of refinery infrastructure; and
  - Stockpiles SP32 and SP33 - Soil and demolition waste.
- **Lot 61**:
  - Stockpile SP37 - Soil containing asbestos; however, has been deemed suitable for site re-use based on asbestos quantification analysis provided in the Stage 2 Stockpile validation Report; and
  - Stockpiles SP38 and SP39 - Demolition waste, predominantly concrete and bricks, sourced from demolition of refinery infrastructure.
- **Lot 62 and adjacent Proposed Roadway**:
  - AEC-3a - Petroleum hydrocarbon impacted soils to be excavated and validated;
  - AEC-3b - Asbestos impacted soils to be excavated and validate; and
  - Stockpiles SP40 and SP43 - Demolition waste, predominantly concrete and bricks, sourced from demolition of refinery infrastructure.

The stockpile management is further discussed in **Section 8**.

2.3 Topography and drainage

ERM, 2022b stated that the surface of the AA3 was reshaped over time with the use of imported fill to provide a relatively flat site. Until July 2020, rainfall and surface water were collected through the Continuously Oil Contaminated (COC) and Accidentally Oil Contaminated (AOC) drainage systems which diverted the water to the Clyde Terminal Drainage network and Wastewater Treatment Plant (WWTP).

As reported by ERM in the AA3 Validation report, drainage lines within Lots 56, 58, 61, 62 and the Proposed Roadway alignment consisted of pipelines that formed part of the sub-grade AOC and COC drainage network decontaminated and decommissioned throughout 2020.

Lots 58, 61, 62 and the Proposed Roadway alignment also consisted of pipelines containing residual hydrocarbon sludge that could not be decontaminated and validated as part of the decommissioning

works and isolated from all other pipelines throughout AA3 and the western area via backfilled drainage pit junctions to prevent lateral migration.

The drainage validation outcomes were presented in ERM, 2021b. ERM assessed that the pipelines and their contents do not present an unacceptable future safety risk via accumulation of gases in sub-grade void spaces. The auditor reviewed and agreed with the findings of the Drainage validation report – which was documented in the Stage 2 RAP SAS. The drainage network is shown on Figure F4 in **Appendix A-1**.

ERM described that the Duck River is the closest surface water body to AA3. The Duck River is lined with mangroves adjacent and is considered a moderately disturbed catchment given the industries that are located along its route. The tidal limit of the Duck River extends approximately one kilometre upstream of the site to the Clyde Railway culvert (Cardno Lawson-Treloar, 2008).

The upper reaches of the Duck River extend approximately 10 kilometres south to Condell Park, within the Bankstown LGA where stormwater flows in a series of storm water pipes and open concrete drains. The downstream extent of the Duck River discharges into the Parramatta River to the north-east of the Stage 2. ERM reported that the Parramatta River is the major tributary of Sydney Harbour located approximately 15 kilometres downstream of the site which, in turn, discharges into the Pacific Ocean.

2.4 Geology and potential acid sulfate soils

ERM, 2022b documented the following general fill/soils profiles within AA3:

- The average thickness of fill material is 0.6 metres with the greatest thickness between 1.2 to 1.5 metres to the south in proximity to the Duck River. Fill material is underlain by high plasticity orange red and grey clay across most of the Stage 2. Localised areas of backfill sand have been identified surrounding subsurface features (pipework) to depths up to two metres below ground level (bgl).
- Acid Sulfate Soils (ASS) below Stage 2 AA3 is classified predominantly as Class 4 ASS risk. A small portion of the south-eastern extent of the Stage 2 area, that includes AA3 is classified as Class 2 ASS risk. Previous investigations within AA3 have identified low potential for ASS/Potential Acid Sulfate Soil (PASS) present.

2.5 Hydrogeology

A summary of the hydrogeological information presented in the AA3 Validation report is presented in **Table 3**.

Table 3 Hydrogeology – AA3

Data	Results
Groundwater depth	A shallow unconfined aquifer is present in AA3 within fill and estuarine-alluvial sediments at depths between 0.3 metres below ground level (m bgl) and 3 m bgl.
Groundwater flow direction	For most of the Stage 2 Area (including AA3), groundwater flow direction was inferred be to the south and south-east towards the Duck River. Groundwater flow direction maps prepared using data collected during the remediation is shown on Figures F2 and F3 in **Appendix A-3**.
Hydraulic gradient	ERM reported an average hydraulic gradient of 0.003 along the up-gradient portion of the WARP, including AA3.
Hydraulic conductivity	ERM reported that the hydraulic conductivity has been established to be low across the majority of the WARP, with estimated hydraulic conductivity values for wells that were screened across clay, sandy clay and gravelly clay typically ranging from 5×10^{-5} m/day to 6×10^{-3} m/day.
Tidal assessment	ERM reported that on the basis of static water level data obtained from monitoring wells adjacent to the Duck River (including within Lot 64), tidal interaction of surface water within the Duck River with groundwater is not considered likely and is consistent with tidal assessments undertaken within the Clyde Terminal.

The AA3 Validation report discussed the following two hydrologic aspects that formed key elements of the conceptual site model (CSM):

– Vertical migration of groundwater is limited by the soil profile which comprises unconsolidated fill underlain by low permeability clay. In addition, groundwater data that had been collected at the site and did not demonstrate there to be groundwater impacts at many of the areas, including the ASTs that were formerly in the northern portion of AA3. Therefore, ERM concluded that vertical migration of contaminants in the AA3 is limited by the nature of the soil profile and the aquifer.
– Lateral migration of contaminants of potential concern (CoPC) in groundwater is limited by the low permeability of the lithology and relatively flat hydraulic gradient. ERM reported that this conclusion was supported by the limited lateral extent of impacted groundwater, indicating that, where present, areas of impacted groundwater are stable and do not appear to be migrating.

2.6 Auditor discussion - Site conditions and environmental setting

The auditor considered that the information presented by ERM in the AA3 Validation report together with the reports listed in **Section 1.4** and **Section 1.5** provided a detailed description of the features of AA3 (historical and prior remediation of AA3). The information presented met the requirements of the Consultant Guidelines checklist (NSW EPA, 2020) as it shown the audit tracking sheet (based on the Consultant Guidelines) included in **Appendix B**.

The descriptions of the Lots 56, 58, 61 and 62 and those of the immediate surrounding land uses reported by ERM were consistent with the auditor's observations made during the site inspection undertaken in November 2021. The photolog of this site visit is presented in **Section 1.8**.

The auditor considered that the AA3 Validation report and the relevant supporting information outlined in **Section 1.5** presented a detailed summary of the local topography, site geology and hydrogeology that formed the basis for understanding these elements in the conceptual site model (CSM) and their influence on the contaminant distribution and mobility.

The auditor noted based on ERM reports listed in **Section 1.5**, as well as in the observations of the soil profile during the remedial excavations, the following key information regarding the hydrogeological characterisation:

- Vertical migration of groundwater is limited by the soil profile which comprises a thin layer of unconsolidated fill underlain by low permeability clay.
- Lateral migration of CoPC in groundwater is limited by the low permeability of the lithology and relatively flat hydraulic gradient, indicating that where present areas of impacted groundwater are likely to be stable with resultant limited migration.

It is the auditor's opinion that the site conditions and environmental setting information presented by ERM in the AA3 Validation report together with other reports reviewed as part of this audit contained the relevant information as recommended in Schedule B2 of the ASC NEPM (NEPC, 2013) and the Consultant Guidelines (NSW EPA, 2020).

3. Historical land use

The summary of the historical land uses (as provided below) was developed by ERM based on desktop reviews, interviews and aerial photograph reviews undertaken during the previous investigations, further discussed in **Section 4.1**. The location of historical infrastructure relevant to the operations described below is shown on Figure F2 in **Appendix A-1**.

3.1 Former Clyde Refinery

AECOM in the Conceptual RAP (AECOM, 2019) described that the former Clyde Refinery was originally included as part of an 850-acre land grant by the Crown to John Macarthur. In 1908, a parcel of 140 acres of land was transferred to the Commonwealth Oil Corporation (COC). The COC struck financial difficulties and went into receivership. In 1913 the land was then acquired from COC by John Fell and Co.

The new owner began purchasing crude oil to refine at Clyde and refining commenced in 1926. In 1928, Shell Refining Pty Ltd took over as owner and operator of the site. Shell purchased an additional seven acres of land and a further 150 acres in June 1930. The duration of the first stage of expansion of the site was from 1929 to 1939 with the purchase and construction of new equipment and buildings, increasing the crude product intake to approximately 250 tonnes/day by 1934.

The former Clyde Refinery operations primarily comprised the receipt and refining of crude oil and finishing product piped from the Gore Bay Terminal until cessation of refining activities in 2012. Since the completion of refining operations, the former Clyde Refinery has been partially utilised as a terminal, which primarily involves the receipt, storage, and distribution of finished petroleum products.

Since the cessation of refining operations in 2012, the Clyde Terminal continues to receive finished petroleum products from the Gore Bay Terminal via an existing product transfer pipeline and distributes the products by separate pipelines from the Clyde Terminal to the adjacent Parramatta Terminal.

3.2 Western Area Remediation Project

Following completion of the Clyde Terminal Conversion Project (SSD Nº 5147), 40 hectares of the terminal (the western area) was no longer required for operational purposes. Given the identified presence of contaminated soil and groundwater in the western area, remediation as per conditions listed in SSD Nº 9302, is taking place to enable future commercial and/or industrial land uses.

3.3 Stage 2 remediation area

The following features associated with the former refining operations in the Stage 2 Area from approximately 1960 until their demolition between 2012 to 2020:

- Administration buildings, car parking areas and offices.
- Fuel and product storage infrastructure, including Tank Farm Areas A1, A2, A3, J and above-ground pipe tracks.
- Oil Refining infrastructure, including boilers, Platformer 3 and flare areas to the south
- A water treatment plant and control room.
- Bitumen loading gantry and associated rail sidings.
- Contractor support services buildings, including warehouses and workshops, laboratory and fire station electrical sub-stations and associated transformer yards.
- Underground drainage infrastructure (accidentally oil contaminated and clean water council drainage), Pump House 1 and corrugated plate interceptor unit.
- Southern Buried Waste Area which is known to have been used for the burial of refinery wastes and soil sourced from excavations across the Clyde Refinery footprint.

– Former sub stations – which were cleared of the presence of Polychlorinated Biphenyls (PCBs). ERM reported that the in-situ decommissioning and decontamination of the sub-grade drainage network was undertaken between July 2020 and February 2021 and subsequently has been isolated from the Clyde Terminal Drainage network and WWTP.

3.4 Stage 2 Audit Area 3

The historical features described by ERM in the AA3 Validation report are as follows:

– Lot 56:
  - Partial Areas of Tank farm A2;
  - Substations and Transformer Yard; and
  - General site areas outside other AECs.
– Lot 58:
  - Substations and Transformer Yards;
  - Subsurface drainage network;
– Lot 61:
  - Platformer 3;
  - Tank farm J;
  - Subsurface drainage network; and
  - General site areas outside other AECs.
– Lot 62:
  - Southern Contractor Area;
  - Substations and Transformer Yards;
  - Subsurface drainage network; and
  - General site areas outside other AECs.
– Proposed Roadway:
  - Southern Contractor Area;
  - Subsurface drainage network; and
  - General site areas outside other AECs.

3.5 Auditor discussion – Historical land use

The auditor noted that investigations over the past 30 years have incorporated a detailed description of the former Clyde Refinery and associated environmental conditions. ERM demonstrated that the primary historical usage of the Stage 2 Area which had the potential to result in soil and groundwater contamination was the storage and processing of petroleum hydrocarbons, the former sub-stations, the drainage systems, former buildings, and fill imported to the Western Area.

Regarding Stage 2 AA3, the auditor noted that the primary uses that could have resulted in contamination were the tanking areas, the drainage network, and the substations and transformers yards. The formal electrical substations were previously presented in the RSI (2020a) and HHERA (ERM, 2020b) and were not deemed by ERM to require remediation due to the presence of PCBs. The drainage network was decommissioned and validated between 2020 and 2021, with the outcomes presented in the Drainage validation report (ERM, 2021b). The auditor noted that most of the former infrastructure within AA3 was aboveground, including fuel and product storage infrastructure, associated pipe tracks and administration buildings.

It is the auditor's opinion that the information provided by ERM in the AA3 Validation report was sufficiently detailed and adequate for the purposes of identifying potential contamination at the Stage 2 AA3.

4. Previous characterisation reports

This section presents a summary of historical site investigations and assessments throughout Stage 2 which incorporates the Stage 2 AA3. The locations of historical soil, groundwater and soil vapour sampling points is shown on Figure 5A in **Appendix A-1**.

The complete historical soil, groundwater, and soil vapour dataset for AA3 screened against the remediation criteria is provided in **Appendix C-1**.

4.1 Historical reports

ERM stated in the AA3 Validation report that investigations across the Clyde Refinery have been conducted since 1991. A summary of the objectives and scope of works of the investigations is presented in **Table 4**.

Table 4 Summary of historical reports

Author	Year of assessment	Objectives	Scope of works
Groundwater Technology	1994	Assessment of soil and groundwater conditions	Installation of six monitoring wells
Woodward Clyde	1998	Groundwater assessment	Drilling of 13 soil bores Installation of four monitoring wells (MW98/2, MW98/3, MW98/4, MW98/5)
Coffey	1998	'Green Mound' Environmental Site Assessment (AEC-4)	15 Test pits
ERM	2009	Investigation of shallow soils within the Old Admin Area	Drilling of 15 soil vapour bores
ERM	2008 to 2020	GMEs for compliance purposes	Groundwater sampling
Douglas Partners	2010	Geotechnical investigation for Sydney Metro	Installation of five monitoring wells (BH115, BH116, BH209, BH210, BH341)
ERM	2011	Tank 30 release Investigation	Drilling of six soil bores Installation of 2 temporary groundwater monitoring wells
ERM	2012	Stage 1 and 2 Environmental Site Assessments	Drilling of 11 soil bores (BH12/29-BH12/39) Installation of 12 monitoring wells
AECOM	2018	Targeted Site Investigation (TSI)	Installation of two groundwater wells (MW18/23 and MW18/24) Installation of five soil bores Drilling of 15 test pits
ERM	2018	Development of PFAS CSM and Model Flux	Groundwater sampling and hydraulic testing in existing wells
ERM	2018	Lease Exit Investigation for Autonexus	Drilling of 15 soil bores (SB1B to SB15B)
ERM	2019	Remediation Site Investigation (RSI)	Drilling of 57 test pits Installation of six soil vapour bores
ERM	2019 to 2020	Remediation Trials	Excavation of approximately 1200 m^3 of soil material from process

Author	Year of assessment	Objectives	Scope of works
			west for bioremediation treatability trials
ERM	2020	Stage 2 Drainage Decommissioning Validation	Drilling of 14 test pits Sampling of nine sludge characterisation
ERM	2020	AEC-4 Supplementary Environmental Site Assessment (ESA)	Installation of 22 groundwater monitoring wells
ERM	2020	Stage 2 Characterisation of stockpiled material on-site	Sampling of four stockpiles Visual inspection of 11 demolition waste stockpiles for presence of asbestos containing material (ACM)
ERM	2021	Stage 2 Additional ESA for increased sample density for validation of future subdivision	Drilling of 97 Test pits: 63 samples collected for laboratory analysis Collection of 34 samples for visual observation and field screening

Relevant data from these reports are discussed in the following sections in relation to preparation of the Stage 2 RAP and the subsequent AA3 Validation report.

4.2 AA3 environmental characterisation

The Stage 2 ESA (ERM, 2021c) enhanced the scope of site characterisation works by increasing sampling densities to facilitate the assessment of the suitability of the site for the individual lots and Proposed Roadway.

ERM in the Stage 2 ESA reported that the sampling density achieved for each lot was considered appropriate for the assessment of land use suitability.

4.2.1 AA3 historical soil characterisation

A summary of soil exceedances for the AA3 is shown in **Table 5**. The remedial criteria are discussed further in **Section 5.3**. The historical soil SSTL exceedances for the WARP by depth are shown on Figures F5A to F5D in **Appendix A-1**.

Table 5 Summary of historical soil exceedances

Lot ID	AEC	CoPC	Soil criteria exceeded	Relevant locations (depth in m bgl)
58	AEC14a	TRH F1 TRH >C_{10}-C_{12} aliphatic	SSTL – Vapour intrusion for future commercial workers	TP20/28 (1.55)
62	AEC3a	Asbestos (ACM >7mm)	NEPM HSL-D Asbestos	TP19/32 (0.1)

Lot ID	AEC	CoPC	Soil criteria exceeded	Relevant locations (depth in m bgl)
	AEC3b	TRH F1	SSTL - Vapour intrusion for future commercial workers	TP18/20 (0.45, 0.7, and 1.2)
Proposed Roadway	AEC3a	TRH F1	SSTL - Vapour Intrusion for future commercial workers	SB18/24 (1.2)

Note: Lot 56 and Lot 61 did not record SSTLs soil exceedances, only TRH Management Limit exceedances which were demonstrated to not pose potential human and ecological risks.

4.2.2 AA3 light non-aqueous phase liquids

ERM, 2022b stated that areas containing LNAPL associated within shallow soils, and TRH Management Limit Tier 1 exceedances were collectively known as AEC-15.

ERM, 2022b reported AEC-15 did not contain Tier 2 SSTL exceedances and are general areas within AA3 that did not require remediation. However, it will require a LTEMP to manage aesthetic issues – that do not pose unacceptable human health or ecological risks.

ERM, 2022b reported that given the difficulty to consistently identify and describe LNAPL within the soil profile due to its high viscosity the TRH Management Limits for commercial/industrial land use (coarse soils) were applied to allow comparison to soil analytical data.

The locations where residual LNAPL trapped in soil is shown on Figures F5B, F5C and F5D in **Appendix A-1**.

4.2.3 AA3 historical groundwater characterisation

ERM, 2022b outlined that LNAPL had been identified during previous groundwater monitoring events at the following monitoring wells located within the Stage 2 Area, noting that these monitoring well locations are all situated outside and down hydraulic gradient of AA3:

- MW11/17 - Located immediately south of former Platformer 3 Location, within AA3.
- MW12/01, MW20/05, MW20/06, MW20/07, and MW20/13 - Situated within the Southern Buried Waste Area, outside and downgradient of AA3.
- MW18/24 - Situated within the footprint of the former laboratory, within AA3.

The groundwater monitoring well locations and historical exceedances of CoPC are shown on Figure F5E in **Appendix A-1**.

Groundwater monitoring of wells in the vicinity of these seven locations where LNAPL was historically observed, has demonstrated no down gradient migration of LNAPL from these areas.

Associated dissolved phase hydrocarbon concentrations are also limited in extent and were delineated within the Stage 2 boundary (before Duck River).

Concentrations of CoPC in groundwater were reported below adopted SSTLs for on-site human health. Within AA3, the following exceedances of off-site criteria for ecological receptors have been reported in the groundwater monitoring dataset during GMEs completed in the last five years (2017 to 2021):

- MW98/4 (Lot 62): zinc and perfluorooctanesulfonic acid (PFOS) exceeding off-site ecological criteria (PFOS exceedances were recorded in 2018 and 2019).
- MW11/02 (Lot 56): copper, nickel, zinc and naphthalene exceeding off-site ecological criteria.
- MW11/04 (Lot 56): nickel and zinc exceeding off-site ecological criteria.
- MW11/08 (Lot 58): copper, nickel, and zinc exceeding off-site ecological criteria.

– MW11/17 (Lot 61): zinc exceeding off-site ecological criterion.
– MW11/18 (Lot 61): PFOS exceeding off-site ecological criteria (PFOS exceedances were recorded in 2018 and 2019).
– MW11/20 (Lot 62): PFOS exceeding off-site ecological criterion (PFOS exceedances were recorded in 2018).
– MW12/21 (Lot 62): PFOS exceeding off-site ecological criterion (PFOS exceedances were recorded in 2017, 2018 and 2019).
– MW18/23 (Lot 62): PFOS exceeding off-site ecological criterion (PFOS exceedances were recorded in 2018).
– MW18/24 (proposed road): benzene ethylbenzene, xylene (m&p) and PFOS exceeding off-site ecological criteria (PFOS exceedances were recorded in in 2018).

ERM stated that as groundwater samples collected from locations down hydraulic gradient of these wells had concentrations of benzene, ethylbenzene, xylene, and naphthalene below the adopted ecological criteria, this demonstrated the extent of CoPC impact was localised. In addition, ERM considered that metals exceedances of off-site ecological criteria were indicative of regional background conditions.

ERM reported that PFOS exceedances recorded in 2017, 2018 and 2019 during the groundwater monitoring events did not pose a potential risk to off-site ecological receptors (Duck River) as per the findings of the PFAS CSM and mass flux assessment (ERM, 2018) which concluded the following:

– The tidal environment and large catchment area of the Duck and Parramatta Rivers located up gradient and adjacent to the site, are likely impacted by numerous off-site sources expected to contribute PFAS to these receiving water bodies.
– Based on the effect of mixing of discharged groundwater with off-site surface water within a large catchment area, discharged concentrations of PFOS are expected to be below the laboratory LORs and adopted criteria for off-site human health and ecological receptors.
– Indirect exposure to off-site recreational fishers (via consumption) are considered low given commercial fishing bans and extensive restrictions on recreational fishing, including a complete fishing ban for the Duck River and ban on the use of traps and nets in nearby sections of the Parramatta River.

ERM, 2022b concluded that the potential risks to the off-site receptor (Duck River) were low and acceptable in consideration of the ongoing industrial land use, delineation data, and disturbed catchment area of the Duck and Parramatta River was likely impacted by numerous other off-site PFAS sources.

4.2.4 AA3 historical soil vapour characterisation

ERM, 2022b reported that two soil vapour monitoring wells were installed within AA3 as follows:
– Lot 62 – AEC-3a (Former Laboratory Area): SV19/05.
– Lot 61 – AEC-5 (former Platformer 3 Area): SV19/09.

The laboratory analytical results identified exceedances of the SSTLs for soil vapour at SV19/05 within Lot 62 – AEC-3a for the following chemicals:

– TRH C_6-C_8 Aliphatic, TRH C_8-C_{10} Aliphatic and TRH C_8-C_{10} Aromatic
– Benzene.
– Naphthalene.
– Methane.

It was reported by ERM in the AA3 Validation report that hazardous ground gas assessment was undertaken for methane and carbon dioxide in accordance with the Ground Gas Guidelines (NSW EPA, 2020). Based on the results of soil vapour monitoring, ERM concluded that the presence of

these ground gases across the broader Stage 2 Area were classified as having a “very low” safety risk in accordance with NSW EPA, 2020.

The methane detected at soil vapour monitoring well SV19/05 was categorised by ERM as having a “low” safety risk for accumulation of methane within future indoor air spaces. However, as SV19/05 is located within AEC3a, and impacted soils and associated LNAPL were removed.

The locations of the soil vapour monitoring wells and historical exceedances are shown on Figure F5F in **Appendix A-1**.

4.3 Data gap investigation – Proposed Roadway

Following completion of the Stage 2 ESA, ERM reported that additional investigations within the area of the proposed road would be necessary to confirm the current CSM for the future road which is elongated and crossed several AECs. A summary of additional investigation locations and rationale is provided in **Table 6**.

The sampling locations for the data gap investigation of the proposed road are shown on Figure F5A in **Appendix A-1**.

Table 6 Proposed Roadway delineation scope of works

Test pit ID	Depth	Minimum sample numbers	Laboratory analysis	Rationale
TP21/98	2.0 m or depth of vertical delineation as indicated by field screening and/or observations.	2 samples, being one sample in fill and one sample in natural clay.	TRH C_6-C_{40}, and BTEXN (all samples) PAH and 8 metals (fill samples) Asbestos %w/w (if demolition waste materials encountered)	Increased spatial coverage of elongated proposed road alignment
TP21/99	2.0 m or depth of vertical delineation as indicated by field screening and/or observations.	2 samples, being one sample in fill and one sample in natural clay.	TRH C_6-C_{40}, and BTEXN (all samples) PAH and 8 metals (fill samples) Asbestos %w/w (if demolition waste materials encountered)	Increased spatial coverage of elongated proposed road alignment

4.4 Auditor discussion – Previous characterisation reports

The auditor considered that a significant quantum of work had been conducted over the past 30 years and that these works have appropriately characterised the Stage 2 AA3. The environmental characterisation of the Stage 2 AA3 has included soil sampling at 87 locations, two soil vapour sampling locations and 23 groundwater monitoring wells.

The auditor noted that ERM calculated the diameter of the hot spot that can be detected with 95% confidence using the number of sampling points per hectare. As mentioned by ERM in the AA3 Validation report, while the equivalent sampling density for most lots was slightly less than the recommendation within the Sampling Design Guidelines (NSW EPA (1995), the diameter of a hot spot that can be detected was smaller than the guideline recommendation.

It is the auditor’s opinion that distribution of soil vapour monitoring wells was appropriate for the purpose of vapour characterisation in combination at areas where soil and groundwater data suggested vapour intrusion could occur.

The auditor considered that the ERM demonstrated a comprehensive understanding of the hydrogeological conditions and the subsequent development of a detailed CSM.

The auditor noted that the sample locations have been systematically positioned across the Stage 2 AA3 with the collection of samples largely focused on areas of concern (identified as part of the thorough site history assessment) in shallow fill, with deeper samples of the underlying natural soils collected sporadically across the AA3, particularly in areas where site observations identified the potential for contamination in the overlying fill.

The auditor noted that the QA/QC evaluation for the historical reports, including the Stage 2 ESA (summarised in this SAR) was discussed in the SAR that accompanied the SAS nº 065-2127799B.

The auditor concurred with ERM's conclusion that the potential risks to the Duck River (the off-site receptor) were low and acceptable in consideration of the ongoing industrial land use, delineation data and that the heavily industrialised nature of the catchment area of the Duck and Parramatta River. Given the nature of the industrial/commercial area the auditor noted that there is no ecological receptor on-site.

The auditor noted that the investigation reports relevant to Stage 2 AA3 were standalone reports, presenting sufficient information for the understanding of the site conditions leading to the preparation of the Stage 2 RAP. As such, it was the auditor's opinion that the historical reports reviewed as part of this site audit met the key requirements of the NSW EPA Consultant Guidelines (NSW EPA, 2020) and ASC NEPM (NEPC, 2013).

5. Stage 2 Remedial Action Plan

The Stage 2 RAP prepared by ERM was reviewed by the auditor, the results of which were documented in SAS Nº 065-2127799B issued in August 2021.

The Stage 2 RAP detailed the nature and approximate extent of identified soil contamination, the extent of remediation required, feasible remediation strategies to address the identified contamination, and the environmental management requirements to be implemented during remedial works.

A list of remediation methods for the AECs identified within the Stage 2 area were presented in the RAP and each method evaluated against criteria of effectiveness, timeframe, health and safety, complexity, sustainability, and cost in accordance with the CRC Care, 2018 guidance.

5.1 AECs within AA3

ERM, 2021d identified the following AECs being relevant to the Stage 2 AA3:

- AEC-3 (Southern Contractor Area) – Lot 62 and Proposed Roadway.
- AEC-5 (Platformer 3) – Lot 61.
- AEC-8 (Tankfarm J) – Lot 61.
- AEC-11 (Partial areas of Tank farm A2) – Lot 56.
- AEC-13 (Substations and Transformer Yards) – Lots 56, 58 and 62.
- AEC-14 (Subsurface drainage network) – Lots 58, 61, 62 and Proposed Roadway.
- AEC-15 (General site areas outside of other AECs) – Lots 56, 58, 61, 62 and Proposed Roadway.

A discussion regarding the AECs that requiring remediation and/or management is further presented in **Section 5.4**.

5.2 Data quality objectives

ERM documented in the AA3 Validation report that the DQOs for the validation program completed following remediation were developed using the guidance in Schedule B(2) of the ASC NEPM as summarised in **Table 7**.

Table 7 Data quality objectives

Step	Action	Details
Step 1	State the Problem	ERM stated that the remediation objectives were: - To remediate soils within AA3 (where required) to enable the land to be used for commercial/ industrial purposes. - To ensure any approved remediation process that is implemented adheres to all applicable regulatory requirements. - To achieve the objectives, a soil sampling plan was prepared to validate the efficacy of remedial works to be conducted within Lots 56, 58, 61, 62 and adjoining Proposed Roadway.
Step 2	Identify the Decision/Goal of the study	Based on the remediation objectives, the following decisions were to be made by ERM: - Had sufficient soil sampling been conducted in the proposed road area? - Had remediation excavations removed contaminated soil to the extent practicable to remove potential risks to human health and the environment?

Step	Action	Details
		- Was excavated soil suitable for on-site re-use, or did it require further treatment (via biopiling) or off-site disposal (material containing ACM)? - Was imported fill material suitable for use in AA3?
Step 3	Identify information inputs	The data necessary to answer the primary study questions identified in Step 2 were as follows: - Historical results. - Field observations made during remediation works for odours, LNAPL, sheens, discoloration, asbestos and other indicators of potential contamination. - Characterisation of the area of interest via visual screening and sampling of soil from excavations and stockpile footprints and subsequent field testing and/or laboratory analysis of selected samples. - Adoption of appropriate assessment criteria. - Evaluation of data quality by assessment of QA/QC.
Step 4	Define boundaries of the study	- Spatial: AA3 is shown on Figure F2 in **Appendix A-1**. - Temporal: Approximately 30 years. - Vertical: The depth of groundwater within AA3 (0.3 to 3.0 m bgl).
Step 5	Decision rules	The decision rules outlined by ERM in the AA3 Validation report were based on the achievement of objectives outlined in Step 1. In a case where the objectives were not met, additional excavation should be undertaken.
Step 6	Specify the performance or acceptance criteria	ERM reported that the data quality assessment should be based on the following: - The acceptable limits on decision errors applied during the review of the results will be based on the Data Quality Indicators (DQIs) of precision, accuracy, representativeness, comparability and completeness (PARCC) in accordance with the ASC NEPM Schedule B(3) - Guidelines on Laboratory Analysis. ERM considered that the potential for significant decision errors will be minimised by: - Completing a robust QA/QC assessment of the assessment data and application of the probability that 95% of data will satisfy the DQIs. Therefore, a limit on the decision error would be 5% that a conclusive statement may be incorrect. - Assessing whether appropriate sampling and analytical density (both laterally and vertically throughout the fill and soil profiles) has been achieved for the purposes of meeting the project objectives; and - Ensuring that the criteria set was appropriate for continuing use consistent with current and proposed usage under the IN3 – Heavy Industrial zoning.
Step 7	Optimise the design for obtaining data	ERM reported that the DQOs were developed based on a review of existing data. If data gathered during the remediation and validation program indicated that the objectives of the remediation were not being met, the sampling design would need to be adjusted accordingly.

5.2.1 Auditor discussion – Data quality objectives

The auditor considered that the DQOs prepared by ERM for the soil validation program were appropriate for the purposes of collecting data of acceptable quality to validate the Stage 2 AA3 for its proposed commercial/industrial land use. The auditor noted that the DQOs were consistent with those presented in the Stage 2 RAP.

5.3 Remediation criteria

5.3.1 Petroleum hydrocarbons and asbestos criteria

ERM, 2022c outlined that the remediation approach for the AA3 was excavation of the hydrocarbon impacted soils and subsequent biopiling (if required and appropriate – provided ACM was not identified in the soils contemplated for biopiling). Applicable risk-based remediation criteria for excavation bases and walls adopted by ERM were as follows:

- Direct Contact SSTLs for commercial/industrial land use, construction works and intrusive maintenance workers.
- Vapour Intrusion SSTLs for commercial/industrial land use (specified by depth of impact), construction works and intrusive maintenance workers.
- The visible presence of LNAPL or sheen in the walls or base of the excavation;
- NEPM Management Limits for TRH (commercial/Industrial, coarse-grained soils), which provide a semi quantitative assessment of the potential formation of LNAPL or potential for future acute hazards during excavation.
- NEPM HSL-D for asbestos management for any remaining soils. NEPM HSL-D criterion for asbestos management is 0.05% weight by weight (w/w) for ACM in soils and 0.01% w/w for fibrous asbestos and asbestos fines (FA and AF) in soil.

Remediation criteria (SSTLs) extracted from the HHERA (ERM, 2020b) are shown on **Table 8**.

ERM stated that during the historical assessments, the generation of polar compounds through natural aerobic biodegradation processes had been noted, which may cause false positives in TRH results. As such, ERM concluded that TRH C_{10}-C_{40} silica gel clean-up analysis be adopted to allow removal of degradation by-products from validation samples collected at the AA3 remedial areas.

5.3.2 Off-site disposal criteria

ERM, 2021d documented that characterisation of excavated materials to be disposed off-site was to be undertaken in accordance with the protocols listed in the Waste Classification Guidelines (NSW EPA, 2014).

5.3.3 On-site beneficial reuse criteria

ERM, 2021d documented that the applicable risk-based remediation criteria for soil re-use on-site were as follows:

- Soil SSTLs (Direct Contact) for commercial workers, construction workers and intrusive maintenance workers.
- Soil SSTLs (Vapour Intrusion) for commercial workers, construction workers and intrusive maintenance workers.

In addition to the above risk-based criteria, ERM considered that the following should be used to assess the potential presence of asbestos containing material, inorganics, LNAPL, or residual TRH concentrations requiring future management:

The visible presence of LNAPL or sheen in soils proposed for re-use:

- NEPM Management Limits for TRH, which trigger indicate the potential formation of LNAPL or potential for future acute hazards during excavation.
- NEPM HSL for asbestos management.
- NEPM HIL for other CoPC.

The following is noted in relation to end-use of excavated soils within other areas of the WARP:

– If soil SSTLs, NEPM HSL (for asbestos management) or NEPM HILs are exceeded, soils are unsuitable for re-use and will require further treatment or offsite disposal.
– If concentrations are <SSTLs, NEPM HSL (for asbestos management) or NEPM HILs, the presence of LNAPL, exceedance of TRH management limits or presence of asbestos containing material does not indicate that soils are unsuitable for on-site re-use but that future management in areas where this soil is placed may be required.

Based on the restricted use, the following was deemed preferential by ERM:

1. Soils are treated to below NEPM TRH management limits to reduce long term management requirements.
2. Placement of any soils known to contain some asbestos containing material be targeted to areas of site where additional filling will be required (such that any ACM will not be at the soil surface)

5.3.4 Auditor discussion – Remediation criteria

The auditor considered that the AA3 Validation report nominated appropriate target levels based on Schedule B1 and B7 of the ASC NEPM (NEPC, 2013) and considered the land use scenarios/activities during and after remediation.

The auditor noted that given the nature of the proposed land use of Stage 2 Area AA3 (commercial/industrial uses) which will be largely covered in hardstand surface, ERM did not consider there to be potential exposure risks to on-site ecological receptors which the auditor endorses. The auditor considered this was a pragmatic approach.

The auditor noted that the soils SSTLs adopted as remediation criteria for the Stage 2 AA3 were presented in the HHERA (ERM, 2021b). The HHERA was reviewed by one of the auditor's specialist support team members, Dr Kylie Dodd. The discussion on the HHERA findings and its endorsement by the auditor are registered in the SAS Nº 043-2127799 issued in June 2020.

The auditor noted that PFAS has been previously assessed within the Western Area, which included the Stage 2 Area. This assessment was discussed in the PFAS CSM, and Flux Assessment Report prepared by ERM (ERM, 2018). Based on the conclusion of the PFAS CSM and further supported by the HHERA, the PFAS concentrations recorded within the WARP did not pose an unacceptable potential human or ecological risk to either on or off-site receptors, thus remediation of PFAS was not deemed necessary.

It is the auditor's opinion that the remediation criteria discussion presented in the AA3 Validation report largely met the requirements of the Consultant Guidelines checklist (NSW EPA, 2020) as shown the audit tracking sheet included in **Appendix B**. The remediation criteria adopted by ERM are consistent with those presented in the endorsed Stage 2 RAP.

Table 8 Soil SSTL remediation criteria

CoPC	Direct Contact (mg/kg)			Vapour intrusion (mg/kg)						Management Limits (mg/kg)
	Commercial	IMW	Construction	Commercial (0.15 m bgl)	Commercial (1 m bgl)	Commercial (>2 – 4 m bgl)	Commercial (>4 m bgl)	IMW	Construction	
Benzene	400	15000	1200	3.2	3.2	3.2	3.2	NL	NL	-
Naphthalene	9800	810000	67000	NL	NL	NL	NL	NL	NL	-
Benzo(a)pyrene TEQ	40	3000	200	-	-	-	-	-	-	-
Total Chromium [2]	21000	100,000	8200							
Chromium VI	3600	17000	1400	-	-	-	-	-	-	-
TRH F1	28000	830000	69000	600	770	NL	NL	NL	NL	-
TRH C6-C10	-	-	-	-	-	-	-	-	-	700
TRH F2	17000	540000	45000	NL	NL	NL	NL	NL	NL	-
TRH C10-C16	-	-	-	-	-	-	-	-	-	1000
TRH C16-C34	27000	770000	64000	-	-	-	-	-	-	3500
TRH C34-C40	27000	770000	64000	-	-	-	-	-	-	10000
TPH (EC5-6) aliphatic	1200000	3700000	310000	-	-	-	-	-	-	-
TPH (>EC6-8) aliphatic	1200000	3700000	310000	480	610	880	1400	NL	NL	-
TPH (>EC8-10) aliphatic	24000	740000	62000	760	980	1400	2200	NL	NL	-
TPH (>EC10-12) aliphatic	24000	740000	62000	430	600	980	1800	NL	NL	-
TPH (>EC12-16) aliphatic	24000	740000	62000	4300	8300	17000	33000	NL	NL	-
TPH (>EC16-21) aliphatic	470000	4400000	370000	-	-	-	-	-	-	-

[2] Assumes total chromium is 17% Hexavalent chromium

CoPC	Direct Contact (mg/kg)			Vapour intrusion (mg/kg)						Management Limits (mg/kg)
	Commercial	IMW	Construction	Commercial (0.15 m bgl)	Commercial (1 m bgl)	Commercial (>2 – 4 m bgl)	Commercial (>4 m bgl)	IMW	Construction	
TPH (>EC21-34) aliphatic	470000	4400000	370000	-	-	-	-	-	-	-
TPH (>34) aliphatic	4700000	44000000	3700000	-	-	-	-	-	-	-
TPH (>EC8-10) aromatic	9500	300000	25000	110	150	230	420	NL	NL	-
TPH (>EC10-12) aromatic	9500	300000	25000	280	430	750	1400	NL	NL	-
TPH (>EC12-16) aromatic	9500	300000	25000	430	2800	5100	9800	NL	NL	-
TPH (>EC16-21) aromatic	7100	220000	18000	-	-	-	-	-	-	-
TPH (>EC21-34) aromatic	7100	220000	18000	-	-	-	-	-	-	-
TPH (>34) aromatic	7100	220000	18000	-	-	-	-	-	-	-

5.4 Remediation approach

As reported by ERM in the AA3 Validation report, the driver for remediation within AA3 was the potential for indoor inhalation of vapours by future on-site commercial workers from hydrocarbon impacted shallow soils and LNAPL within shallow soils in AEC-3a, and AEC-14a. The potential for vapour intrusion risks from soils at depths greater than 4 m bgl were not identified through tier 1 screening; therefore, these soils were not therefore subject to remediation.

Given the proposed future redevelopment as a commercial/industrial estate with limited access to soils afforded by concrete hardstand, isolated soil impacts may be subject to passive management controls under an LTEMP under the following circumstances:

- Soils which exceeded direct contact SSTLs.
- Residual LNAPL associated within shallow soils or soils with TRH fractions exceeding 'TRH management limits' which do not exceed relevant vapour intrusion SSTLs.

A summary of the areas selected for remediation and/or management, the adopted remedial method and the CoPC risk drivers is presented in **Table 9**.

Table 9 Summary of remediation and/or management areas

AEC	Area within AA3	CoPC requiring remediation	CoPC requiring management	Preferred remediation method
AEC-3a: Former Laboratory	Lot 62	benzene, naphthalene, TRH F1 methane[3]	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Excavation and on-site treatment or validation for on-site reuse
AEC-3b: Former Laboratory (ACM impacted Area)	Lot 62	asbestos	Not applicable	Excavation and off-site disposal
AEC – 5 Platformer 3	Lot 61	No remediation is required	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Not applicable
AEC – 8: Tank farm J	Lot 61	No remediation is required	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Not applicable
AEC – 11: Tank farms A1, A2, A3	Lot 56 Lot 58	No remediation is required	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Not applicable
AEC-13 (former substation 5)	Lot 56 Lot 58	No remediation is required	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Not applicable
AEC – 14: Subsurface drainage network	Lot 61 Lot 58 Lot 62	No remediation is required		Not applicable[4]

[3] Given the ground gas classification as CS4 (low risk), levels and flow of methane following removal of soils and backfill of excavation with compacted material there was little likelihood that there was a ground gas risk that required reinstallation of ground gas wells for post remediation monitoring.

[4] Details of residual hydrocarbons associated with the subsurface drainage network are detailed within the Stage 2 Drainage Decommissioning Validation Report.

AEC	Area within AA3	CoPC requiring remediation	CoPC requiring management	Preferred remediation method
AEC-14a: Compromised Pipe 18D300-5	Lot 61 Lot 58 Lot 62	TRH F1	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Excavation and on-site treatment or validation for on-site reuse
AEC-15	Lot 61 Lot 56 Lot 62	No remediation is required	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Not applicable
AEC-3 (Southern Contractor Area) AEC-15	Proposed Roadway	Residual LNAPL associated with shallow soil around TP 20/24 at 1.0 m bgl	Residual LNAPL in soil and soil concentrations > Management Limits for TRH	Excavation and on-site treatment or validation for on-site reuse

The locations of the AECs and proposed lots are presented in Figure F5A in **Appendix A-1**.

5.5 Excavation methodology

The excavation methodology nominated by ERM was to include the following actions:

– Excavation in grids in a progressive and methodical manner. Once the excavation of each grid was achieved, the excavator was to be utilized assist with the collection of validation samples. Each grid representing 10 metres by 10 metres of the excavation surface was used for the selection of the validation sample locations, as shown in Figures F6 and F7 in **Appendix A-1**.

– As per the requirements of the AEVR prepared by ERM and EPL 570, excavations were generated that exposed an area of contaminated soil no greater than 900 m^2. This was achieved through a combination of the following:

  - Progressive validation (via field headspace screening) of exposed surfaces (i.e. excavation, stockpiles) with subsequent selection of contaminated soils requiring treatment (>100 ppm v PID) or not requiring treatment (<100 ppm v PID).
  - A watercart used as required during the excavation works for dust suppression.

The above activities were combined with a program of ambient air quality monitoring for Volatile Organic Compounds (VOCs), odour and dust, as documented within the Stage 2 AAQ report, discussed in **Section 6**.

5.6 Segregation and screening of materials

As presented in the Stage 2 RAP, the following segregation and screening method of the soils excavated from the remedial areas was implemented. The contractor engaged to conduct the remedial works was EPS:

– Excavated materials were stockpiled and screened to allow removal of oversize material (>50 mm) and increase the available surface area of soil materials for biopiling. ERM reported that this was to be achieved via the use of a Powerscreen Warrior 1400X.

– A hood enclosure was placed over the screen deck, connected to a soil vapour extraction (SVE) system with activated carbon adsorption vessels to mitigate the emission of VOCs and odours during the screening process.

– The operation of the SVE system was to be conducted in accordance with EPS's Air Quality Management Method Statement and Soil Vapour Extraction Breakthrough Procedure.

– The Powerscreen hood enclosure and SVE system provided an additional level of VOC and odour control of the material screening process, as outlined in the AEVR prepared by ERM.

5.7 Monitoring required during remediation

ERM, 2021d reported that applicable monitoring requirements as per the associated WARP Remediation Environmental Management Plan (REMP) sub-plans and EPL 570, were to be implemented as per the summary presented in **Table 10**.

Table 10 Compliance monitoring during remediation

Monitored media	Scope
Groundwater	*Weekly gauging for changes in water levels and the presence of LNAPL during remediation.* *Baseline and post remediation groundwater sampling of nearby wells*
Ambient Air, Dust and Odour Monitoring	*Daily ambient air, dust and odour monitoring during remediation works to assess the effectiveness of the implemented management measures and the potential need for increased management measures.* *Boundary and source area air quality monitoring with Summa Canisters during intensive phases of excavation to verify compliance with air quality standards (relevant to AEC-3d and AEC-3e excavations).*

5.8 Remediation site management

ERM, 2021d reported that the biopile treatment pad was constructed in the former Tank Farm A1 Area and a soil screening and segregation pad was constructed in the former Platformer 3 area and the area between Tank Farm A1 and Platformer 3.

These pads were constructed via importation and compaction at a nominal thickness of 200 mm of certified clay VENM. The sediment basin was constructed in the area south of the former Platformer 3, via importation and compaction of certified clay VENM.

ERM stated that all VENM classifications were reviewed and approved prior to the importation to site.

The locations of the biopile treatment area, the soil screening and segregation area and the sediment basin are shown on Figure F8 in **Appendix A-1**.

5.9 Validation program

The remediation validation program prepared by ERM is summarised in **Table 11.**

Table 11 Summary of validation program

Contamination/Area	Validation approach	Required analysis	Sampling density
Hydrocarbon petroleum excavation	- Visual assessment of excavation surface on a systematic basis for the presence of LNAPL (in soils) or soils with PID screening >100 ppm. - The presence of residual LNAPL (in soils) and/or PID screening >100 ppm was used to guide further excavation to the extent practicable. - Validation sampling from final excavation walls and floor surfaces.	- BTEXN - Carcinogen BaP - PID. When PID >100 ppm and/or reported concentrations > SSTLs then TRH speciation (CWG fractions) - If TRH C_{10}-C_{40} > Management Limits, then the silica gel clean-up analysis was used to confirm the presence of degradation products.	- Wall: One sample per 10 lineal metres or one sample from each wall where the excavation wall <10 m. Additional sampling at the same frequency to be conducted for each material type present. - Base: 10 x 10 metres off-set grid in herringbone pattern.

Contamination/Area	Validation approach	Required analysis	Sampling density
Temporary stockpiles	- Visual assessment of soil for the presence of LNAPL (in soils) or soils with PID screening >100 ppm - Sampling of stockpiled soil to determine suitability for beneficial re-use or if further treatment is required.	- BTEXN - Carcinogen BaP - PID. If PID >100 ppm and/or reported concentrations > SSTLs then TRH speciation (CWG fractions). If TRH C_{10}-C_{40} > Management Limits, then the silica gel clean-up analysis will be used to confirm the presence of degradation products	- Up to 250 m^3 - One sample per 25 m^3 (minimum three samples per stockpile). - Between 250 and 2,500 m^3 - 10 samples (minimum number for calculation of 95% UCL). - >2,500 m^3 - One sample per 250 m^3
Temporary stockpile footprint (if not conducted on hardstand)	If a stockpile was placed on the footprint of a planned areas to be remediated at later stages of the WARP, separate validation for residual stockpile impacts was not considered warranted.	Use of existing in-situ data, plus the following: - BTEXN - TRH C_6-C_{40} - VOCs - PAHs - Phenols - As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+} - PCBs - OCPs	- 10 x 10 metres off-set grid in herringbone pattern.
Additional sampling at the alignment of proposed road	Collection of additional samples to confirm suitability for proposed land use and/or LTEMP requirements.	- BTEXN - TRH C_6-C_{40} - PAHs (50% of samples) - Metals (50% of samples) - If building or demolition material noted within fill: field sieving for gravimetric quantification of AF + FA quantification.	Two samples at each of four additional sample locations to reduce spatial gaps in the data.
Imported material	Classified as VENM.	As required	As required.

5.10 Auditor discussion – Stage 2 Remedial Action Plan

The appropriateness of the Stage 2 RAP was discussed in a SAR and SAS (Nº 065-2127799B) issued by the auditor on 13 August 2021. The auditor noted that the Stage 2 RAP was prepared based on a series of robust assessments, including two ROAs, an AEVR and the outcomes and lessons learnt with the Stage 1 Area remediation. The Stage 2 RAP was considered by the auditor to have been prepared in a manner consistent with relevant guidelines.

The auditor noted that the ROA included a series of field and lab-scale remediation trials for the Western Area conducted between November 2019 to February 2020 to assess the feasibility and effectiveness of various soil remediation methods in targeted areas of the site. Biopiling and land farming trials had been undertaken on soil sourced from excavation of AEC-9, within the Stage 1 Area.

The auditor noted that the following remedial methods were selected (in order of preference):

1) Excavation and On-Site Bioremediation (bio-piling); and/or

2) Excavation and off-site disposal of soils (as a contingency measure).

The selected remedial methods were consistent with the shortlist of remedial methods presented in the Conceptual RAP and EIS (AECOM 2018 and AECOM 2019).

Based on the historical GMEs, the auditor acknowledged that hydrocarbon concentrations in groundwater are stable to decreasing. Therefore, it is expected that the remedial works will contribute to the current natural attenuation processes to reduce residual groundwater impacts over time. To monitor the natural attenuation process, a Long-Term Groundwater Monitoring Management Plan was prepared as part of the SSD Conditions of Consent

As stated in the SAR associated with SAS Nº 065-2127799B, the auditor considered that ERM identified the key areas of contamination that would require remediation. The proposed remediation areas had concentrations of CoPC in soils that exceeded the nominated remediation target levels. The auditor noted that the selected remedial options for each AECs were technically sound and consistent with NSW EPA policies.

The auditor noted that ERM provided an appropriate unexpected finds protocol in the event that additional contamination was identified during remediation or development works.

The Proposed Road alignment within the Stage 2 AA3 was identified by ERM as requiring supplementary investigation to confirm the land suitability for commercial/industrial use from a contamination perspective. The collection of soil samples along the proposed road was considered an appropriate approach to dealing with the uncertainty associated with the extent of contaminated soils in these areas or providing greater characterisation coverage.

The auditor noted that the validation sampling program prepared by ERM was based on a systematic sampling grid of each excavation to evaluate the efficient removal of the contaminated soil. There was also a sampling program to demonstrate whether soil treated using biopiling can be reused on-site and for waste classification for materials to be disposed off-site.

6. Stage 2 Ambient Air Quality Summary

The ERM AAQ report (2022a) presented the outcomes of the assessment of ambient air quality monitoring data collected during the Stage 2 remediation works in accordance with the requirements of the NSW DPIE conditions of consent SSD Nº 9302.

The AAQ report was prepared to meet the reporting requirements outlined within the Environment Protection Licence for the WARP and the monitoring requirements outlined within the Stage 2 Air Emissions Verification Report (AEVR) (ERM, 2021). The ambient air monitoring was undertaken by ERM between 29 September and 19 October 2021.

6.1 Legal requirements

ERM reported that the AAQ report met the requirement of Condition R4.1 d) of Environment Protection Licence 570 (EPL 570) which states the following:

"The licensee must provide to the EPA air quality performance reports. The first report must be provided to the EPA by close of business on the Friday of the first week that the Soil Vapour Extraction systems are in operation…The reports must include: …

d) Monitoring data collected as per the air quality management procedure including any action taken when ambient VOC concentrations measured trigger the action levels identified in the Clyde Western Area Remediation Project Stage 2 Air Emissions Verification Report, dated 11 June 2021."

In addition, ERM reported that as per EPL 570, the following requirements for exposed surface areas were applicable to the Stage 2 remediation works:

- *O6.6 The total exposed excavation area must not exceed 900 m² at any time. For the purposes of this condition, an exposed excavation area means a disturbed ground surface as a result of the Stage 2 remediation works.*
- *O6.7 Stockpiles of unclassified contaminated material and stockpiles of contaminated material that has been identified as requiring onsite treatment must be covered at all times using a physical cover or suitable suppressant, except during periods when material is being added or removed from the stockpile.*
- *O6.8 Stockpiles of unclassified contaminated material and stockpiles of contaminated material that has been identified as requiring onsite treatment must be processed and, if required, moved to the biopile are for remediation as soon as reasonably practicable*.
- *Excavation areas were progressively validated as not requiring further remediation such that compliance with condition O.6 were met during the works. Validation results are detailed within relevant validation reports. Stockpiled materials were covered with suitable suppressant (Vital Bon Matt solution) when materials were stored and not subject to reworking.*

6.2 Stage 2 monitoring events

ERM completed the following ambient air monitoring events as per the Stage 2 AEVR:

- Photo-ionisation Detector (PID) area monitoring: which was used to provide real-time information on the intensity of VOC emissions during soil handling works and implement response measures; and
- Boundary VOC monitoring: which was undertaken during the Stage 2 remedial works in order to provide assurance of the efficacy of PID area monitoring in managing potential VOC impacts offsite.

Monitoring data from biopile SVE systems were not necessary for the purposes of the audit in demonstrating the suitability of the site for commercial/industrial land uses.

6.3 Stage 2 ambient monitoring results

6.3.1 PID area monitoring

ERM, 2022a reported that PID area monitoring was undertaken during handling of soils during remedial activities in order to provide real-time notification of whether elevated total volatile organic compound (TVOC) concentrations were present and if necessary, implement nominated Level 1 and Level 2 responses, as follows:

Level 1 (5 ppm):

- *Notification of plant operator of elevated ambient VOC concentrations;*
- *Investigation of potential sources; and*
- *Review of potential measures to reduce VOC emissions.*

Level 2 (10 ppm):

- *Cessation of soil handling operations and implementation of measures listed under Level 1 until TVOC emissions consistently reduce below the Level 1 trigger; and*
- *Investigation of the potential for Stage 2 related odours to be detected at the downwind boundary.*

A summary of exceedances of the PID trigger levels is presented in **Table 12.** A figure showing where PID exceedances were recorded is shown on **Figure 8** (extracted from ERM, 2022a).

Table 12 Summary of PID exceedances

Date	Monitoring location	Level exceeded	Comment / Management actions implemented
29/09/2021	3A-NW	Level 1	*Notified equipment operator of elevated VOC readings during loading of material.* *Reduced volume of material being transferred. Concentrations reduce to below level 1 trigger*
30/09/2021	3A-NW	Level 1	*Notified equipment operator of elevated VOC readings during loading of material.* *Conduct monitoring of boundary during works execution.*
01/10/2021	3A-NW	Level 1	*Notified equipment operator of elevated VOC readings.*
5/10/2021	3A-NW	Level 1	*Notified equipment operator of elevated VOC readings during loading of material.* *Reduced volume of material being transferred.*
6/10/2021	3A-NW	Level 2	*Level 2 trigger reached over isolated 60 second peak.* *Notified equipment operator of elevated VOC reading.* *Subsequent measurements were below Level 1 trigger.*
7/10/2021	SSA-CW	Level 2	*Notified equipment operator of elevated VOC readings during loading of material.* *Cessation of soil handing operations until PID measurements were below level 1 trigger level.* *Activated Anotec odour misting system.*
8/10/2021	3A-NW	Level 2	*Notified equipment operator of elevated VOC readings during loading of material.* *Cessation of soil handing operations until PID measurements were below level 1 trigger level;*

Date	Monitoring location	Level exceeded	Comment / Management actions implemented
			Modification of excavation methods to exclude stockpiling of freed material outside of the excavation. *Reduction of material drop heights.* *Reduction of excavation rates.*
19/10/2021	SSA-CW	Level 1	*Notified equipment operator of elevated VOC readings during loading of material.* *Reduced volume of material being transferred.*

ERM reported that with exception of the exceedances outlined in **Table 12** all other PID monitoring readings were below the adopted trigger levels. A summary of the PID measurements is presented in **Appendix C-2**.

6.3.2 Boundary VOC monitoring

ERM stated in the AAQ report that ambient VOC monitoring was undertaken during the Stage 2 remedial works in order to provide assurance of the efficacy of PID area monitoring in managing potential VOC impacts to off-site receptors.

The sampling was conducted using evacuated canisters in accordance with the USEPA TO-15 methodology, as specified within Compendium Method TO-15 - *Determination of volatile organic compounds in air collected in specially prepared canisters and analysed by gas chromatography / mass spectrometry* (US EPA, 1999). ERM noted that this method has also been applied by state jurisdictions under the National Environment Protection (Air Toxics) Measure (ASC NEPC, 2011) for the evaluation of VOC concentrations within populated airsheds around Australia.

As documented in the AAQ report, monitoring was conducted near the northern boundary (EC 01), southern boundary (EC 02), western boundary (EC 03) and eastern boundary (EC 04) of the Western Area. In addition, an 'at-source' location (EC 00) was included to allow assessment of the effect on air quality from the remedial works relative to other local and regional VOC emission sources

The monitoring locations are shown on **Figure 8** and **Figure 9** (extracted from 2022a) – overleaf extracted from the AAQ report. A summary of the VOC boundaries results is presented in **Appendix C-2**.

ERM reported four rounds of monitoring, targeting the intensive phases of remedial works, as follows:

- Round 1: Excavation and stockpiling (AEC-3A) (7/10/2021 – 8/10/2021).
- Round 2: Excavation and stockpiling (AEC-3D) (20/10/2021 – 21/10/2021).
- Round 3: Excavation, stockpiling and screening (28/10/2021 – 29/10/2021).
- Round 4: Stockpiling and screening operations (16/11/2021 – 17/11/2021).

A summary of the boundary monitoring results (maximum by location) is presented in **Table 13**.

Table 13 Screening of boundary monitoring wells – Maximum detected concentrations

Analytes		Maximum 24-hour concentration – Rounds 1 to 4 (µg/m³)				Screening criteria	
	EC00	EC 01	EC 02	EC 03	EC 04	24 hours	Chronic / Annual
	At the source	Northern Boundary	Southern Boundary	Western Boundary	Eastern Boundary		
Benzene	<3	< 3	< 3	< 3	< 3	29[(a)]	*9[(b)]*
Toluene	11	13	11	9.8	19	3,770[(b)]	*377[(b)]*
Ethylbenzene	11	< 4	< 4	< 4	< 4	21,700[(a)]	*260[(a)]*

Analytes		Maximum 24-hour concentration – Rounds 1 to 4 (µg/m³)				Screening criteria	
	EC00	EC 01	EC 02	EC 03	EC 04	24 hours	Chronic / Annual
	At the source	Northern Boundary	Southern Boundary	Western Boundary	Eastern Boundary		
Xylenes – Total	19	< 12	< 13	< 13	< 12	1,085[(b)]	*868[(b)]*
1.2.4-Trimethylbenzene	6.5	< 4	< 5	< 5	< 5	92[(c*)]	*54[(d)]*
1.3.5-Trimethylbenzene	<5	< 5	< 5	< 5	< 5	92[(c*)]	*54[(d)]*
Hexane	<5	< 5	< 5	< 5	< 5	133[(c*)]	*200[(d)]*
Naphthalene	<22	< 20	< 21	< 20	< 22	18[(d*)]	*50[(d)]*
Cyclohexane	81	< 3.5	< 3.5	< 3.5	< 3.5	792[(c*)]	340

Notes:

(a) ATSDR (2021)

(b) ASC NEPC (2011)
(c) NSW EPA (2016)

(d) TCEQ (2021)

* 1-hour average criterion divided by 24 to obtain the theoretical lower bound 24 hours average concentration indicative of compliance.

"<" Maximum result less than LOR.

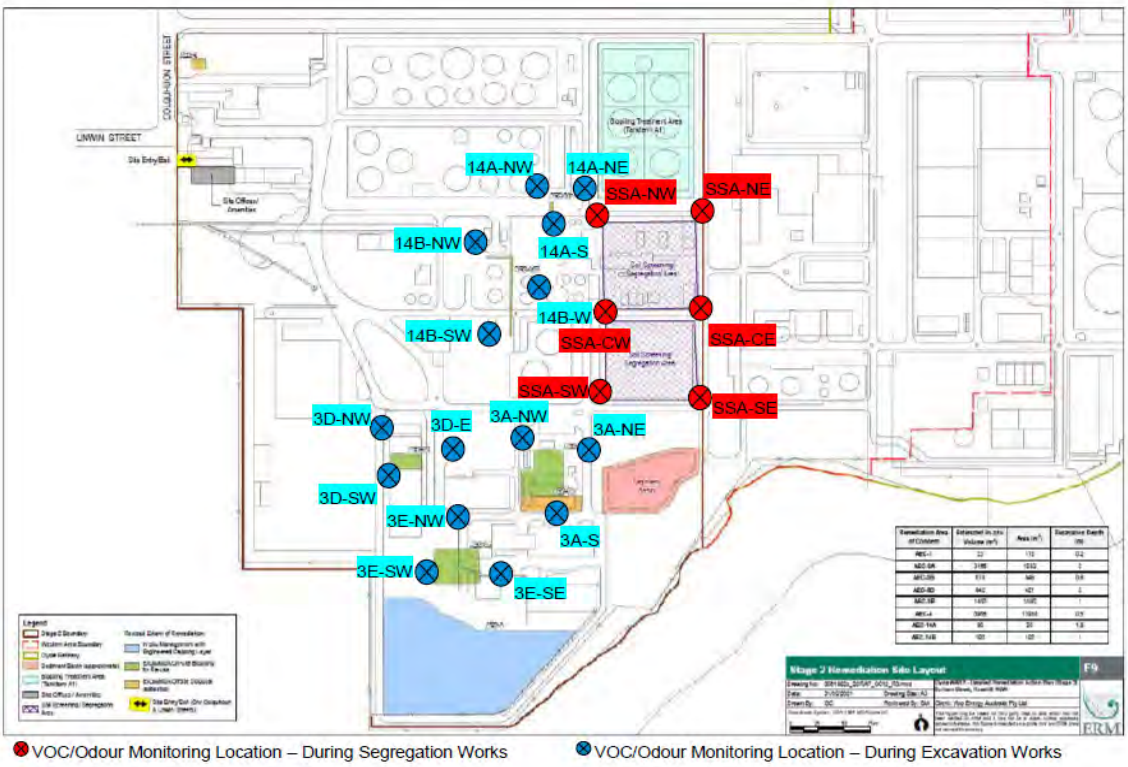


Figure 3-1: Aerial imagery showing monitoring locations relative to excavation area

Figure 8 Monitoring locations relative to excavation areas

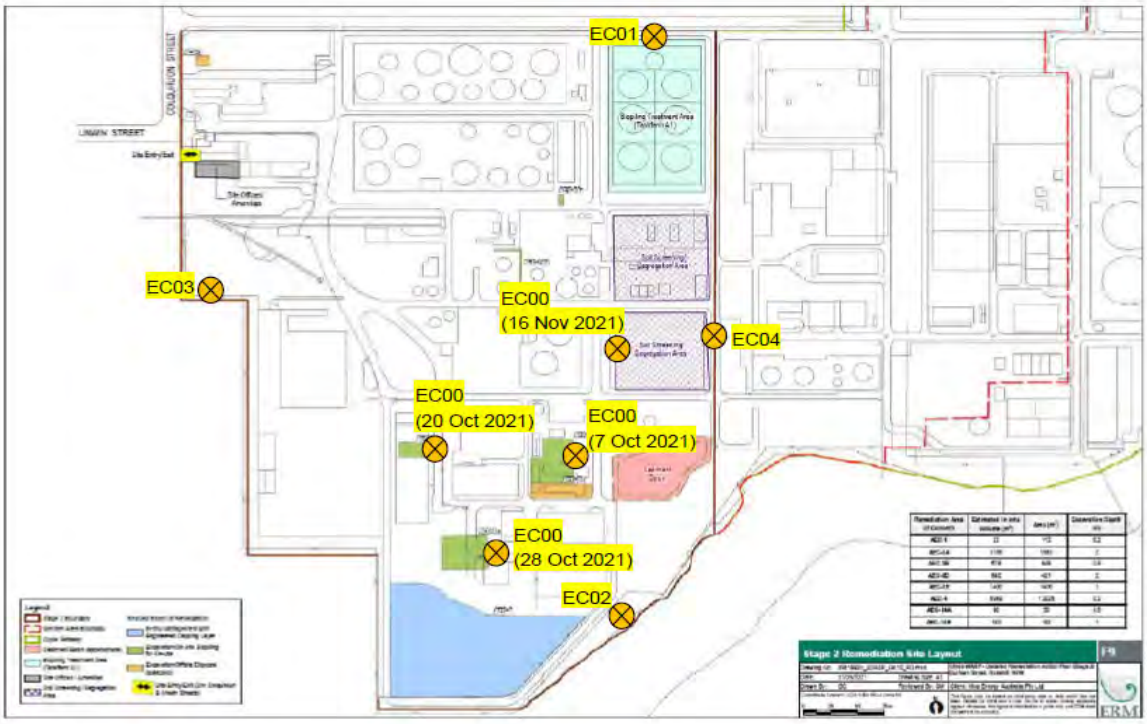


Figure 3-2: Air sampling locations

Figure 9 Air sampling location

ERM reported that based on the results shown in **Table 13** that the detections above the limit of reporting at boundary locations were limited to toluene and 1,2,4-trimethylbenzene, with maximum measured concentrations of these substances being at least an order of magnitude lower than respective screening criteria. In addition, the maximum toluene detection, was significantly higher than the corresponding at-source sample result. Accordingly, the boundary toluene measurement was considered by ERM to be indicative of an external toluene source not associated with the Stage 2 remedial works.

ERM noted that the laboratory LOR for naphthalene (22 ug/m^3) was reported marginally above the nominated criterion (18 ug/m^3). This criterion was calculated by ERM by dividing the one hour averaged odour-based criterion of 440 ug/m^3 by 24, to obtain a theoretical lower bound 24 hours average criterion that would implicitly demonstrate compliance with one hour criterion.

ERM also noted that naphthalene was also below laboratory LOR (17 to 22 ug/m^3) at all EC00 (source) samples during all rounds of monitoring, including reported concentrations of < 17 ug/m^3 near the source during excavation of AEC-3d, where naphthalene was the key contaminant of concern.

ERM concluded that based on this reasoning, the reported laboratory LOR for naphthalene in boundary samples was not considered to have exceeded criteria. ERM provided additional context on the scale of monitoring results by comparing average and maximum concentrations measured by the NSW Department of Environment and Conservation in Sydney as part of the *NSW Ambient Air Quality Research Project* (1996 – 2001) (DEC, 2004) and the NSW NEPM air toxics monitoring campaign (NEPC, 2010). This comparison is shown on **Table 14**.

Table 14 **Comparison of boundary monitoring results with historical monitoring within Sydney**

CoPC	Stage 2 Boundary	Urban Air				24 hours: Screening Criteria
		(Sydney 1996 – 2001):		(Sydney 2009 – 2010):		
	Average (maximum)	Average *(Maximum)*		Average *(Maximum)*		
	AS 01 to 03	Rozelle	Sydney CBD	Rozelle	Turrella	
Toluene	<7.5 (19)	8.3 *(60.3)*	15.8 *(37.7)*	3.4 *(14.3)*	6.8 *(24.1)*	3,770

Note:

All values converted from volumetric to mass-based units at conditions of 25°C and 1 atmosphere. AS01 – 03 refer to the four boundary locations as per the Evacuated Canister 'EC' nomenclature for the sample average and maximum (EC01, EC02, EC03 and EC04). It is also noted that these locations also correspond with Ambient Sampling 'AS' locations AS01 – AS04.

ERM reported that the boundary monitoring locations were selected to provide representative ambient air samples at site boundaries. The canisters were placed on the northern, eastern, southern and western boundaries to record the presence of potential air toxics that could have been released from excavation areas in the proximity to receptors as well as capturing a potential range of wind directions over a 24-hour monitoring period. It was noted by ERM that these locations were consistent with those proposed within the Stage 2 AEVR.

ERM concluded that based on the results shown in **Table 14**, that concentrations of detected VOCs during Stage 2 remedial activities were within the range of those observed in ambient air within Sydney as documented in DEC (2004) and NEPC (2010).

6.4 Auditor discussion – Stage 2 Ambient Air Quality Summary

The auditor considered that the monitoring was conducted as per the measures outlined in the Stage 2 AEVR endorsed in the SAS N° 065-2127799B, with key measures including the use of real-time VOC monitoring and implementation of a trigger response framework for mitigation of VOC emissions during the works.

The auditor noted that the results of the monitoring indicated that the air emissions management framework outlined in the Stage 2 AEVR was effectively implemented and that the performance indicators were met as follows:

- Boundary VOC concentrations were generally below the LOR, and significantly lower than the adopted screening criteria.
- No offensive odours were detected at the boundary.
- No odour or dust complaints were received from offsite receptors related to the Stage 2 remedial works.

The auditor concurred with ERM's conclusion that the naphthalene LOR, being greater than the calculated averaged odour-based criterion, did not suggest there was a potential risk that was not quantified. The auditor noted that the value used by ERM was an odour and not a health-based criterion. By way of comparison, 50 ug/m^3 is the threshold limit (expressed as a time weighted average) at which most workers can be exposed without adverse effects (American Conference of Governmental and Industrial Hygienists' threshold limit value) – US EPA 2022 web site search https://www.epa.gov/sites/default/files/2016-09/documents/naphthalene.pdf. It is the auditor's opinion that the air quality management protocols prepared by ERM were sufficient to monitor and control air emissions during the remediation of the Stage 2 AA3.

7. Implementation of Stage 2 RAP for AA3

The remediation and validation activities, including the Proposed Road data gap investigation, excavation validation of AEC-3a, AEC-3b and AEC-14a and backfilling with VENM were conducted between 3 September 2021 and 3 May 2022. The outcome of these activities is presented in the following sections.

All primary and intra-laboratory duplicate samples were submitted to National Association of Testing Authorities (NATA) accredited laboratory Eurofins Environmental Testing (Eurofins) and all interlaboratory duplicate samples were submitted to NATA accredited laboratory ALS Laboratories (ALS). The QA/QC evaluation is further discussed in **Section 10**.

7.1 Proposed Roadway data gap results

In September 2021, two supplementary test pits (TP21/98and TP21/99) were advanced in the Proposed Roadway. The locations of supplementary test pits are shown on Figure F5A in **Appendix A-1**.

ERM documented that the test pits within the Proposed Road within AA3 identified no exceedances of the site assessment criteria for any of the CoPCs tested, confirming that the area was suitable for commercial/industrial land use with LTEMP requirements. ERM outlined in the AA3 Validation report that the LTEMP requirements within the future road in AA3 are required due to the former identification of LNAPL in shallow soils within a nearby former test pit (TP20/24) which could not be relocated, as shown in Figure F10 in **Appendix A-1**.

7.2 Extent of excavations

The extent of impacts requiring remediation for AA3 as proposed in the Stage 2 RAP and the final extent of excavation (following the receipt of additional characterisation or subsequent validation data) are shown on Figures F6 and F7 in **Appendix A-1**. Details of the estimated and completed vertical and lateral extents of remediation are provided in **Table 15**.

Table 15 Remediation excavation summary

Excavation Area ID	Area (m^2)	Remediation depth (m bgl)	Remediation Volume (m^3)	Assumptions/Comments
AEC-3a	1,583 (estimated)	2 (estimated)	3,166 (estimated)	Excavation to a depth of two metres to remove source of vapour impacts (shallows soils and LNAPL trapped in soils to level of groundwater) based on PID readings at TP 19/17 to two metres within clay. LNAPL associated with soils
	1,791 (final)	1.8*[5] (final)	3,273 (final)	None
AEC-3b	678 (estimated)	1 (estimated)	678 (estimated)	Excavation of fill material containing demolition waste at 0.8 m bgl, based on TP19/32 and similar material observed across surface of area.
	910 (final)	1.1* (final)	980 (final)	Increased volume due to areas of deeper excavation to remove building materials surrounding former building footings and the southern wall

[5] (*) The final average depth based on the surveyed excavation depth

Excavation Area ID	Area (m^2)	Remediation depth (m bgl)	Remediation Volume (m^3)	Assumptions/Comments
				excavation extending further out than anticipated footprint.
AEC-14a	50 (estimated)	1.8 (estimated)	90 (estimated)	Assumed backfill sands to a width of 2 m will be excavated along alignment of pipe.
	69 (final)	1.6* (final)	116 (final)	Increased volume due to removal of contaminated material in wall sample remaining at original excavation extent. Determination of contamination based on validation sample exceedance.
		Total (final)	**4,369**	

7.3 Deviations from Stage 2 RAP

7.3.1 Classification of unexpected finds – Stockpile SP99

ERM, 2022b reported that during excavation activities at AEC-14b in Audit Area 2 (AA2), which was outside the boundary of AA3, an unexpected find of a suspected ACM conduit and associated soils beneath a bridge was encountered. The potentially asbestos impacted materials were then stockpiled on concrete hardstand as SP99 within AA3, as shown on Figure F7 in **Appendix A-1**. SP99 was classified as Asbestos Waste – General Solid Waste for off-site disposal.

7.3.2 Validation of soils for reuse – Stockpile SP100

Following the excavation and off-site disposal of asbestos soils within AEC-3b, ERM stated that the remaining fill materials connecting AEC-3a and AEC-3b were observed to contain a significant portion of building and demolition waste. As ERM considered these materials potentially contained ACM, further assessment for re-use to avoid potentially generating friable asbestos was necessary.

ERM, 2022b reported that the resulting 150 m^3 stockpile (SP100) was placed within the soil screening and segregation area shown in Figure F8 in **Appendix A-1**.

The stockpile SP100 was sampled as per the recommended NEPM Schedule B2 rate of one sample per 25 m^3, resulting in six samples collected via six test pits. ERM reported that the quantification for ACM >7 mm by gravimetric sieving of 10 L bulk soil samples was completed for each of the six test pits.

Laboratory analysis included asbestos AF/FA in soils, asbestos identification in fibre cement samples, TRH C_6-C_{40} fractions, BTEXN and PAHs.

7.3.3 Extension of AEC-14a excavation

ERM, 2022b, reported that following initial excavation and validation sampling at AEC-14a, the concentration of TRH >C_{10}-C_{16} Fraction – Silica Gel Clean-up in sample 14A-E-1 (0.5) exceeded the TRH Management Limits - Commercial/ Industrial (coarse) criterion, within grid B2 as shown Figure F6 in **Appendix A-1**.

The western wall within grid B3 of the excavation was therefore excavated an approximate further 2 metres to the south to remove the impacted soil.

7.3.4 Sampling of AEC excavation bases

The Stage 2 RAP sampling requirement for the bases of AEC-3a, AEC3b and AEC14a excavations was to collect samples at a rate of one sample per 10 x 10 m grid in an off-set grid (herringbone)

pattern. However, the base samples from each AEC were collected approximately within the centre of each 10 m by 10 m grid.

The bases of each AEC excavation were considered by ERM to be adequately represented by collecting a validation sample within each 10 m by 10 m grid, regardless of the pattern between grids.

7.3.5 Validation of soils for reuse – SP81

ERM, 2022b reported that the stockpile SP81 was generated during as part of the establishment of the Road 2 utilities easement, between 0.2 and 1.2 m bgl in the former Tankfarm A3 (Lot 56 in AA3) and Stage 1. The Stage 1 was previously determined to be suitable for commercial/industrial land use, as outlined in the Clyde WARP Stage 1 Validation Report.

ERM reported that the 630 m^3 stockpile SP81 was sampled as per the NEPM Schedule B2 recommended sampling density for reuse of soils. Ten samples were collected from 10 test pits, each 0.5 m below the stockpile surface, with stockpile and sampling locations outlined in Figure F8 in **Appendix A-1**.

Samples were analysed for BTEXN, TRH, PAH and asbestos AF/FA in soils. Quantification for ACM >7 mm by gravimetric sieving of 10L bulk soil samples was completed within each of the 10 test pits. No asbestos was identified.

7.3.6 Stockpiles footprint characterisation - SP98, SP101, SP102A, SP103 and SP104

As outlined by ERM in the schematic of the site material tracking in **Figure 10** in **Section 8.1** the excavated contaminated soil stockpiles SP98, SP101, SP102A, SP103 and SP104 were fed through the powerscreen to condition the soils for biopiling, removing oversized materials which could inhibit airflow and biodegradation of petroleum hydrocarbons ERM reported that these stockpiles were temporarily placed within the soil screening area before being converted to stockpiles SP102B and SP102A.

Stockpile SP102B consisted of the oversized material (>50 mm), which was within the soil screening area. Stockpile SP102A consisted of the <50 mm material suitable for biopiling and was relocated to the biopile treatment area as stockpile SP105, SP106, SP107, SP108 and SP109.

ERM outlined that due to the temporary stockpile locations of SP98, SP101, SP102A, SP103 and SP104 being placed on the soil surface of the soil screening area, the soil surface of these footprints was sampled at a rate of one sample per 10 m by 10 m grid in an off-set (herringbone) pattern as per the Stage 2 RAP, throughout each footprint. SP102B footprint was unable to be sampled as the stockpile currently remains in the soil screening area.

The total footprint surface area of stockpiles SP98, SP101, SP102A, SP103 and SP104 was 4,950 m^3. Therefore 40 surface (0 to 0.05 m bgl) soil samples were collected throughout the soil screening area, as outlined in Figure F9 in **Appendix A-1**.

ERM, 2022b reported that each soil sample was analysed for the contaminants previously identified in the source AEC excavations, consisting of BTEXN, TRH and PAH.

7.4 Soil validation program

ERM, 2022b stated that overall, the validation program was completed in a manner that was consistent with the procedures listed in the Stage 2 RAP. A summary of the validation program is discussed in the following sections.

7.4.1 AEC-14a excavation validation

The excavation of AEC-14a was conducted between 21 September to 8 October 2021 as per the Stage 2 RAP. AEC-14a was advanced to an approximate depth of 2.0 m bgl to remove impacted soil and visible LNAPL.

The surveyed lateral extent of the completed AEC-14a excavation overlain with the original estimated remediation extent (as per the Stage 2 RAP) is shown on Figure F6 in **Appendix A-1**.

ERM, 2022b reported a surveyed in-situ volume of 116 m^3 was excavated and transported to the soil screening area. The final Relative Level (RL) of the floor of the excavation ranged between 2.5 m AHD to 4.2 m AHD, corresponding to approximately 0.5 m to 2.2 m below original surface levels (the original surface level was indicated as approximately 4.7 m AHD).

The following field observations were presented in ERM, 2022b:

- The shallow horizon (0 to 0.5 m bgl) of the excavation generally consisted of fill materials described as brown silty/sandy clay, low plasticity from which samples were collected at 0.5 m bgl.
- The deeper horizon of the walls (0.5 to 2.2 m bgl) of the excavation and base of the excavation (2.0 m bgl) generally consisted of natural red, mottled grey, shaly clay, low plasticity. Natural clays were recorded as having no evidence of impact (staining or odour). ERM noted that minimal groundwater seepage was observed from clay lithology during excavation.

Fifteen samples were collected from within the footprint (wall and floor) of the excavation. Sample locations and exceedances of the adopted assessment criteria are shown on Figure F6 in **Appendix A-1**. Laboratory results tabulated and screened against relevant remediation assessment criteria are provided in **Appendix C-1**.

Of the 15 samples, one sample collected from 0.5 m bgl had CoPC concentrations more than the validation criteria. Therefore, additional the excavation was extended, as follows:

- Sample 14A-E-1-0.5 - The northeastern wall at grid B2 was excavated approximately 2.0 m to remove impacted material. One additional validation sample was collected (14A-E-1-RV-0.5). The re-validation sample recorded no exceedances of the validation criteria for the tested COPC.

The following conclusion was made by ERM "***Based on sampling and visual observations during excavation, the walls and base of the extent of the AEC-3a excavation met the assessment criteria defined in the Stage 2 RAP***".

7.4.2 AEC-3a excavation validation

The surveyed lateral extent of the completed AEC-3a excavation overlain with the remediation extent (as per the Stage 2 RAP) is shown on Figure F7 in **Appendix A-1**.

ERM, 2022b reported a surveyed in-situ volume of 3,273 m^3 was excavated and transported to the soil screening area. The final RL of the floor of the excavation ranged from 1.7 m AHD to 2.7 m AHD, corresponding to approximately 1.8 m to 2.8 m below original surface levels (the original surface level is indicated as approximately 4.5 m AHD). The estimated remediation depth (outlined in the Stage 2 RAP) was 2 m bgl; However, this was extended to 2.8 m bgl in areas impacted with visible LNAPL.

The following field observations were presented in ERM, 2022b:

- The walls of the excavation (0 to 1.0 m bgl) generally consisted of brown and red/yellow sandy clay, medium plasticity from which validation samples were collected at 0.5 m bgl.
- The base of the excavation (2.0 to 2.8 m bgl) generally consisted of natural red/grey/yellow clay with sand, medium plasticity. ERM noted minimal groundwater seepage from clay lithology during excavation.

A total of 53 samples were collected from within the footprint (wall and floor) of the excavation. Sample locations are presented in Figure F7 in **Appendix A-1**.

Laboratory results tabulated and screened against relevant remediation assessment criteria are provided in **Appendix C-1**. All samples reported concentrations of CoPC were below the adopted assessment criteria.

The following conclusion was made by ERM "***Following excavation of AEC-3b, the concentrations of asbestos in the soils forming the walls and base were below the remediation assessment criteria. Based on sampling and visual observations during excavation, the walls and base of the extent of the AEC-3b excavation meet the assessment criteria defined in the Stage 2 RAP***".

7.4.3 AEC-3b excavation validation

The surveyed lateral extent of the completed AEC-3b excavation overlain with the remediation extent (as per the Stage 2 RAP) is shown in Figure F7 in **Appendix A-1**.

ERM, 2022b reported a surveyed in-situ volume of 980 m^3 was excavated and transported off-site to a waste receiving facility. The final RL of the floor of the excavation ranged between 2.5 m AHD to 3.7 m AHD, corresponding to approximately 0.7 m to 1.9 m below original surface levels (the original surface level is indicated as approximately 4.4 m AHD. Excavation of AEC-3b was advanced approximately 0.9 m bgl to remove impacted soil materials.

The following field observations were presented in ERM, 2022b:

- The walls of the excavation (0 to 0.9 m bgl) generally consisted of fill materials described as brown/grey sandy clay, low plasticity from which validation samples were collected at 0.2 to 0.3 m bgl.
- The base of the walls (approximately 0.9 to 1.2 m bgl) generally consisted of natural red/yellow clay, medium plasticity. ERM noted minimal groundwater seepage from clay lithology during excavation. The slightly deeper wall of 1.2 m bgl was observed along the central portion of the northern wall with the broader base of the excavation approximately 0.9 m bgl.

A total of 32 samples were screened and collected from the footprint (wall and floor) of the excavation. No ACM was identified with material subject to gravimetric sieving. Therefore, no laboratory analysis of sieved soils was required (as per Stage 2 RAP).

The following conclusion was made by ERM: "***Based on sampling and visual observations of the final excavation surface, the reported concentrations of COPCs in the walls and base of the AEC-14a excavation were demonstrated to meet the assessment criteria defined in the Stage 2 RAP."***

7.4.3.1 Asbestos air monitoring

ERM, 2022b reported that during excavation of fill materials between AEC 3a and AEC-3b on 8 October 2021, airborne asbestos monitoring was undertaken at four locations surrounding AEC-3b. All monitoring and analysis were conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003(2005)].* Asbestos air monitoring results were summarized as follows:

- The airborne asbestos fibre concentrations recorded for the sampling undertake on 8 October 2021 were below the limit of detection for the method used. Asbestos fibres. Therefore, are routinely reported as <0.01 fibres per millimeter of air sampled;
- Monitoring results were acceptable and indicate that the workplace controls were adequate in order to mitigate the risk to those on-site personnel working outside the set exclusion zone or the nearby identified receptors.

The results of asbestos monitoring conducted during works is presented in **Appendix C-1**.

7.4.4 Lot 62 – Stockpile SP99 footprint validation

ERM, 2022b reported that the excavation and off-site disposal of asbestos stockpile SP99 was conducted on 6 October 2021. The location of the stockpile SP99 footprint is shown on Figure F7 in **Appendix A-1**.

No sampling of the stockpile footprint was required as the footprint consisted of concrete hardstand (as per Stage 2 RAP). Visual confirmation of no remaining stockpile materials was completed.

7.4.4.1 Asbestos air monitoring

ERM, 2022b reported that during excavation and off-site removal of the asbestos impacted soil SP99 on 6 October 2021, airborne asbestos monitoring was undertaken at four locations surrounding the adjacent asbestos removal area AEC-3b. All monitoring and analysis were conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003(2005)].* Asbestos air monitoring results were summarized as follows:

- The airborne asbestos fibre concentrations recorded for the sampling undertake on 6 October 2021 were below the limit of detection for the method used. Asbestos fibres, therefore, are routinely reported as <0.01 fibres per millimeter of air sampled; and
- Monitoring results were acceptable and indicate that the workplace controls were adequate in order to mitigate the risk to those onsite personnel working outside the set exclusion zone or the nearby identified receptors.

The results of asbestos monitoring conducted during works is presented in **Appendix C-1**.

ERM concluded that based on the visual observations during excavation, the soils withing the footprint of the former stockpile SP99 met the assessment criteria defined in the Stage 2 RAP.

7.4.5 Lots 58 and 61 - Stockpile footprint validation

ERM (2022b) reported that stockpiles that were contaminated with hydrocarbons and PAHs were temporarily placed with the soil screening area, subject to biopiling remediation. These included SP98, SP101, SP102A, SP103 and SP104.

Following removal of these stockpiles to the biopile treatment area, soil from the ground surface was sampled on 28 March and 3 May 2022 to confirm land use suitability against the site assessment criteria. ERM noted that soil sampling frequency in the footprints of former stockpiles SP98 and SP101 was below the frequency in the RAP due to the irregular shape, despite compliance with a 10 x 10 m grid systematic sampling approach of the validation; However, concluded this deviation did not have a significant impact on charactering the footprints.

The stockpile footprints consisted of brown, gravelly clay, medium plasticity, moist, with shale, brick, concrete, and sandstone fragments.

Forty samples were collected at the surface of the stockpile footprints. Footprint and sample locations are presented on Figure F9 in **Appendix A-1**.

Laboratory results tabulated and screened against relevant remediation assessment criteria are provided in **Appendix C-1**. All samples reported concentrations below adopted assessment criteria.

ERM concluded that based on sampling and visual observations, the soils within the former stockpile footprints of SP98, SP101, SP102A, SP103 and SP104 met the assessment criteria defined in the Stage 2 RAP. The temporary placement of stockpiles in the soil screening area did not result in cross contamination of underlying soils.

7.5 AA3 Residual drainage network

As detailed by ERM in the Stage 2 Drainage validation report the former COC and AOC drainage network remains in-situ within parts of Lots 56, 58, 61, 62 and the Proposed Roadway following

decontamination and decommissioning activities. These pipes and pits were suitably decontaminated and decommissioned throughout 2020, as documented within the Stage 2 Drainage Decommissioning Report (ERM, 2021a).

ERM noted that in parts of Lots 56, 58, 61, 62 and the Proposed Roadway alignment of AA3, some drainage lines could not be cleaned, with residual hydrocarbon sludge noted to remain within these pipes following decommissioning. An overview of pipework containing residual hydrocarbons within the broader Stage 2 Area following completion of decommissioning works is shown on Figure F4 in **Appendix A-1**.

The following conditions were noted by ERM post drainage decommissioning within AA3:

- Gas testing of pipes and pits did not identify the presence of residual gas concentrations above relevant health and safety standards following cleaning.
- No compromised pipework was identified during pipe cleaning works within AA3.
- Pits have been filled with stabilised sand or aggregate to prevent lateral migration of residual sludges from other portions of the Stage 2 Area.
- The drainage network has been isolated from the Clyde Terminal wastewater treatment plant and cannot be re-commissioned for future use.

Based on these aspects, ERM concluded that specific management of residual conditions or risks of contaminant exposure associated with the decommissioned drainage network within AA3 are not necessary.

7.6 Wastewater management

As stated by ERM in the AA3 Validation report, no dewatering or disposal of wastewater from remediation activities was necessary given the minimum volume of water encountered during the remedial works.

7.7 Validation of imported soil

Virgin Excavated Natural Material (VENM) was imported to site for the backfilling of AEC-3a, AEC-3b, and AEC-14a excavations, as well as for constructing pads within the biopile treatment and segregation areas shown on Figure F8 in **Appendix A-1**.

A summary of volumes and sources of material imported for use within AA3 is provided **Table 16**.

Table 16 Summary of VENM classification and sources

VENM sources	Site address	VENM report reference	VENM description	VENM mass (tonnes)
Biopile Pad – Tankfarm 1				
Merrylands	1-11 Neil Street, Merrylands, NSW	E23511.E05.007_Rev0	Clay soils (VENM)	2,432
Neutral Bay	12-14 Grosvenor Street, Neutral Bay, NSW	E24854.E05.002	Clay soils (VENM)	2,130
Leichhardt	141 Allen Street, Leichhardt, NSW	E24835.E05.003.Rev0	Clay soils (VENM)	3,616
Parramatta	5 Parramatta Square, Civic Place, Parramatta, NSW	57745-130112	Clay soils (VENM)	2,496
Leichhardt	141 Allen Street, Leichhardt, NSW	E24835.E05.003.Rev0	Clay soils (VENM)	160
Redfern	2-38 Baptist Street & 397-399 Cleveland Street, Redfern, NSW	E1363-11 Redfern Natural	Clay soils (VENM)	2,144

VENM sources	Site address	VENM report reference	VENM description	VENM mass (tonnes)
Sub-total				**12,978**
Processing Area (Soil Screening Area Pads)				
Punchbowl	13-23 Henry Street, Punchbowl, NSW	E24351.E05.004.Rev0	Clay soils (VENM)	2,112
Redfern	2-38 Baptist Street & 397-399 Cleveland Street, Redfern, NSW	E1363-11 Redfern Natural	Clay soils (VENM)	2,176
Campsie	24-28 Vicliffe Avenue, Campsie, NSW	D9606	Clay soils (VENM)	4,152
Parramatta	5-7 Charles Street and 116 Macquarie Street, Parramatta, NSW	E25238.E05.001.Rev0	Clay soils (VENM)	4,096
Fairfield	10 Court Road and 6-10 Crescent Street, Fairfield, NSW	E418	Clay soils (VENM)	1,184
St Ives	97 Killeaton Street, St Ives, NSW	PCA7153-2021-VENMLET01_9Sep21	Clay soils (VENM)	162
Parramatta	52 Belmore Street, North Parramatta, NSW	CH1214_D9516-VENM Classification	Clay soils (VENM)	672
Sub-total				**14,554**
Sediment Basin				
Parramatta	2 Macquarie Street, Parramatta, NSW	28.03.Rev0	Clay soils (VENM)	704
Lidcombe	2-36 Church Street, Lidcombe, NSW	ACE-21-18366.LTR1.V1F	Clay soils (VENM)	8,160
Croydon Park	230-234 Georges River Road, Croydon Park, NSW	E25123.E05.002_Rev0	Clay soils (VENM)	1,472
Redfern	2-38 Baptist Street & 397-399 Cleveland Street, Redfern, NSW	E1363-11 Redfern Natural R1	Clay soils (VENM)	256
Roseville	989-1015 Pacific Highway, Roseville, NSW	E24705.E05.006.Rev0	Clay soils (VENM)	4,910
Sub-total				**15,502**
AEC-3a, AEC-3b, and AEC-14a				
Punchbowl	13-23 Henry Street, Punchbowl, NSW	E24351.E05.004.Rev0	Clay soils (VENM)	5,440
Fairfield	10 Court Road and 6-10 Crescent Street, Fairfield, NSW	E418	Clay soils (VENM)	576
Parramatta	52 Belmore Street, North Parramatta, NSW	CH1214_D9516-VENM Classification	Clay soils (VENM)	1,024
Lane Cove	640-646 Mowbray Road, Lane Cove, NSW	RG165-WAC-1-1	Clay soils (VENM)	224
Five Dock	71 Ramsey Road, Five Dock, NSW	E2724	Clay soils (VENM)	704
Marrickville	182-198 Victoria Road, Marrickville, NSW	Environmental Consulting Services	Clay soils (VENM)	1,312

VENM sources	Site address	VENM report reference	VENM description	VENM mass (tonnes)
Epping	96 Carlingford Road, Epping, NSW	CAE1147.2	Clay soils (VENM)	544
Roselands	918-936 Canterbury Road and 2 Deadnought Street, Roselands, NSW	00006495.03.WCR	Clay soils (VENM)	512
Parramatta	125-129 Arthur Street, Parramatta, NSW	E29010Klet	Clay soils (VENM)	4,704
Sub-total				**15,040**

ERM in the email issued on 9 June 2021 (copy is included in **Appendix B**), clarified the difference between the VENM imported to be used in the backfilling of the excavation undertaken in AEC-3a, AEC-3b and AEC-14a and the discrepancy between in-situ surveyed cut volumes from excavations AEC-14a, AEC-3a and AEC-3b were as follows:

- *Placed compacted VENM within AEC-14A, AEC-3A and AEC-3B had reported field wet densities of approximately 2.14 T/m3 as determined per the attached geotechnical report*. A copy of the geotechnical report is presented in **Appendix G**.
- *The backfill volume for all excavations is greater than their respective cut volume shown in survey drawings and reported within the Validation Report. Excavations were crowned 300-500mm proud of the original surface level to mitigate pooling of water on the backfilled surfaces and to tie-in to existing ground level at the varying elevations, in particular AEC-3A and AEC-3B. This crowning volume has not been captured on the "excavation extent" survey data, which only captured the respective excavation's cut prior to fill*.
- *After a number of rain events during the backfilling of AEC-3A/B, Enviropacific had to strip out layers of backfill that were too wet to reach suitable compaction. This material was stockpiled to dry out on the concrete pad south of AEC-3B and ultimately was used within the biopiling area to secure down the tarps for the Stage 2 biopiles. At the time of import would have been allocated to AEC-3A and AEC-3B in the Imported Materials Register and accounts for additional material.*

A breakdown of tonnage is provided below for volume reconciliation purposes is presented in **Table 17.**

Table 17 Breakdown volume reconciliation

Excavation	Area m2	Depth (m)	m3	Wet field density	Imported material tonnage (estimated)	ERM's comments
AEC-14A (cut)	-	-	116	2.14	248	Assumes wet density of clay of 2.14 as per geotech report
AEC-3A (cut)	-	-	3273	2.14	7004	Assumes wet density of clay of 2.14 as per geotech report
AEC-3B (cut)	-	-	980	2.14	2097	Assumes wet density of clay of 2.14 as per geotech report
AEC-14A (mound)	69.24	0.4	28	2.14	59	Assumes wet density of clay of 2.14 as per geotech report, 0.4m average mounding height
AEC-3A (mound)	1791.44	0.4	717	2.14	1533	Assumes wet density of clay of 2.14 as per geotech report, 0.4m average mounding height
AEC-3B (mound)	910.14	0.4	364	2.14	779	Assumes wet density of clay of 2.14 as per geotech report, 0.4m average mounding height

Excavation	Area m2	Depth (m)	m3	Wet field density	Imported material tonnage (estimated)	ERM's comments
TOTAL (tonnes)					11721	
Geotechnically unsuitable material removed and replaced (estimated)			1551	2.14	3319	
BACKFILL TOTAL for AA3 Excavations					**15,040**	

The VENM certificates and tracking recorded were included in Appendix H of the Validation report. Laboratory analyses were conducted for the eight sources. Following assessment of these analysis, ERM concluded that the soil and rock imported to the site (as summarised **Table 17**) was VENM and suitable for use within Stage 2 AA3.

7.8 Waste management

ERM (2022d) reported that soils from AEC-3b were removed from site on 1, 5 and 6 October 2021 and stockpile SP99 was removed from Site on 6 October 2021. AEC-3b and SP99 were classified for off-site. The reconciliation of waste volumes tracked from Site to a licenced waste management facility during the remediation is presented in **Table 18**.

Table 18 Waste tracking summary

Waste ID	Original estimated volume (tonnes) *	Waste classification	Receiving facility	Material received (tonnes)
AEC-3b	Approximately 1,084.8	Special Waste (Asbestos) – as General Solid Waste	Glenfield Waste Services and SUEZ Elizabeth Drive Landfill Facility	1,761.12
SP99	Approximately 16	Special Waste (Asbestos) – as General Solid Waste	Glenfield Waste Services	32.72
Total	**1,100.8**			**1,793.84**

Note:

(*) Material originally classified by volume m^3, which was then converted to tonnes by applying a conversion factor of 1.6 T/m^3 for soil with gravels.

(**) NSW EPA EPL Nº 4614.

The following considerations were outlined by ERM regarding the waste tracking summary:

– The 1,761.12 tonnes of materials removed from AEC-3b was noted to be higher than the estimated 1,084.8 tonnes. However, a large number of concrete footings of former infrastructure was excavated along with soil materials during excavation of AEC-3b, which was a factor for the increase in tonnage exported from AEC-3b. Although the final mass of material removed from AEC-3b differed from the original estimate, ERM presented appropriate reasoning for the difference.

ERM concluded the following **"*The review of tracking information and reconciliation has been undertaken to confirm the lawful disposal of wastes to appropriately licenced facilities*".**

7.9 Auditor discussion – Implementation of Stage 2 RAP for AA3

The auditor considered that the number and locations of samples collected during the validation sampling program was adequate in demonstrating the effectiveness of the remedial works. The samples from the walls and bases of excavations were collected in a manner consistent with standard industry practice and the approach listed in the Stage 2 RAP, meeting the minimal required ratio.

The selection of the soil analytical suite was suitable given that contamination was clearly linked to the historical use of the site and previous investigation results.

The auditor considered that impacted fill and shallow soils within AA3 were remediated in accordance with the Stage 2 RAP.

Residual hydrocarbons in soil that were demonstrated to not pose an unacceptable human health risk shall be managed in accordance with the Stage 2 AA3 LTEMP to allow the land to be used for commercial/ industrial uses.

During the review of the AA3 Validation report, the auditor noted a discrepancy between the recorded imported VENM and the surveyed cut volumes from excavations AEC-14a, AEC-3a and AEC-3b. Further, ERM clarified the auditor queries in an email issued on 9 June 2022. A copy of this email is presented in **Appendix B**. The auditor is satisfied with the breakdown reconciliation presented by ERM. The auditor notes that a copy of the geotechnical report supporting ERM's rationale was also presented.

Waste disposed off-site was classified as per the Waste Guidelines and tracked to ensure disposal to appropriate waste receiving facilities.

Based on the outcomes of validation activities undertaken by ERM, the Stage 2 AA3 including the adjoining portion of proposed road, the auditor considered that AA3 is suitable for ongoing commercial/industrial land use subject to implementation of a legally enforceable LTEMP to manage the residual impacts, further discussed in **Section 12.**

8. Stockpile management and biopiling validation

The stockpile management and biopiling validation works are discussed in the following sections.

8.1 Segregation and screening material

ERM (2022b) reported that the soil segregation process was undertaken as follows:

- Excavated contaminated soils from AEC-14a, AEC-14b and AEC-3a were consolidated to form stockpile SP98.
- Excavated contaminated soils from AEC-3d were consolidated to form stockpile SP101.
- Excavated contaminated soils from AEC-3e were consolidated to form stockpile SP103.
- Excavated contaminated soils from the southern wall of AEC-3e were consolidated to form stockpile SP104.

Contaminated soil stockpiles SP98, SP101, SP103 and SP104 were fed through the powerscreen to condition the soils for biopiling and remove oversized materials.

Screened fill materials for biopiling (<50 mm) were added to stockpile SP102A. This stockpile was then transported to the biopile treatment area as five stockpiles of appropriate size for remediation (SP105, SP106, SP107, SP108 and SP109).

Oversized, predominantly clay materials (>50 mm) which could not be practically broken down were added to stockpile SP102B. These materials were segregated from ongoing screening processes and were deemed suitable for on-site re-use.

A schematic of material tracking is also provided in **Figure 10** (extracted from ERM, 2022b).

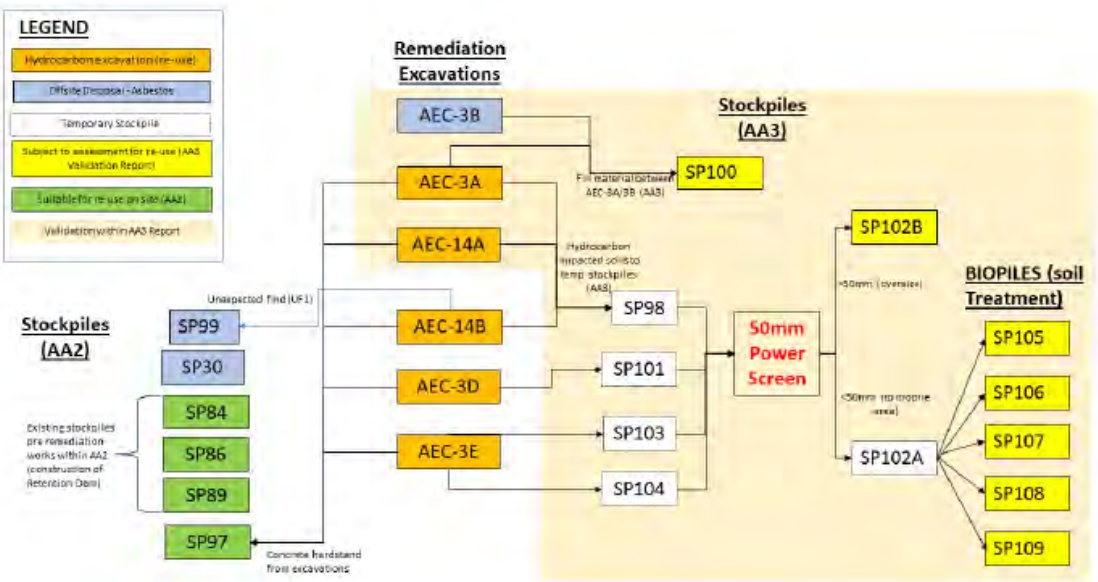


Figure 10 **On-site excavated material movement**

ERM (2022d) presented the following summary regarding the stockpile management:

- A surveyed in-situ volume of 3,151.54 m^3 of soil was excavated and transported from excavations within AA2 (AEC-14b, AEC-3d and AEC-3E) to the soil screening and material handling area, (located within AA3) as part of remediation works.
- This material, along with excavated material from AA3 excavations AEC-3a and AEC-14a, which had a combined in-situ surveyed volume of 3,389.36 m^3 was processed through a power-screen to generate material suitable for biopiling (<50 mm) and separate material >50 mm (oversize).
- The combined in-situ volume of 6,540.24 m^3 removed from the above excavations bulked to an estimated volume of 8,937 m^3 once excavated, segregated and screened. This volume of material was broadly segregated as follows:
  (a) SP97 (Concrete from remediation excavations): 413 m^3
  (b) SP99 (unexpected find from AEC-14B – disposed off-site): approximately 10 m^3
  (c) SP102B (Oversized soil material >50 mm not sent to biopiles): 3,724 m^3
  (d) Biopiles SP105, SP106, SP107, SP108 and SP109 (contaminated soils material screened to <50mm): Approximately 4,800 m^3
- The materials sourced from AA2 and AA3 excavations were used to form stockpiles of optimum size for biopiling. ERM reported that due to this process, an estimation of an exact volume of material sent to biopiles from individual excavations within AA2 and AA3 was not possible. Given the overall volume balance of materials excavated from AA2 and AA3 to that stockpiled on-site, all excavated contaminated material from remediation works was accounted for and has been managed appropriately.

ERM reported that stockpile SP102B (3,724 m^3) was sampled as per the ASC NEPM Schedule B2 recommendations, resulting in 15 samples collected via 15 test pits, each 0.5 m below the stockpile surface. The sampling locations are shown in Figure F8 in **Appendix A-1**. Samples were analysed for BTEXN, TRH and PAH.

8.2 Stockpiles remaining in AA3

ERM, 2022b reported that 13 stockpiles were present within the Stage 2 AA3. A summary of stockpiles remaining in AA3 presented in **Table19**. The location of stockpiles remaining within AA3 are shown on Figure F8 in **Appendix A-1**.

Table 19 Summary of stockpile characterisation

Stockpile ID	Source of material	Material type	Volume (m^3)	Suitable for commercial land use?
Lot 58 – Stockpiles validated in 2021 (ERM, 2021e) but remaining in AA3				
SP31	Western Area demolition - substation	Demolition waste	322.5	Yes
SP32	Western Area Demolition – 2020	Concrete/Demolition waste	326	Yes
SP33	Western Area Demolition – 2020	Concrete/Demolition waste	780	Yes
SP34	Western Area Demolition – 2020	Concrete/Demolition waste	15	Yes
SP35	Western Area Demolition – 2020	Concrete/Demolition waste	80	Yes
Lot 61 - Stockpiles validated in 2021 (ERM, 2021e) but remaining in AA3				
SP37	Western area demolition - 2015	Soil with foreign materials	5,175	Yes – Subject to management controls and unexpected finds procedure outlined in the LTEMP.

Stockpile ID	Source of material	Material type	Volume (m^3)	Suitable for commercial land use?
SP38	Western Area demolition - 2015	Demolition waste	260	Yes
SP39	Western Area demolition - 2015	Demolition waste	1800	Yes
Lot 62 - Stockpiles validated in 2021 (ERM, 2021e) but remaining in AA3				
SP40	Western Area demolition - 2020	Demolition waste	30	Yes
SP30	Western Area demolition - 2020	Demolition waste	30	Yes
Stockpiles validated in 2022 - source AA3 remediation works				
SP81	Road 2 utilities easement trench spoil	Soil	630	Yes
SP100	Southern border of AEC-3a meeting AEC-3b	Soil with foreign materials	150	Yes
SP102B	Screened oversize materials from stockpiles 98, 101, 103 and 104	>50mm oversized materials and clay (bricks, concrete, pipework)	3,724	Yes
SP105	Stage 2 Biopile – 1 of 5 Screened material from SP98 (Sourced from AEC-14A, AEC-14B and AEC-3A hydrocarbon contaminated material	Soil	1,000	Yes
SP106	Stage 2 Biopile – 2 of 5 Screened material from SP98 (Sourced from AEC-14A, AEC-14B and AEC-3A hydrocarbon contaminated material	Soil	1,000	Yes
SP107	Stage 2 Biopile – 3 of 5 Screened hydrocarbon contaminated material from SP98 (Sourced from AEC-14A, AEC-14B, AEC-3D and AEC-3A	Soil	1,000	Yes
SP108	Stage 2 Biopile – 4 of 5 Screened hydrocarbon contaminated material from SP103 (AEC- 3E), SP104 (AEC-3E)	Soil	1,000	Yes
SP109	Stage 2 Biopile – 5 of 5 Screened hydrocarbon contaminated material from SP103 (AEC-3E),	Soil	800	Yes

Notes:

Stockpile SP37 (approximately 5,175 m^3) – soil stockpile that was identified to contain one isolated fragment of ACM. Laboratory calculated quantification results were below the commercial/ industrial assessment criteria and this

material is therefore considered suitable for re-use on site, subject to validation of no visible asbestos at the final ground surface. At the time of report preparation, the SP37 footprint was situated partially across the proposed roadway, as shown on Figure 3 in **Appendix A**.

(2) Prior to commencement of excavation works of hydrocarbon impacted AECs, the overlying concrete/ hardstand was removed and stockpiled within AA2 as stockpile SP97. SP97 was inspected for the presence of ACM and no ACM was noted within the stockpiled materials, as outlined within the AA2 validation report.

8.2.1 Stockpiles validation

ERM, 2022b reported that 81 primary soil samples, seven intra-laboratory duplicates and four inter-laboratory duplicates were sent to Eurofins for analysis of the CoPC. Inter-laboratory duplicate samples were then sent to ALS for analysis for stockpiles that had not yet been characterised, i.e. all stockpiles outlined in **Table 18** except from SP31, SP37, SP38 and SP40.

ERM noted that analysis of TRH Speciation (CWG fractions) was not undertaken on all samples. The TRH Speciation analysis was selected based on PID screening concentrations (>100 ppm v) and laboratory analytical results for the presence of TRH C6-C40 Fractions when compared to the SSTLs.

All CoPC were less than the relevant adopted assessment criteria. A copy of the analytical results is included in **Appendix C-1**.

ERM, 2022b stated that asbestos was detected within the three fibre cement samples collected from stockpile SP100. However, field sieving (to 7 mm) of 10 L samples for gravimetric assessment and calculation of %w/w of ACM identified no exceedances of the site assessment criterion for commercial/ industrial land use.

ERM reported that on 8 October 2021 during excavation between AEC-3a and AEC-3b and stockpile SP100 consolidation in the segregation area, airborne asbestos monitoring was undertaken at four locations surrounding AEC-3b. All monitoring and analysis were conducted in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003(2005)]. The following was summarised by ERM, 2022d:

– *The airborne asbestos fibre concentrations recorded for the sampling undertaken on 8th October 2021 were below the limit of detection for the method used. Asbestos fibres, therefore, are routinely reported as <0.01 fibres per millilitre of air sampled.*
– *Monitoring results were acceptable and indicate that the workplace controls were adequate in order to mitigate the risk to those onsite personnel working outside the set exclusion zone or the nearby identified receptors.*

Soils from areas identified as exceeding SSTLs, which were processed into biopiles and subject to SVE remediation, were successfully treated for target COPCs to achieve concentrations below both the SSTLs and management limits.

Stockpile SP100 was subsequently considered suitable for on-site re-use.

ERM noted that post validation of AA3, remaining suitable stockpiled materials located within other Audit Areas of the Stage 2 Area may be utilised as fill material within AA3 during future land forming works.

ERM, 2022b reported that the previously uncharacterized stockpiles within AA3 (SP81, SP102B, SP105, SP106, SP107, SP108 and SP109) were considered suitable for unrestricted re-use on site on the basis of analytical data demonstrating soil concentrations below criteria for on-site re-use, as summarised in Table 19.

8.3 Biopile sources and screening

ERM, 2022b reported that following completion of screening, screened material from stockpile SP102A was transported to the treatment area in the former Tank farm A1, located within the Stage 2 Area for construction of biopiles, as per the specification outlined in the Stage 2 RAP and EPS's

Excavation and Bioremediation Method Statement (EPS, 2020c). The biopiles comprised processed stockpiles (and AEC source origin) as per **Table 20**.

Table 20 Biopile sources

Stockpile	Source Material – Processing Pad Stockpile (and AEC Source Origin)
Biopile 1 (SP105)	SP98 (AEC-14A, AEC-14B, AEC-3A)
Biopile 2 (SP106)	SP98 (AEC-14A, AEC-14B, AEC-3A)
Biopile 3 (SP107)	SP98 (AEC-14A, AEC-14B, AEC-3A), SP101 (AEC-3D
Biopile 4 (SP108)	SP103 (AEC-3E), SP104 (AEC-3E)
Biopile 5 (SP109)	SP103 (AEC-3E)

ERM (2022b) reported that to validate the success of biopiling, soil samples were collected as per the Stage 2 RAP, as follows:

- *Discrete sampling locations within each biopile were selected such that the samples were representative of each biopile;*
- *Soil samples were collected from 0.5 metre below biopile surfaces;*
- *Soil samples were collected at a rate of 10 samples per stockpile for stockpiles 250 – 2,500 m^3;*
- *Soil was collected from each biopile with a hand auger so as not to damage biopile covering orbiopile plumbing with a mechanical excavator;*
- *A duplicate of each soil samples was placed in a snap-lock bag and screened using a PID fitted with a 10.6 eV lamp, calibrated at the beginning of each working day; and*
- *Visual assessment of soil for the presence of LNAPL was undertaken throughout the sampling works.*

8.4 Biopiling monitoring compliance

ERM, 2022b reported that during treatment of biopiles, SVE system monitoring was undertaken on a daily basis on weekdays, in accordance with EPL requirements. During this time, the SVE treatment system operated in a consistent and predictable manner, with effective control of VOCs for the duration of the biopiling operations (limiting fugitive emissions and breakthrough of contaminants).

The following was noted by ERM regarding the system operation undertaken over a period of 75 days between 21 February and 6 May 2022, as follows:

- *Inlet concentrations were observed to decrease rapidly throughout the first week of treatment, prior to a more gradual decrease across the duration of the biopile treatment;*
- *Treatment capacity was observed to be consistent with breakthrough estimates, and change out of carbon filter media in the lead vessel was not required, nor was implementation of a contingency vessel;*
- *VOC concentrations at the outlet of lead vessel were less than or equal to 3.7 ppm v for the duration of the biopile treatment, indicative of no breakthrough of VOCs from the lead to the lag vessel*;
- VOC concentrations at the EPL discharge points were less than or equal to 2.0 ppm v for the duration of the biopile treatment; and
- Ambient VOC concentrations in close proximity to the biopile covers were indicative of negligible fugitive VOC emissions from the covered biopiles. This condition was observed irrespective of the operating condition of the SVE system.

A summary of SVE inlet monitoring results is shown on **Figure 11** while the EPL discharge point monitoring results across the biopile treatment period is shown on **Figure 12**, both extracted from ERM, 2022d.

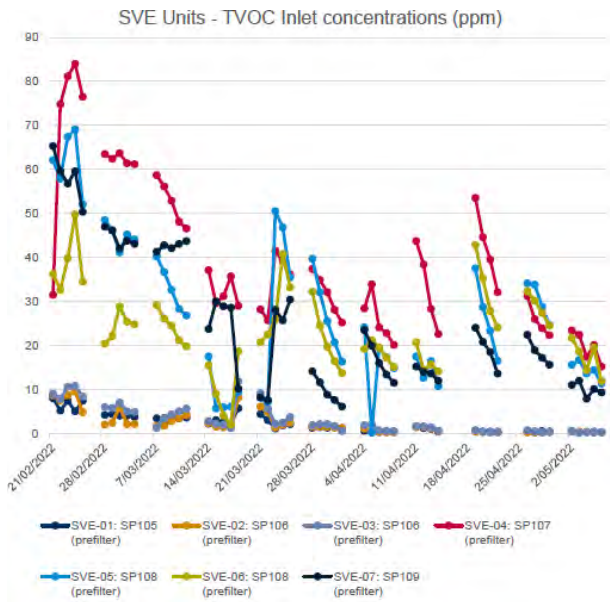


Figure 11 **Summary of SVE System Inlet VOC concentration data across the duration treatment**

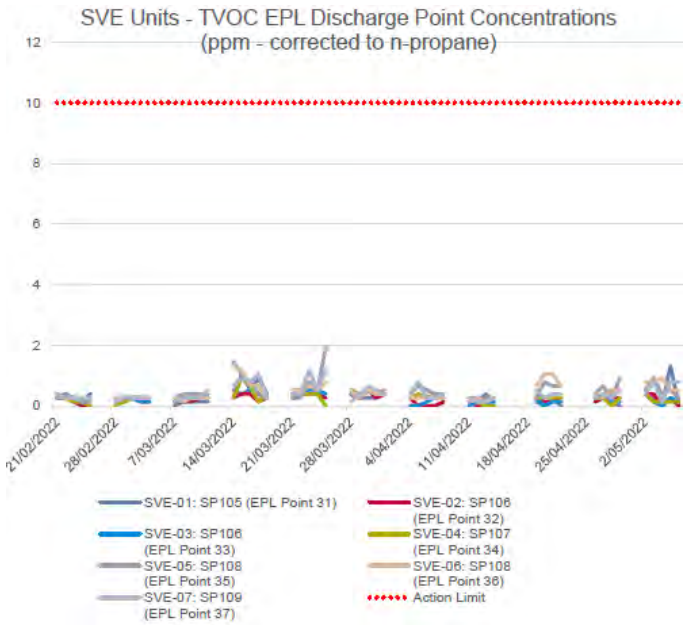


Figure 12 **Summary of SVE System Outlet VOC concentration data across the duration of treatment**

8.5 Biopiles SP105 to SP109 – Validation results

A comparison of PID ranges in soil before biopiling and following biopiling demonstrated the reduction in VOC concentrations in soil, as shown in **Table 21**.

Table 21 PID ranges of excavated hydrocarbon impacted soils and biopiling remediated soils

PID screened material	Date	PID results (ppm v)
Prior to Biopiling Treatment		
Hydrocarbon impacted soils sourced from hydrocarbon AECs and placed in the soil screening and segregation area	28 October 2021	9.2 – 100.7
	29 October 2021	92.5 – 341.2
	1 November 2021	107.3 – 295.0
	2 November 2021	27.7 – 71.4
	3 November 2021	10.5 – 102.7
	16 November 2021	145.3 – 350.3
	17 November 2021	96.3 – 315.6
	18 November 2021	10.5 – 125.9
	17 December 2021	8.6 – 103.2
Maximum PID Measurement		**350.3**
Following Biopiling Treatment		
SP105 (Biopile 1)	2 May 2022	0.5 – 18.4
SP106 (Biopile 2)	2 May 2022	0.2 – 6.5
SP107 (Biopile 3)	2 May 2022	0.5 – 7.2
SP108 (Biopile 4)	2 May 2022	0.7 – 30.9
SP109 (Biopile 5)	2 May 2022	0.6 – 11.8
Maximum PID Measurement		**30.9**

ERM, 2022b concluded the following "***Based on the outcomes of validation activities undertaken and detailed within this report, stockpiled hydrocarbon impacted material subject to biopiling (SP105, SP106, SP107, SP108 and SP109) were demonstrated to be suitable for beneficial use within the Western Area Remediation Project site for commercial/ industrial land use following treatment."***

8.6 Auditor discussion – AA3 Stockpile management and biopiling

The auditor noted that 13 stockpiles within the Stage 2 area were assessed in the Stage 2 Stockpile report. The outcomes of this assessment were documented in the SAR that accompanied the SAS n° 065-2127799B.

The auditor is satisfied with the management undertaken by EPS and ERM in moving the stockpiles between AA2 and AA3.

The auditor considered that the number of primary and second samples collected from stockpiles met the ratio as per the Stage 2 RAP. Samples were not collected for the analysis of CoPC for material such as concrete from slabs from AECs and oversize material.

Based on the information presented by ERM in the AA3 Validation report together with the information included in the Stage 2 Stockpile report, it is the auditor's opinion that the material from the biopiling can be re-used within the WARP, with the exception of stockpile SP37 that should be managed / reused under considerations discussed in the Stage 2 AA3 LTEMP.

9. Groundwater monitoring events - Consent Condition B22

As required by Condition B22 of the Development Consent for the Project (SSD Nº 9302), a groundwater monitoring program (GWMP) was developed for implementation during and post-remedial works.

The groundwater monitoring data collected as part of the GWMP were presented by ERM in the following reports:

- Clyde Western Area Remediation Project - Stage 2 Groundwater Monitoring – Remediation Phase – Month 1, dated 8 November 2021 (the Remediation GME 1).
- Clyde Western Area Remediation Project - Stage 2 Groundwater Monitoring – Remediation Phase – Month 2, dated 20 December 2021 (the Remediation GME 2).

9.1 Groundwater monitoring program requirements

The groundwater monitoring strategy as outlined within the Stage 2 GWMP detailed the following requirements:

- Weekly gauging of wells BH2/10, MW98/4, MW11/20, MW11/19, MW12/03 and MW11/15 located within the excavation area. This was completed on the following dates:
  (a) 27 September 2021 (month 1);
  (b) 12, 18 and 22 October 2021 (month 1);
  (c) 27 October 2021 (month 2); and
  (d) 3, 15 and 18 November 2021 (month 2).
- Monthly pH sampling (laboratory analysis) of groundwater collected from wells BH2/10, MW98/4, MW11/20, MW11/19, MW12/03 and MW11/15 located within the excavation area. This was completed on the following dates:
  (a) 12 October 2021 (month 1); and
  (b) 15 November 2021 (month 2).

The objective of the aforementioned works was to monitor water levels, pH and LNAPL presence (including thickness if identified). The weekly gauging was required during remedial works to monitor the potential for LNAPL mobilisation.

The monitoring strategy also outlined the following requirement:

- Monthly gauging and sampling for pH at down-gradient groundwater monitoring wells, MW12/20, MW18/23 and MW12/21, during excavation works, completed on the following dates:
  (a) 12 October 2021 (month 1); and
  (b) 15 November 2021 (month 2).

The objective of this additional monitoring was to demonstrate that the off-site groundwater conditions had not been adversely impacted by remedial works or caused environmental harm to the Duck River and monitor potential for LNAPL mobilisation from the remedial works area. The collection of pH data was used to assess the potential generation of acidic conditions due to variations in water table depth and potential oxidation of potential acid sulfate soils (PASS).

9.2 Consent Condition B22 - Groundwater monitoring results

Hydrocarbon impacted soils excavated during month 1 of remediation consisted of the below areas of environmental concern, with excavation date undertaken as follows:

- AEC-14a: 24th September to 8th October 2021
- AEC-14b: 22nd September to 8th October 2021
- AEC-3a: 24th September to 20th October 2021

Weekly gauging and monthly pH sampling dates were presented in **Section 9.1**.

9.2.1 Baseline monitoring

Baseline testing for pH was undertaken on 8 July 2021, prior to commencement of excavation works in Stage 2 at the following 10 selected wells: BH2/10, MW98/4, MW11/15, MW11/18, MW11/19, MW11/20, MW12/03, MW12/20, MW18/23 and, MW12/21. The baseline monitoring data is summarised in **Table 22**.

Table 22 Baseline results

Well ID	pH	Groundwater depth (m BTOC)	LNAPL thickness
BH210	4.52	0.934	No LNAPL detected
MW98/4	4.84	0.64	No LNAPL detected
MW11/15	4.75*	1.515	No LNAPL detected
MW11/18	4.60*	0.965	No LNAPL detected
MW11/19	5.07*	0.462	No LNAPL detected
MW11/20	5.68	0.745	No LNAPL detected
MW12/03	6.52	0.88	No LNAPL detected
MW12/20	6.63*	1.682	No LNAPL detected
MW18/23	6.21*	1.264	No LNAPL detected
MW12/21	7.36*	1.495	No LNAPL detected

Note:

(*) Baseline pH data on 8 July 2021 not collected. Baseline data generated using historical pH average.

9.2.2 Remediation GME 1 outcomes

ERM reported that increases in groundwater levels observed in MW11/15 and MW12/03 were likely due to rainfall events leading up to gauging event(s). Groundwater monitoring levels in the remaining wells recorded levels similar to those recorded during the baseline event.

ERM, 2021e concluded that the pre-remediation southeastern groundwater flow direction, as shown on Figure F2 in **Appendix A-2** was more to the south in the remediation phase groundwater flow direction shown on Figure F3 in **Appendix A-2**. Overall, the discharge was still to the Duck River.

LNAPL was not detected in any of the 10 wells prior to remedial works and was not detected in the month 1 monitoring, indicating that remedial works were not mobilising LNAPL.

ERM reported that comparisons between baseline pH data to the month 1 remediation phase pH data indicated no observable acidification of groundwater conditions. The pH laboratory analysis is summarised in **Appendix C-2**.

Data collected during remedial works in month 1 did not indicate any adverse change to groundwater conditions or environmental harm to the Duck River. As such, contingency actions as per the GWMP were not required.

9.2.3 Remediation GME 2 outcomes

ERM, 2021f reported that fluctuations in the recorded groundwater levels were considered likely due to the significant rainfall leading up to and during the monitoring period. The observed groundwater levels were generally considered minor variations of the baseline levels, with the exception of results from MW11/20. The groundwater level within MW11/20 was observed to have increased significantly and was presumed to be due to the seepage of rainwater and water discharged from dust suppression trucks, as it was observed the well cap was not properly sealed.

The groundwater flow direction was estimated to be southerly, similar to that recorded in GME 1.

The observed change in groundwater flow direction was considered by ERM to be likely due to the large variation in rainfall events throughout the month 2 monitoring schedule. The change in groundwater flow and the updated flow direction was not considered to alter the potential for CoPC mobilisation via groundwater to potential receptors.

ERM reported that comparisons between baseline pH data to the month 2 remediation phase pH data indicated no observable acidification of groundwater conditions. The pH laboratory analysis is summarised in **Appendix C-4**.

ERM noted that LNAPL was not detected in any of the 10 wells prior to remedial works and was not detected in the month 2 monitoring, indicating that the remedial works were not appear mobilising LNAPL.

Data collected during remedial works did not indicate any adverse change to groundwater conditions or environmental harm to the Duck River. As such, contingency actions as per the GWMP were not required.

9.3 Ongoing groundwater monitoring

ERM reported that previous groundwater monitoring across the Western Area indicated stable to decreasing concentrations of TRH and BTEX in groundwater. No human health and ecological risks from dissolved phase groundwater concentrations have been identified in Stage 2 AA3.

As outlined in the Stage 2 Groundwater Monitoring Program (GWMP), on-going groundwater monitoring requirements were to focus on down-gradient boundary monitoring and this approach was supported by no adverse changes in groundwater conditions being recorded within the vicinity of excavation areas post-remediation (ERM, 2022b and ERM, 2022c). Groundwater monitoring wells which were part of the ongoing boundary monitoring program in Stage 2 AA3 included:

– BH210, MW20/19, MW18/23 and MW12/21 - All these wells were located outside the boundary of Stage 2 AA3.

9.4 Auditor discussion – GMEs, Consent Condition B22

The auditor considered that the GMEs carried out by ERM were completed in accordance with the GWMP requirements discussed in **Section 5.7**.

As noted by the auditor (email included in **Appendix B**), ERM missed one sampling event in the weeks commencing 4 October 2022 and 15 November 2022. ERM explained (as presented in the letter in A**ppendix B**) that the omission of those events that did not compromise the monitoring program, based on the following lines of evidence:

- Low permeability clay soils, and lack of LNAPL in monitoring wells prior to and following the monitoring period. Thus, the omission of gauging data (two rounds) was not considered to be material in the context of assessing potential short-term risks to sensitive receptors (i.e. Duck River).

The auditor agreed that comparison between baseline pH data to the remediation data from months 1 and 2 indicated no observable acidification of groundwater conditions. The auditor also noted during his site visit in November 2021 that the exposed soils in the open excavations (awaiting backfill with VENM) were stiff clays, most likely residual shale rather than alluvial sediments associated with ASS.

The auditor noted that LNAPL was not mobilized as a consequence of the excavation works, as it was not observed in either of the GMEs completed by ERM.

The auditor considered that the groundwater fluctuations recorded during the remediation of Stage 2 AA3 were not significant and were likely to be associated with the heavy rainfall that occurred during September and October 2021.

10. Evaluation of quality assurance and quality control

This section of the SAR provides an evaluation of the QA/QC procedures relevant to the validation program conducted by ERM with reference to ASC NEPM.

The field and laboratory QA/QC measures presented by ERM in it's Validation report have been compared to the relevant requirements listed in the *Consultant Guidelines* to gauge the integrity of the data set used to validate the remedial works.

A copy of the auditor's assessment of QA/QC measures presented by ERM is provided within **Appendix D** of this SAR.

10.1 Auditor discussion – Evaluation of QA/QC

The auditor considered that the level of QA/QC provided by ERM was sufficient to meet the objectives of the validation program and could be relied upon to make decisions regarding site suitability.

Sample locations were appropriate to validate the effectiveness of the excavation of contaminated soils in Stage 2 AA3 that could present risks to future site users. A suitable number and type of samples was selected to characterise the unexpected finds. The analyses of all soil samples (both as part of the validation of remedial excavations and the validation characterisation program) have been conducted by laboratories certified by the NATA, and the contaminants of concern were appropriate to the areas of concern and the former site activities.

The auditor deemed that the data presented in the Validation report was sufficiently precise, accurate, representative, complete and comparable.

The auditor considered that the overall quality of data and their presentation are of an adequate standard to support the conclusions that ERM made regarding the suitability of AA3.

11. Conceptual site model – Post remediation

Based on the outcomes of the validation program and considering the most recent results from the assessments carried out in 2021, ERM updated the CSM for the Stage 2 AA3 as per the following discussion.

11.1 Former potential sources and CoPc

ERM considered that the primary sources of soil impacts formerly included the refinery processing infrastructure which has been decommissioned/removed from the Stage 2 Area. It is noted that all soils associated with CoPC that could present a vapour intrusion risk were removed as part of the remedial works.

PFAS contamination assessments had been undertaken as part of the preparation of the PFAS CSM and mass flux assessment (ERM 2018). The results of this assessment indicated that testing for PFAS from soil leachate and groundwater in the WARP did not constitute an unacceptable risk to on- and off-site receptors. Therefore, PFAS was not considered a CoPC.

11.2 Extent of residual impacts

Following completion of remedial works, the following residual sources of contamination were still present within the Stage 2 AA3:

- Residual hydrocarbon impacted soil – limited to presence of observed LNAPL or hydrocarbon impacts exceeding TRH Management Limits:
  (a) **Lot 56 –** BH12/29 (0.65 m), TP19/79 (0.2-0.35 m) and TP21/58 (0.5 m).
  (b) **Lot 58 –** BH12/34 (0.6-1.3 m), TP18/30 (0-1.0 m), TP19/10 (0.2-0.4 m) and BH12/28 (0.05 m).
  (c) **Lot 61 –** TP18/31 (0-2.0 m) and TP20/26a (0.6-0.7 m).
  (d) **Lot 62 –** MW12/20 (2.0 m) and MW12/21 (1.4 m).
  (e) **Proposed Roadway (AA3)** – TP20/24 (1.0 m).
- Residual sludge within drainage network, within the pipes and pits outlined in pink in Figure F4 in **Appendix A-1**.
- Residual LNAPL within shallow groundwater at MW11/17 (Lot 61).

11.3 Receptor

The following potential receptors were discussed by ERM in the AA3 Validation report:

Groundwater beneficial use assumption

- Beneficial groundwater users (potable or non-potable) were not considered a potential receptor given the absence of registered extraction bores within and down gradient of the WARP, poor natural background quality of groundwater and likely low yields.

On-site ecological receptors assumptions

- Current on-site employees and contractors are subject to Viva Energy's Health, Safety and Environment controls restrict on-site workers potential exposure to soil contamination. Therefore, potentially complete SPR linkages are currently considered managed. However, future land users would not be subject to the same controls and thus, management of any potentially SPR linkage would be required.

– Given the extensive coverage of the WARP in concrete hardstand and limited available on-site habitat, on-site ecological receptors were not considered further in the CSM. Given the proposed slab- on-grade commercial/industrial future land use, ecological on-site receptors were also not considered in the CSM under future development scenarios.

Off-site ecological receptors assumption

– The nearest off-site ecological receptor is the Duck River, bordering the Stage 2 Area to the south, and the Parramatta River, which adjoins the Duck River to the north-east. Due to the estuarine nature of these river systems and receipt of runoff from multiple industrial catchment areas, these Duck and Parramatta Rivers are consistent slightly to moderately disturbed marine ecosystem, as per the ANZG (2018) Guidance.

11.4 Source pathway receptor linkages

Based on the Tier 2 assessment undertaken in the HHERA and subsequent investigations carried out in 2020 and 2021, the following source-pathway- receptors (SPR) linkages were considered relevant by ERM to the specific AECs setting in the Stage 2 AA3 and may constitute an exposure risk during redevelopment of the site and future commercial/IMW receptors:

– Inhalation of asbestos fibres by future on site commercial workers, construction workers and intrusive maintenance workers from bonded asbestos fibres liberated during future excavation works or exposed at the ground surface.

Residual soil impacts and LNAPL which have been identified to not present a risk to human health or the environment:

– Identification of areas of aesthetic impact (staining, sheen, LNAPL) for appropriate waste management and odour management during future excavations.
– Prevention of groundwater extraction on-site.
– Unexpected finds (e.g. asbestos).

ERM identified that within the Stage 2 AA3 there were locations where COPCs exceeded Management Limits. No unacceptable risks associated with these soils were identified, but it was recognised that they need to be managed owing to aesthetic considerations (i.e. odorous, stained or containing non-volatile LNAPL). The LTEMP for Stage 2 AA3 identified these areas and nominated management procedures including (but not limited to) waste management, air quality/odour management and unexpected finds protocols if these soils are disturbed during future intrusive works in these areas.

11.5 Auditor discussion – Conceptual site model - Post remediation

The auditor noted that the post remediation CSM developed by ERM for the Stage 2 AA3 was based on the validation results and implementation of the AA3 LTEMP.

The CoPCs that need to be managed under the AA3 LTEMP are for primarily for aesthetic reasons given that ERM presented sufficient lines of evidence that there are no human health and/or environmental exposure risks associated with the residual hydrocarbons in site soils or groundwater. The management of asbestos is an unexpected find given ACM was not identified in site investigations.

The auditor considered that sufficient data has been gathered in GMEs conducted over the past eight years to demonstrate that hydrocarbon impacts to groundwater quality are either localised and have little migration potential or at levels that do not pose an unacceptable risk to human health or the off-site environment (noting that there are no environmental receptors on-site).

It is the auditor's opinion that the refined CSM developed by ERM considered site specific attributes (including the site geology, groundwater behaviour and soil and groundwater data) and was largely prepared in accordance with the relevant guidelines and presented sufficient information to assess potential risks within the Stage 2 AA3.

12. AA3 Long Term Environmental Management Plan

12.1 Objective of AA3 LTEMP

The AA3 LTEMP summarises environmental conditions at the site and provides a mechanism to inform the site owner(s), workers and managers of the potential risks to human health and / or the environment arising from contact with residual soil contamination that need to be managed.

The objectives of the AA3 LTEMP are as follows:

- Outline methods and procedures that will avoid and/or mitigate adverse effects on human health and/or the environment.
- Provide a methodology for the appropriate environmental management of excavation works that may encounter residual contaminated soil.
- Provide environmental requirements for the sourcing and placement of backfill material.
- Present safety measures / considerations for dealing with potentially contaminated soil
- Outline restrictions to potential future land uses.

12.2 Nature of the residual contamination

ERM reported in the AA3 LTEMP that following completion of soil remedial works within the Stage 2 AA3, the following residual contamination may be present:

- Hydrocarbon impacted soils - limited to aesthetic considerations (presence of hydrocarbon staining and/or odours) which may be identified during future intrusive works.
- Asbestos - Although asbestos has not been identified above the relevant criteria for the proposed land-use, given the long history of industrial land use and surrounding industries, the possibility of discovering isolated asbestos as an unexpected find during further intrusive excavations within the site cannot be precluded. This applies to all proposed Lots subject to this SAR and the Stockpile SP 37. If asbestos is identified during intrusive works, any finds should be investigated as per the unexpected finds methodology detailed within Section 6.1 of the AA3 LTEMP and appropriate health & safety and waste management measures implemented.
- Oily water / sludge associated with former underground drainage infrastructure – The drainage infrastructure within the AA3 is not considered to pose a risk to future site operations, residual hydrocarbon impacted sludge and sediment within pipes and pits should be managed to void inadvertent release of LNAPL during future construction works and manage potential safety risk for workers (via dermal contact / inhalation) during future excavation works undertaken to remove this infrastructure.

The location and extent of residual contamination within AA3 is illustrated on Figure F3 in **Appendix A-4**.

12.3 AA3 LTEMP enforceability

All long-term management requirements are legally enforceable via conditions B10(a) and (b) of the Development Consent (State Significant Development 9302), issued under Section 4.38 of the Environmental Planning and Assessment Act 1979 (the 'EP&A Act') – as outlined below:

– *B10. Upon completion of the Site Audit Statement and Site Audit Report, the Applicant must: (a) Implement the approved LTEMP (b) Provide evidence to the Planning Secretary that the LTEMP is listed on the relevant planning certificate for the land, issued under section 10.7 of the EP&A Act.*

Additionally, as required by condition B10 (b) of the Development Consent, Parramatta Council will be requested to add a notation to the planning certificate for the Stage 2 AA3 under section 10.7(5) of the EP&A Act that the property is subject to the AA3 LTEMP.

12.4 AA3 LTEMP Public Notification

Notification of the AA3 LTEMP will be placed on the Section 10.7(5) planning certificate.

12.5 Actions required under AA3 LTEMP

ERM reported in the AA3 LTEMP that based on the nature and extent of residual contamination identified within the AA3 Stage 2 Area the following management controls are required:

– Non-Intrusive works – No management controls are required.
– Intrusive Excavation Works – Implementation of environmental management controls as detailed in Section 6 of the AA3 LTEMP.

12.6 Auditor discussion – AA3 LTEMP

Section 3.4.6 of the *Auditor guidelines* requires the following conditions to be met for an EMP to be accepted by an auditor as a means of managing site contamination:

a) *The EMP has been reviewed by the auditor*

The AA3 LTEMP has been reviewed by the auditor. The auditor considered that the LTEMP had been prepared in a manner consistent with relevant NSW EPA made or approved guidelines.

b) *The EMP can reasonably be made to be legally enforceable, for example because compliance with it is a requirement of a notice under the CLM Act or of development consent conditions issued by the relevant consent authority*

The AA3 LTEMP is legally enforceable through condition B10(a) of the Development Consent (State Significant Development 9302).

c) *There will be appropriate public notification of any restrictions applying to the land to ensure that potential purchasers or other interested individuals are aware of the restrictions, for example appropriate notations on a planning certificate issued under s.149(2) of the Environmental Planning and Assessment Act or a covenant registered on the title to land under s.88B of the Conveyancing Act 1919.*

The AA3 LTEMP will be noted on the planning certificate under section 10.7 of the EP&A Act as required by condition B10(b) of the Development Consent, notifying of the restrictions applying to the land to ensure that potential purchasers or other interested individuals are aware of the restrictions. The auditor informed Parramatta Council that notation needed to be made on the Section 10.7. A copy of Council's response (along with that provided by the NSW EPA) is presented in Appendix B of this report.

d) *There is no off-site migration of contamination from the site which is the subject of the site audit, or where there is off-site migration or its potential, that contamination within the site is*

managed or monitored so it does not present an unacceptable risk to either the on-site or off-site environments

Based on the data presented in the AA3 Validation report (ERM, 2022d) and Remediation GMEs 1 and 2 reports (ERM, 2022b and ERM, 2022c), the auditor agreed there was no evidence of off-site migration of contamination from the AA3 that could constitute a risk to off-site receptors. Based on the refined CSM post-remediation prepared by ERM (ERM, 2022b), the potential risks associated with the residual impacts are low and acceptable for either future on-site receptor and off-site human (commercial/industrial) and ecological (Duck River) receptors.

The auditor noted that the AA3 LTEMP appropriately identified the residual contamination and provided an adequate description of the objectives, scope of works, roles and responsibilities of parties involved in the implementation and management of the AA3 LTEMP.

A copy of the AA3 LTEMP prepared by ERM is presented in **Appendix E**.

13. Other considerations

13.1 Ecological considerations

Based on the historical reports, the off-site migration of residual LNAPL in groundwater or dissolved phase petroleum hydrocarbons has not been demonstrated to be at levels that could potentially cause risk to the identified environmental/ecological receptors. As previously discussed in the PFAS CSM and mass flux assessment prepared by ERM, testing for PFAS from soil leachate and groundwater in the WARP had demonstrated that PFAS in groundwater did not represent an unacceptable risk to on- and off-site receptors.

13.2 Aesthetic impacts

ERM included the TRH Management Limits as trigger levels for future site management considerations (aesthetics impacts). Residual aesthetic impacts will be managed via the AA3 LTEMP discussed in **Section 12**.

13.3 Chemical mixtures

ERM did not specifically examine potential additive or synergistic effects of chemical mixtures in the AA3 Validation report. Cumulative impacts from chemical present at the site had however been evaluated in the HHERA (ERM 2020b) and the results of validation sampling demonstrated CoPC were less than the nominated validation criteria.

13.4 Potential migration

Previous groundwater investigations had demonstrated that there was little to no migration of CoPC from the site to the nearest receptor (Duck River). The outcomes of Remediation GME 1 (ERM, 2022b) and GME 2 (ERM, 2022c) demonstrated there was no potential off-site migration to AA4 (down gradient of AA3) or the nearest off-site ecological receptor (Duck River).

In addition, the monitoring data completed during the remedial activities did not identify any change to groundwater quality in relation to residual immobile LNAPL or pH conditions compared with the baseline monitoring.

13.5 Auditor discussion – Other considerations

The auditor noted that the WARP was a petroleum refinery process area mostly covered in hardstand and it would not be expected that the presence, or protection, of ecological receptors would be relevant at such facilities. Additionally, the primary sources of contamination within the Stage AA3 were aboveground. In relation to potential off site migration of contaminants, ERM reported groundwater concentrations of CoPC within adopted trigger levels for ecological receptors at delineation wells down gradient of the Stage 2 AA3.

In relation to aesthetic impacts, as noted by ERM, LNAPL is unlikely to be encountered during routine use of AA3 or subsurface maintenance activities. On-site intrusive maintenance works, where needed, will be managed under the AA3 LTEMP and/or workplace health and safety procedures. Odours may be encountered in some areas of AA3 if excavations are undertaken, as discussed in the AA3 LTEMP (a copy is attached in **Appendix E**). The chemicals associated with these odours have been assessed as not presenting an unacceptable exposure risk to site users.

Although not specifically discussed in the AA3 Validation report, potential chemical mixtures are not relevant in relation to human health risks as these were assessed as part of the HHERA (ERM, 2021b) used to inform the scope of the remedial works.

14. Compliance with regulatory requirements

In evaluating the adequacy of the soil remedial and validation works and whether the site is suitable for commercial/industrial land use, the decision-making process for assessing urban redevelopment sites (Appendix A of the *Auditor Guidelines*) has been followed. In using this process, the auditor has considered the information presented earlier in the SAR. **Table 23** presents this assessment.

Table 23 Decision making process for assessing urban redevelopment sites

EPA's requirements	Auditor 's comments
All site assessment, remediation and validation reports follow the applicable guidelines.	The AA3 Validation report prepared by ERM contained the key elements required by the Consultant Guidelines for such reports.
Any aesthetic issues relating to soils have been adequately addressed.	The auditor noted that residual contaminated soils, if encountered, could have a hydrocarbon odour. However, exposure to odorous soils would only occur if there was an excavation. This situation is not likely to be encountered under general activities at the site and will otherwise be managed under the LTEMP discussed in **Section 12**.
Soils have been assessed against health-based investigation levels and potential migration of contamination from soils to groundwater has been considered.	Soil sampling data was compared to validation criteria (based on NSW EPA endorsed guideline values or SSTLs derived as part of the HHERA) or ASC NEPM Management Limits.
Groundwater (where relevant) has been assessed against health-based investigation levels and, if required, any potential impacts to buildings and structures from the presence of contaminants considered.	Groundwater monitoring was conducted as part of the remediation and validation process, as required by Condition of Consent B22. The data from the remediation GMEs 1 and 2 indicate that the remedial activities did not affect the groundwater quality neither promoted LNAPL mobilisation. In addition, groundwater historical data had demonstrated that there were no unacceptable health risks posed by the recorded concentrations of the CoPC to human health or the environment.
Hazard ground gases (where relevant) have been assessed against relevant health-based investigation levels and screening values.	Hazardous ground gases associated with hydrocarbon contamination were assessed as part of the remedial planning and execution.
Any issues relating to local area background soil concentrations that exceed relevant investigation levels have been adequately addressed in the site assessment reports.	Not applicable.
The impacts of chemical mixtures have been assessed.	Risks associated with chemical mixtures were not explicitly commented upon by ERM. However, the CoPC were assessed as part of the HHERA (used to identify site specific risks of exposure) which would have considered cumulative risks of exposure to all identified chemicals.
Any potential ecological risks have been assessed.	Ecological risks had previously been evaluated in the groundwater monitoring programs that had been completed leading up to the remedial works. No ecological risks were identified to the key receptor, i.e. Duck River to the south of the WARP.
Any evidence of, or potential for, migration of contaminants from the site has been appropriately addressed, including potential risks to off-site receptors, and reported to the site owner or occupier.	The potential migration of contaminants has been assessed (principally via groundwater monitoring) and the risks of exposure deemed to be low and acceptable.

EPA's requirements	Auditor 's comments
The site management strategy (where relevant) is appropriate including post-remediation environmental plans.	Site management protocols were presented and discussed in **Section 12** of this SAR. The auditor considered that the LTEMP is suitable for the proposed industrial/commercial land uses and that there is appropriate public notification and legal enforceability.

Table 24 presents a summary of the conditions of SSD Nº 9302 (that were incorporated in the GWMP and other relevant documentation) and the auditor's assessment of compliance and risk to human health and the environment based on the data collected during the validation program.

Table 24 Summary of the conditions of SSD9302 and auditor's assessment

SSD Condition	Definition	Auditor comments
B22(b)	Include a program to monitor groundwater levels and quality during remediation works and following demobilisation	Groundwater monitoring was conducted by ERM during and following remedial works. The monitoring showed that there was a rise in the groundwater levels, but this was attributed to rainfall events and was not considered to influence the risk profile. Neither notable changes to pH in groundwater nor LNAPL was not recorded at any of the monitoring points.
B22(e)	Include trigger levels for investigating potential adverse impacts to the Duck River, including triggers for indicating if further remediation of groundwater is required	Appropriate trigger levels were nominated for the evaluation of data collected during the groundwater monitoring program. The concentrations of the majority of COPC were less than the level of reporting and all recorded concentrations were less than the trigger levels listed in the GWMP.
B22 (f)	Outline contingency actions to be implemented if monitoring indicates that natural attenuation is not occurring, or groundwater is having an adverse impact on the Duck River	Although MNA has not been demonstrated to be influencing the hydrocarbon concentrations, the majority of CoPC were less than LOR and all are less than the nominated trigger levels. The silica gel clean-up analysis has shown that biodegradation of the hydrocarbons is occurring. The data that has been collected as part of the GWMP program, coupled with the data collected over the past ten years has shown that there is no unacceptable risk of exposure to human and health and the environment.
B22(g)	Monitor the effectiveness of management measures and contingency actions for reducing impacts	Neither management measures nor contingency actions were required during remediation. Groundwater monitoring was conducted during and after remediation: around excavation areas and at the down gradient site boundary. The data has shown that remediation has not affected groundwater quality and the risk to human health and the environment remains low and acceptable. The auditor noted that the most recent data set of CoPC detected in groundwater as well as the absence of LNAPL, have demonstrated there to be no unacceptable risks to on and off-site receptors.
B22(h)	Procedures for reporting changes to groundwater conditions that have the potential to create unacceptable risks to the Duck River.	

15. Audit conclusions

15.1 Consultant conclusions

The following conclusions were presented by ERM in the AA3 Validation report:

Supplementary 'Data Gaps' Test Pitting Future Road Data Gap Investigation – "*Laboratory analysis reported concentrations of all Contaminants of Potential Concern (COPCs) below the adopted assessment criteria for both locations, confirming the suitability for the proposed road land use, subject to LTEMP requirements for areas of previously identified residual hydrocarbons*".

Remediation Excavations – AEC-3a "*Based on sampling and visual observations during excavation, the walls and base of the extent of the AEC-3a excavation met the assessment criteria defined in the Stage 2 RAP*."

Remediation Excavations – AEC-3b "*Following excavation of AEC-3b, the concentrations of asbestos in the soils forming the walls and base were below the remediation assessment criteria. Based on sampling and visual observations during excavation, the walls and base of the extent of the AEC-3b excavation meet the assessment criteria defined in the Stage 2 RAP*."

Remediation Excavations – AEC-14a "*Based on sampling and visual observations of the final excavation surface, the reported concentrations of COPCs in the walls and base of the AEC-14a excavation were demonstrated to meet the assessment criteria defined in the Stage 2 RAP*."

Characterisation of Soils Following Biopiling Remediation for on-site re-use "*Based on the outcomes of validation activities undertaken and detailed within this report, stockpiled hydrocarbon impacted material subject to biopiling (SP105, SP106, SP107, SP108 and SP109) were demonstrated to be suitable for beneficial use within the Western Area Remediation Project site for commercial/ industrial land use following treatment*."

Characterisation of soils unsuitable for biopiling for on-site re-use "*These stockpiles were assessed as suitable for unrestricted re-use on site based on soil concentrations below the assessment criteria for on-site reuse and no identification of asbestos containing materials*".

Waste Disposal and Tracking "*The 'Soil Screening Area' was subject to validation sampling of surface soils following temporary storage and handling of hydrocarbon impacted soils. Based on sampling and visual observations within this area of AA3, the former stockpile footprints of SP98, SP101, SP102A, SP103 and SP104 were demonstrated to meet the assessment criteria defined in the Stage 2 RAP. The temporary placement of these stockpiles in the soil screening area is therefore not considered to have resulted in cross contamination of underlying soils*".

Stockpile SP100 Characterisation "*Based on sampling and visual observations during excavation, stockpile SP100 met the assessment criteria defined in the Stage 2 RAP and was therefore considered suitable for on-site re-use*."

Imported Material Validation "*An estimated total of 58,074 Tonnes of VENM were imported to backfill the AEC-3a, AEC-3b and AEC-14a excavations as well as for constructing pads within the biopile treatment and segregation areas. The type and volume of VENM imported to backfill the excavations within AA3 and construct biopile treatment and segregation area pads was deemed appropriate to meet the requirements of the Stage 2 RAP, the Development Consent and EPL conditions. The balance of material imported and compacted is consistent with overall excavation volumes."*

Based on the outcomes of remediation and validation activities undertaken and detailed within this report, AA3 is considered suitable for commercial/industrial land use, subject to implementation of a legally enforceable Long Term Environmental Management Plan (LTEMP), to manage the following residual impacts and scenarios during future site redevelopment:

- Identification of areas of aesthetically impacted soils (staining, sheen, Light Non-Aqueous Phase Liquids (LNAPL)) for appropriate waste and odour management during potential future excavation works.
- *Preclusion of groundwater extraction on site for beneficial re-use.*
- *Restriction on basement construction.*
- *Release of residual sludge/ LNAPL to soil and/ or groundwater during excavation of pipework or drainage infrastructure.*
- *Identification and management of unexpected finds of contamination during future excavation works*.

15.2 Auditor conclusions

Remediation of AEC-3a, AEC-3b and AEC-14a was necessary to address the presence of soil contamination within AA3 (petroleum hydrocarbons and asbestos) that may affect human health. The approach to remediate the Stage 2 AA3 was presented in the Stage 2 RAP that was subject to a site audit (as summarised by the site auditor in SAS Nº 065-2127799B issued on 13 August 2021).

It is the auditor's opinion that based on the remedial and validation results discussed in this SAR, the AA3 within Stage 2 Area is suitable for commercial/industrial land uses, subject to implementation of the approved AA3 LTEMP. A copy of the AA3 LTEMP is presented in **Appendix E**.

The AA3 LTEMP prepared by ERM was reviewed and is considered to have been prepared in a manner consistent with NSW EPA made or endorsed guidelines. The auditor confirms that the four key requirements of an EMP (as listed in Section 3.4.6 of the Auditor Guidelines) have been met. The following residual contamination may be present that must be managed via the LTEMP:

- Hydrocarbon impacted soils - limited to aesthetic considerations (presence of hydrocarbon staining and/or odours) which may be identified during future intrusive works.
- While asbestos has not been identified above criteria for the proposed land-use, the long history of industrial land use and surrounding industries, it cannot be precluded that asbestos could be an unexpected find during further intrusive excavations within the Management Area. This applies to all proposed Lots subject to this SAR and Stockpile SP37.

This SAR also confirms, as required by condition B7 of the Development Consent, that:

- the remedial works approved under the Development Consent have been completed in accordance with the remediation objectives listed in the Stage 2 RAP; and
- potential risks to human health and the environment have been addressed in accordance with the objectives of the Stage 2 RAP.

16. Disclaimer

This SAR and accompanying SAS have been prepared in accordance with relevant provisions of the Contaminated Land Management Act 1997.

This Report:

- Has been prepared the auditor and his support team as indicated in the appropriate sections of this SAR ("GHD") for Viva Energy.
- May be used and relied on by Viva Energy.
- May be used by and provided to the NSW EPA and the relevant planning authority for the purpose of meeting statutory obligations in accordance with the relevant sections of the.
- May be provided to other third parties but such third parties use of or reliance on the SAR is at their sole risk, as this SAR must not be relied on by any person other than those listed above without the prior written consent of GHD.
- May only be used for the purpose as stated in **Section 1.2** of the SAR (and must not be used for any other purpose).

GHD and its servants, employees and officers (including the auditor) otherwise expressly disclaim responsibility to any person other than Viva Energy arising from or in connection with this SAR.

To the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by GHD and the SAR are excluded unless they are expressly stated to apply in this Report.

The services undertaken by the auditor, his team and GHD in connection with preparing this SAR:

- Were undertaken in accordance with current profession practice and by reference to relevant guidelines made or approved by the NSW EPA.
- The opinions, conclusions and any recommendations in this SAR are based on assumptions made by the auditor, his team and GHD when undertaking services and preparing the SAR ("Assumptions"), as specified throughout this SAR.
- GHD and the auditor expressly disclaim responsibility for any error in, or omission from, this SAR arising from or in connection with any of the Assumptions being incorrect.
- Subject to the paragraphs in this section of the SAR, the opinions, conclusions and any recommendations in this SAR are based on conditions encountered and information reviewed at the time of preparation of this SAR and are relevant until relevant legislations changes, at which time, GHD expressly disclaims responsibility for any error in, or omission from, this SAR arising from or in connection with those opinions, conclusions and any recommendations.

The auditor and GHD have prepared this SAR on the basis of information provided by Viva Energy and others who provided information to GHD (including Government authorities), which the auditor and GHD have not independently verified or checked ("Unverified Information") beyond the agreed scope of work.

The auditor and GHD expressly disclaim responsibility in connection with the Unverified Information, including (but not limited to) errors in, or omissions from, the SAR, which were caused or contributed to by errors in, or omissions from, the Unverified Information.

This SAR and SAS should be read in full, and no excerpts are taken to be representative of the findings of this SAR.

The opinions, conclusions and any recommendations in this SAR are based on information obtained from, and testing (if undertaken as specified in this SAR) undertaken at or in connection with previous reports.

Although reasonable care has been used to assess the extent to which the data collected from site is representative of the overall site condition and its beneficial uses, investigations undertaken in respect of this SAR are constrained by the particular conditions as discussed in this SAR.

Site conditions may change after the date of this SAR. The auditor and GHD expressly disclaim responsibility:

– Arising from, or in connection with, any change to the site conditions.
– To update this SAR if the site conditions change.

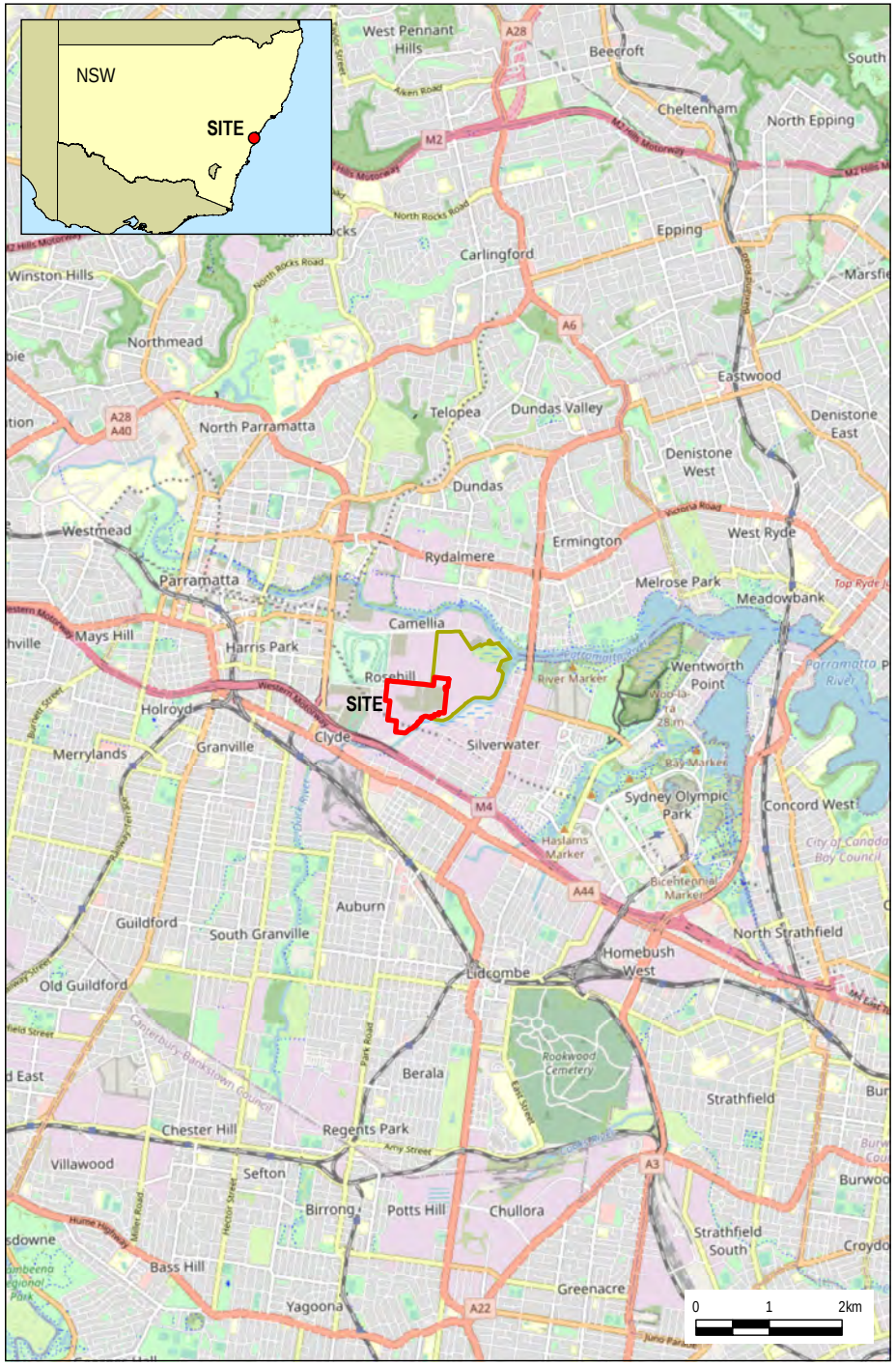
These Disclaimers should be read in conjunction with the entire SAR and no excerpts are taken to be representative of the findings of this SAR.

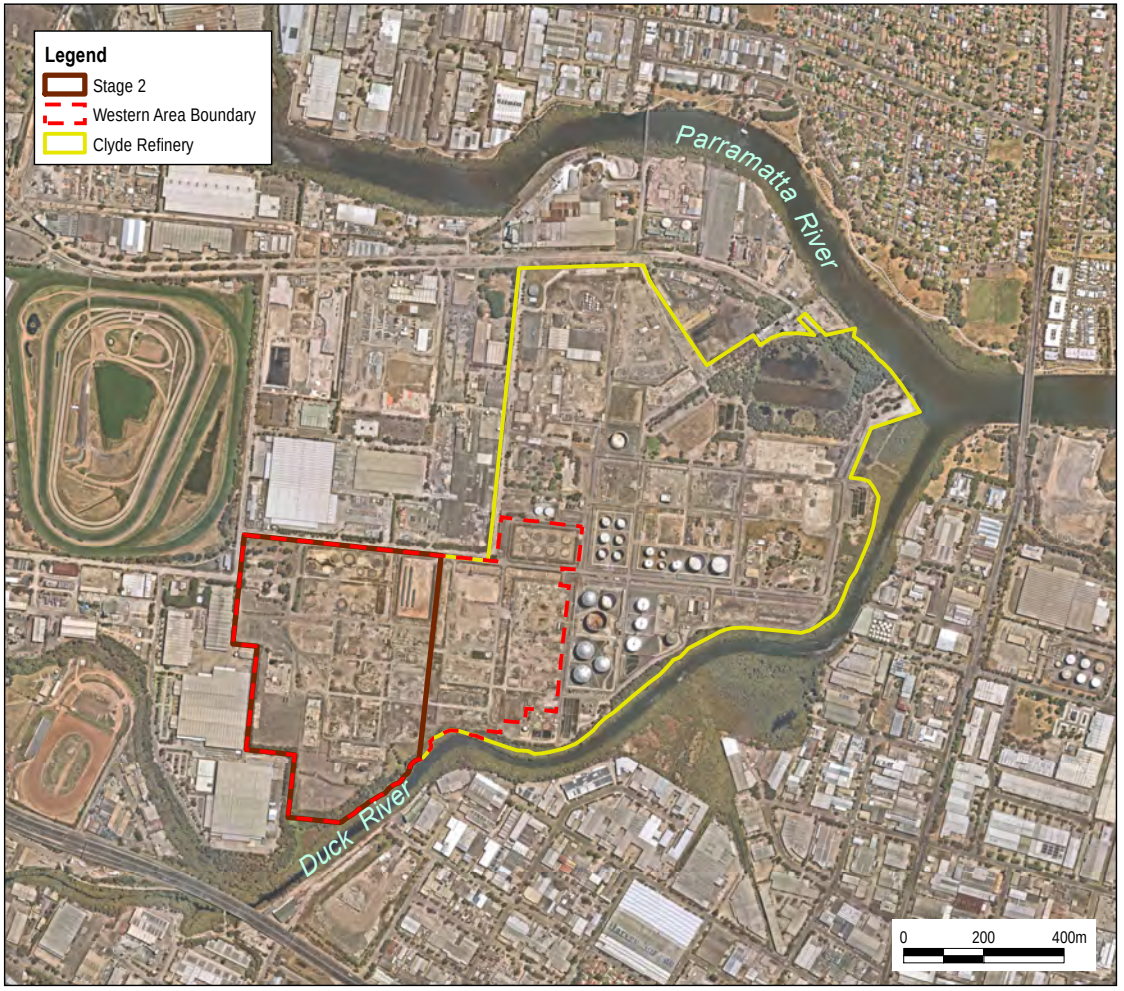
Appendices

Appendix A

Figures

Appendix A-1 Figures from AA3 Validation report





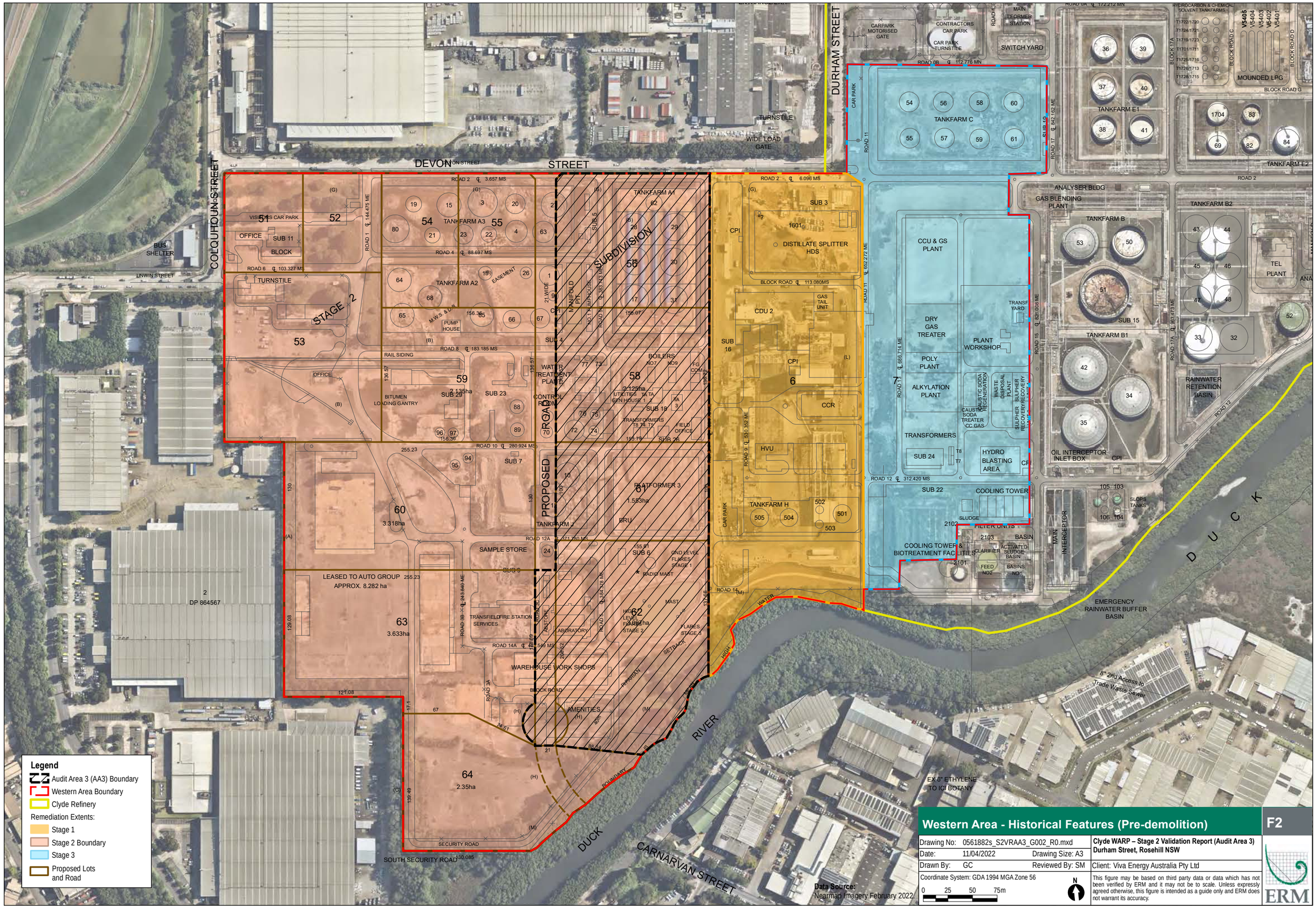
General Area Land Use:
Industrial
General Hydrogeology of Locality:
1. Soil Type:
Residual clay with minor silt and sand
2. Depth to aquifer:
1.0-3.0m bgs

Aquifer Usage:
Not known beneficial onsite extraction
Potentially Sensitive Receptors:
- Parramatta River (north eastern boundary)
- Duck River (southern boundary)

Source:
Nearmap Imagery January 2021
Locality: Esri, OpenStreetMap 2021

Site Locality			F1
Drawing No: 0561882s_S2VRAA3_G001_R0.mxd			**Clyde WARP – Stage 2 Validation Report (Audit Area 3)** **Durham Street, Rosehill NSW**
Date: 11/04/2022	Drawing Size: A4		
Drawn By: GC	Reviewed By: SM		Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56	N		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



Western Area - Historical Features (Pre-demolition)

F2

Drawing No: 0561882s_S2VRAA3_G002_R0.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 11/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Stockpile Location (centroid)		
Stockpile ID	Eastings	Northings
SP31	318027.27	6255056.47
SP32	318121.81	6255026.71
SP33	318145.95	6255017.47
SP34	318139.76	6255013.41
SP35	318140.75	6255007.03
SP37	318015.09	6254938.89
SP38	318039.20	6254937.89
SP39	318115.94	6254962.02
SP40	317986.28	6254843.23
SP43	318009.82	6254817.67
SP75	318105.52	6255169.96
SP76	318118.62	6255169.20
SP77	318128.32	6255139.06

Coord. Sys.: GDA 1994, MGA Zone 56

Remediation Extents			
Area	Point ID	Eastings	Northings
AEC-3a	5	317994.13	6254852.79
	6	318022.23	6254849.27
	7	318018.09	6254804.18
	8	317978.32	6254808.77
	9	317981.30	6254834.07
	10	317991.89	6254833.28
AEC-3b	11	317978.56	6254808.77
	12	318034.65	6254802.17
	13	318032.22	6254787.63
	14	317976.91	6254793.31
AEC-14a	38	318033.37	6255086.54
	39	318034.30	6255097.41
	40	318038.68	6255097.10
	41	318037.75	6255086.06

Coord. Sys.: GDA 1994, MGA Zone 56

Remediation Area of Concern	Estimated In-situ Volume (m^3)	Area (m^2)	Excavation Depth (m)
AEC-3a	3273	1791.44	1.8
AEC-3b	980.23	910.14	1.0
AEC-14a	116.37	69.24	1.7

AA3 Features (Post-Demolition)

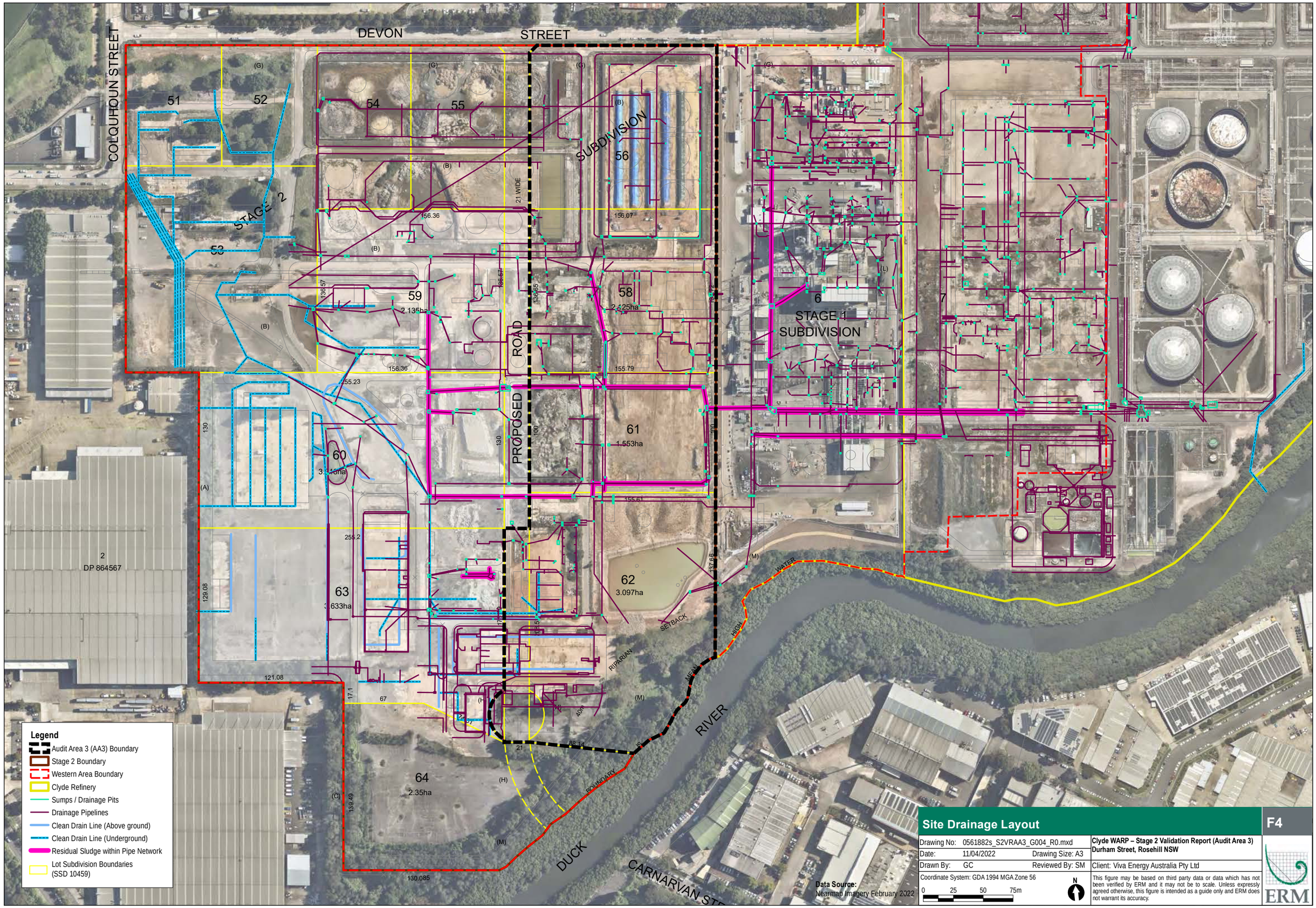
F3

Drawing No: 0561882s_S2VRAA3_G003_R1.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 11/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 25 50 75m

N

ERM



Site Drainage Layout

F4

Drawing No: 0561882s_S2VRAA3_G004_R0.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 11/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

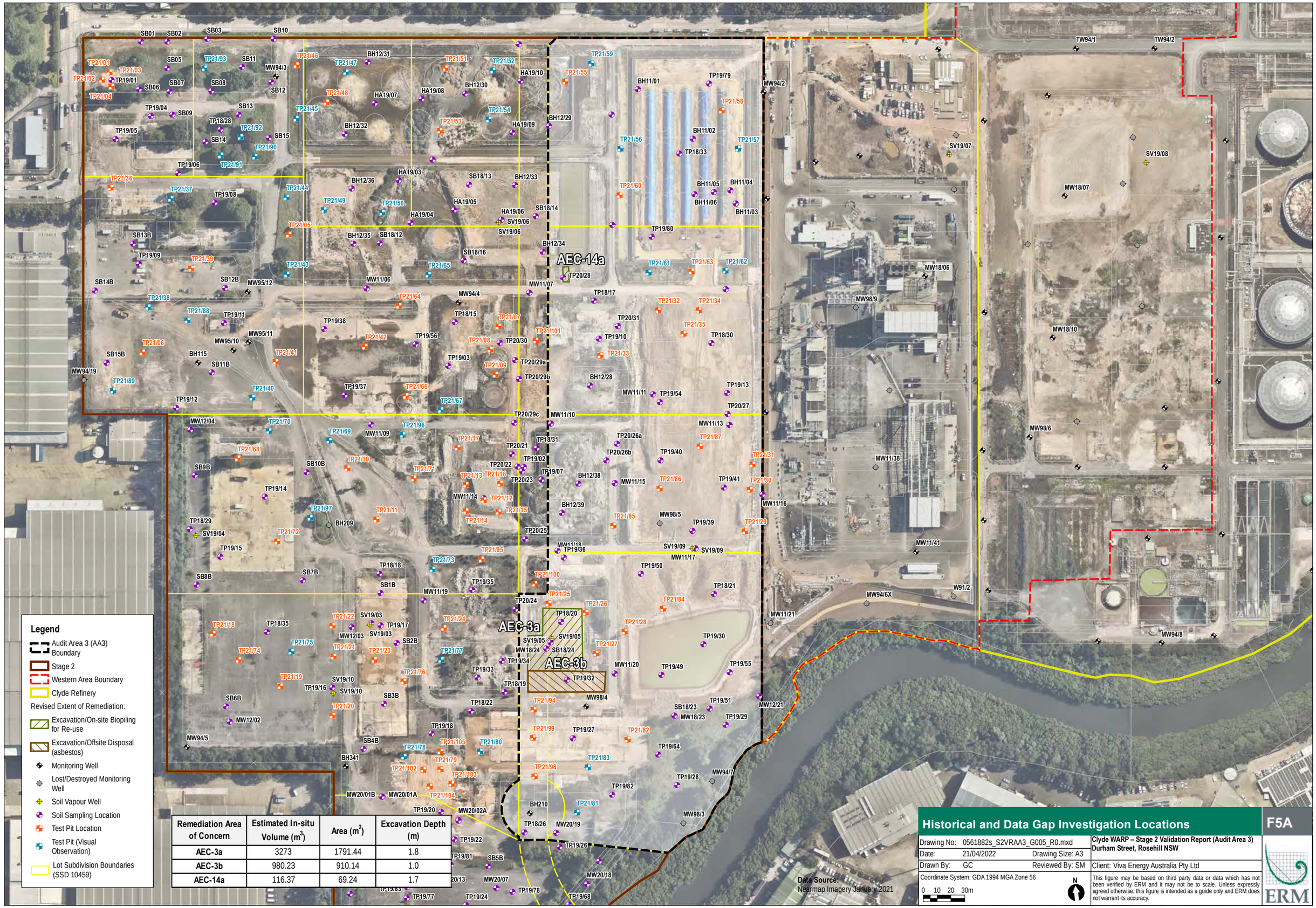
Coordinate System: GDA 1994 MGA Zone 56

0 25 50 75m

N

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



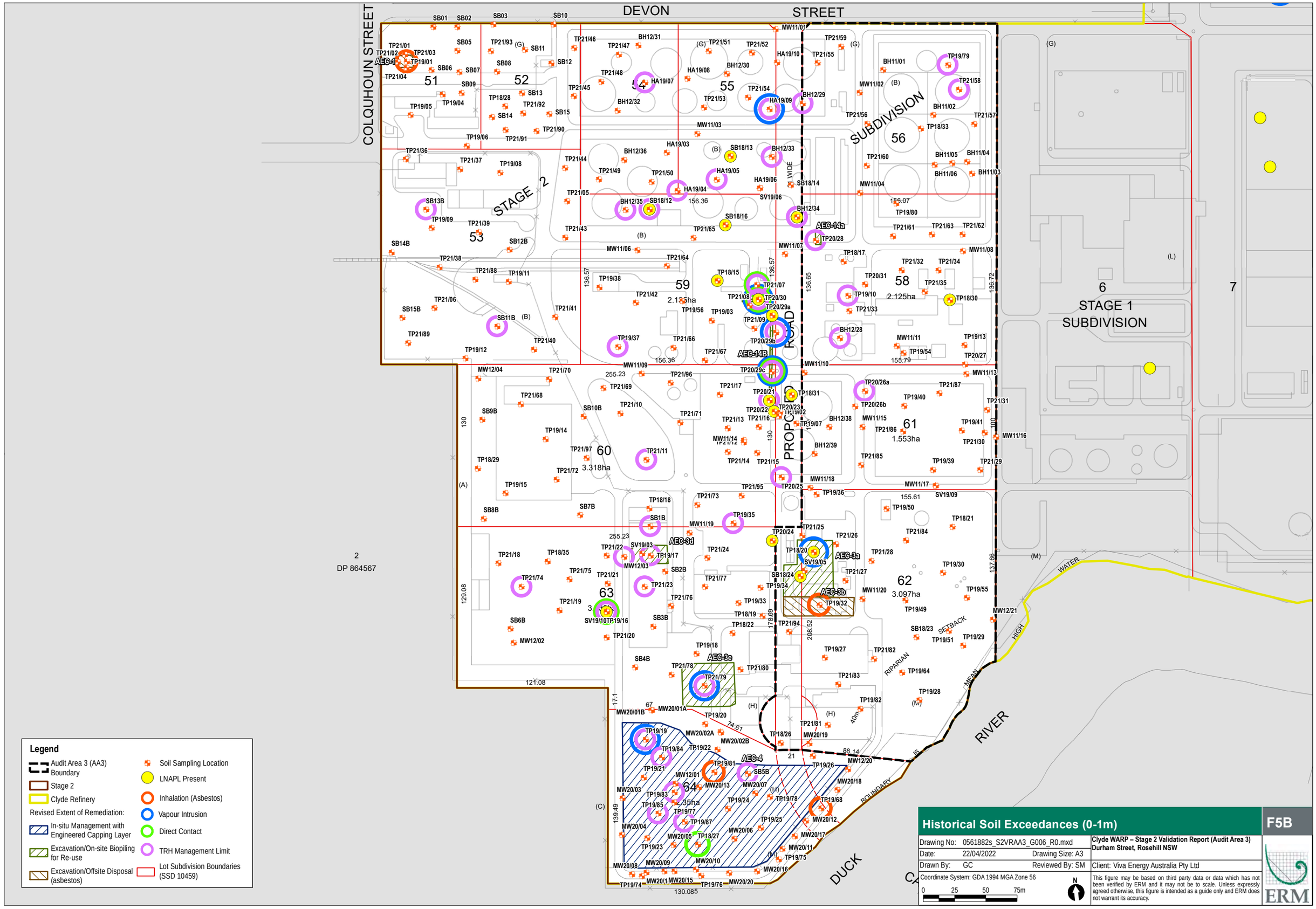
Remediation Area of Concern	Estimated In-situ Volume (m^3)	Area (m^2)	Excavation Depth (m)
AEC-3a	3273	1791.44	1.8
AEC-3b	980.23	910.14	1.0
AEC-14a	116.37	69.24	1.7

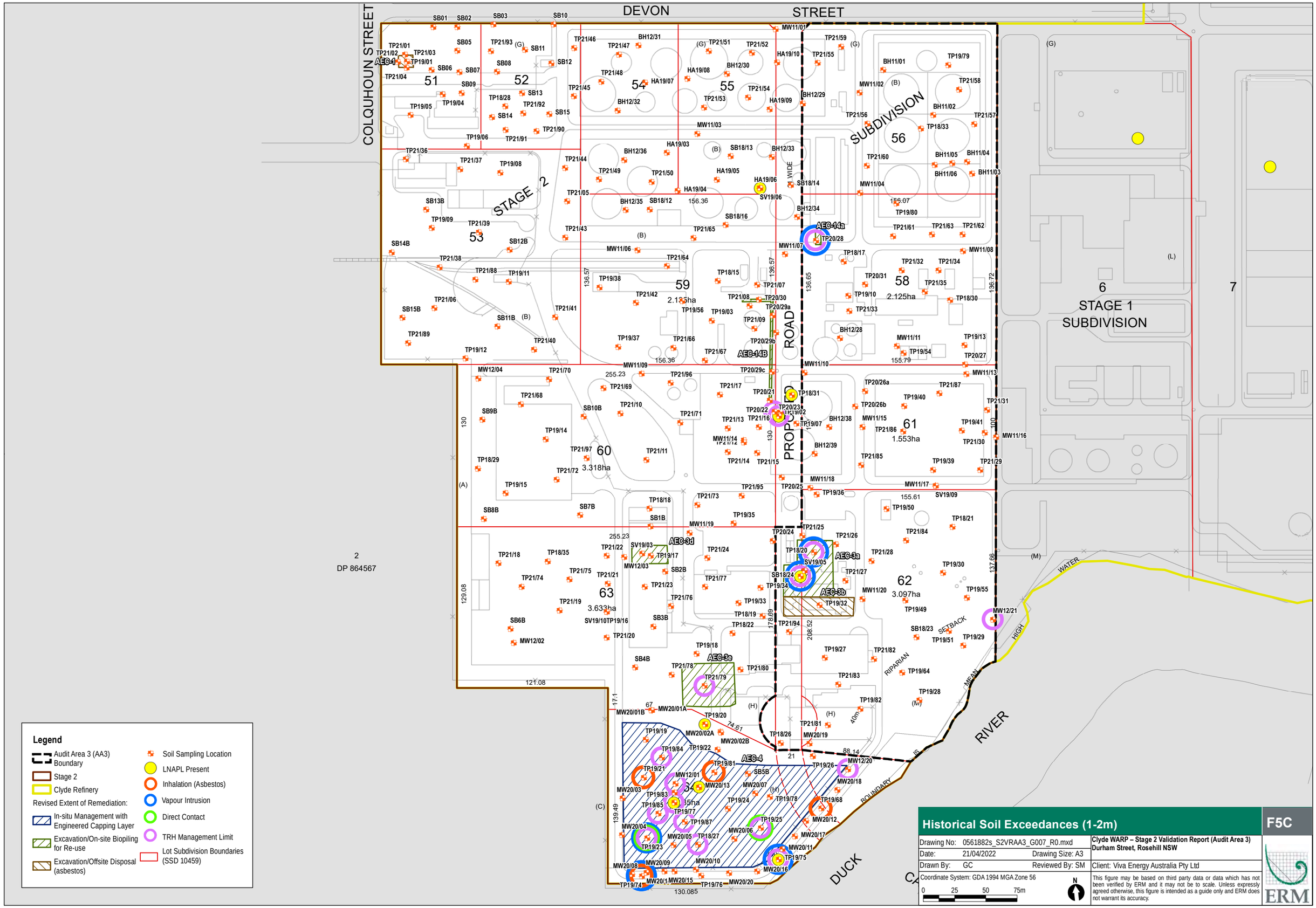
Historical and Data Gap Investigation Locations

F5A

Drawing No:	0561882s_S2VRAA3_G005_R0.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date:	21/04/2022	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56			This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM


DEVON STREET
COLQUHOUN STREET
PROPOSED ROAD
SUBDIVISION
STAGE 2
STAGE 1 SUBDIVISION
DUCK RIVER
WATER
HIGH
MEAN
RIPARIAN
SETBACK
BOUNDARY
2
DP 864567
6
7
51
52
53
54
55
56
58
59
60
61
62
63
64
2.125ha
3.318ha
1.553ha
3.097ha
AEC-1
AEC-14a
AEC-14B
AEC-9d
AEC-9a
AEC-9b
AEC-9e
AEC-4
Legend
Audit Area 3 (AA3) Boundary
Stage 2
Clyde Refinery
Revised Extent of Remediation:
In-situ Management with Engineered Capping Layer
Excavation/On-site Biopiling for Re-use
Excavation/Offsite Disposal (asbestos)
Soil Sampling Location
LNAPL Present
Inhalation (Asbestos)
Vapour Intrusion
Direct Contact
TRH Management Limit
Lot Subdivision Boundaries (SSD 10459)
Historical Soil Exceedances (0-1m)
F5B
Drawing No: 0561882s_S2VRAA3_G006_R0.mxd
Date: 22/04/2022
Drawing Size: A3
Drawn By: GC
Reviewed By: SM
Coordinate System: GDA 1994 MGA Zone 56
0 25 50 75m
N
Clyde WARP – Stage 2 Validation Report (Audit Area 3)
Durham Street, Rosehill NSW
Client: Viva Energy Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM



Historical Soil Exceedances (1-2m)

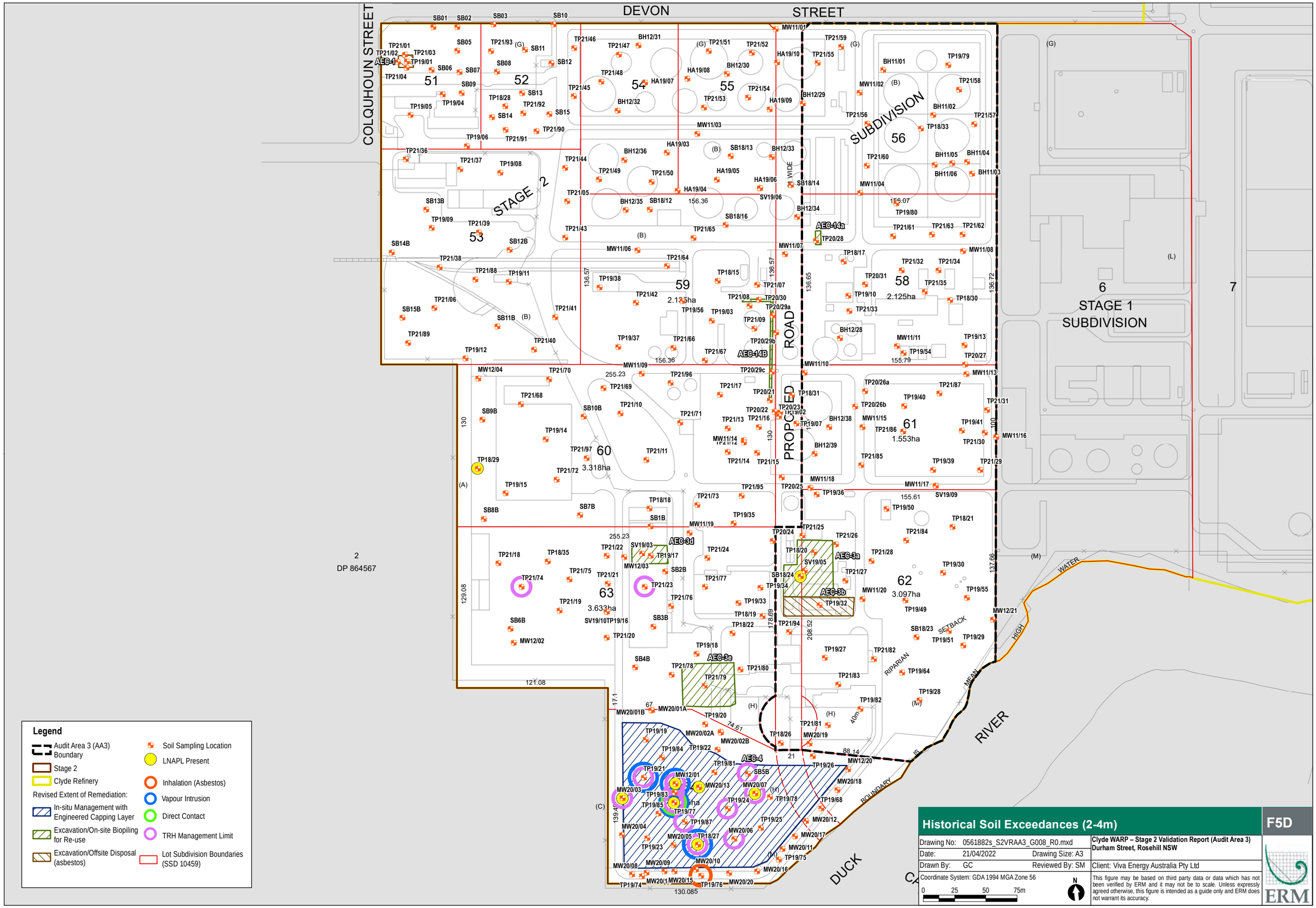
F5C

Drawing No: 0561882s_S2VRAA3_G007_R0.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 21/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 25 50 75m

N

ERM



Historical Soil Exceedances (2-4m)

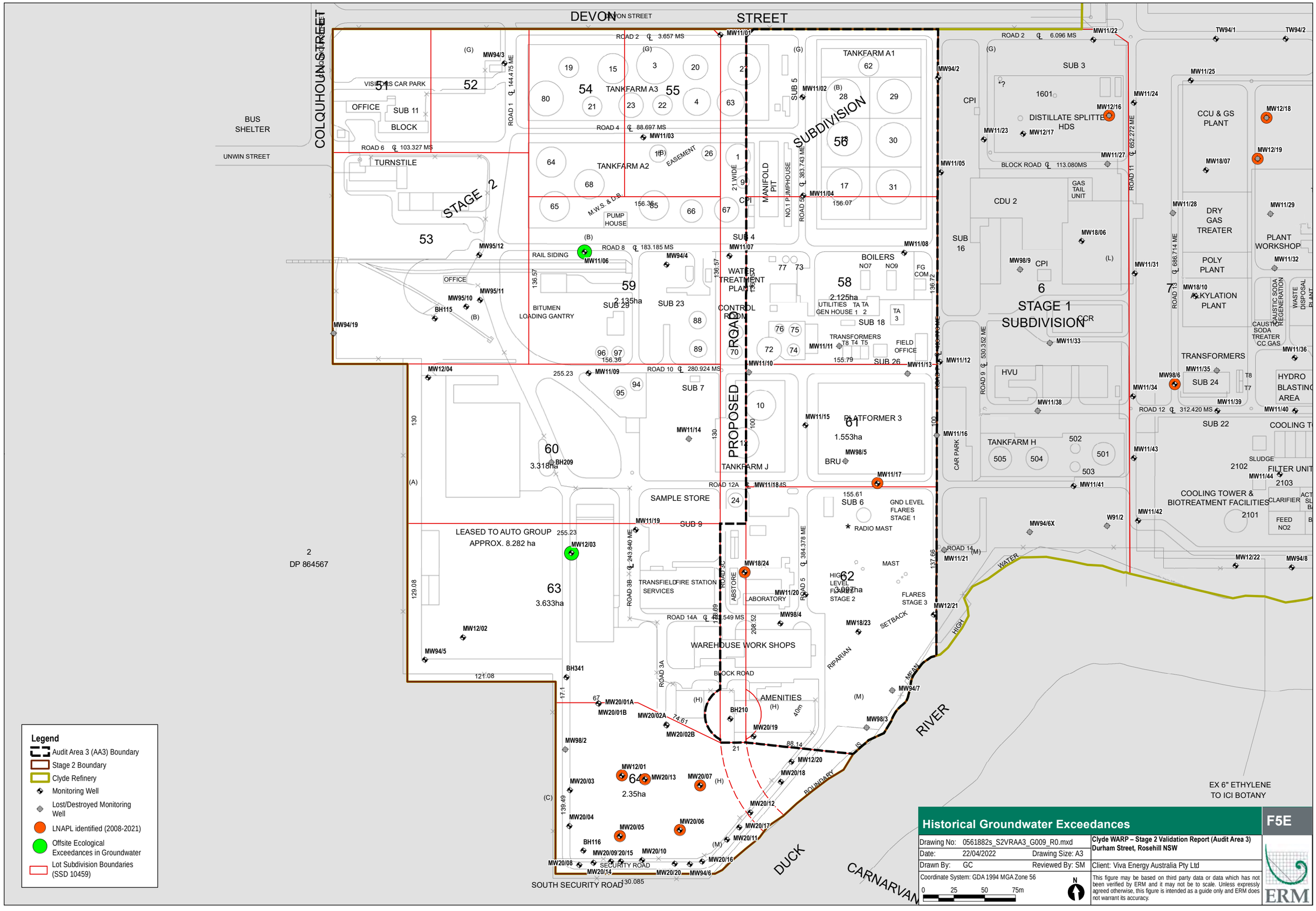
F5D

Drawing No: 0561882s_S2VRAA3_G008_R0.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 21/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

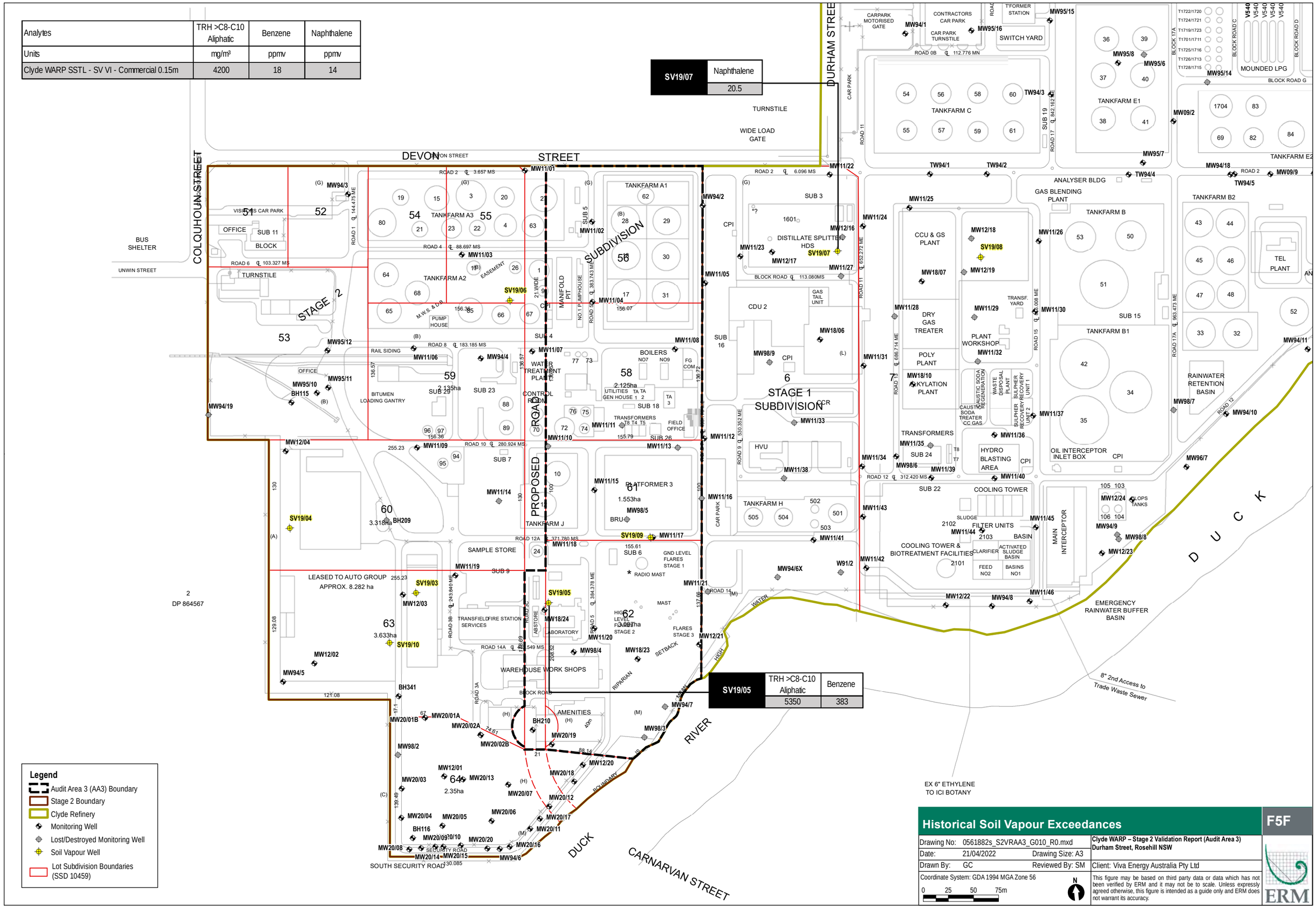
0 25 50 75m

N

ERM


DEVON STREET
COLQUHOUN STREET
BUS SHELTER
UNWIN STREET
VISITORS CAR PARK
OFFICE
SUB 11
BLOCK
TURNSTILE
STAGE 2
TANKFARM A1
TANKFARM A2
TANKFARM A3
SUBDIVISION
MANIFOLD PIT
NO.1 PUMPHOUSE
PUMP HOUSE
RAIL SIDING
BITUMEN LOADING GANTRY
WATER TREATMENT PLANT
CONTROL ROOM
BOILERS
UTILITIES GEN HOUSE
TRANSFORMERS
FIELD OFFICE
SUB 26
SUB 18
SUB 3
DISTILLATE SPLITTER HDS
CDU 2
GAS TAIL UNIT
SUB 16
STAGE 1 SUBDIVISION
HVU
TANKFARM H
CAR PARK
CCU & GS PLANT
DRY GAS TREATER
POLY PLANT
ALKYLATION PLANT
PLANT WORKSHOP
CAUSTIC SODA REGENERATION
WASTE DISPOSAL PLANT
CAUSTIC SODA TREATER CC GAS
TRANSFORMERS
SUB 24
HYDRO BLASTING AREA
SUB 22
COOLING TOWER & BIOTREATMENT FACILITIES
FILTER UNIT
CLARIFIER
FEED NO2
SLUDGE
PROPOSED ROAD
SUB 7
SUB 23
SUB 29
SUB 4
SUB 5
SUB 9
SUB 6
PLATFORMER 3
BRU
TANKFARM J
SAMPLE STORE
GND LEVEL FLARES STAGE 1
RADIO MAST
HIGH LEVEL FLARES STAGE 2
FLARES STAGE 3
MAST
LEASED TO AUTO GROUP APPROX. 8.282 ha
TRANSFIELD SERVICES
FIRE STATION
ABSTORE
LABORATORY
WAREHOUSE WORK SHOPS
BLOCK ROAD
AMENITIES
SECURITY ROAD
SOUTH SECURITY ROAD
DUCK RIVER
CARNARVAN
RIPARIAN
SETBACK
HIGH WATER MARK
BOUNDARY
EX 6" ETHYLENE TO ICI BOTANY
2 DP 864567
51
52
53
54
55
56
57
58
59
60
61
62
63
64
6
7
Legend
Audit Area 3 (AA3) Boundary
Stage 2 Boundary
Clyde Refinery
Monitoring Well
Lost/Destroyed Monitoring Well
LNAPL identified (2008-2021)
Offsite Ecological Exceedances in Groundwater
Lot Subdivision Boundaries (SSD 10459)
Historical Groundwater Exceedances
F5E
Drawing No: 0561882s_S2VRAA3_G009_R0.mxd
Date: 22/04/2022
Drawing Size: A3
Drawn By: GC
Reviewed By: SM
Coordinate System: GDA 1994 MGA Zone 56
0 25 50 75m
N
Clyde WARP – Stage 2 Validation Report (Audit Area 3)
Durham Street, Rosehill NSW
Client: Viva Energy Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM

Analytes	TRH >C8-C10 Aliphatic	Benzene	Naphthalene
Units	mg/m³	ppmv	ppmv
Clyde WARP SSTL - SV VI - Commercial 0.15m	4200	18	14



Historical Soil Vapour Exceedances

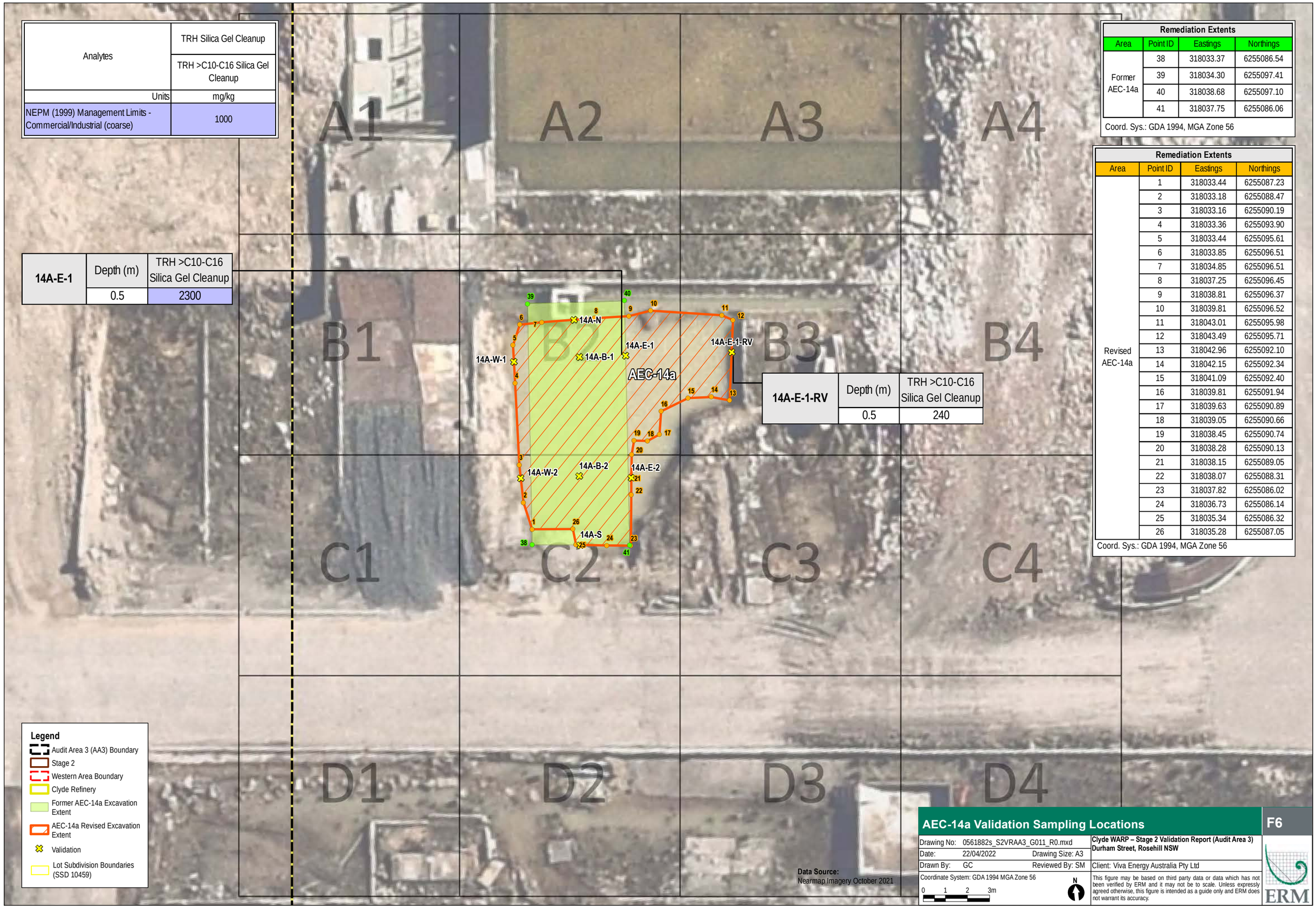
F5F

Drawing No: 0561882s_S2VRAA3_G010_R0.mxd		Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 21/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 25 50 75m

N

ERM



Analytes	TRH Silica Gel Cleanup
	TRH >C10-C16 Silica Gel Cleanup
Units	mg/kg
NEPM (1999) Management Limits - Commercial/Industrial (coarse)	1000

14A-E-1	Depth (m)	TRH >C10-C16 Silica Gel Cleanup
	0.5	2300

14A-E-1-RV	Depth (m)	TRH >C10-C16 Silica Gel Cleanup
	0.5	240

Remediation Extents

Area	Point ID	Eastings	Northings
Former AEC-14a	38	318033.37	6255086.54
	39	318034.30	6255097.41
	40	318038.68	6255097.10
	41	318037.75	6255086.06

Coord. Sys.: GDA 1994, MGA Zone 56

Remediation Extents

Area	Point ID	Eastings	Northings
Revised AEC-14a	1	318033.44	6255087.23
	2	318033.18	6255088.47
	3	318033.16	6255090.19
	4	318033.36	6255093.90
	5	318033.44	6255095.61
	6	318033.85	6255096.51
	7	318034.85	6255096.51
	8	318037.25	6255096.45
	9	318038.81	6255096.37
	10	318039.81	6255096.52
	11	318043.01	6255095.98
	12	318043.49	6255095.71
	13	318042.96	6255092.10
	14	318042.15	6255092.34
	15	318041.09	6255092.40
	16	318039.81	6255091.94
	17	318039.63	6255090.89
	18	318039.05	6255090.66
	19	318038.45	6255090.74
	20	318038.28	6255090.13
	21	318038.15	6255089.05
	22	318038.07	6255088.31
	23	318037.82	6255086.02
	24	318036.73	6255086.14
	25	318035.34	6255086.32
	26	318035.28	6255087.05

Coord. Sys.: GDA 1994, MGA Zone 56

AEC-14a Validation Sampling Locations

F6

Drawing No: 0561882s_S2VRAA3_G011_R0.mxd
Date: 22/04/2022 Drawing Size: A3
Drawn By: GC Reviewed By: SM
Coordinate System: GDA 1994 MGA Zone 56
0 1 2 3m
N

Clyde WARP – Stage 2 Validation Report (Audit Area 3)
Durham Street, Rosehill NSW

Client: Viva Energy Australia Pty Ltd

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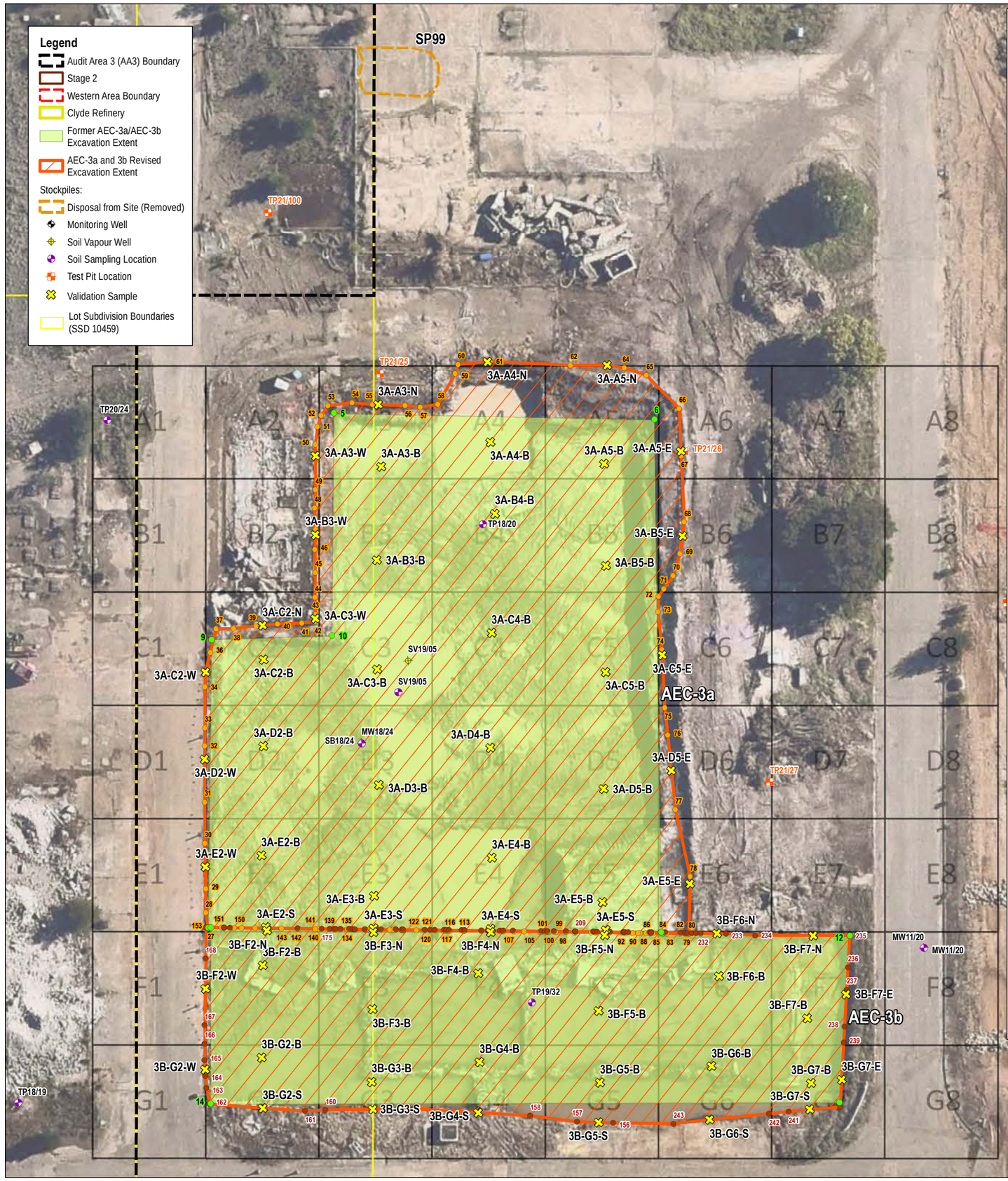
ERM



Data Source:
Nearmap Imagery October 2021

Remediation Extents						
Area	Point ID	Eastings	Northings	Point ID	Eastings	Northings
Revised AEC-3a	27	317978.28	6254808.81	92	318014.76	6254804.51
	28	317978.25	6254810.15	93	318013.56	6254804.65
	29	317978.47	6254812.25	94	318012.32	6254804.80
	30	317978.81	6254816.24	95	318011.98	6254804.84
	31	317979.17	6254819.86	96	318010.57	6254805.00
	32	317979.68	6254824.79	97	318010.47	6254805.02
	33	317979.87	6254826.39	98	318009.77	6254805.10
	34	317980.24	6254829.98	99	318008.84	6254805.21
	35	317980.43	6254831.29	100	318008.23	6254805.28
	36	317981.04	6254832.96	101	318008.13	6254805.29
	37	317981.76	6254834.97	102	318007.90	6254805.32
	38	317983.31	6254834.82	103	318007.55	6254805.36
	39	317985.31	6254834.82	104	318007.48	6254805.37
	40	317987.22	6254834.82	105	318006.08	6254805.53
	41	317989.36	6254834.69	106	318005.18	6254805.64
	42	317990.51	6254834.67	107	318004.26	6254805.75
	43	317990.66	6254835.33	108	318003.97	6254805.78
	44	317990.75	6254836.84	109	318002.97	6254805.90
	45	317991.00	6254839.00	110	318002.97	6254805.90
	46	317991.19	6254841.01	111	318002.96	6254805.90
	47	317991.44	6254842.78	112	318002.34	6254805.97
	48	317991.56	6254844.66	113	318000.80	6254806.15
	49	317991.79	6254846.26	114	318000.78	6254806.16
	50	317992.20	6254850.24	115	318000.77	6254806.16
	51	317992.54	6254851.78	116	317999.53	6254806.30
	52	317992.98	6254852.75	117	317999.28	6254806.33
	53	317993.67	6254853.53	118	317999.03	6254806.36
	54	317995.80	6254853.57	119	317998.27	6254806.45
	55	317997.61	6254853.21	120	317997.87	6254806.50
	56	318000.44	6254852.84	121	317997.31	6254806.56
	57	318001.78	6254852.55	122	317996.60	6254806.65
	58	318003.33	6254852.62	123	317995.49	6254806.78
	59	318005.15	6254855.17	124	317995.44	6254806.79
	60	318005.47	6254855.95	125	317995.37	6254806.79
	61	318008.33	6254855.91	126	317994.81	6254806.86
	62	318015.37	6254854.83	127	317994.51	6254806.89
	63	318018.68	6254854.48	128	317994.29	6254806.92
	64	318020.07	6254854.11	129	317993.59	6254807.00
	65	318021.93	6254853.23	130	317992.93	6254807.08
	66	318024.52	6254850.04	131	317992.43	6254807.14
	67	318024.25	6254845.87	132	317992.16	6254807.17
	68	318023.92	6254840.01	133	317991.20	6254807.28
	69	318023.25	6254837.28	134	317990.98	6254807.31
	70	318022.45	6254835.41	135	317990.93	6254807.32
	71	318021.51	6254834.34	136	317990.80	6254807.33
	72	318020.97	6254833.72	137	317990.57	6254807.36
	73	318020.76	6254832.38	138	317989.92	6254807.44
	74	318020.78	6254829.01	139	317989.41	6254807.50
	75	318020.48	6254823.88	140	317988.02	6254807.66
	76	318020.50	6254821.45	141	317987.73	6254807.69
	77	318020.48	6254814.84	142	317986.28	6254807.86
	78	318021.16	6254808.83	143	317984.80	6254808.04
	79	318020.51	6254803.83	144	317983.74	6254808.16
	80	318020.49	6254803.83	145	317983.74	6254808.16
	81	318020.22	6254803.86	146	317983.74	6254808.16
	82	318019.74	6254803.92	147	317983.73	6254808.16
	83	318018.57	6254804.06	148	317982.47	6254808.31
	84	318018.24	6254804.10	149	317981.29	6254808.45
	85	318017.37	6254804.20	150	317980.65	6254808.53
	86	318017.14	6254804.23	151	317979.74	6254808.63
	87	318016.77	6254804.27	152	317979.51	6254808.66
	88	318016.28	6254804.33	153	317978.32	6254808.80
	89	318016.07	6254804.35	154	317978.28	6254808.81
	90	318015.62	6254804.41	155	317978.28	6254808.81

Coord. Sys.: GDA 1994, MGA Zone 56

Remediation Extents						
Area	Point ID	Eastings	Northings	Point ID	Eastings	Northings
Revised AEC-3b	156	318012.14	6254787.90	200	318003.03	6254805.93
	157	318008.99	6254788.35	201	318003.96	6254805.82
	158	318004.90	6254789.31	202	318004.27	6254805.79
	159	317994.41	6254791.04	203	318005.13	6254805.69
	160	317986.99	6254791.70	204	318007.59	6254805.40
	161	317985.17	6254791.78	205	318007.94	6254805.36
	162	317976.88	6254793.28	206	318008.13	6254805.34
	163	317976.71	6254794.71	207	318008.72	6254805.27
	164	317976.72	6254795.80	208	318009.79	6254805.14
	165	317976.79	6254797.18	209	318010.58	6254805.05
	166	317976.95	6254798.61	210	318010.58	6254805.05
	167	317977.12	6254800.25	211	318010.60	6254805.05
	168	317977.84	6254806.07	212	318012.18	6254804.87
	169	317978.14	6254808.83	213	318012.30	6254804.85
	170	317979.73	6254808.64	214	318012.51	6254804.83
	171	317979.76	6254808.64	215	318013.64	6254804.70
	172	317980.27	6254808.58	216	318014.81	6254804.56
	173	317983.66	6254808.18	217	318014.91	6254804.55
	174	317986.21	6254807.89	218	318014.94	6254804.54
	175	317988.32	6254807.64	219	318015.24	6254804.51
	176	317989.03	6254807.56	220	318017.11	6254804.29
	177	317989.43	6254807.51	221	318017.22	6254804.28
	178	317989.54	6254807.50	222	318017.26	6254804.27
	179	317989.96	6254807.45	223	318017.29	6254804.27
	180	317990.74	6254807.36	224	318018.09	6254804.18
	181	317991.04	6254807.33	225	318018.23	6254804.16
	182	317991.24	6254807.30	226	318018.50	6254804.13
	183	317992.09	6254807.20	227	318019.78	6254803.97
	184	317992.96	6254807.10	228	318020.20	6254803.92
	185	317993.20	6254807.07	229	318020.41	6254803.90
	186	317993.55	6254807.03	230	318020.78	6254803.85
	187	317994.85	6254806.88	231	318021.14	6254803.81
	188	317995.37	6254806.82	232	318021.56	6254803.76
	189	317995.46	6254806.81	233	318023.77	6254803.49
	190	317997.37	6254806.59	234	318026.35	6254803.07
	191	317997.88	6254806.53	235	318034.64	6254802.17
	192	317998.25	6254806.49	236	318034.19	6254799.40
	193	317999.06	6254806.39	237	318033.86	6254797.46
	194	317999.29	6254806.37	238	318033.34	6254794.25
	195	317999.50	6254806.34	239	318033.11	6254792.85
	196	318000.62	6254806.21	240	318032.21	6254787.22
	197	318000.86	6254806.18	241	318027.65	6254787.29
	198	318002.34	6254806.01	242	318025.92	6254787.28
	199	318002.92	6254805.94	243	318017.42	6254787.29

Coord. Sys.: GDA 1994, MGA Zone 56

Remediation Extents			
Area	Point ID	Eastings	Northings
Former AEC-3a	5	317994.13	6254852.79
	6	318022.23	6254849.27
	7	318018.09	6254804.18
	8	317978.32	6254808.77
	9	317981.30	6254834.07
	10	317991.89	6254833.28
Former AEC-3b	11	317978.56	6254808.77
	12	318034.65	6254802.17
	13	318032.22	6254787.63
	14	317976.91	6254793.31

Coord. Sys.: GDA 1994, MGA Zone 56

AEC-3a and 3b Validation Sampling Locations

F7

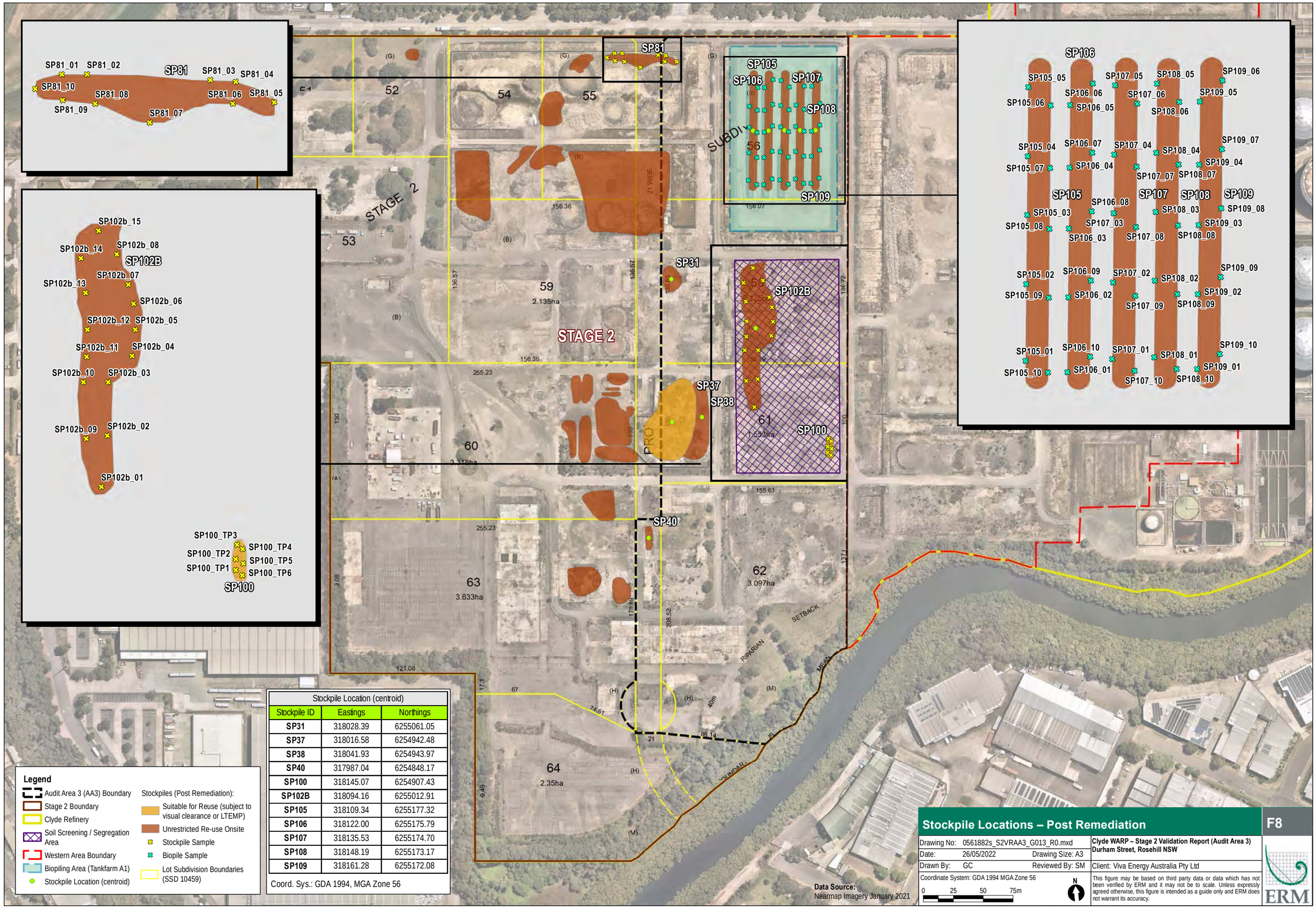
Drawing No: 0561882s_S2VRAA3_G012_R0.mxd
Date: 21/04/2022 Drawing Size: A3
Drawn By: GC Reviewed By: SM
Coordinate System: GDA 1994 MGA Zone 56
0 2.5 5 7.5m
N

Clyde WARP – Stage 2 Validation Report (Audit Area 3)
Durham Street, Rosehill NSW

Client: Viva Energy Australia Pty Ltd

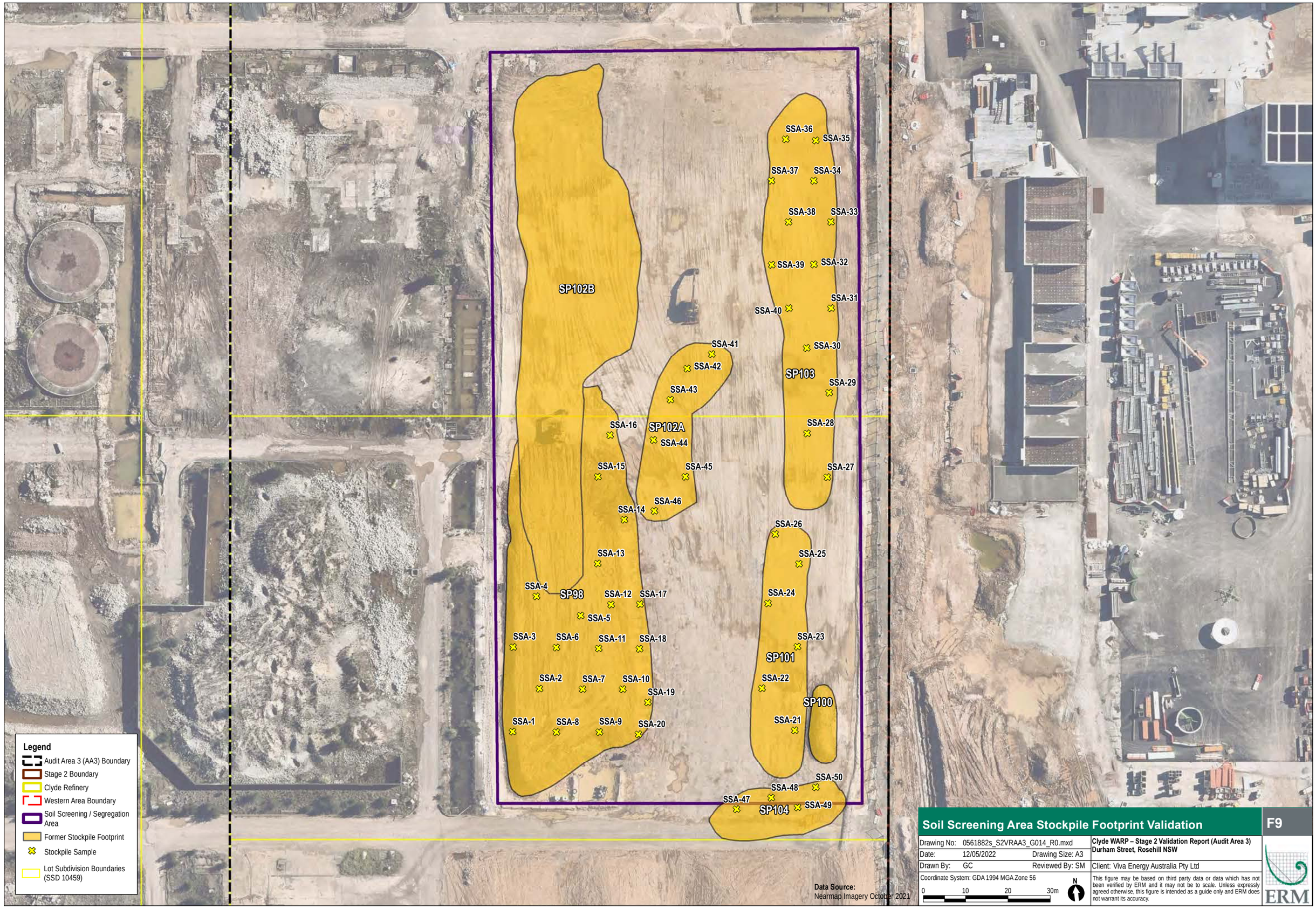
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



Stockpile Location (centroid)		
Stockpile ID	Eastings	Northings
SP31	318028.39	6255061.05
SP37	318016.58	6254942.48
SP38	318041.93	6254943.97
SP40	317987.04	6254848.17
SP100	318145.07	6254907.43
SP102B	318094.16	6255012.91
SP105	318109.34	6255177.32
SP106	318122.00	6255175.79
SP107	318135.53	6255174.70
SP108	318148.19	6255173.17
SP109	318161.28	6255172.08

Coord. Sys.: GDA 1994, MGA Zone 56

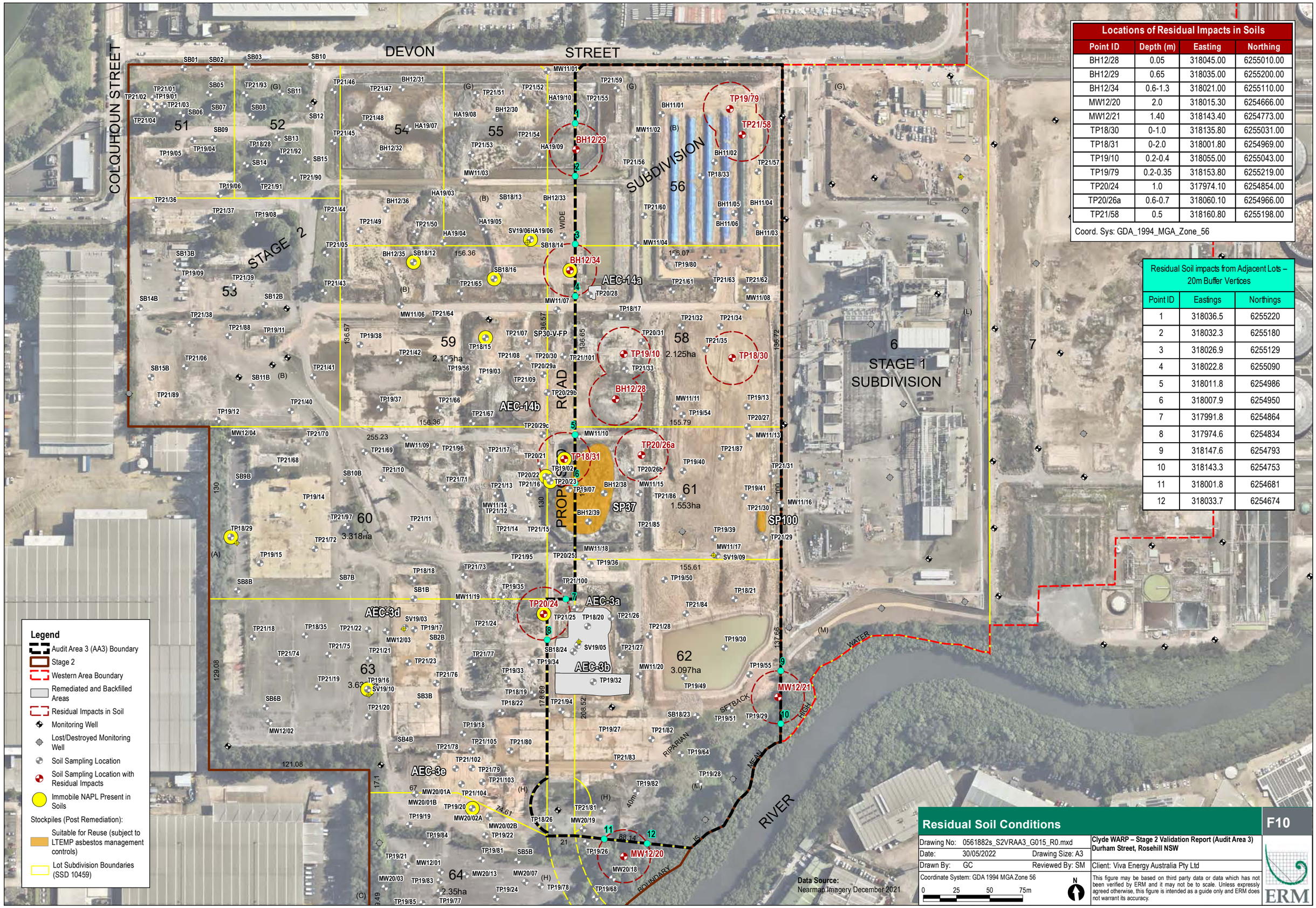


Soil Screening Area Stockpile Footprint Validation

F9

Drawing No: 0561882s_S2VRAA3_G014_R0.mxd	Clyde WARP – Stage 2 Validation Report (Audit Area 3) Durham Street, Rosehill NSW
Date: 12/05/2022 Drawing Size: A3	
Drawn By: GC Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



Locations of Residual Impacts in Soils			
Point ID	Depth (m)	Easting	Northing
BH12/28	0.05	318045.00	6255010.00
BH12/29	0.65	318035.00	6255200.00
BH12/34	0.6-1.3	318021.00	6255110.00
MW12/20	2.0	318015.30	6254666.00
MW12/21	1.40	318143.40	6254773.00
TP18/30	0-1.0	318135.80	6255031.00
TP18/31	0-2.0	318001.80	6254969.00
TP19/10	0.2-0.4	318055.00	6255043.00
TP19/79	0.2-0.35	318153.80	6255219.00
TP20/24	1.0	317974.10	6254854.00
TP20/26a	0.6-0.7	318060.10	6254966.00
TP21/58	0.5	318160.80	6255198.00

Coord. Sys: GDA_1994_MGA_Zone_56

Residual Soil impacts from Adjacent Lots – 20m Buffer Vertices		
Point ID	Eastings	Northings
1	318036.5	6255220
2	318032.3	6255180
3	318026.9	6255129
4	318022.8	6255090
5	318011.8	6254986
6	318007.9	6254950
7	317991.8	6254864
8	317974.6	6254834
9	318147.6	6254793
10	318143.3	6254753
11	318001.8	6254681
12	318033.7	6254674

Residual Soil Conditions

F10

Drawing No: 0561882s_S2VRAA3_G015_R0.mxd
Date: 30/05/2022 Drawing Size: A3
Drawn By: GC Reviewed By: SM
Coordinate System: GDA 1994 MGA Zone 56
0 25 50 75m
N

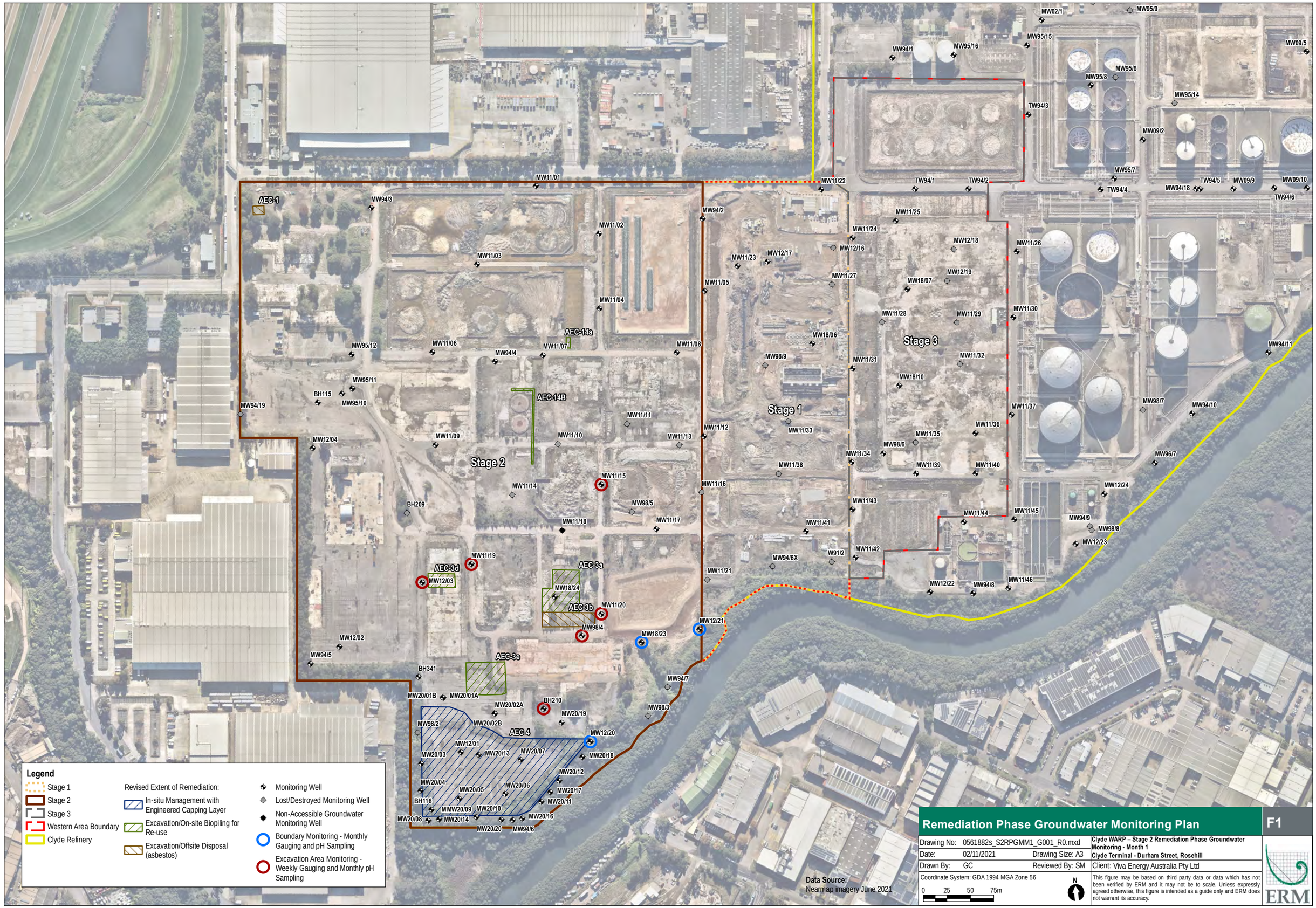
Clyde WARP – Stage 2 Validation Report (Audit Area 3)
Durham Street, Rosehill NSW

Client: Viva Energy Australia Pty Ltd

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Appendix A-2 Figures from Remediation GME 1 report



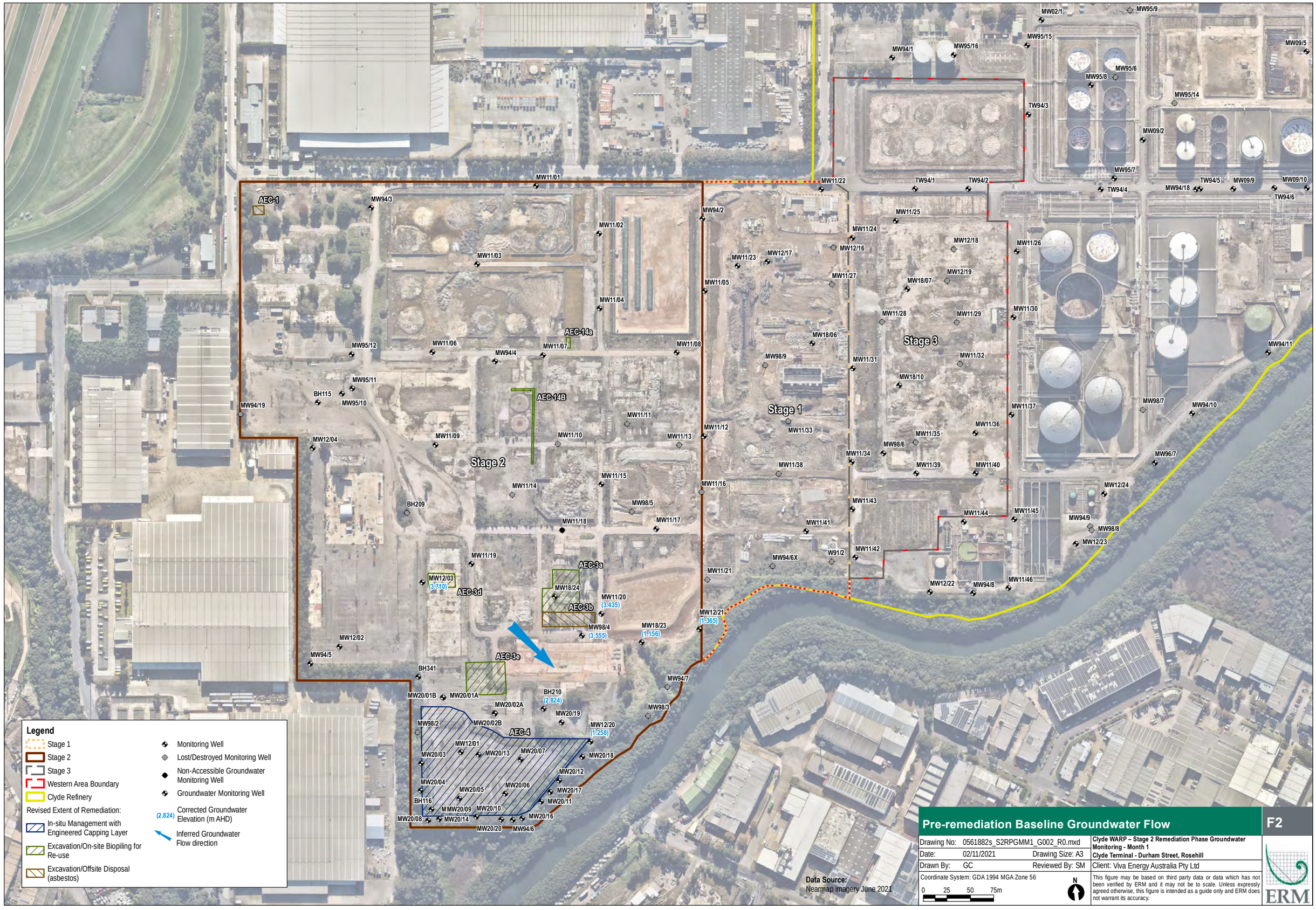
Remediation Phase Groundwater Monitoring Plan

F1

Drawing No:	0561882s_S2RPGMM1_G001_R0.mxd		Clyde WARP – Stage 2 Remediation Phase Groundwater Monitoring - Month 1 Clyde Terminal - Durham Street, Rosehill
Date:	02/11/2021	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.



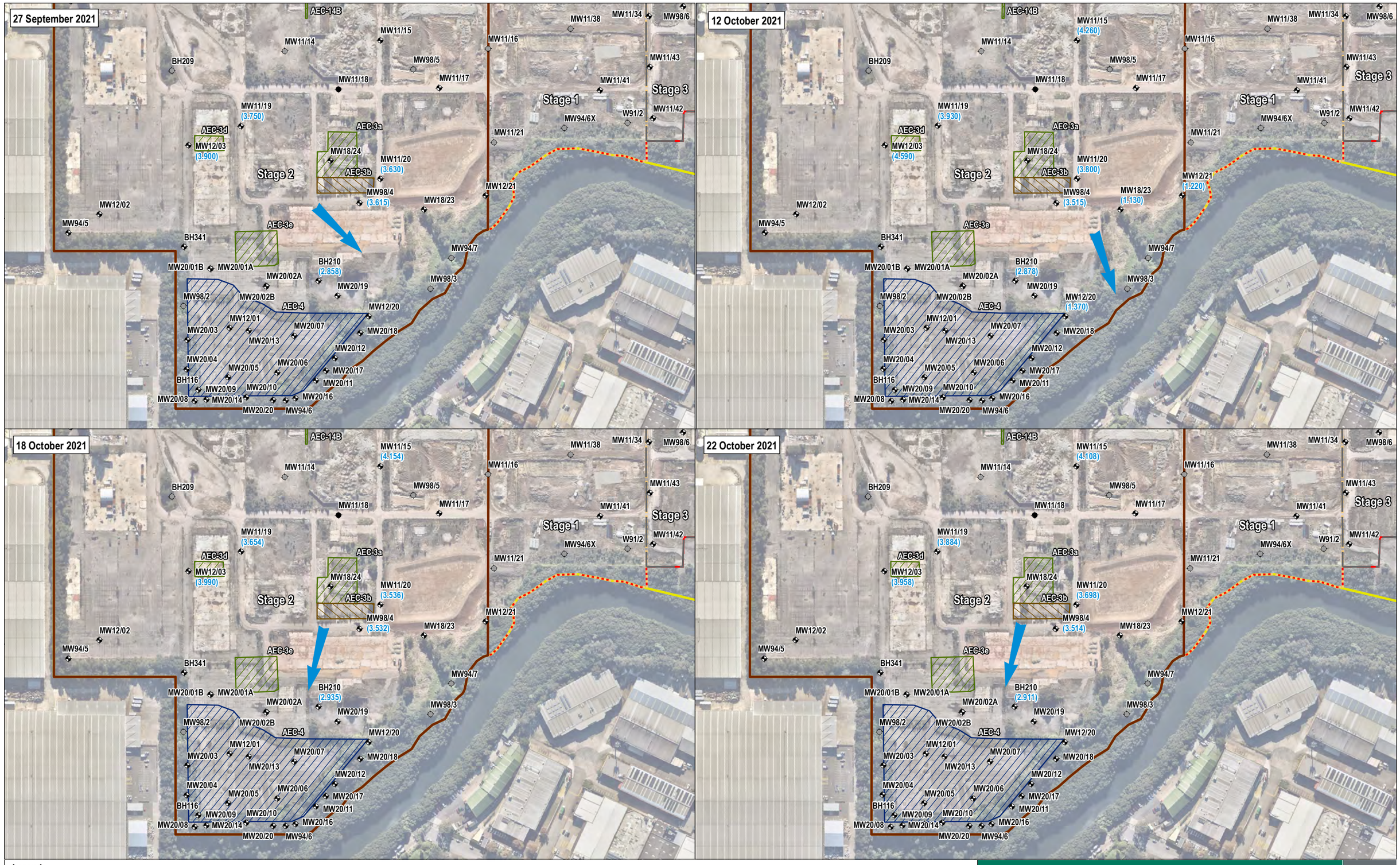
Pre-remediation Baseline Groundwater Flow

F2

Drawing No:	0561882s_S2RPGMM1_G002_R0.mxd		Clyde WARP – Stage 2 Remediation Phase Groundwater Monitoring - Month 1 Clyde Terminal - Durham Street, Rosehill
Date:	02/11/2021	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.



Legend

- Stage 1
- Stage 2
- Stage 3
- Western Area Boundary
- Clyde Refinery

Revised Extent of Remediation:

- In-situ Management with Engineered Capping Layer
- Excavation/On-site Biopiling for Re-use
- Excavation/Offsite Disposal (asbestos)

- Monitoring Well
- Lost/Destroyed Monitoring Well
- Non-Accessible Groundwater Monitoring Well
- Groundwater Monitoring Well

(2.824) Corrected Groundwater Elevation (m AHD)

Inferred Groundwater Flow direction

Data Source:
Nearmap imagery June 2021

Remediation Phase Groundwater Flow Monitoring

F3

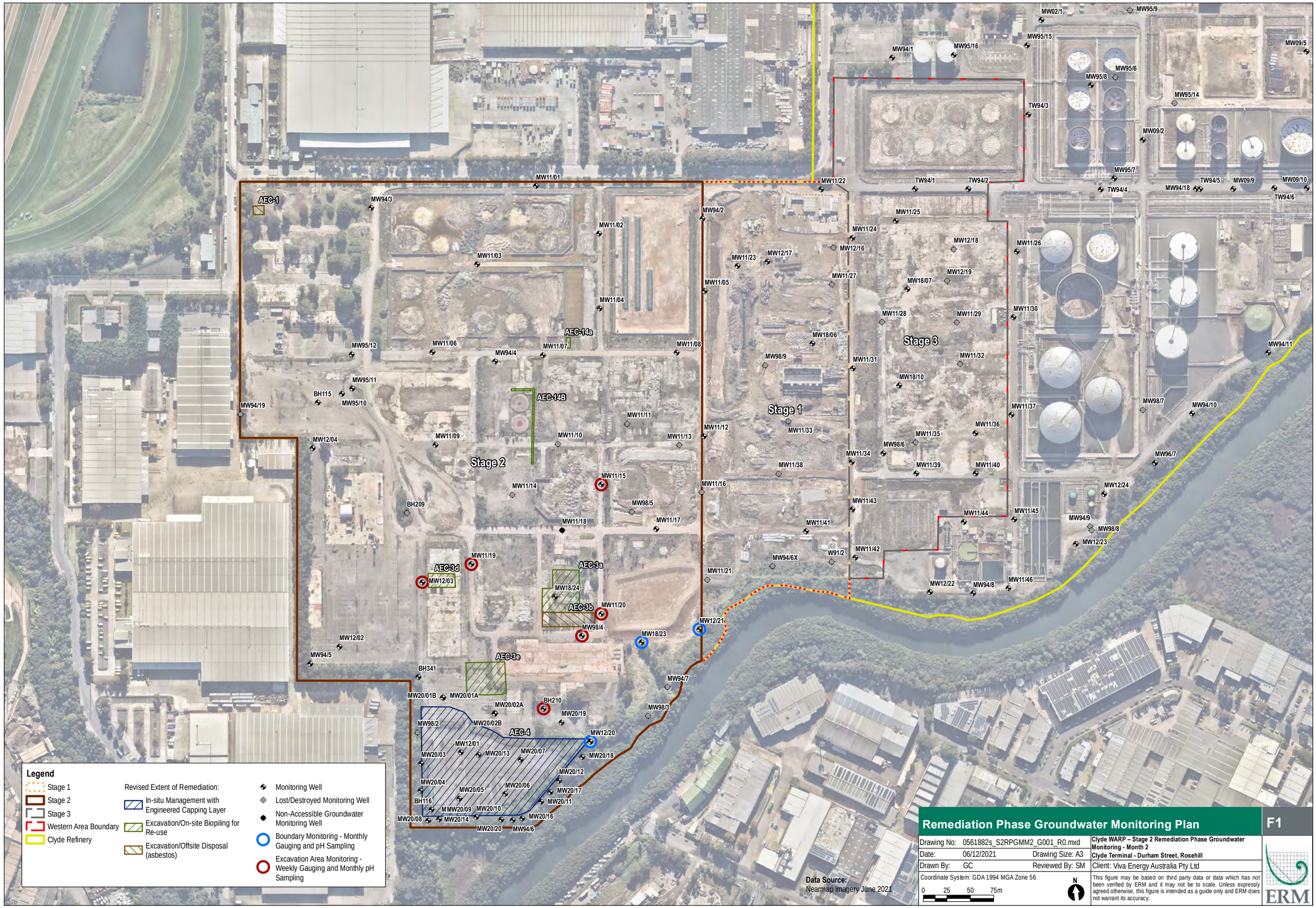
Drawing No:	0561882s_S2RPGMM1_G003_R0.mxd		**Clyde WARP – Stage 2 Remediation Phase Groundwater Monitoring - Month 1** **Clyde Terminal - Durham Street, Rosehill**
Date:	02/11/2021	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56			This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 25 50 75m

N

ERM

Appendix A-3 Figures from Remediation GME 2 report



Remediation Phase Groundwater Monitoring Plan

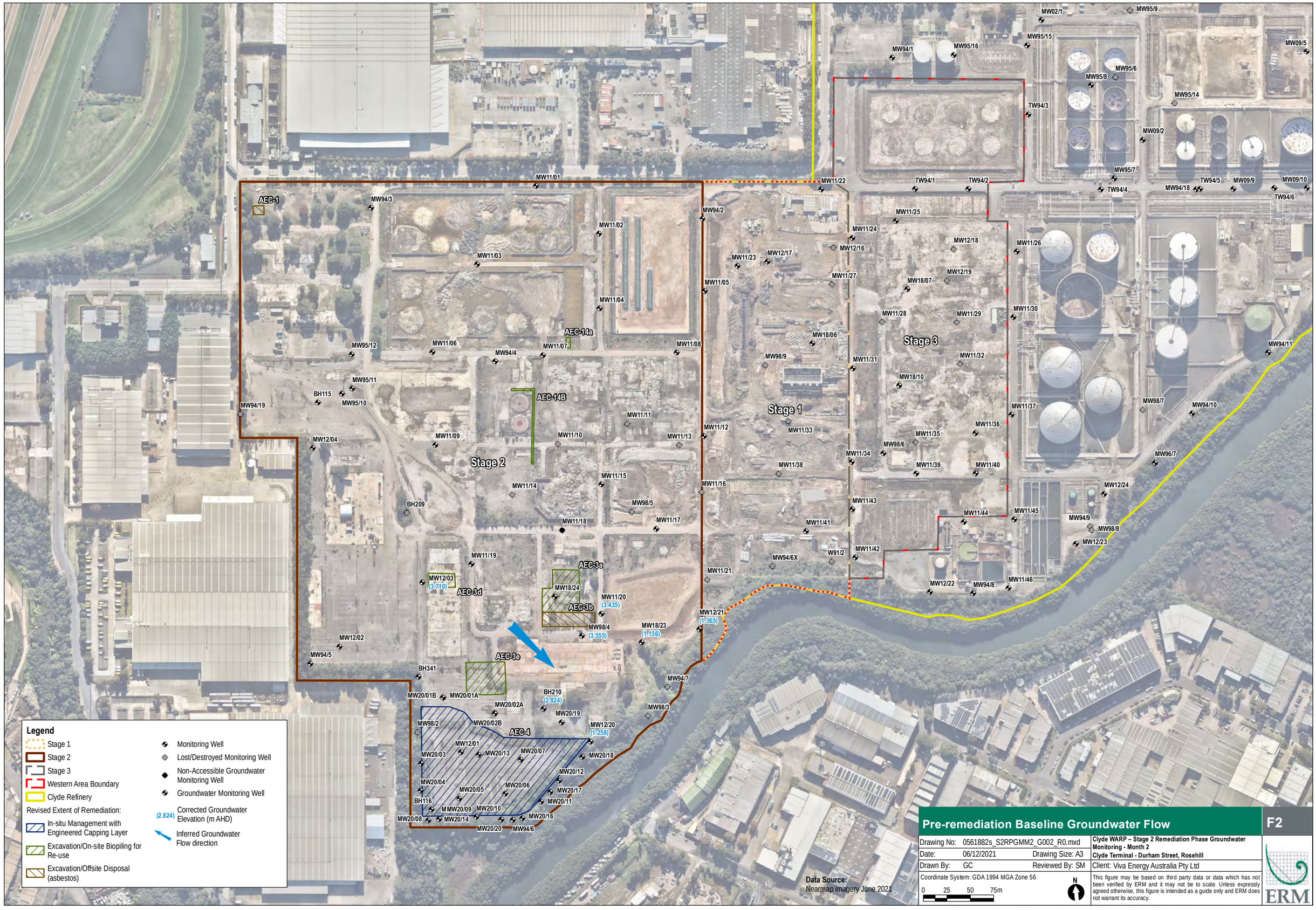
F1

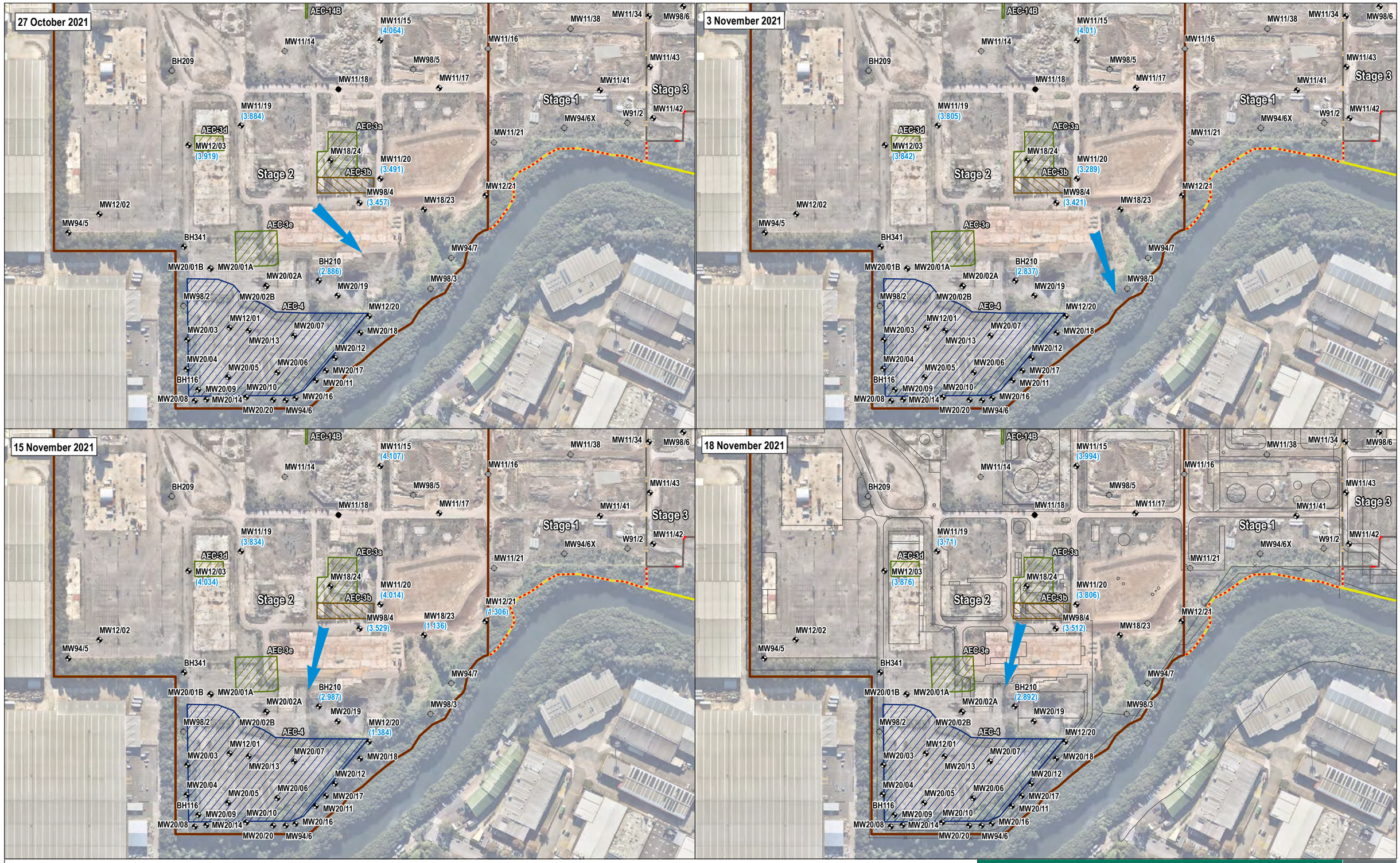
Drawing No:	0561882s_S2RPGMM2_G001_R0.mxd		Clyde WARP – Stage 2 Remediation Phase Groundwater Monitoring - Month 2 Clyde Terminal - Durham Street, Rosehill
Date:	06/12/2021	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM


Stage 1
Stage 2
Stage 3
AEC-1
AEC-14a
AEC-14B
AEC-3a
AEC-3b
AEC-3d
AEC-3e
AEC-4
MW11/01
MW94/3
MW11/02
MW11/03
MW94/2
MW11/04
MW11/05
MW11/06
MW11/07
MW11/08
MW95/12
MW94/4
MW95/11
BH115
MW95/10
MW94/19
MW12/04
MW11/09
MW11/10
MW11/11
MW11/12
MW11/13
MW11/14
MW11/15
MW11/16
MW11/17
MW11/18
MW11/19
BH209
MW98/5
MW12/03
(3.710)
MW18/24
MW11/20
(3.435)
MW98/4
(3.555)
MW18/23
(1.156)
MW12/21
(1.365)
MW12/02
MW94/5
BH341
MW20/01B
MW20/01A
MW20/02A
BH210
(2.824)
MW20/19
MW94/7
MW98/3
MW98/2
MW20/02B
MW12/20
(1.258)
MW12/01
MW20/03
MW20/13
MW20/07
MW20/18
MW20/12
MW20/04
MW20/05
MW20/06
MW20/17
BH116
MW20/09
MW20/10
MW20/11
MW20/08
MW20/14
MW20/16
MW20/20
MW94/6
MW11/22
TW94/1
TW94/2
MW11/25
MW11/24
MW12/16
MW12/17
MW11/23
MW11/27
MW12/18
MW18/07
MW12/19
MW11/28
MW11/29
MW18/06
MW98/9
MW11/31
MW11/32
MW18/10
MW11/33
MW11/35
MW11/36
MW98/6
MW11/34
MW11/38
MW11/39
MW11/40
MW11/43
MW11/41
MW11/44
MW11/45
MW94/6X
W91/2
MW11/42
MW11/21
MW12/22
MW94/8
MW11/46
MW02/1
MW95/9
MW95/15
MW94/1
MW95/16
MW09/5
MW95/6
MW95/8
MW95/14
TW94/3
MW09/2
MW95/7
TW94/4
MW94/18
TW94/5
MW09/9
MW09/10
TW94/6
MW11/26
MW11/30
MW94/11
MW98/7
MW94/10
MW11/37
MW96/7
MW12/24
MW94/9
MW98/8
MW12/23
Legend
Stage 1
Stage 2
Stage 3
Western Area Boundary
Clyde Refinery
Revised Extent of Remediation:
In-situ Management with Engineered Capping Layer
Excavation/On-site Biopiling for Re-use
Excavation/Offsite Disposal (asbestos)
Monitoring Well
Lost/Destroyed Monitoring Well
Non-Accessible Groundwater Monitoring Well
Groundwater Monitoring Well
(2.824) Corrected Groundwater Elevation (m AHD)
Inferred Groundwater Flow direction
Data Source:
Nearmap imagery June 2021
Pre-remediation Baseline Groundwater Flow
F2
Drawing No: 0561882s_S2RPGMM2_G002_R0.mxd
Date: 06/12/2021
Drawing Size: A3
Drawn By: GC
Reviewed By: SM
Coordinate System: GDA 1994 MGA Zone 56
0 25 50 75m
N
Clyde WARP – Stage 2 Remediation Phase Groundwater Monitoring - Month 2
Clyde Terminal - Durham Street, Rosehill
Client: Viva Energy Australia Pty Ltd
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM



Legend

- Stage 1
- Stage 2
- Stage 3
- Western Area Boundary
- Clyde Refinery

Revised Extent of Remediation:

- In-situ Management with Engineered Capping Layer
- Excavation/On-site Biopiling for Re-use
- Excavation/Offsite Disposal (asbestos)

- Groundwater Monitoring Well
- Lost/Destroyed Monitoring Well
- Non-Accessible Groundwater Monitoring Well
- (2.824) Corrected Groundwater Elevation (m AHD)
- Inferred Groundwater Flow direction

Data Source:
Nearmap imagery June 2021

Remediation Phase Groundwater Flow Monitoring

F3

Drawing No: 0561882s_S2RPGMM2_G003_R0.mxd		**Clyde WARP – Stage 2 Remediation Phase Groundwater Monitoring - Month 2**
Date: 06/12/2021	Drawing Size: A3	**Clyde Terminal - Durham Street, Rosehill**
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

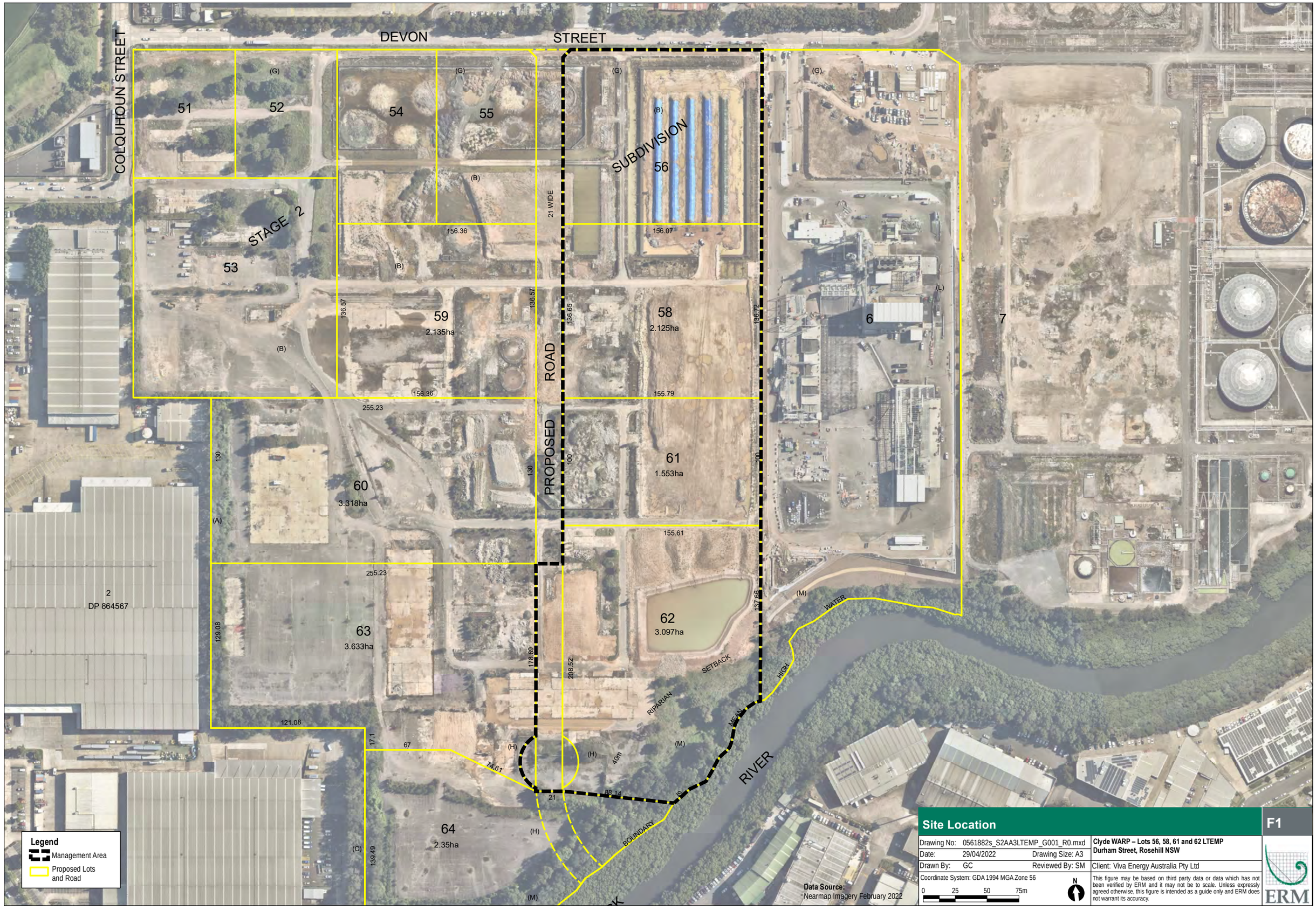
0 25 50 75m

N

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Appendix A-4 Figures from AA3 LTEMP



Site Location

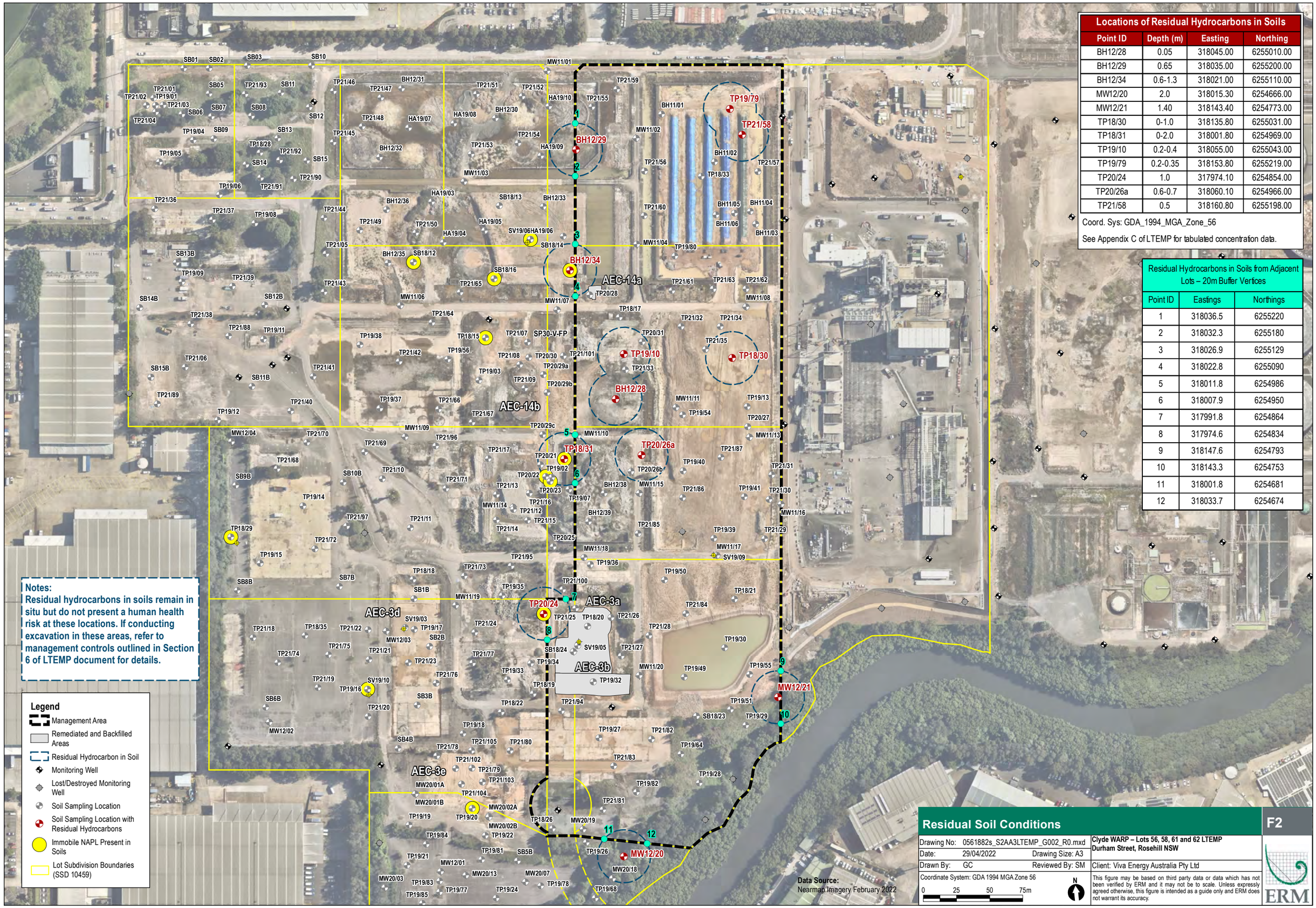
F1

Drawing No: 0561882s_S2AA3LTEMP_G001_R0.mxd		Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date: 29/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 25 50 75m

N

ERM



Notes:
Residual hydrocarbons in soils remain in situ but do not present a human health risk at these locations. If conducting excavation in these areas, refer to management controls outlined in Section 6 of LTEMP document for details.

Locations of Residual Hydrocarbons in Soils

Point ID	Depth (m)	Easting	Northing
BH12/28	0.05	318045.00	6255010.00
BH12/29	0.65	318035.00	6255200.00
BH12/34	0.6-1.3	318021.00	6255110.00
MW12/20	2.0	318015.30	6254666.00
MW12/21	1.40	318143.40	6254773.00
TP18/30	0-1.0	318135.80	6255031.00
TP18/31	0-2.0	318001.80	6254969.00
TP19/10	0.2-0.4	318055.00	6255043.00
TP19/79	0.2-0.35	318153.80	6255219.00
TP20/24	1.0	317974.10	6254854.00
TP20/26a	0.6-0.7	318060.10	6254966.00
TP21/58	0.5	318160.80	6255198.00

Coord. Sys: GDA_1994_MGA_Zone_56

See Appendix C of LTEMP for tabulated concentration data.

Residual Hydrocarbons in Soils from Adjacent Lots – 20m Buffer Vertices

Point ID	Eastings	Northings
1	318036.5	6255220
2	318032.3	6255180
3	318026.9	6255129
4	318022.8	6255090
5	318011.8	6254986
6	318007.9	6254950
7	317991.8	6254864
8	317974.6	6254834
9	318147.6	6254793
10	318143.3	6254753
11	318001.8	6254681
12	318033.7	6254674

Residual Soil Conditions

F2

Drawing No:	0561882s_S2AA3LTEMP_G002_R0.mxd		Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date:	29/04/2022	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 25 50 75m

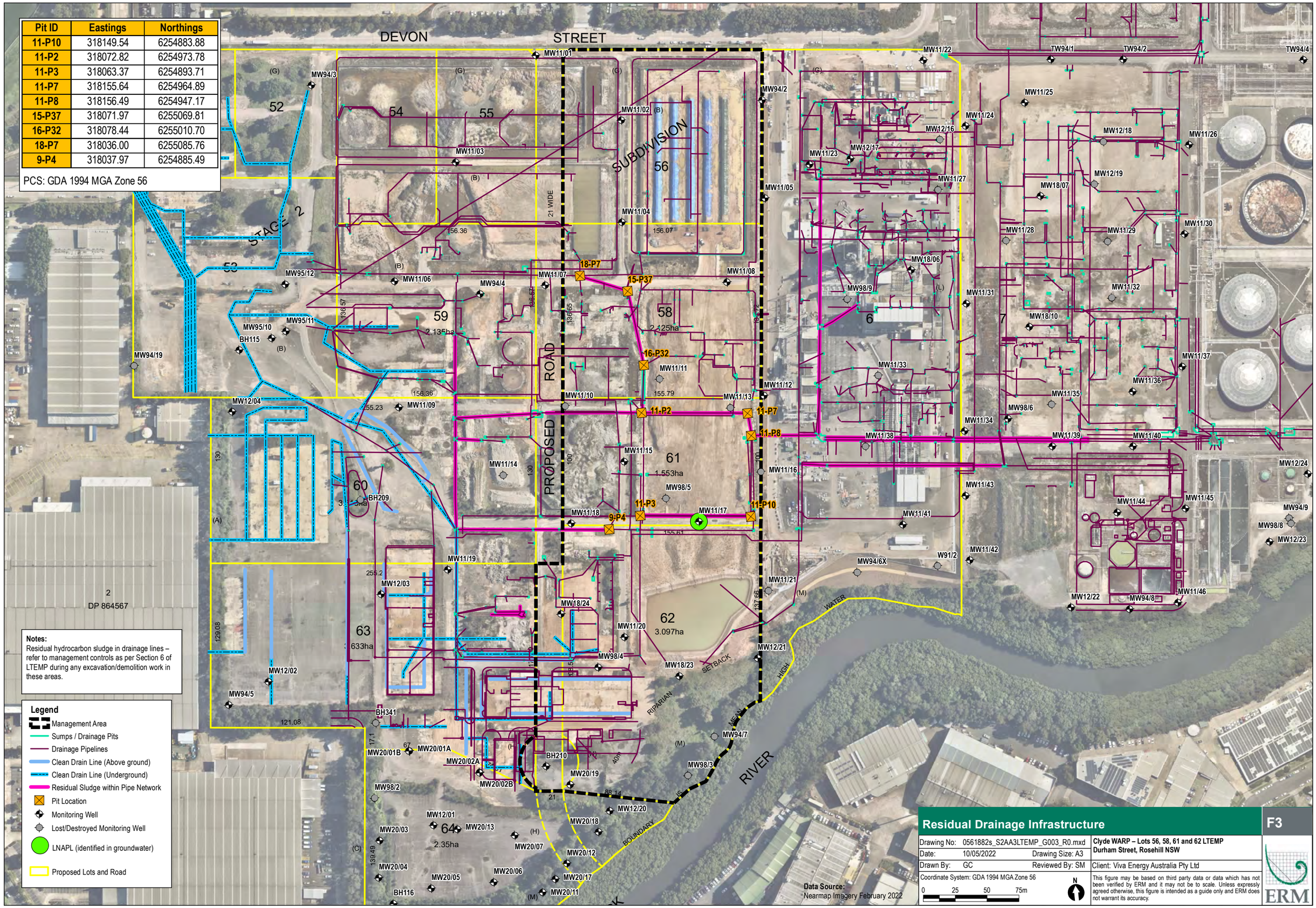
N

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Pit ID	Eastings	Northings
11-P10	318149.54	6254883.88
11-P2	318072.82	6254973.78
11-P3	318063.37	6254893.71
11-P7	318155.64	6254964.89
11-P8	318156.49	6254947.17
15-P37	318071.97	6255069.81
16-P32	318078.44	6255010.70
18-P7	318036.00	6255085.76
9-P4	318037.97	6254885.49

PCS: GDA 1994 MGA Zone 56



Notes:
Residual hydrocarbon sludge in drainage lines – refer to management controls as per Section 6 of LTEMP during any excavation/demolition work in these areas.

Legend
- Management Area
- Sumps / Drainage Pits
- Drainage Pipelines
- Clean Drain Line (Above ground)
- Clean Drain Line (Underground)
- Residual Sludge within Pipe Network
- Pit Location
- Monitoring Well
- Lost/Destroyed Monitoring Well
- LNAPL (identified in groundwater)
- Proposed Lots and Road

Data Source:
Nearmap Imagery February 2022

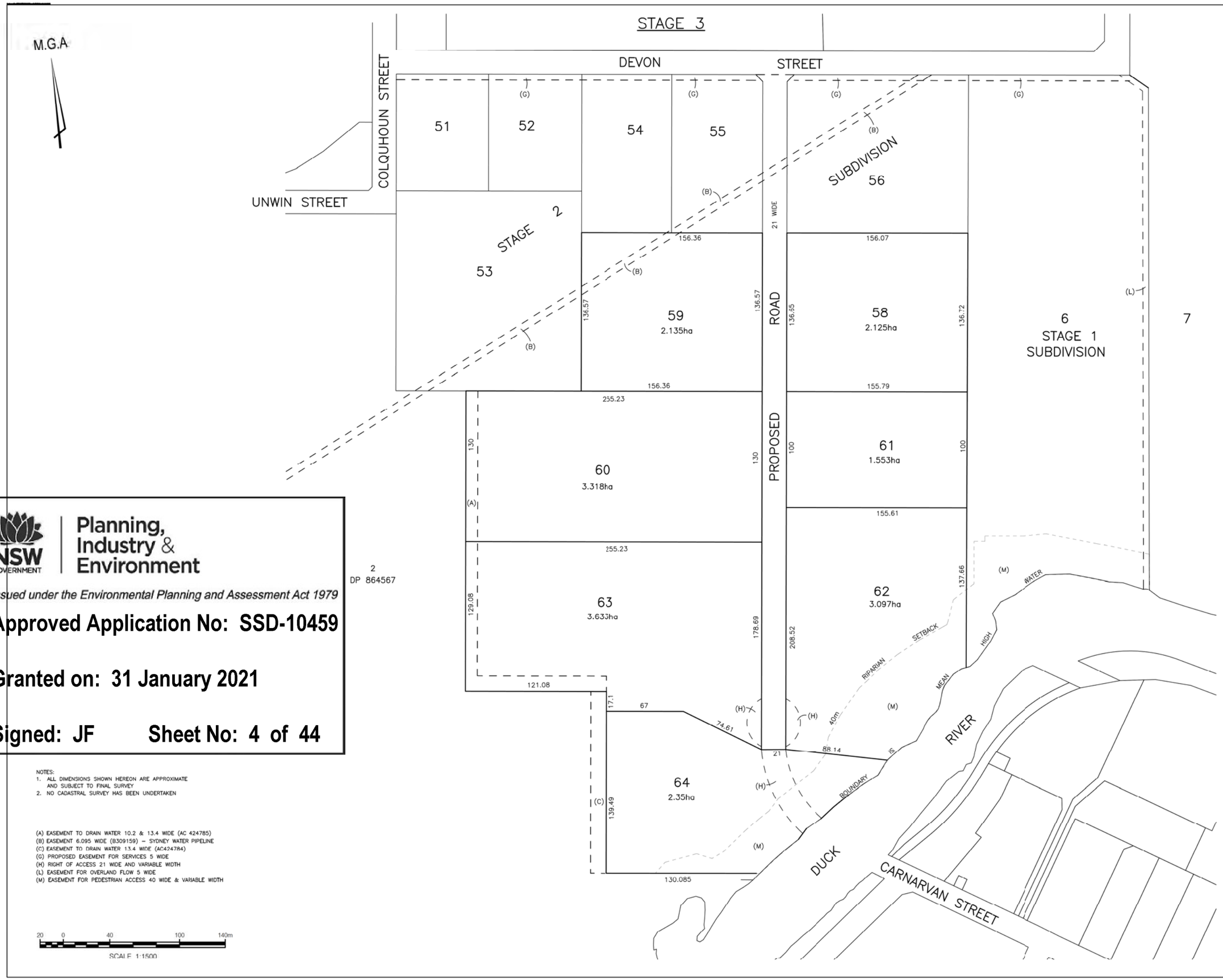
Residual Drainage Infrastructure

F3

Drawing No: 0561882s_S2AA3LTEMP_G003_R0.mxd	Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date: 10/05/2022 Drawing Size: A3	
Drawn By: GC Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56 0 25 50 75m N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Appendix A-5 Survey Plans



Planning, Industry & Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No: SSD-10459

Granted on: 31 January 2021

Signed: JF Sheet No: 4 of 44

NOTES:
1. ALL DIMENSIONS SHOWN HEREON ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY
2. NO CADASTRAL SURVEY HAS BEEN UNDERTAKEN

(A) EASEMENT TO DRAIN WATER 10.2 & 13.4 WIDE (AC 424785)
(B) EASEMENT 6.095 WIDE (B309159) – SYDNEY WATER PIPELINE
(C) EASEMENT TO DRAIN WATER 13.4 WIDE (AC424784)
(G) PROPOSED EASEMENT FOR SERVICES 5 WIDE
(H) RIGHT OF ACCESS 21 WIDE AND VARIABLE WIDTH
(L) EASEMENT FOR OVERLAND FLOW 5 WIDE
(M) EASEMENT FOR PEDESTRIAN ACCESS 40 WIDE & VARIABLE WIDTH

20 0 40 100 140m
SCALE 1:1500

CLIENT
VE PROPERTY PTY LTD

PROJECT
PLAN OF PROPOSED SUBDIVISION OF LOT 57 OF STAGE 2 OF SUBDIVISON OF LOT 100 IN DP1168951 STAGE 3

NOTES
The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.

Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.

Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

8	GKO	23/11/2020	LOT 61 & 62 AMENDED
7	GKO	11/11/2020	AMEND RIPARIAN SETBACK & (H)
6	GKO	02/11/2020	LANDSCAPE SETBACK REMOVED
5	GKO	29/10/2020	PLAN AMENDED
4	GKO	20/10/2020	LOT BOUNDARIES AMENDED
3	GKO	24/07/2020	EASEMENTS DETAIL ADDED
2	GKO	17/07/2020	EASEMENT AMENDED
1	GKO	22/06/2020	INITIAL ISSUE

SYM	CODE	DESCRIPTION
	BIN	BIN
	BM	BENCH MARK
	BO	BOLLARD
	DJM	DRAINAGE MANHOLE
	EFP	ELEC FUSE BOX
	ELP	ELEC GARDEN LIGHT
	EL	ELEC GREEN PILLAR
	LP	ELEC LIGHT POLE
	EP	ELECT SINGLE PIT
	SPL	ELEC STAY POLE
	PP	ELEC POWER POLE
	ELP	ELEC POLE/LIGHT
	TRANS	ELE POLE/TRANSFORM
	FD	FUEL DIP
	GM	GAS MAIN
	GMR	GAS METER
	GAS	GAS VALVE
	AG	GATE
	GUL	GULLY PIT
	HYD	HYDRANT
	BOR	BOREHOLE

SYM	CODE	DESCRIPTION
	OFM	OPTICAL FIBRE MARKER
	OFP	OPTICAL FIBRE PIT
	TM	PALM TREE
	SE	SEAT
	TS	SHRUB
	TCA	TELSTRA PIT
	SLH	SEWER LAMP HOLE
	SMH	SEWER MANHOLE
	SVP	SEWER VENT PIPE
	SI	SIGN
	BUS	BUS STOP SIGN
	T	TREE
	SGL	TRAFFIC LIGHT
	SCL	TRAFFIC CONTROLLER
	SJX	TRAFFIC JUNCTION BOX
	US	UNKNOWN SERVICE
	WAV	WATER AIR VALVE
	WMR	WATER METER
	WEP	WATER PUMP
	WSV	WATER STOP VALVE
	WTP	WATER TAP

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

DRAINAGE PIPE U/G
DRAIN
ELECT. CABLE A/G
ELEC. CABLE U/G
GAS PIPE
FENCE LINE
SEWERAGE PIPE
TELSTRA CABLE
WATER PIPE

LANDPARTNERS built environment consultants

Sydney Office
Level 2, 39-41 South Street
Rydalmere NSW 2116
PO Box 1144
Dundas NSW 2117

t (02) 9683 2000
e info@landpartners.com.au
w www.landpartners.com.au

HEIGHT DATUM: AHD	LOCAL AUTHORITY: CITY OF PARRAMATTA
HEIGHT ORIGIN: N/A	SCALE: 1:1500 (A1)
MERIDIAN: 56	CONTOUR INTERVAL: N/A
CO-ORD SYSTEM: MGA	SURVEYOR: N/A — DATE OF SURVEY: -
CCAD FILE: 74707 ver 9 final subdivision	DRAWN: SF/CLP — DATE: 23/11/2020
AUTOCAD FILE: SY074707.000.13.8	CHECKED: GKO — DATE: 23/11/2020
ARCHIVE FILE: SY074707.000.13.6	APPROVED: GKO — DATE: 23/11/2020
PLAN NUMBER: SY074707.000.13.8	SHEET 1 OF 1

Appendix B

Site Audit Documentation

Client: Viva Energy
Project: 2127799 - Stage 2 Remediation - AA3
Report: **Clyde WARP Stage 2 AA3 Validation Report**

Requirement in NSW EPA (2020)	Information Presented?	Location in Document	Auditor Comments (version dated 6/5/2022)	ERM responses	Auditor's review of report version 30/05/2022 - Was the required information presented (Final assessment)
Document Control					
Date, version number, author and reviewer (including certification details) and who commissioned the report	✓	Pages 2 and 3 of PDF	The auditor notes that signatures must be included in the final version of the report.	NA	✓
Executive Summary					
Background	✓	Page ii	Please refer to the auditor's comments in the following sections and update the Executive Summary accordingly.	No updates	✓
Objectives of the investigation	✓	Page ii		No updates	✓
Scope of works	✓	Page iii		Included summary statement on groundwater monitoring works undertaken	✓
Where appropriate, a summary of keyfindings, observations and sampling results	✓	Page iv (Table E-0-1)		Included summary statement on outcomes of groundwater monitoring works undertaken and that requirements as per SSD and GWMP have been met	✓
Summary of conclusions and recommendations	✓	Page iv		Added statement inclusinve of potential for unexpected finds during stockpile movement/re-use on site	✓
Objectives					
Objectives of the remediation and validation	✓	Sections 1.3 and 1.4	1 - Addressing hydrocarbon impacts in shallow soil: It is necessary to clarify that only hydrocarbon impacts that pose potential risks to future commercial/industrial receptors were the focus of the remediation (as per the HHERA). LNAPL within soils and TRH Management below criteria will be managed as aesthetic issues under the LTEMP. 2 - Clarify whether the LTEMP will incorporate groundwater management, as the following was stated: " To remediate the soil and **manage groundwater within AA3** of the Western Area...". Does groundwater within AA3 need to be managed?	1 - the specific hydrocarbon impacts subject to remediation have been clarified in this point and is also outlined in the first paragraph beneath this point. 2 - LTEMP incorporates completion of the requirements of the Stage 2 GWMP. From a risk perspective, management of groundwater is not required. Further monitoring rounds are required to meet conditions of consent for conducting a period of groundwater monitoring post remediation to confirm no adverse effects to the Duck River.	✓
Site Identification					
Site name or description	✓	Section 2, Table 2-2	No further action required.	NA	✓
Street address (street number & name,suburb), town/city	✓	Section 2, Table 2-2	No further action required.	NA	✓
Property description	✓	Section 2, Table 2-2	No further action required.	NA	✓
Current certificates of title	NA	NA	NA	NA	NA
Latitude, longitude (centre of site, or site corner for regular shapes)	✓	Survey Plan	Although this information was not presented in Section 2 of the Validation report, it is available in the survey plan. Therefore, no further action is required.	NA	✓
Current owner(s)	✓	Section 2, Table 2-2	No further action required.	NA	✓
Current occupier(s)	✓	Section 2, Table 2-2	No further action required.	NA	✓
Site area	✓	Section 2, Table 2-2	No further action required.	NA	✓
Local government authority	✓	Section 2, Table 2-2	No further action required.	NA	✓
Current zoning (planning)	✓	Section 2, Table 2-2	No further action required.	NA	✓
Locality map	✓	Figures 1 and 2	No further action required.	NA	✓
Trigger for assessment (e.g. change in land use)	✓	Section 1.1	Although this information was not presented in Section 2 of the report, it was discussed in Section 1.1. No further action required.	NA	✓
Site History					
A summary is enough if detailed information was included in an available reference previous report	✓	Section 3.1	No further action required.	NA	✓
Site Condition and Surrounding Environment					
A summary is enough if detailed information was included in an available reference previous report	✓	Section 3.2	The proposed road description prior to remediation was not included in Section 3.2.	Description of the proposed road is provided under the third dot point in this section. No edits required.	✓
Previous results					
Brief summary of previous results	✓	Sections 3.6 and 3.7	1 - Table 3-4 - Commentary should be made on the minimum number of groundwater wells recommended in NSW EPA guidelines. Please refer to the auditor comment requesting a figure showing the monitoring wells network. 2 - Section 3.7.1 - It would be beneficial to state that no SSTL exceedances were recorded in Lot 61. TRH Management Limit exceedances shall be managed via LTEMP. 3 - Section 3.7.1 - Clarify/confirm whether the potential for asbestos occurrence will be included in the LTEMP. 4 - Section 3.7.2 - Clarify whether the PFAS exceedances reported in Section 3.7.2 were detected in 2021. Were the PFAS concentrations stable in relation to the 2018 PFAS CSM and mass flux? 5 - Table 3-7 - It was stated in Section 3.7.3 that "Based on soil vapour monitoring undertaken, these gases in wells sampled across the broader Stage 2 were generally categorised as having a "very low" safety risk in accordance with the Ground Gas Guidance. As such, consideration of hazardous ground gases in future management and/ or remediation decisions for the future construction of buildings with enclosed spaces is not considered to be warranted in these areas". However, in Table 3-7 reporting the contaminants of Concern Requiring Remediation and/or Management, methane associated with LNAPL was included in the comments column. It is not clear why methane was included in this table if it was previously stated that no remediation or management was required.	1 - Explanatory text added above above table 3-4 added to detail that assessment of groundwater has been undertaken in accordance with Section 2 of the Guidelines for the Assessment and Management of Groundwater Contamination (DEC NSW, 2007). Figure of monitoring well network is provided as figure 5E and is referenced in the report in section 3.6.3.2. 2 - Paragraph below table 3-5 updated to outline that lots 56 and 61 contain no SSTL exceedances and are subject to management of TRH management limit exceedances as per the LTEMP. 3 - Potential for unidentified asbestos occurrence has been flagged within the LTEMP, with unexpected finds protocol referenced. 4 - dates of PFAS exceedances now outlined in this section, with all recent exceedances in 2017-2019 and none in 2021 monitoring events. 5 - A CS4 or "low risk" was identified for methane at AEC-3A and would require consideration for management of future indoor air spaces if the source of methane (ie LNAPL) was not remediated. Section 3.7.2 has been amended to clarify this. There is also a footnote in the table which explains the inclusion of methane in detail.	✓
Conceptual Site Model					
Refer to CSM checklist	✓	Section 8	Refer to the CSM checklist	Refer to the CSM checklist	Refer to the CSM checklist
Remediation Application					

A summary of the remediation plan	x	Section 5.1	The proposed road is not included in the discussion presented in Section 5.1 nor in Table 5-1.	No changes proposed. The correlation between proposed lots and the road and AECs has been provided within earlier sections. This section refers specifically to remediation methodologies and extents completed for AEC excavations as a comparison with those proposed within the RAP. It is unclear what the purpose of breaking down volumes and remediation methodologies undertaken for each lot (and the road) achieves in this instance. Furthermore, some of the AEC excavations extend across lot boundaries.	✓
Remediation objectives and criteria including a table listing all selected remediation criteria and references	✓	Section 1.4	No further action required.	NA	✓
Description of remedial activities (e.g. volumes and characteristics of material treated or disposed, design or permanent treatment installations, etc.)	✓	Section 6	1 - Additional information regarding stockpile management and validation is required. 2 - A summary of groundwater monitoring completed before, during and after remediation, including a statement on whether the Consent Condition B22 was met, should be included. 3 - Data from the biopile operation is yet to be included in the Validation report. 4 - the ambient air summary monitored during the remediation of AA3 should be included.	1 - This has been included in revised draft version. 2 - A summary of the monitoring results from before (July 2021), during (GMEs 1 and 2) and after Dec 2021) have been provided as section 6.9, with the groundwater monitoring conditions outlined in section 5.6.3. 3 - This information has been included in revised draft version dated 27th May 2022. 4 - Table 5-3 (Site monitoring summary) provides comment of no exceedances of actions limits for VOCs or other performance criteria. Ambient AQ data is attached to the validation report and has been reported standalone within the AAQS summary report. No further addition of area specific summaries is considered neccessary.	✓
Deviations of Remediation Action Plan	✓	Section 5.3	NA	NA	✓
Plans showing areas remediated and areas of residual contamination or subsurface structures	✓	Figures section	No further action required.	NA	✓
Summary and evidence (e.g. documentation) of compliance with regulatory requirements set by the regulatory authority and local government	✓	Sections 1.6 and 5.4	NA	NA	✓
Contractor reports	✓	Appendix O	The Asbestos Clereance Certificate is presented in Appendix O.	NA	✓
Field inspection checklists and photolog (as appropriate)	✓	Appendix C	NA	NA	✓
Dates of operations	✓	Section 5	The period of remediation was discussed in Section 5.	NA	✓
Quantity of material treated and/or disposed	✓	Section 6.7	NA	NA	✓
Sampling and Analysis Plan and Sampling Methodology					
Refer to SAQP checklist	✓	refer to the SAQP checklist	refer to the SAQP checklist	refer to the SAQP checklist	refer to the SAQP checklist
Validation Results and Discussion					
Summary of all results, in a table that:					
· show all essential details such as sample identification numbers and sampling depth	✓	Section 6	No further action required.	NA	✓
· show remediation assessment criteria	✓	Tables	No further action required.	NA	✓
· highlight all results exceeding any remediation criteria (not just the highest)	✓	Tables and Figures	No further action required.	NA	✓
Sample descriptions for all media where applicable (e.g. soil, sediment, surface water, groundwater, biota)	✓	Section 6	The auditor notes that the remediation focus was hydrocarbon contaminated soils.	NA	✓
Site plans or excavation logs showing all sample locations, photoionisation detector results, lithology changes and field observations (if appropriate).	✓	Figures Section, Appendix D and Section 6	Figures F4 to F11 - Presented the site plans, excavation areas, residual impacts plan. Appendix D - Field documentation, PID, litologies and other observations.	NA	✓
Site plan(s) showing the extent of soil and groundwater contamination exceeding remediation criteria for each sampling depth, including sample identification numbers and sampling depths of all samples analysed (clearly mark concentrations of contaminants remaining on site)	✓	Figures F4, F9 and F10	Figure F4 - Shows the site drainage layout that requires management under the LTEMP. Figure F10 - Shows the residual soil contamination that requires management under the LTEMP. However the depth of residual impacts needs to be documented. Figure F9 - Shows the Stockpile locations that remain in AA2 post - remediation. However, further information regarding stockpiles is required.	NA	✓
Follow appropriate statistical procedures when comparing site data with the investigation and screening levels. Refer to in ASC NEPM Schedule B1 sections 2, 3 and 4	TBT		To be updated in accordance with the comments above	Provided within revised draft version. No statistical analysis required as all individual results were below relevant criteria.	✓
Quality Assurance and Quality Control Data Evaluation					
Assessment of the implementation of the validation plan from the remedial action plan, with justification for departures (if necessary)	✓	Section 6.10 and Appendix G	Please refer to the auditor's comments in the QA/QC checklist.	Please refer to the auditor's comments in the QA/QC checklist.	Please refer to the auditor's comments in the QA/QC checklist.
Details of a statistical analysis of validation results and evaluation against the remediation criteria	waiting	waiting	waiting	No statistical analysis required as all individual results were below relevant criteria.	✓
Logs for each sample collected	✓	Appendix D	No further action required.	NA	✓
Identify and discuss ongoing management or monitoring (if required)	✓	Section 9	Refer to the auditor's comments in the LTEMP review	Refer to the auditor's comments in the LTEMP review	Refer to the auditor's comments in the LTEMP review
Waste management					
Waste classification reports in accordance with EPA Waste Classification Guidelines	✓	Section 7	No further action is required.	NA	✓
Summary of material handling and tracking and reconciliation of volumes or weight of soil removed from site and disposed off site	✓	Section 7	No further action is required.	NA	✓

Statements regarding materials being disposed via appropriately licenced facility or re-used under an order or exemption	✓	Section 7	No further action is required.	NA	✓
Confirmation that waste imported onto the site is lawful. Note: materials transported onto site will either need to meet the definition of virgin excavated natural material, or a resource recovery order and resource recovery exemption. In addition, materials imported onto the site must be adequately assessed as being appropriate for the final use of the site, including QA/QC evaluation of any sampling and analysis for material brought to site.	✓	Section 7	No further action is required.	NA	✓
Waste disposal dockets or other waste documentation for any disposed waste	✓	Appendix K	No further action is required.	NA	✓
Conclusions and Recommendations					
Summary of all findings	✓	Section 9	To be updated in accordance with the comments above	Included summary statement on groundwater monitoring works undertaken	✓
Conclusions addressing the stated objectives	✓	Section 9	To be updated in accordance with the comments above	No updates required	✓
Assumptions used in reaching the conclusions	✓	Section 9	To be updated in accordance with the comments above	No updates required	✓
Extent of uncertainties in the results	NA	NA	NA	NA	NA
A clear-cut statement that the consultant considers the site to be suitable for the proposed use (where applicable)	✓	Section 9	To be updated in accordance with the comments above	NA	✓
A clear-cut statement of proposed limitations and constraints on the use of the site post remediation and proposed environmental management plan for long-term management of residual contamination at the site (where applicable)	✓	Section 9	To be updated in accordance with the comments above	No updates required	✓
Recommendations for further work, if appropriate	NA	NA	NA	NA	NA
Clearly state any ongoing management or monitoring (if required)	✓	Section 9	To be updated in accordance with the comments above	No updates required	✓
Other Comments					
	NA	Section 1.5.2	Biopiling validation should be outlined in the scope of works of Stage 1 AA3.	Scope point added: Validation of soils subject to biopiling treatment for on-site re-use.	✓
	NA	Figure F10	The lots in Figure F10 should be shown. Areas where asbestos could be found should be presented. SP37 that requires management under LTEMP must be shown in Figure F10.	1 - F10 has been updated with lot IDs. 2 and 3 - SP37 and SP100 to be outlined in F10, and that these stockpiles are suitable for re-use but subject to LTEMP controls as outlined in LTEMP (asbestos management during movement, placement beneath slab).	✓
	General	Stockpile 40	Clarify whether Stopkipe SP40 is within AEC-3a .	Stockpile SP40 is outside of the AEC-3a footprint.	✓

Notes

NA	Not applicable
✓	Information presented as per NSW EPA (2020) checklist
x	Information not presented as per NSW EPA (2020) checklist

Client: **Viva Energy**
Project: 2127799 - WARP Clyde Stage 2 AA3
Report: **Clyde WARP Stage 2 AA3 Validation Report**

Requirement in NSW EPA (2020)	Information Presented?	Location in Document	Auditor Comments (version dated 6/5/2022)	ERM responses	Auditor's review of report version 30/05/2022 - Was the required information presented (Final assessment)
Regional and local geology, hydrogeology and hydrology	✔	Section 3.4 and 3.5	No further action is required.	NA	✔
List of potential contaminants of concern	✔	Table 8-1 in Section 8	No further action is required.	NA	✔
Potential and known sources of contamination (on and off-site)	✔	Table 8-1 in Section 8	No further action is required.	NA	✔
Mechanism of contamination (e.g. 'top down' spill, sub-surface release from tank or pipe, atmospheric, deposition etc.)	✔	Table 8-1 in Section 8	The potentially complete SPR Linkages presented a discussion regarding the remaining mechanism of contamination.	NA	✔
Potentially affected environmental media	✔	Table 8-1 in Section 8	No further action is required.	NA	✔
Actual or potential exposure pathways. Also consider preferential pathways for contaminant migration	✔	Table 8-1 in Section 8	No further action is required.	NA	✔
Consideration of spatial and temporal variations (e.g. weather)	NA	NA	NA	NA	NA
Actual or potential exposure pathways. Also consider preferential pathways for contaminant migration	✔	Table 8-1 in Section 8	No further action is required.	NA	✔
Human and ecological receptors	✔		There is no on-site potential ecological receptor within Stage 2 AA2. The site is proposed to be redeveloped into a commercial/industrial site. Based on the HHERA developed by ERM, there are no risks to off-site ecological receptors. The Potential for human health risks was assessed following completion of remediation and deemed by ERM to be low and acceptable. Residual aesthetic impacts that do not pose risks to future on-site receptors must be managed via LTEMP. No further action is required.	NA	✔
Frequency of exposure	NA	NA	NA	NA	NA
Linkage of source, pathway and receptor assessed in terms of potentially complete pathways and likelihood	✔	Table 8-1 in Section 8	No further action is required.	NA	✔
Discussion on multiple lines of evidence (for complex sites)	NA	NA	NA	NA	NA
Justification for the number of samples collected and analysed	✔	Sections 3.3, 3.4 and 3.5	Please refer to clarifications regarding Tables 3-4 and 3-5 presented in the Validation Checklist.	NA	✔
Data gap identification	✘	✘	Please include a statement regarding data gap identification. If data gaps are inexistent, this information should be presented.	Section 8.4.6 includes a clear statement of no outstanding data gaps.	✔
Sensitivity analysis where modelling is undertaken	NA	NA	NA	NA	NA

Notes

NA	Not applicable
✔	Information presented as per NSW EPA (2020) checklist
x	Information not presented as per NSW EPA (2020) checklist

Client: Viva Energy
Project: 2127799 - Stage 2 Remediation - AA3
Report: **Clyde WARP Stage 2 AA3 Validation Report**

Requirement in NSW EPA (2020)	Information Presented?	Location in Document	Auditor Comments (version dated 6/5/2022)	ERM responses	Auditor's review of report version 30/05/2022 - Was the required information presented (Final assessment)
Assessment Criteria					
Table listing all selected assessment criteria and references	✓	Tables in the end of the report	No further action required.	NA	✓
Rationale for the selection of assessment criteria, including assumptions and limitations of the criteria (relevant to the assessment and current or proposed land use) and any deviations from approved guidelines.	✓	5.2.1	1 - Clarify which methane risks this statement refers to (Table 5-1), as it was previously reported that methane risks investigation concluded the potential risks were very low and unlikely. This statement needs to be reviewed. It was stated in the Stage 2 RAP that there was no need to monitor for acute hazards during excavations. In addition, TRH concentrations in the last ten years did not contribute to the formation of LNAPL, as no "new" LNAPL was observed. The methane matter needs to be reviewed through the report to be consistent between sections and Stage 2 RAP.		
Rationale for any site-specific assessment criteria developed through a site-specific	✓	Section 5.2	Yes, assessed in the HHERA. No further action required.	NA	✓
Sampling and Analysis Strategy and Sampling Methodology					
Sampling and analysis data quality objectives:					
Step 1 - State the problem	✓	Section 4.2.1	1 - The following was stated, "Previous investigations in AA3 have identified soil and groundwater contamination exceeding risk-based Site Specific Target Levels (SSTLs)". The auditor notes that SSTLs were developed for soils. Groundwater exceedances are limited to ecological receptors, as previously reported in the summary of groundwater characterisation within AA3. Please, a review of this statement is required.	Reference to groundwater has been removed from this statement, as SSTLs were not exceeded in groundwater.	✓
Step 2 - Identify the decision/goal of the study	✓	Section 4.2.2	1 - The validation of biopiles should be discussed within the Stage 2 AA3 report; Therefore, why this matter is not included in the DQOs?	Question added to this section to ask if biopiles were adequetely remediated to be suitable for on-site re-use.	✓
Step 3 - Identify the information inputs	✓	Section 4.2.3	No further action is required.	NA	✓
Step 4 - Define the boundaries of the study	✓	Section 4.2.4	No further action is required.	NA	✓
Step 5 - Develop the analytical approach	✓	Section 4.2.5	ERM stated the following "If concentrations of contaminants of concern in soil samples collected from representative excavated materials are reported equal to or below the adopted re-use criteria (Section 5), the material is suitable for on-site re-use." However, only VENM was re-used on-site. Shouldn't this analytical approach be reviewed? Otherwise, this matter should be discussed in the QA/QC assessment.	While VENM has been used on site to backfill remedial excavations due to geotechnical purposes, excavated stockpiled materials may be assessed as suitable for re-use during later stages of site redevelopment. No changes to document considered warranted.	✓
Step 6 - Specify performance or acceptance criteria	✓	Section 4.2.6	No further action is required.	NA	✓
Step 7 - Develop the plan for obtaining data	✓	Section 4.2.7	No further action is required.	NA	✓
Are the data quality objectives linked to the conceptual site model, and have they been updated with the conceptual site model?	x	Section 4.2	Please include a statement for completeness.	Final paragraph of section 4.2 outlines that information obtained through assessment via the DQO process has been used to further refine the CSM for individual proposed lots within AA3, as presented in section 8.	✓
A strategy to achieve predetermined data quality objectives, including the sampling strategy and justification for the sampling design	✓	Through the report and Stage 2 RAP	No further action is required.	NA	✓
Refer to the updated conceptual site model and identified data gaps to determine sampling locations (to ensure sourcepathway- receptors have been considered)	✓	Section 4.2	No further action is required.	NA	✓
Consideration of existing production, residential or monitoring wells when determining groundwater sampling locations	x	Not included	The auditor acknowledges that groundwater monitoring shall be conducted as per the Consent Condition B22. This should be mentioned in the DQOs. In additistand-alone the auditor notes that a summary of groundwater monitoring completed before, during, and after the completion of remediation was not included in the Validation report.	DQOs in section 4 updated to include consideration of groundwater monitoring. A summary of the monitoring results from before (July 2021), during (GMEs 1 and 2) and after Dec 2021) have been provided as section 6.9, with the groundwater monitoring conditions outlined in section 5.6.3.	✓
Data quality indicators Note: sampling and analysis quality plan including details of the required quality assurance/quality control samples for the project (e.g. field blank, rinsate blank, trip blank, laboratory prepared trip spikes), including acceptable limits for field quality assurance/quality control.	✓	Section 4.2 and Appendix G	The auditor is satisfied with the information discussed in the Validation report. The QA/QC assessment will be discussed in the QA/QC checklist.	NA	✓

Notes

NA	Not applicable
✓	Information presented as per NSW EPA (2020) checklist
x	Information not presented as per NSW EPA (2020) checklist

Client: Viva Energy
Project: 2127799 - Stage 2 Remediation - AA3
Report: **Clyde WARP Stage 2 AA3 Validation Report**

Requirement in NSW EPA (2020)	Information Presented?	Location in Document	Relevant Quality Aspect (PARCC)	Auditor Comments (version dated 6/5/2022)	ERM responses	Auditor's review of report version 30/05/2022 - Was the required information presented (Final assessment)
Sampling QA/QC						
Details of sampling team	x	NA	C Comparability C Completeness	Please include a statement for completeness.	Statement in first row of Table G-1 of appendix G cross references individual field records for field personnel, as was provided for AA2 validation.	✓
Reference to sampling plan/method, including any deviations from it – sampling and analysis quality plan	x	NA	C Completeness	Please include a statement for completeness.	Table G3 within QAQC appendix G includes reference to the SAQP provided within the Stage 2 RAP and cross references RAP deviations discussion section 5.3 within the main body of the validation report.	✓
Any information that could be required to evaluate measurement uncertainty for subsequent testing (analysis)	NA	NA	P Precision A Accuracy	NA	NA	NA
Decontamination procedures carried out between sampling events	✓	Appendix G	P Precision A Accuracy R Representativeness	No further action is required.	NA	✓
Sampling Log: Logs for each sample collected, including date, time, location (with GPS coordinates if possible), sampler, duplicate samples, chemical analyses to be performed, site observations and weather/environmental (i.e. surroundings) conditions.	✓	Appendix D and Appendix F	R Representativeness C Completeness	Not all information was provided in the table, but adequate in light of complete report information such as sampling figures	NA	✓
Chain of custody fully identifying – for each sample – the sampler, nature of the sample, collection date, analyses to be performed, sample preservation method, departure time from the site and dispatch courier(s) (where applicable)	✓	Appendix M	C Comparability C Completeness	No further action is required.	NA	✓
Field quality assurance/quality control results (e.g. field blank, rinsate blank, trip blank, laboratory prepared trip spike)	✓	Appendix G	P Precision A Accuracy	No further action is required.	NA	✓
Sample splitting techniques – sub-sampling, containers/preservation (ensure unique ID for subsequent samples provided)	NA	NA	R Representativeness	NA	NA	NA
Statement of duplicate frequency	✓	Appendix G	P Precision R Representativeness	No further action is required.	NA	✓
Background sample results	NA	NA	C Comparability C Completeness	NA	NA	NA
Field instrument calibrations (when used)	✓	Appendix E	P Precision A Accuracy	No further action is required.	NA	✓
Laboratory QA/QC						
A copy of signed chain-of-custody forms acknowledging receipt date, time and temperature and identity of samples included in shipments	✓	Appendix M	C Comparability C Completeness	No further action is required.	NA	✓
Record of holding times and a comparison with method specifications	✓	Appendix M	C Comparability C Completeness	No further action is required.	NA	✓
Analytical methods used, including any deviations	✓	Appendix M	C Comparability C Completeness	No further action is required.	NA	✓
Laboratory accreditation for analytical methods used, also noting any methods used which are not covered by accreditation	✓	Appendix M	P Precision C Completeness	No further action is required.	NA	✓
Laboratory performance for the analytical method using inter-laboratory duplicates	✓	Appendix M	C Comparability C Completeness	No further action is required.	NA	✓
Surrogates and spikes used throughout the full method process, or only in parts. Results are corrected for the recovery	✓	Appendix M	C Comparability C Completeness	No further action is required.	NA	✓
Practical quantification limits (PQL)	✓	NA	C Comparability C Completeness	No further action is required. The LORs presented were below the adopted criteria.	NA	✓
Reference laboratory control sample (LCS) and check results	✓	Appendix M	C Completeness	No further action is required.	NA	✓
Laboratory duplicate results (tabulate)	✓	Appendix M	A Accuracy C Completeness	No further action is required.	NA	✓
Laboratory blank results (tabulate)	✓	Appendix M	A Accuracy C Completeness	No further action is required.	NA	✓
Evaluation of all quality assurance/control information listed above against the stated data quality objectives, including a quality assurance/control data evaluation	✓	Appendix M	P Precision A Accuracy R Representativeness C Comparability C Completeness	No further action is required.	NA	✓

Notes

NA	Not applicable
✓	Information presented as per NSW EPA (2020) checklist
x	Information not presented as per NSW EPA (2020) checklist

Client: Viva Energy
Project: WARP Clyde Stage 2 AA3
Report: Proposed Lots 56, 68, 61 and 62 – Long Term Environmental Management Plan

Requirement in NSW EPA (2020)	Information Presented?	Location in Document	Auditor's review of report version 9/5/2022	Consultant Responses	Auditor's review of report version 30/05/2022 - Was the required information presented (Final assessment)
Document control					
Date, version number, author and reviewer names (including certification details where applicable)	✓	Page 3 of pdf	The final version of the LTEMP must show the document control details and contain the relevant signatures.	To be provided in final version.	✓
Tittle					
Use 'environmental management plan' not 'site management plan' or other alternative wording	✓	Front page of the document	The auditor considers "LTMP" appropriate and in accordance with the NSW EPA recommendation regarding the document title. No further action is required.	NA	✓
Purpose					
Purpose of the plan	✓	Section 1.2	No further action is required.	NA	✓
Time period of the plan	✓	Section 1.1	No further action is required.	NA	✓
How the plan will be made enforceable	✓	Section 2.1	No further action is required.	NA	✓
Whether the environmental management plan is active or passive	✓	Section 1.2	No further action is required.	NA	✓
Parties responsible for implementation and review/maintenance of the plan and their tasks	✓	Section 3.4	No further action is required.	NA	✓
Where the plan will be recorded	✓	Section 2.1	No further action is required.	NA	✓
Background					
Site name or description	✓	Section 1.1	No further action is required.	NA	✓
Street address (street number & name, suburb), town/city	✓	Section 1.1	No further action is required.	NA	✓
Property description (e.g. Section, hundred, plan, parcel)	✓	Section 1.1	No further action is required.	NA	✓
Latitude, longitude (centre of site, or site corners for regular shapes)	✓	Appendix B - Site Survey	No further action is required.	NA	✓
Current owner(s)	✓	Section 1.1	No further action is required.	NA	✓
Current occupier(s)	✓	Section 1.1	No further action is required.	NA	✓
Site area	✓	Section 1.1	No further action is required.	NA	✓
Local government authority	✓	Section 1.1	No further action is required.	NA	✓
Current zoning (planning)	✓	Section 1.1	No further action is required.	NA	✓
Locality map	✓	Appendix A, Figure 1	No further action is required.	NA	✓
Description of existing/residual contamination					
COPC	✓	Section 4	No further action is required.	NA	✓
Contaminated media	✓	Sections 4.1 and 5.1	No further action is required.	NA	✓
Concentrations and location(s) of the contaminants	✓	Appendix C	No further action is required.	NA	✓
Site plan to show location(s) of residual impacts	x	Section 4 and Figure F2	Stockpile SP37 should be included in the LTEMP as management is required.	Figure 4 added to show SP37 and SP100 locations, and added within a new asbestos register as appendix D. Sections 4, 5 and 6 also updated to outline potential for asbestos presence in these stockpiles (albeit below commercial industrial land use criteria).	✓
Summary of the geology and hydrogeology (relevant to the environmental management plan)	✓	Section 4	No further action is required.	NA	✓
Management activities					
Outline the activity(s), and detail procedures that are to be applied	✓	Section 6	No further action is required.	NA	✓
Management structure and responsibilities	✓	Section 6	No further action is required.	NA	✓
How the plan sits within an existing environmental management system (EMS) (if applicable)	NA	NA	NA	NA	NA
Monitoring of site conditions and site management measures	✓	Section 6	No further action is required.	NA	✓
Approval and licensing requirements (if applicable)	NA	NA	NA	NA	NA
How the environmental management plan is consistent with conditions of consent under a planning instrument	✓	Section 2	No further action is required.	NA	✓
Reporting requirements for environmental management plan implementation. Include list of people responsible for preparing the reports, who receives the reports and by when	✓	Section 6 and Section 7	NA	NA	✓
Communications protocol	✓	Section 6	NA	NA	✓
Emergency contacts and response, including 24-hour emergency phone number	NA	NA	NA	NA	NA
Operating hours (if applicable)	NA	NA	NA	NA	NA
Contingency plans (if applicable)	✓	Section 7	No further action is required.	NA	✓
Inspection, maintenance, environmental sampling, analysis and reporting (if applicable)					
Relevant sections from sampling and analysis quality plan	NA	NA	NA	NA	NA
Data quality objectives					
Basis for assessment criteria					
Sampling and analysis plan and sampling methodology, identifying sampling locations and media					
Quality assurance/quality control					
Frequency of monitoring					
Outline triggers for responses or reassessment arising from the environmental sampling, analysis and reporting, and required actions					
Outline provision for maintenance of existing sampling points and their replacement if necessary					
Integrity inspection or testing or maintenance inspection program and frequency (if applicable) (for example where capping exists)					
Monitor and review of environmental management plan					
Schedule for environmental management plan review	NA	NA	NA	NA	NA
Monitoring checklist					
Description of corrective actions and triggers for these actions					
Notification to the regulator and/or consent authority with request to amend or end management activities (if applicable)					
Communications and notifications					
List of stakeholders	NA	NA	NA	NA	NA

Outline details for how affected stakeholders, including potential purchasers will be notified of the existing/residual contamination and the environmental management plan	✓	Section 3	NA	NA	✓
How the environmental management plan is communicated and made enforceable, including any financial assurance requirements	✓	Section 2	Financial assurance was not discussed, however it is not required.	NA	✓
Outline details for informing stakeholders of changes to activities and/or responsible parties	✓	Section 3	No further action is required.	NA	✓

Notes

NA	Not applicable
✓	Information presented as per NSW EPA (2020) checklist
x	Information not presented as per NSW EPA (2020) checklist

ERM

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Adam Speers
Viva Energy Australia Pty Ltd
Via Email

1 April 2022

Reference: 0561882_L17

Dear Adam,

Subject: Clyde Western Area Remediation Project – Response to Auditor Review of Stage 2 Ambient Air Quality Summary Report and Stage 2 Remediation Phase Groundwater Monitoring Reports

1. INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by Viva Energy Australia Pty Ltd (Viva Energy) to prepare an Ambient Air Quality Summary (AAQS) for Stage 2 of the Clyde Western Area Remediation Project (WARP), and to undertake groundwater monitoring requirements throughout the execution of Stage 2 of the WARP within the Clyde Terminal, located at Devon Street, Rosehill, NSW, 2142 (the Site).

The following compliance reports for groundwater and air quality monitoring undertaken during the execution of Stage 2 remediation works were provided to the Site Auditor for review in the context of demonstrating compliance with the Development Consent for the Project (SSD 9302):

- ERM (2021a) *Clyde Western Area Remediation Project - Stage 2 Groundwater Monitoring – Remediation Phase – Month 1*. November 2021.
- ERM (2021b) *Clyde Western Area Remediation Project - Stage 2 Groundwater Monitoring – Remediation Phase – Month 2*. December 2021.
- ERM (2022) *Clyde Western Area Remediation Project - Stage 2 Remediation – Ambient Air Quality Summary*. February 2022.

The Site Auditor requested clarifications to items within these reports via email (dated 28th March 2022) to assist with the completion of the site audit process for portions of the Stage 2 Area. These comments and ERM clarifications are provided in the following sections.

2. SITE AUDITOR COMMENTS AND ERM RESPONSES

2.1 Remediation Phase Groundwater Monitoring

Auditor Comment (ERM 2021a, Table 4-2):

Clarify why the GME in the week of 4th October was not completed. Lines of evidence supporting why this issue did not affect the Consent Condition requirements should be presented.

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Environmental Resources Management Australia Pty Ltd
Level 15, 309 Kent Street
Sydney NSW 2000 Australia

ABN: 12 002 773 248
ACN: 002 773 248

Offices worldwide

A member of the
ERM Group

ERM Response:

Consent condition requirements relevant to weekly groundwater monitoring are *B22 (b) implement a program to monitor groundwater levels and quality during remediation works.*

Groundwater gauging works were not completed during the week of 4-10 October 2022. During this period, remediation areas AEC-3a and AEC-3b were subject to excavation works. No remediation works were undertaken within AEC-3d and AEC-3e during the week of 4 October, which is noted to lower the probability of remediation works throughout the monitoring network having short-term adverse effects on Site groundwater and Duck River.

Given the low permeability clay soils, lack of LNAPL mobilisation identified in localised near-excavation wells prior to and following this period, the lack of gauging data collected within this weekly period is not considered to be material in the context of assessing potential short term risks to sensitive receptors (i.e. the Duck River).

Given the above points, groundwater gauging not being completed within the week commencing 4 October 2021 is a minor deviation from the GWMP requirements and not considered to affect the overarching consent condition requirements (monitoring short term adverse changes from remediation works, assessing whether contingency actions are required to prevent harm to offsite receptors).

Auditor Comment (ERM 2021b, Table 4-2):

Clarify why the GME in the week of 8th November was not completed. Lines of evidence supporting why this issue did not affect the Consent Condition requirements should be presented.

ERM Response:

Field works were unable to be completed during the week of 8-14 November 2022 due to inclement weather and therefore groundwater gauging was undertaken early during the following week (15 November, 2022).

During this period, remediation works were limited to excavation of AEC-3e and a period of 11 days between monitoring events. No remediation works were undertaken within other areas, which is noted to further decrease the potential of remediation works having observable short-term adverse effects on localised groundwater and the Duck River.

Given the low permeability clay soils known to inhibit migration of contaminants in groundwater at the Site, lack of LNAPL mobilisation identified in localised near-excavation wells prior to and following this period, the lack of gauging data collected within this weekly period is not considered to be material in the context of assessing potential short term risks to sensitive receptors (i.e. the Duck River).

Given the above points, groundwater gauging not being completed within the week commencing 8 November 2021 is a minor deviation from the GWMP requirements and not considered to affect the overarching consent condition requirements (monitoring short term adverse changes from remediation works, assessing whether contingency actions are required to prevent harm to offsite receptors).

2.2 Ambient Air Quality Monitoring

Auditor Comment (ERM 2022, Section 3.1.2):

The discussion of naphthalene LORs being greater than the screening criteria should be presented, with supporting lines of evidence as to why this issue did not affect the results discussed in the report.

ERM Response:

The Laboratory Limit of Reporting (LOR) for naphthalene was reported marginally above the nominated screening criterion (maximum 22µg/m^3 versus screening criterion of 18µg/m^3).

This screening criterion has been calculated through dividing the 1 hour averaged odour-based criterion of 440 µg/m^3 by 24, to obtain a theoretical lower bound 24 hour average criterion that would implicitly demonstrate compliance with the 1 hour criterion. This reflects a simplistic assumption that all naphthalene within the sample is collected during a single hour of the 24-hour sampling period, with no naphthalene present during other hours. For diffuse, ground-based emission sources such as stockpiles and excavations, this assumption is conservative.

It is also noted that naphthalene was also below the LOR (17 to 22µg/m^3) at all EC00 (at-source) samples during all rounds of monitoring. Notably, reported concentrations of <17µg/m^3 were reported at near source during excavation of AEC-3d, where naphthalene in groundwater and soil vapour was a key contaminant of concern. When source-receptor attenuation is accounted for, this indicates that boundary impacts marginally lower than the LOR (e.g. at the screening criterion) are unlikely.

Given these factors, the reported LORs for naphthalene in boundary samples are not considered likely to exceed criteria and are consistent with compliance with the 1 hour average naphthalene criterion.

Auditor Comment (ERM 2022, Section 3.2.5):

The rationale for the selection of AS01 should be presented. In addition, the AS01 location is not shown in the AAQ report.

ERM Response:

Table 3.7 in Section 3.2.5 refers to AS01 – 03, which should in fact refer to all four boundary locations as per the Evacuated Canister 'EC' nomenclature for the sample average and maximum (EC01, EC02, EC03 and EC04). It is noted that these locations also correspond with Ambient Sampling 'AS' locations AS01 - AS04. The data presented within this table is correct for Evacuated Canister Sampling undertaken.

The location of these boundary monitoring locations were selected to provide representative ambient air samples at site boundaries. The canisters were placed on the northern, eastern, southern and western boundaries to detect potential air toxics sourced from excavation areas in proximity to receptors, capturing a potential range of wind directions over a 24 hour monitoring period. These locations are consistent with those proposed within the Stage 2 AEVR.

The selection of these boundary monitoring locations for comparison against background concentrations in urban air is to provide context to background detections of toluene reported.

The location of sampling locations EC01-EC04 are shown on Figure 3-2.

2.3 General Comment

Auditor Comment (General):

During the preparation of the SAR, the following issue was raised in relation to drainage:

- *After July 2020, does general drainage flow south?*

ERM Response:

General drainage flow on the Stage 2 Area is towards the South (via overland flow) post decommissioning of the subsurface drainage network.

3. CLOSING

We hope that this letter addresses the Site Auditor requirements. Please do not hesitate to contact the undersigned should you have any questions.

Yours sincerely,
Environmental Resources Management Australia Pty Ltd

Joshua Panton
Senior Environmental Consultant

Stephen Mulligan
Project Manager

Attachment:
Statement of Limitations

STATEMENT OF LIMITATIONS

This report was prepared in accordance with the scope of work outlined within this report and subject to the applicable cost, time and other constraints. ERM performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental profession. ERM makes no warranty concerning the suitability of the Site for any purpose or the permissibility of any use, development or re-development of the Site. Except as otherwise stated, ERM's assessment is limited strictly to identifying specified environmental conditions associated with the subject Site and does not evaluate structural conditions of any buildings on the subject Site. Lack of identification in the report of any hazardous or toxic materials on the subject Site should not be interpreted as a guarantee that such materials do not exist on the Site.

This assessment is based on Site inspection conducted by ERM personnel, sampling and analyses described in the report, and information provided by Viva Energy Australia Pty Ltd ("Viva Energy" or "the client") or other people with knowledge of the Site conditions. All conclusions and recommendations made in the report are the professional opinions of the ERM personnel involved with the project and, while normal checking of the accuracy of data has been conducted, ERM assumes no responsibility or liability for errors in data obtained from such sources, regulatory agencies or any other external sources, nor from occurrences outside the scope of this project.

ERM is not engaged in environmental consulting and reporting for the purpose of advertising, sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity or investment purposes.

Nothing in this section or in this report in any way affects, limits or qualifies ERM's obligations and liabilities, or Viva Energy's rights and benefits under the agreement entitled Global Framework Agreement for the procurement of services (and related goods) (RET/10/0313/GLES) between Viva Energy Australia Pty Ltd and ERM (as amended, varied, supplemented, novated or replaced).

ERM PREPARED THIS REPORT FOR THE SOLE AND EXCLUSIVE BENEFIT AND USE OF VIVA ENERGY. NOTWITHSTANDING DELIVERY OF THIS REPORT BY ERM OR VIVA ENERGY TO ANY THIRD PARTY, UNLESS OTHERWISE EXPRESSLY AGREED, ANY COPY OF THIS REPORT PROVIDED TO A THIRD PARTY IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY, WITHOUT THE RIGHT TO RELY AND ERM DISCLAIMS ALL LIABILITY TO SUCH THIRD PARTY TO THE EXTENT PERMITTED BY LAW. ANY USE OF THIS REPORT BY A THIRD PARTY IS DEEMED TO CONSTITUTE ACCEPTANCE OF THIS LIMITATION.

From: Stephen Mulligan
To: Daniela Balbachevsky
Cc: Adam Speers (InTouch); Andrew Kohlrusch; Peter Lavelle; Joshua Panton
Subject: RE: Clyde - AA3 Validation Report Edits
Date: Thursday, 9 June 2022 6:26:20 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png
TestResult-P201733-5 RP.pdf

Hi Andrew and Daniela,

I have checked tracking documents and imported material volumes within the tracking register and Table 6-4 (Table 6-7 in final version) and also liased with Enviropacific on this. I can confirm volumes of imported Clay VENM which was tracked as being imported to backfill these excavations are 15,040 tonnes as per the Validation report.

Reasoning behind the discrepancy between in-situ surveyed cut volumes from excavations AEC-14A, AEC-3A and AEC-3B are as follows:

- Placed compacted VENM within AEC-14A, AEC-3A and AEC-3B had reported field wet densities of approximately 2.14 T/m3 as determined per the attached geotechnical report.
- The backfill volume for all excavations is greater than their respective cut volume shown in survey drawings and reported within the Validation Report. Excavations were crowned 300-500mm proud of the original surface level to mitigate pooling of water on the backfilled surfaces and to tie-in to existing ground level at the varying elevations, in particular AEC-3A and AEC-3B. This crowning volume has not been captured on the "excavation extent" survey data, which only captured the respective excavation's cut prior to fill. I've included a photo of AEC-3A/B from the western ground level for reference.
- After a number of rain events during the backfilling of AEC-3A/B, Enviropacific had to strip out layers of backfill that were too wet to reach suitable compaction. This material was stockpiled to dry out on the concrete pad south of AEC-3B and ultimately was used within the biopiling area to secure down the tarps for the Stage 2 biopiles. At the time of import would have been allocated to AEC-3A and AEC-3B in the Imported Materials Register and accounts for additional material.

A breakdown of tonnage is provided below for volume reconciliation purposes.

Excavation	Area m2	depth (m)	m3	Wet field density	Imported material tonnage (estimated)	Comments
AEC-14A (cut)	-	-	116	2.14	248	Assumes wet density of clay of 2.14 as per geotech report
AEC-3A (cut)	-	-	3273	2.14	7004	Assumes wet density of clay of 2.14 as per geotech report
AEC-3B (cut)	-	-	980	2.14	2097	Assumes wet density of clay of 2.14 as per geotech report
AEC-14A (mound)	69.24	0.4	28	2.14	59	Assumes wet density of clay of 2.14 as per geotech report, 0.4m average mounding height
AEC-3A (mound)	1791.44	0.4	717	2.14	1533	Assumes wet density of clay of 2.14 as per geotech report, 0.4m average mounding height
AEC-3B (mound)	910.14	0.4	364	2.14	779	Assumes wet density of clay of 2.14 as per geotech report, 0.4m average mounding height
TOTAL (tonnes)					**11721**	
Geotechnically unsuitable material removed and replaced (estimated)			1551	2.14	3319	
BACKFILL TOTAL for AA3 Excavations- in tracking Sheet					15040	

Let me know if you need anything further on this.

Kind regards
Steve

Stephen Mulligan
Principal Environmental Consultant / Team Leader

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From: Stephen Mulligan
Sent: Thursday, June 9, 2022 12:04 PM
To: Daniela Balbachevsky <Daniela.Balbachevsky@ghd.com>
Cc: Speers, Adam C <Adam.Speers@vivaenergy.com.au>; Andrew Kohlrusch <Andrew.Kohlrusch@ghd.com>
Subject: RE: Clyde - AA3 Validation Report Edits

Hi Daniela,

I can confirm the LTEMP dated 30th May 2022 is the latest version.

Version of final report with Tables and figures (no changes were made):
https://theermgroup-my.sharepoint.com/:b:/g/personal/stephen_mulligan_erm_com/ETMpNrSfnqxBgnAYYpvpO6kB9Na3oksLF5c6mJqb3D5csg?e=O3yHio

We will come back to you later this afternoon or tomorrow morning with regards to the imported material volume query.

Stephen Mulligan
Principal Environmental Consultant / Team Leader

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From: Daniela Balbachevsky <Daniela.Balbachevsky@ghd.com>
Sent: Thursday, June 9, 2022 10:57 AM
To: Stephen Mulligan <Stephen.Mulligan@erm.com>
Cc: Speers, Adam C <Adam.Speers@vivaenergy.com.au>; Andrew Kohlrusch <Andrew.Kohlrusch@ghd.com>
Subject: RE: Clyde - AA3 Validation Report Edits
Importance: High

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Stephen,

Could you please send the final version of the report with all figures and tables, as we need to have a complete final version for audit purposes.

I would like to double-check whether the figures in the Validation report did not change and whether the LTEMP issued on 30 May 2022 is still the last version.

During the cross-checking between appendices and the information reported, we noticed a difference between the volume of material excavated from AEC-3a (3,273 m3), AEC-3b (980 m3) and AEC-14a (116 m3), totalising 4,369 m3 or applying a density factor of 1.6 = **6,991 tonnes** and the volume of VENM reported to backfilling these areas (Table 6-4) **15,04 tonnes**.

Can ERM please confirm the volume presented in Table 6-4 or provide a rationale for the difference?

Please do not hesitate to contact me or Andrew if you have any queries.

Kind regards,

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Appendix C

Tables

Appendix C-1 Tables from AA3 Validation report

COPC	Soil									
	Direct Contact (mg/kg)			VI (mg/kg)						Management Limits (mg/kg)
	Commercial	IMW	Construction	Commercial (0.15mbgl)	Commercial (1 mbgl)	Commercial (>2-4mbgl)	Commercial (>4mbgl)	IMW	Construction	
Benzene	400	15000	1200	3.2	3.2	3.2	3.2	NL	NL	-
Naphthalene	9800	810000	67000	NL	NL	NL	NL	NL	NL	-
Benzo(a)pyrene TEQ	40	3000	200	-	-	-	-	-	-	-
Total Chromium[a]	21000	100,000	8200							
Chromium VI	3600	17000	1400	-	-	-	-	-	-	-
TRH C6-C10 (less BTEX)	28000	830000	69000	600	770	NL	NL	NL	NL	-
TRH C6-C10	-	-	-	-	-	-	-	-	-	700
TRH C10-C16 (less N)	17000	540000	45000	NL	NL	NL	NL	NL	NL	-
TRH C10-C16	-	-	-	-	-	-	-	-	-	1000
TRH C16-C34	27000	770000	64000	-	-	-	-	-	-	3500
TRH C34-C40	27000	770000	64000	-	-	-	-	-	-	10000
TPH (EC5-6) aliphatic	1200000	3700000	310000	-	-	-	-	-	-	-
TPH (>EC6-8) aliphatic	1200000	3700000	310000	480	610	880	1400	NL	NL	-
TPH (>EC8-10) aliphatic	24000	740000	62000	760	980	1400	2200	NL	NL	-
TPH (>EC10-12) aliphatic	24000	740000	62000	430	600	980	1800	NL	NL	-
TPH (>EC12-16) aliphatic	24000	740000	62000	4300	8300	17000	33000	NL	NL	-
TPH (>EC16-21) aliphatic	470000	4400000	370000	-	-	-	-	-	-	-
TPH (>EC21-34) aliphatic	470000	4400000	370000	-	-	-	-	-	-	-
TPH (>34) aliphatic	4700000	44000000	3700000	-	-	-	-	-	-	-
TPH (>EC8-10) aromatic	9500	300000	25000	110	150	230	420	NL	NL	-
TPH (>EC10-12) aromatic	9500	300000	25000	280	430	750	1400	NL	NL	-
TPH (>EC12-16) aromatic	9500	300000	25000	430	2800	5100	9800	NL	NL	-
TPH (>EC16-21) aromatic	7100	220000	18000	-	-	-	-	-	-	-
TPH (>EC21-34) aromatic	7100	220000	18000	-	-	-	-	-	-	-
TPH (>34) aromatic	7100	220000	18000	-	-	-	-	-	-	-
Trimethylbenzene, 1,2,4-										
Trimethylbenzene, 1,3,5-										
Cyclohexane										
Heptane, N-										
Hexane, N-										
Isooctane										
Propene										

a - Assumes Total chromium is 17% Hexavalent chromium

					Asbestos															BTEX							Naphthalene	TRH NEPM (1999)						TRH NEPM (2013)						
					FA- Comment	ACM - Comment	Asbestos Detected	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	AF - Comment	Mass ACM	Mass AF	Mass Asbestos in ACM	Mass Asbestos in FA & AF	Mass of test sample for extraction	Mass asbestos in AF	Mass Asbestos in FA	Mass FA	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction
					Comment	Comment	Comment	%w/w	%w/w	Comment	g	g	g	g	g	g	g	g	Comment	COMMENT	COMMENT	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL																							0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5	10	20	20	50	50	50	20	20	50	50	100	100	100
Clyde WARP SSTL (Direct Contact - Commercial)																							400							9800								28000		17000	27000		27000
Clyde WARP SSTL (Direct Contact - Construction Worker)																							1200							67000								69000		45000	64000		64000
Clyde WARP SSTL (Direct Contact - IMW)																							15000							810000								830000		540000	770000		770000
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																											
0-0.99m																							3.2							NL								600		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																											
1-1.99m																							3.2							NL								770		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																											
2-3.99m																							3.2							NL								NL		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																																											
4-6m																							3.2							NL								NL		NL			
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)																							NL							NL								NL		NL			
Clyde WARP SSTL (Vapour Intrusion - IMW)																							NL							NL								NL		NL			
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																																					700		1000		3500		10000
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**	**Location_Code**	**Sample_Depth_Avg**																																							
TP21/98_0.4	3/09/2021	822144	TP21/98	0.4	ND	ND	ND	0	0	ND	0	0	0	0	813	0	0	0	Detected	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
TP21/98_1	3/09/2021	822144	TP21/98	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
TP21/99_0.5	3/09/2021	822144	TP21/99	0.5	ND	ND	ND	0	0	ND	0	0	0	0	684	0	0	0	Detected	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
TP21/99_1.5	3/09/2021	822144	TP21/99	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
Statistical Summary																																											
Number of Results					2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	4	4	4	4	4	4	0	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detects					0	0	0	2	2	0	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					0	0	0	0	0	0	0	0	0	0	684	0	0	0	99999	0	0	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	99999	<0.5	99999	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	684	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					0	0	0	0	0	0	0	0	0	0	813	0	0	0	0	0	0	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	0	<0.5	0	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	813	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																						0.05	0.05	0.05	0.05	0.1	0.15		0.25		10	10	25	25	25	10	10	25	25	50	50	50
Median Concentration					0	0	0	0	0	0	0	0	0	0	749	0	0	0		0	0	0.05	0.05	0.05	0.05	0.1	0.15		0.25		10	10	25	25	25	10	10	25	25	50	50	50
Standard Deviation																						0	0	0	0	0	0		0		0	0	0	0	0	0	0	0	0	0	0	0
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

					Inorganics	Metals								PAH/Phenols																			
					Moisture Content (dried @ 103°C)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					1	2	0.4	5	5	5	0.1	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)								21000													40												
Clyde WARP SSTL (Direct Contact - Construction Worker)								8200													200												
Clyde WARP SSTL (Direct Contact - IMW)								100000													3000												
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																	
0-0.99m																																	
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																	
1-1.99m																																	
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																	
2-3.99m																																	
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																																	
4-6m																																	
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)																																	
Clyde WARP SSTL (Vapour Intrusion - IMW)																																	
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																																	
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**	**Location_Code**	**Sample_Depth_Avg**																													
TP21/98_0.4	3/09/2021	822144	TP21/98	0.4	17	9	<0.4	23	23	21	<0.1	6	15	<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	<0.5	<0.5	<0.5
TP21/98_1	3/09/2021	822144	TP21/98	1	5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21/99_0.5	3/09/2021	822144	TP21/99	0.5	14	<2	<0.4	<5	<5	<5	<0.1	<5	<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	<0.5	<0.5	<0.5
TP21/99_1.5	3/09/2021	822144	TP21/99	1.5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																	
Number of Results					4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of Detects					4	1	0	1	1	1	0	1	1	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					5.9	<2	<0.4	<5	<5	<5	<0.1	<5	<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	<0.5	<0.5	<0.5
Minimum Detect					5.9	9	ND	23	23	21	ND	6	15	ND	ND	ND	ND	ND	ND	1.2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					17	9	<0.4	23	23	21	<0.1	6	15	<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	<0.5	<0.5	<0.5
Maximum Detect					17	9	ND	23	23	21	ND	6	15	ND	ND	ND	ND	ND	ND	1.2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration					12																												
Median Concentration					12.5	5	0.2	12.75	12.75	11.75	0.05	4.25	8.75	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation					4.7																												
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	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	0	0	0	0	0	0	0	0

					TRH Silica Gel Cleanup									BTEX							Naphthalene	TRH NEPM (1999)					TRH NEPM (2013)						
					TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction
					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					50	50	50	100	100	100	100	100	100	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5	20	20	50	50	50	20	20	50	50	100	100	100
Clyde WARP SSTL (Direct Contact - Commercial)														400							9800							28000		17000	27000		27000
Clyde WARP SSTL (Direct Contact - Construction Worker)														1200							67000							69000		45000	64000		64000
Clyde WARP SSTL (Direct Contact - IMW)														15000							810000							830000		540000	770000		770000
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																	
0-0.99m														3.2							NL							600		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																	
1-1.99m														3.2							NL							770		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																	
2-3.99m														3.2							NL							NL		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																																	
4-6m														3.2							NL							NL		NL			
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)														NL							NL							NL		NL			
Clyde WARP SSTL (Vapour Intrusion - IMW)														NL							NL							NL		NL			
NEPM (1999) Management Limits - Commercial/Industrial (coarse)							1000				3500		10000													700							
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**	**Location_Code**	**Sample_Depth_Avg**																													
14A-B-1-2.0	21/09/2021	826953	14A-B-1	2	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	33	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-B-2-2.0	21/09/2021	826953	14A-B-2	2	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-E-1-0.5	21/09/2021	826953	14A-E-1	0.5	-	1900	2300	3710	3800	1600	1400	210	140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	2.6 - 3.9	32	1500	2000	250	3750	160	160	2000	1996.1	1600	3740	140
14A-E-1-RV-0.5	7/10/2021	830751	14A-E-1-RV	0.5	-	200	240	390	410	190	170	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	46	460	340	130	930	120	120	500	500	370	870	<100
14A-E-1-1.5	21/09/2021	826953	14A-E-1	1.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-E-2-0.5	21/09/2021	826953	14A-E-2	0.5	-	410	430	540	430	130	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	37	350	140	<50	490	160	160	410	410	100	510	<100
14A-E-2-1.5	21/09/2021	826953	14A-E-2	1.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-N-0.5	21/09/2021	826953	14A-N	0.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-N-1.5	21/09/2021	826953	14A-N	1.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-S-0.5	21/09/2021	826953	14A-S	0.5	-	55	63	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	37	190	220	52	462	92	92	220	220	210	430	<100
14A-S-1.5	21/09/2021	826953	14A-S	1.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-W-1-0.5	21/09/2021	826953	14A-W-1	0.5	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	43	30	<50	<50	<50	110	110	<50	<50	<100	<100	<100
14A-W-1-1.5	21/09/2021	826953	14A-W-1	1.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
14A-W-2-0.5	21/09/2021	826953	14A-W-2	0.5	-	65	60	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	110	110	<50	<50	110	250	250	85	85	<100	<100	<100
14A-W-2-1.5	21/09/2021	826953	14A-W-2	1.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
DUP01_210921	21/09/2021	826953	14A-W-1	0.5	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
TRIP01_210921	21/09/2021	ES2134680	14A-W-1	0.5	<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	-	-	-	<10	<10	-	-	-	-	-
Statistical Summary																																	
Number of Results					1	8	8	8	8	8	8	8	8	17	17	17	17	17	17	1	17	17	16	16	16	16	17	17	16	16	16	16	16
Number of Detects					0	5	5	3	3	3	2	1	1	0	0	0	0	0	0	0	1	6	7	4	3	5	6	6	5	5	4	4	1
Minimum Concentration					<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5	<10	<20	<50	<50	<50	<10	<10	<50	<50	<100	<100	<100
Minimum Detect					ND	55	60	390	410	130	170	210	140	ND	ND	ND	ND	ND	ND	ND	2.6	32	30	140	52	110	92	92	85	85	100	430	140
Maximum Concentration					<50	1900	2300	3710	3800	1600	1400	210	140	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	3.9	110	1500	2000	250	3750	250	250	2000	1996.1	1600	3740	140
Maximum Detect					ND	1900	2300	3710	3800	1600	1400	210	140	ND	ND	ND	ND	ND	ND	ND	3.9	110	1500	2000	250	3750	250	250	2000	1996.1	1600	3740	140
Average Concentration						338	396	608	608	271	234	70	61	0.053	0.062	0.062	0.062	0.11	0.16		0.43	24	173	188	47	376	59	59	218	218	180	384	56
Median Concentration					25	60	61.5	50	50	50	50	50	50	0.05	0.05	0.05	0.05	0.1	0.15	0.1	0.25	10	10	25	25	25	10	10	25	25	50	50	50
Standard Deviation						645	783	1268	1301	539	473	57	32	0.012	0.049	0.049	0.049	0.036	0.024		0.73	26	379	492	60	936	76	76	498	497	388	926	23
Number of Guideline Exceedances					0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

					Inorganics	Metals								PAH/Phenols																		
					Moisture Content (dried @ 103°C)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					1	5	1	2	5	5	0.1	2	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)								21000													40											
Clyde WARP SSTL (Direct Contact - Construction Worker)								8200													200											
Clyde WARP SSTL (Direct Contact - IMW)								100000													3000											
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																
0-0.99m																																
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																
1-1.99m																																
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																
2-3.99m																																
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																																
4-6m																																
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)																																
Clyde WARP SSTL (Vapour Intrusion - IMW)																																
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																																
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**	**Location_Code**	**Sample_Depth_Avg**																												
14A-B-1-2.0	21/09/2021	826953	14A-B-1	2	18	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-B-2-2.0	21/09/2021	826953	14A-B-2	2	19	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-E-1-0.5	21/09/2021	826953	14A-E-1	0.5	19	-	-	-	-	-	-	-	-	2.2	0.7	1.2	0.6	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	4	<0.5	9.9	2.5	24.8
14A-E-1-RV-0.5	7/10/2021	830751	14A-E-1-RV	0.5	17	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-E-1-1.5	21/09/2021	826953	14A-E-1	1.5	23	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-E-2-0.5	21/09/2021	826953	14A-E-2	0.5	19	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-E-2-1.5	21/09/2021	826953	14A-E-2	1.5	17	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-N-0.5	21/09/2021	826953	14A-N	0.5	19	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-N-1.5	21/09/2021	826953	14A-N	1.5	18	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-S-0.5	21/09/2021	826953	14A-S	0.5	24	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7
14A-S-1.5	21/09/2021	826953	14A-S	1.5	16	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-W-1-0.5	21/09/2021	826953	14A-W-1	0.5	18	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-W-1-1.5	21/09/2021	826953	14A-W-1	1.5	15	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-W-2-0.5	21/09/2021	826953	14A-W-2	0.5	17	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
14A-W-2-1.5	21/09/2021	826953	14A-W-2	1.5	16	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
DUP01_210921	21/09/2021	826953	14A-W-1	0.5	18	-	-	-	-	-	-	-	-	<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	<0.5	<0.5
TRIP01_210921	21/09/2021	ES2134680	14A-W-1	0.5	19.2	9	<1	16	15	15	<0.1	2	10	<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	<0.5	<0.5
Statistical Summary																																
Number of Results					17	1	1	1	1	1	1	1	1	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Number of Detects					17	1	0	1	1	1	0	1	1	1	1	1	1	0	0	17	17	0	0	0	2	0	0	1	0	1	1	2
Minimum Concentration					15	9	<1	16	15	15	<0.1	2	10	<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	<0.5	<0.5
Minimum Detect					15	9	ND	16	15	15	ND	2	10	2.2	0.7	1.2	0.6	ND	ND	1.2	0.6	ND	ND	ND	0.7	ND	ND	4	ND	9.9	2.5	0.7
Maximum Concentration					24	9	<1	16	15	15	<0.1	2	10	2.2	0.7	1.2	0.6	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	4	<0.5	9.9	2.5	24.8
Maximum Detect					24	9	ND	16	15	15	ND	2	10	2.2	0.7	1.2	0.6	ND	ND	1.2	0.7	ND	ND	ND	1.1	ND	ND	4	ND	9.9	2.5	24.8
Average Concentration					18									0.36	0.28	0.31	0.27	0.25	0.25	1.2	0.61	0.25	0.25	0.25	0.33	0.25	0.25	0.47	0.25	0.82	0.38	1.7
Median Concentration					18	9	0.5	16	15	15	0.05	2	10	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation					2.3									0.47	0.11	0.23	0.085	0	0	0	0.024	0	0	0	0.23	0	0	0.91	0	2.3	0.55	5.9
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	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	0	0	0	0	0	0	0

							TRH Aliphatic/Aromatic Split													TRH Silica Gel Cleanup									BTEX							Naphthalene
							TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.1	10	10	10	10	10	10	0.1	1	10	10	10	10	50	50	50	100	100	100	100	100	100	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5
Clyde WARP SSTL (Direct Contact - Commercial)								1200000	24000	24000	24000	470000	470000		9500	9500	9500	7100	7100										400							9800
Clyde WARP SSTL (Direct Contact - Construction Worker)								310000	62000	62000	62000	370000	370000		25000	25000	25000	18000	18000										1200							67000
Clyde WARP SSTL (Direct Contact - IMW)								3700000	740000	740000	740000	4400000	4400000		300000	300000	300000	220000	220000										15000							810000
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																				
1-1.99m								610	980	600	8300				150	430	2800												3.2							NL
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																				
2-3.99m								880	1400	980	17000				230	750	5100												3.2							NL
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																				
0-0.99m								480	760	430	4300				110	280	430												3.2							NL
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)								NL	NL	NL	NL				NL	NL	NL												NL							NL
Clyde WARP SSTL (Vapour Intrusion - IMW)								NL	NL	NL	NL				NL	NL	NL	NL	NL										NL							NL
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																						1000				3500		10000								
Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Number	Location_Type																														
3A_A5_B_2.5	3A_A5_B	2.4-2.6	19/10/2021	Normal	834015	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	0.3	1.5	0.3	0.6	2.2	2.9	-	<0.5
3A_A5_E_1.5	3A_A5_E	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	0.1	0.7	0.2	0.4	1.4	1.7	-	<0.5
3A_A5_N_1.5	3A_A5_N	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	0.6	<0.1	2.5	2.5	-	1.3 - 1.6
3A_B5_B_2.5	3A_B5_B	2.4-2.6	19/10/2021	Normal	834015	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	1.1	0.1	0.3	0.7	1	-	<0.5
3A_B5_E_1.5	3A_B5_E	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_C2_B_2.0	3A_C2_B	1.9-2.1	19/10/2021	Normal	834015	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	<0.1	0.2	0.2	0.7	0.9	-	<0.5
3A_C2_N_0.5	3A_C2_N	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	200	571	620	510	420	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_C2_N_1.5	3A_C2_N	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
DUP10_211019	3A_C2_N	1.4-1.6	19/10/2021	Field_D	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
TRIP10_211019	3A_C2_N	1.5-1.5	19/10/2021	Interlab_D	ES2138456	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5
3A_C2_W_0.5	3A_C2_W	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_C2_W_1.5	3A_C2_W	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_D2_W_0.5	3A_D2_W	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_D2_W_1.5	3A_D2_W	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_E2_B_2.0	3A_E2_B	1.9-2.1	19/10/2021	Normal	834015	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_E2_S_1.5	3A_E2_S	1.4-1.6	21/10/2021	Normal	834154	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	280	470	460	220	180	<100	<100	<0.1	<0.1	0.1	<0.1	<0.2	<0.3	-	<0.5
3A_E2_W_0.5	3A_E2_W	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	130	<100	130	<100	<100	<0.1	0.2	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_E2_W_1.5	3A_E2_W	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_E3_S_1.5	3A_E3_S	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A_E5_S_1.5	3A_E5_S	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-A3-B-2.0	3A-A3-B	1.9-2.1	24/09/2021	Normal	827824	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 4.4
DUP04_210924	3A-A3-B	1.9-2.1	24/09/2021	Field_D	827824	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
TRIP04_210924	3A-A3-B	1.9-2.1	24/09/2021	Interlab_D	ES2135432	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	220	110	220	610	630	500	410	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1 - 0.7
3A-A3-N-0.5	3A-A3-N	0.4-0.6	24/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-A3-N-1.5	3A-A3-N	1.4-1.6	24/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-A3-W-0.5	3A-A3-W	0.4-0.6	24/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	290	310	290	310	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-A3-W-1.5	3A-A3-W	1.4-1.6	24/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-A4-B-3.5	3A-A4-B	3.4-3.6	27/09/2021	Normal	827824	Validation (base)	<0.1	22	11	<10	<10	<10	<10	<0.1	2.1	<10	<10	<10	<10	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	1	0.4	0.8	3.2	4	-	<0.5
3A-A4-N-1.0	3A-A4-N	0.9-1.1	27/09/2021	Normal	827824	Validation (wall)	<0.1	<10	<10	35	<10	<10	<10	<0.1	<1	<10	<10	<10	<10	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	0.2	0.6	0.4	2.9	3.4	-	<0.5
3A-A4-N-2.0	3A-A4-N	1.9-2.1	27/09/2021	Normal	827824	Validation (wall)	<0.1	<10	<10	<10	<10	<10	<10	<0.1	<1	<10	<10	<10	<10	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	1.1	0.4	1	3.6	4.6	-	<0.5
3A-A4-N-3.0	3A-A4-N	2.9-3.1	27/09/2021	Normal	827824	Validation (wall)	<0.1	<10	<10	<10	<10	<10	<10	<0.1	<1	<10	<10	<10	<10	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	1.6	0.7	1.7	6.4	8.1	-	<0.5

							TRH Aliphatic/Aromatic Split													TRH Silica Gel Cleanup									BTEX							Naphthalene
							TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.1	10	10	10	10	10	10	0.1	1	10	10	10	10	50	50	50	100	100	100	100	100	100	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5
Clyde WARP SSTL (Direct Contact - Commercial)								1200000	24000	24000	24000	470000	470000		9500	9500	9500	7100	7100										400							9800
Clyde WARP SSTL (Direct Contact - Construction Worker)								310000	62000	62000	62000	370000	370000		25000	25000	25000	18000	18000										1200							67000
Clyde WARP SSTL (Direct Contact - IMW)								3700000	740000	740000	740000	4400000	4400000		300000	300000	300000	220000	220000										15000							810000
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																				
1-1.99m								610	980	600	8300				150	430	2800												3.2							NL
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																				
2-3.99m								880	1400	980	17000				230	750	5100												3.2							NL
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																				
0-0.99m								480	760	430	4300				110	280	430												3.2							NL
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)								NL	NL	NL	NL				NL	NL	NL												NL							NL
Clyde WARP SSTL (Vapour Intrusion - IMW)								NL	NL	NL	NL				NL	NL	NL	NL	NL										NL							NL
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																						1000			3500		10000									
Field_ID	**Location_Code**	**Sample_Depth_Range**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**	**Location_Type**																														
3A-A5-E-0.5	3A-A5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-A5-N-0.5	3A-A5-N	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	210	330	210	330	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-B3-B-2.0	3A-B3-B	1.9-2.1	24/09/2021	Normal	827824	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-B3-W-0.5	3A-B3-W	0.4-0.6	24/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-B3-W-1.5	3A-B3-W	1.4-1.6	24/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-B4-B-2.0	3A-B4-B	1.9-2.1	28/09/2021	Normal	829163	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-B5-E-0.5	3A-B5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C3-B-2.0	3A-C3-B	1.9-2.1	27/09/2021	Normal	827824	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C3-W-0.5	3A-C3-W	0.4-0.6	27/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C3-W-1.5	3A-C3-W	1.4-1.6	27/09/2021	Normal	827824	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C4-B-2.0	3A-C4-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C5-B-2.0	3A-C5-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C5-E-0.5	3A-C5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-C5-E-1.5	3A-C5-E	1.4-1.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-D2-B-2.0	3A-D2-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
DUP06_211008	3A-D2-B	1.9-2.1	7/10/2021	Field_D	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
TRIP06_211008	3A-D2-B	1.9-2.1	8/10/2021	Interlab_D	ES2136477	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5
3A-D3-B-2.2	3A-D3-B	2.1-2.3	28/09/2021	Normal	829163	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
DUP05_210928	3A-D3-B	2.1-2.3	28/09/2021	Field_D	829163	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
TRIP05_210928	3A-D3-B	2.1-2.3	28/09/2021	Interlab_D	ES2135758	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5
3A-D4-B-2.0	3A-D4-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	0.2	0.2	0.5	0.2	1.1	1.3	-	<0.5
3A-D5-B-2.0	3A-D5-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-D5-E-0.5	3A-D5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	50	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-D5-E-1.5	3A-D5-E	1.4-1.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-E3-B-2.0	3A-E3-B	1.9-2.1	28/09/2021	Normal	829163	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-E4-B-2.5	3A-E4-B	2.4-2.6	7/10/2021	Normal	830751	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-E4-S-1.5	3A-E4-S	1.4-1.6	7/10/2021	Normal	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
DUP08_211008	3A-E4-S	1.4-1.6	7/10/2021	Field_D	830751	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
TRIP08_211008	3A-E4-S	1.4-1.6	8/10/2021	Interlab_D	ES2136477	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5
3A-E5-B-2.0	3A-E5-B	1.9-2.1	28/09/2021	Normal	829163	Validation (base)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-E5-E-0.5	3A-E5-E	0.4-0.6	28/09/2021	Normal	829163	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
3A-E5-E-1.5	3A-E5-E	1.4-1.6	28/09/2021	Normal	829163	Validation (wall)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5
Statistical Summary																																				
Number of Results							4	4	4	4	4	4	4	4	4	4	4	4	4	5	32	32	32	32	32	32	32	32	63	63	63	63	63	63	5	63
Number of Detects							0	1	1	1	0	0	0	0	1	0	0	0	0	1	3	4	5	6	5	6	0	0	7	9	11	9	10	10	0	3
Minimum Concentration							<0.1	<10	<10	<10	<10	<10	<10	<0.1	<1	<10	<10	<10	<10	<50	<50	<50	<50	<50	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5
Minimum Detect							ND	22	11	35	ND	ND	ND	ND	2.1	ND	ND	ND	ND	220	61	50	210	130	210	130	ND	ND	0.1	0.2	0.1	0.2	0.7	0.9	ND	1.3
Maximum Concentration							<0.1	22	11	35	<10	<10	<10	<0.1	2.1	<10	<10	<10	<10	220	250	280	610	630	510	420	<100	<100	0.4	1.6	0.7	1.7	6.4	8.1	<0.2	4.4
Maximum Detect							ND	22	11	35	ND	ND	ND	ND	2.1	ND	ND	ND	ND	220	250	280	610	630	510	420	ND	ND	0.4	1.6	0.7	1.7	6.4	8.1	ND	4.4
Average Concentration							0.05	9.3	6.5	13	5	5	5	0.05	0.9	5	5	5	5	64	36	45	106	115	96	96	50	50	0.074	0.18	0.12	0.15	0.49	0.62	0.1	0.31
Median Concentration							0.05	5	5	5	5	5	5	0.05	0.5	5	5	5	5	25	25	25	50	50	50	50	50	50	0.05	0.05	0.05	0.05	0.1	0.15	0.1	0.25
Standard Deviation							0	8.5	3	15	0	0	0	0	0.8	0	0	0	0	87	42	63	155	166	122	109	0	0	0.067	0.34	0.15	0.27	1.1	1.3	0	0.3
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	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	0	0	0	0	0	0	0	0	0

							TRH NEPM (2013)							Inorganics	PAH/Phenols																			
							TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	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							20	20	50	50	50	20	20	50	50	100	100	100	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)													28000		17000	27000		27000									40											
Clyde WARP SSTL (Direct Contact - Construction Worker)													69000		45000	64000		64000									200											
Clyde WARP SSTL (Direct Contact - IMW)													830000		540000	770000		770000									3000											
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																						
1-1.99m													770		NL																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																						
2-3.99m													NL		NL																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																						
0-0.99m													600		NL																							
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)													NL		NL																							
Clyde WARP SSTL (Vapour Intrusion - IMW)													NL		NL																							
NEPM (1999) Management Limits - Commercial/Industrial (coarse)												700		1000		3500		10000																				
Field_ID	**Location_Code**	**Sample_Depth_Range**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**	**Location_Type**																																
3A_A5_B_2.5	3A_A5_B	2.4-2.6	19/10/2021	Normal	834015	Validation (base)	35	<20	<50	<50	<50	39	34	<50	<50	<100	<100	<100	16	<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	0.6	<0.5	0.6
3A_A5_E_1.5	3A_A5_E	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	<20	46	130	110	286	23	20	<50	<50	220	220	<100	18	<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	<0.5	<0.5
3A_A5_N_1.5	3A_A5_N	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	370	140	<50	<50	140	450	450	65	63.7	<100	<100	<100	19	<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	<0.5	1.6
3A_B5_B_2.5	3A_B5_B	2.4-2.6	19/10/2021	Normal	834015	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19	<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	<0.5	<0.5
3A_B5_E_1.5	3A_B5_E	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	<20	23	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15	<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	<0.5	<0.5
3A_C2_B_2.0	3A_C2_B	1.9-2.1	19/10/2021	Normal	834015	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16	<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	<0.5	<0.5
3A_C2_N_0.5	3A_C2_N	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	<20	39	320	57	416	<20	<20	110	110	300	410	<100	10	<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	<0.5	<0.5
3A_C2_N_1.5	3A_C2_N	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	14	<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	<0.5	<0.5
DUP10_211019	3A_C2_N	1.4-1.6	19/10/2021	Field_D	834015	Validation (wall)	<20	<20	68	<50	68	<20	<20	<50	<50	<100	<100	<100	7.6	<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	<0.5	<0.5
TRIP10_211019	3A_C2_N	1.5-1.5	19/10/2021	Interlab_D	ES2138456	Validation (wall)	<10	-	-	-	-	<10	-	-	-	-	-	-	6.6	<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	<0.5	<0.5
3A_C2_W_0.5	3A_C2_W	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	<20	<20	81	81	162	<20	<20	<50	<50	140	140	<100	17	<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	<0.5	<0.5
3A_C2_W_1.5	3A_C2_W	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	130	87	190	<50	277	140	140	130	130	160	290	<100	14	<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	<0.5	<0.5
3A_D2_W_0.5	3A_D2_W	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	64	<20	<50	<50	<50	71	71	<50	<50	<100	<100	<100	13	<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	<0.5	<0.5
3A_D2_W_1.5	3A_D2_W	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	<20	<20	160	120	280	<20	<20	<50	<50	260	260	<100	15	<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	<0.5	<0.5
3A_E2_B_2.0	3A_E2_B	1.9-2.1	19/10/2021	Normal	834015	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	10	<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	<0.5	<0.5
3A_E2_S_1.5	3A_E2_S	1.4-1.6	21/10/2021	Normal	834154	Validation (wall)	<20	44	220	<50	264	<20	-	-	-	-	294	-	7.7	<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	0.7	<0.5	0.7
3A_E2_W_0.5	3A_E2_W	0.4-0.6	19/10/2021	Normal	834015	Validation (wall)	<20	23	290	210	523	<20	<20	<50	<50	440	550	110	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	2.1
3A_E2_W_1.5	3A_E2_W	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16	<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	<0.5	<0.5
3A_E3_S_1.5	3A_E3_S	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	32	<20	55	<50	55	36	36	<50	<50	<100	<100	<100	9.3	<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	<0.5	<0.5
3A_E5_S_1.5	3A_E5_S	1.4-1.6	19/10/2021	Normal	834015	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16	<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	<0.5	<0.5
3A-A3-B-2.0	3A-A3-B	1.9-2.1	24/09/2021	Normal	827824	Validation (base)	<20	<20	70	<50	70	<20	<20	<50	<50	<100	<100	<100	22	<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	0.7	<0.5	2.7	<0.5	3.4
DUP04_210924	3A-A3-B	1.9-2.1	24/09/2021	Field_D	827824	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	24	<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	1.2	<0.5	1.2
TRIP04_210924	3A-A3-B	1.9-2.1	24/09/2021	Interlab_D	ES2135432	Validation (base)	<10	-	-	-	-	<10	<10	-	-	-	-	-	15.1	<0.5	<0.5	1.3	1	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	1.1	<0.5	1	2.8	<0.5	12.2	2.2	22.3
3A-A3-N-0.5	3A-A3-N	0.4-0.6	24/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	30	<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	<0.5	<0.5
3A-A3-N-1.5	3A-A3-N	1.4-1.6	24/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	28	<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	<0.5	<0.5
3A-A3-W-0.5	3A-A3-W	0.4-0.6	24/09/2021	Normal	827824	Validation (wall)	<20	<20	81	<50	81	<20	<20	<50	<50	<100	<100	<100	25	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	3.3
3A-A3-W-1.5	3A-A3-W	1.4-1.6	24/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19	<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	<0.5	<0.5
3A-A4-B-3.5	3A-A4-B	3.4-3.6	27/09/2021	Normal	827824	Validation (base)	64	<20	<50	<50	<50	73	68	<50	<50	<100	<100	<100	17	<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	<0.5	<0.5
3A-A4-N-1.0	3A-A4-N	0.9-1.1	27/09/2021	Normal	827824	Validation (wall)	47	35	<50	<50	<50	60	56	<50	<50	<100	<100	<100	16	<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	<0.5	<0.5
3A-A4-N-2.0	3A-A4-N	1.9-2.1	27/09/2021	Normal	827824	Validation (wall)	34	<20	<50	<50	<50	41	35	<50	<50	<100	<100	<100	17	<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	<0.5	<0.5
3A-A4-N-3.0	3A-A4-N	2.9-3.1	27/09/2021	Normal	827824	Validation (wall)	99	<20	<50	<50	<50	120	110	<50	<50	<100	<100	<100	16	<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	<0.5	<0.5

							TRH NEPM (2013)							Inorganics	PAH/Phenols																			
						TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	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						20	20	50	50	50	20	20	50	50	100	100	100	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)												28000		17000	27000		27000									40											
Clyde WARP SSTL (Direct Contact - Construction Worker)												69000		45000	64000		64000									200											
Clyde WARP SSTL (Direct Contact - IMW)												830000		540000	770000		770000									3000											
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																					
1-1.99m												770		NL																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																					
2-3.99m												NL		NL																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																					
0-0.99m												600		NL																							
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)												NL		NL																							
Clyde WARP SSTL (Vapour Intrusion - IMW)												NL		NL																							
NEPM (1999) Management Limits - Commercial/Industrial (coarse)											700		1000		3500		10000																				
Field_ID	**Location_Code**	**Sample_Depth_Range**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**	**Location_Type**																															
3A-A5-E-0.5	3A-A5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	<20	<20	160	160	320	<20	<20	<50	<50	280	390	110	12	<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	<0.5
3A-A5-N-0.5	3A-A5-N	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	<20	42	660	690	1392	<20	<20	52	52	1200	1692	440	15	<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	<0.5
3A-B3-B-2.0	3A-B3-B	1.9-2.1	24/09/2021	Normal	827824	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15	<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	<0.5
3A-B3-W-0.5	3A-B3-W	0.4-0.6	24/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	23	<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	<0.5
3A-B3-W-1.5	3A-B3-W	1.4-1.6	24/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19	<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	<0.5
3A-B4-B-2.0	3A-B4-B	1.9-2.1	28/09/2021	Normal	829163	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16	<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	<0.5
3A-B5-E-0.5	3A-B5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	<20	<20	190	220	410	<20	<20	<50	<50	350	530	180	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
3A-C3-B-2.0	3A-C3-B	1.9-2.1	27/09/2021	Normal	827824	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	20	<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	<0.5
3A-C3-W-0.5	3A-C3-W	0.4-0.6	27/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	11	<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	<0.5
3A-C3-W-1.5	3A-C3-W	1.4-1.6	27/09/2021	Normal	827824	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17	<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	<0.5
3A-C4-B-2.0	3A-C4-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	21	<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	<0.5
3A-C5-B-2.0	3A-C5-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	20	<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	<0.5
3A-C5-E-0.5	3A-C5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	<20	<20	<50	87	87	<20	<20	<50	<50	100	100	<100	22	<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	<0.5
3A-C5-E-1.5	3A-C5-E	1.4-1.6	7/10/2021	Normal	830751	Validation (wall)	<20	31	75	<50	106	<20	<20	<50	<50	<100	<100	<100	20	<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	<0.5
3A-D2-B-2.0	3A-D2-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16	<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	<0.5
DUP06_211008	3A-D2-B	1.9-2.1	7/10/2021	Field_D	830751	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15	<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	<0.5
TRIP06_211008	3A-D2-B	1.9-2.1	8/10/2021	Interlab_D	ES2136477	Validation (base)	<10	-	-	-	-	<10	<10	-	-	-	-	-	13.6	<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	<0.5
3A-D3-B-2.2	3A-D3-B	2.1-2.3	28/09/2021	Normal	829163	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19	<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	<0.5
DUP05_210928	3A-D3-B	2.1-2.3	28/09/2021	Field_D	829163	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	20	<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	<0.5
TRIP05_210928	3A-D3-B	2.1-2.3	28/09/2021	Interlab_D	ES2135758	Validation (base)	<10	-	-	-	-	<10	<10	-	-	-	-	-	17.7	<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	<0.5
3A-D4-B-2.0	3A-D4-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	22	<20	<50	<50	<50	22	<20	<50	<50	<100	<100	<100	14	<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	<0.5
3A-D5-B-2.0	3A-D5-B	1.9-2.1	7/10/2021	Normal	830751	Validation (base)	49	120	250	<50	370	58	58	180	180	220	400	<100	13	<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	<0.5
3A-D5-E-0.5	3A-D5-E	0.4-0.6	7/10/2021	Normal	830751	Validation (wall)	<20	<20	57	<50	57	<20	<20	<50	<50	<100	<100	<100	19	<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	<0.5
3A-D5-E-1.5	3A-D5-E	1.4-1.6	7/10/2021	Normal	830751	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18	<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	<0.5
3A-E3-B-2.0	3A-E3-B	1.9-2.1	28/09/2021	Normal	829163	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16	<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	<0.5
3A-E4-B-2.5	3A-E4-B	2.4-2.6	7/10/2021	Normal	830751	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17	<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	<0.5
3A-E4-S-1.5	3A-E4-S	1.4-1.6	7/10/2021	Normal	830751	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	14	<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	<0.5
DUP08_211008	3A-E4-S	1.4-1.6	7/10/2021	Field_D	830751	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17	<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	<0.5
TRIP08_211008	3A-E4-S	1.4-1.6	8/10/2021	Interlab_D	ES2136477	Validation (wall)	<10	-	-	-	-	<10	<10	-	-	-	-	-	15.4	<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	<0.5
3A-E5-B-2.0	3A-E5-B	1.9-2.1	28/09/2021	Normal	829163	Validation (base)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	23	<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	<0.5
3A-E5-E-0.5	3A-E5-E	0.4-0.6	28/09/2021	Normal	829163	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	9.5	<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	<0.5
3A-E5-E-1.5	3A-E5-E	1.4-1.6	28/09/2021	Normal	829163	Validation (wall)	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	21	<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	<0.5
Statistical Summary																																					
Number of Results						63	58	58	58	58	63	61	57	57	57	58	57	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
Number of Detects						11	11	17	9	19	12	11	5	5	11	12	4	63	0	0	1	2	0	0	63	63	0	0	0	4	0	1	2	0	8	2	10
Minimum Concentration						<10	<20	<50	<50	<50	<10	<10	<50	<50	<100	<100	<100	6.6	<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	<0.5	<0.5
Minimum Detect						22	23	55	57	55	22	20	52	52	100	100	110	6.6	ND	ND	1.3	0.9	ND	ND	1.2	0.6	ND	ND	ND	0.6	ND	1	0.7	ND	0.5	1.3	0.5
Maximum Concentration						370	140	660	690	1392	450	450	180	180	1200	1692	440	30	<0.5	<0.5	1.3	1	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	1.1	<0.5	1	2.8	<0.5	12.2	2.2	22.3
Maximum Detect						370	140	660	690	1392	450	450	180	180	1200	1692	440	30	ND	ND	1.3	1	ND	ND	1.3	0.7	ND	ND	ND	1.1	ND	1	2.8	ND	12.2	2.2	22.3
Average Concentration						23	19	70	51	109	26	26	32	32	105	131	61	17	0.25	0.25	0.27	0.27	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.29	0.25	0.26	0.3	0.25	0.54	0.3	0.8
Median Concentration						10	10	25	25	25	10	10	25	25	50	50	50	16	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation						50	25	106	95	210	60	60	27	27	171	243	55	4.6	0	0	0.13	0.12	0	0	0.018	0.018	0	0	0	0.17	0	0.094	0.33	0	1.5	0.28	2.8
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	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	0	0	0	0	0	0	0	0	0	0	0

Sieved Asbestos %w/w Calculations

			Material Retained on Sieve		Material Passed through Sieve						
Sample ID	Lab Report	Sieve Date	% Asb Content	Bonded ACM Weight (g)	Weight of AF/FA (g)	Weight of Soil Sample (g)	Soil Volume (L)	Soil Density (kg/L)	%w/w Asb in Soil	Applicable Criteria (w/w)	Suitable for onsite use?
3B-F2-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F2-N-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F2-N-1.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F2-W-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F3-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F3-N-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F3-N-1.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F4-N-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F4-N-1.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F4-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F5-N-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F5-N-1.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F5-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F6-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F6-N-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F7-N-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F7-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-F7-E-0.2	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G2-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G2-S-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G2-W-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G3-S-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G3-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G4-S-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G4-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G5-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G5-S-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G6-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G6-S-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G7-B-1.0	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G7-S-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓
3B-G7-E-0.3	No lab analysis	6/10/2021	0	0	NR	NR	11	1.8	0.0000	0.050%	✓

Notes

ND = Not Detected above laboratory detection limits.

NR = Not Required.

nd = Not Detected above Laboratory detection limits; -- = Not Required due to No Detcection

					TRH Silica Gel Cleanup									Asbestos																		
					TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup	FA- Comment	ACM - Comment	Asbestos Detected	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Asbestos Sample Dimensions	AF - Comment	Mass ACM	Mass AF	Mass Asbestos in ACM	Mass Asbestos in FA & AF	Mass of test sample for extraction	Mass asbestos in AF	Mass Asbestos in FA	Mass FA	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment	Comment	Comment	%w/w	%w/w	Comment	Comment	g	g	g	g	g	g	g	g	Comment	COMMENT	COMMENT
EQL					50	50	50	100	100	100	100	100	100																		
Clyde WARP SSTL (Direct Contact - Commercial)							17000				27000		27000																		
Clyde WARP SSTL (Direct Contact - Construction Worker)							45000				64000		64000																		
Clyde WARP SSTL (Direct Contact - IMW)							540000				770000		770000																		
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																															
0-0.99m							NL																								
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																															
1-1.99m							NL																								
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																															
2-3.99m							NL																								
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																															
4-6m							NL																								
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)							NL																								
Clyde WARP SSTL (Vapour Intrusion - IMW)							NL																								
NEPM (1999) Management Limits - Commercial/Industrial (coarse)							1000				3500		10000																		
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**	**Location_Code**	**Sample_Depth_Avg**																											
DUPE13-20211026	26/10/2021	835430	SP100-TP2		-	<50	<50	<100	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP100-TP1	26/10/2021	835430	SP100-TP1		-	51	110	331	420	280	310	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP100-TP2	26/10/2021	835430	SP100-TP2		-	<50	<50	<100	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP100-TP3	26/10/2021	835430	SP100-TP3		-	<50	<50	<100	100	<100	100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP100-TP4	26/10/2021	835430	SP100-TP4		-	<50	57	130	200	130	140	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP100-TP5	26/10/2021	835430	SP100-TP5		-	<50	<50	110	180	<100	180	110	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP100-TP6	26/10/2021	835430	SP100-TP6		-	<50	<50	<100	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP10-TP2-ACM	26/10/2021	835430	SP100-TP2-ACM		-	-	-	-	-	-	-	-	-	ND	Chrysotile and Amosite	Detected	0	0	50x30x5mm	ND	0	0	0	0	18	0	0	0	ND	ND	ND
SP10-TP3-ACM	26/10/2021	835430	SP100-TP3-ACM		-	-	-	-	-	-	-	-	-	ND	Chrysotile and Amosite	Detected	0	0	40x25x5mm	ND	0	0	0	0	10	0	0	0	ND	ND	ND
SP10-TP4-ACM	26/10/2021	835430	SP100-TP4-ACM		-	-	-	-	-	-	-	-	-	ND	Chrysotile and Amosite	Detected	0	0	35x25x5	ND	0	0	0	0	10	0	0	0	ND	ND	ND
TRIP13-20211026	26/10/2021	ES2138851	SP100-TP2		<50	<50	<50	<50	<50	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																															
Number of Results					1	8	8	8	8	8	8	8	8	3	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Number of Detects					0	1	2	3	4	2	4	1	0	0	0	0	3	3	3	0	3	3	3	3	3	3	3	3	0	0	0
Minimum Concentration					<50	<50	<50	<50	<50	<100	<100	<100	<100	0	99999	99999	0	0	35	0	0	0	0	0	10	0	0	0	0	0	0
Minimum Detect					ND	51	57	110	100	130	100	110	ND	ND	ND	ND	ND	ND	35	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	ND
Maximum Concentration					<50	51	110	331	420	280	310	110	<100	0	0	0	0	0	50	0	0	0	0	0	18	0	0	0	0	0	0
Maximum Detect					ND	51	110	331	420	280	310	110	ND	ND	ND	ND	ND	ND	50	ND	ND	ND	ND	ND	18	ND	ND	ND	ND	ND	ND
Average Concentration						28	40	100	134	89	116	58	50	0			0	0	42	0	0	0	0	0	13	0	0	0	0	0	0
Median Concentration					25	25	25	50	75	50	75	50	50	0			0	0	40	0	0	0	0	0	10	0	0	0	0	0	0
Standard Deviation						9.2	31	100	132	82	93	21	0	0			0	0	7.6	0	0	0	0	0	4.6	0	0	0	0	0	0
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	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	0	0	0	0	0	0

Notes:
ND - not detected
"-" - not analysed

					BTEX							Naphthalene	TRH NEPM (1999)						RH NEPM (2013		Inorganics	PAH/Phenols																				
					Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH >C10-C40 Fraction	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5	10	20	20	50	50	50	20	100	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)					400							9800							28000										40												
Clyde WARP SSTL (Direct Contact - Construction Worker)					1200							67000							69000										200												
Clyde WARP SSTL (Direct Contact - IMW)					15000							810000							830000										3000												
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																									
0-0.99m					3.2							NL							600																						
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																									
1-1.99m					3.2							NL							770																						
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																									
2-3.99m					3.2							NL							NL																						
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																																									
4-6m					3.2							NL							NL																						
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)					NL							NL							NL																						
Clyde WARP SSTL (Vapour Intrusion - IMW)					NL							NL							NL																						
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			700																						
Field_ID	**Sampled_Date_Time**	**Lab_Report_Number**	**Location_Code**	**Sample_Depth_Avg**																																					
DUPE13-20211026	26/10/2021	835430	SP100-TP2		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	68	96	164	<20	160	12	<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	<0.5	<0.5	<0.5
SP100-TP1	26/10/2021	835430	SP100-TP1		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	210	180	390	<20	460	22	<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	<0.5	<0.5	<0.5
SP100-TP2	26/10/2021	835430	SP100-TP2		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	100	130	230	<20	200	8.8	<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	<0.5	<0.5	<0.5
SP100-TP3	26/10/2021	835430	SP100-TP3		<0.1	<0.1	<0.1	<0.1	0.5	0.5	-	<0.5	-	46	<20	170	130	300	48	300	11	<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	<0.5	<0.5	<0.5
SP100-TP4	26/10/2021	835430	SP100-TP4		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	24	190	130	344	<20	310	12	<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	<0.5	<0.5	<0.5
SP100-TP5	26/10/2021	835430	SP100-TP5		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	220	230	450	<20	570	9.9	<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	<0.5	<0.5	<0.5
SP100-TP6	26/10/2021	835430	SP100-TP6		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	110	130	240	<20	210	8	<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	<0.5	<0.5	<0.5
SP10-TP2-ACM	26/10/2021	835430	SP100-TP2-ACM		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP10-TP3-ACM	26/10/2021	835430	SP100-TP3-ACM		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP10-TP4-ACM	26/10/2021	835430	SP100-TP4-ACM		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP13-20211026	26/10/2021	ES2138851	SP100-TP2		<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	-	-	-	-	<10	-	10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																									
Number of Results					8	8	8	8	8	8	1	8	1	7	7	7	7	7	8	7	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects					0	0	0	0	1	1	0	0	0	1	1	7	7	7	1	7	8	0	0	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5	<10	<20	<20	68	96	164	<10	160	8	<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	<0.5	<0.5	<0.5
Minimum Detect					ND	ND	ND	ND	0.5	0.5	ND	ND	ND	46	24	68	96	164	48	160	8	ND	ND	ND	ND	ND	ND	1.2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					<0.2	<0.5	<0.5	<0.5	0.5	0.5	<0.2	<1	<10	46	24	220	230	450	48	570	22	<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	<0.5	<0.5	<0.5
Maximum Detect					ND	ND	ND	ND	0.5	0.5	ND	ND	ND	46	24	220	230	450	48	570	22	ND	ND	ND	ND	ND	ND	1.2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration					0.056	0.075	0.075	0.075	0.17	0.21		0.28		15	12	153	147	303	14	316	12	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Median Concentration					0.05	0.05	0.05	0.05	0.1	0.15	0.1	0.25	5	10	10	170	130	300	10	300	10.75	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation					0.018	0.071	0.071	0.071	0.14	0.12		0.088		14	5.3	60	44	100	14	150	4.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
ND - not detected
"-" - not analysed

Sieved Asbestos %w/w Calculations

				Material Retained on Sieve		Material Passed through Sieve								
Sample Location	**ACM Sample ID**	**Lab Report**	**Sieve Date**	**% Asb Content in ACM**	**Bonded ACM Weight (g)**	**Weight of AF/FA (g)**	**Weight of Soil Sample (g)**	**Soil Volume (L)**	**Soil Density (kg/L)**	**%w/w ACM in Soil**	**Applicable Criteria - ACM (%w/w)**	**%w/w AF+FA in Soil**	**Applicable Criteria - AF+FA (%w/w)**	**Suitable for onsite use?**
SP100-TP1	-	836967-AID	26/10/2021	NR	NR	ND	714	11	1.8	ND	0.05	ND	0.001%	✓
SP100-TP2	SP100-TP2-ACM	836967-AID	26/10/2021	15	18	ND	916	11	1.8	0.0136	0.05	ND	0.001%	✓
SP100-TP3	SP100-TP3-ACM	836967-AID	26/10/2021	15	10	ND	841	11	1.8	0.0076	0.05	ND	0.001%	✓
SP100-TP4	SP100-TP4-ACM	836967-AID	26/10/2021	15	10	ND	829	11	1.8	0.0076	0.05	ND	0.001%	✓
SP100-TP5	-	836967-AID	26/10/2021	NR	NR	ND	897	11	1.8	ND	0.05	ND	0.001%	✓
SP100-TP6	-	836967-AID	26/10/2021	NR	NR	ND	945	11	1.8	ND	0.05	ND	0.001%	✓

Notes
ND = Not Detected above laboratory detection limits.
NR = Not Required.

Pipe Details									Gas Testing - Upstream Pit (Pre-Cleaning)					Gas Testing - Downstream Pit (Pre-Cleaning)					Gas Testing - Upstream Pit (Post-Cleaning)					Gas Testing - Downstream Pit (Post-Cleaning)				
Pipe ID ("CDLD Area_Pipe Number")	Upstream Pit ID	Downstream Pit ID	Key Plan Area	x Co-Ords	Y Co-Ords	Date/time completed	Pipe Type	Other - Pipe Type	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%
15D150-1	NA	15D150-1	15	151.0331332	-33.8290307	2/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D150-2	15P2	15D150-2	15	151.0330957	-33.82903477	2/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D150-3	15P3	15D150-3	15	151.0329525	-33.82907609	2/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-10	P11	P10	15	151.0334628	-33.82916326	15/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-11	15-P12	15-P11	15	151.0334732	-33.82914952	15/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-12	15-P13	15-P12	15	151.0334611	-33.82910149	15/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-13	15-P14 (could not uncover- under stockpile of rubble)	15-P13	15	151.0335134	-33.82913237	15/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
15D300-9	NA	15-P11	15	151.0334486	-33.82917391	15/09/2020	other	PVC	NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	**0**	0	0	0	0
15D100-10	NA	15-P24	15	151.0339093	-33.829067	16/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
15D100-6a	NA	15-P25	15	151.0340289	-33.82913866	16/09/2020	steel		NA	NA	NA	NA	0	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
15D100-7	15-P26	15-P25	15	151.0340124	-33.82912416	16/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D150-4	NA	15P22	15	151.0335245	-33.82890703	16/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
15D150-5	15-P23	15-P24	15	151.0338876	-33.82905828	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D150-6	16-P7	15-P24	15	151.0339313	-33.82904348	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D150-7	NA	15-P25	15	151.0340242	-33.8291263	16/09/2020	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
15D300-14	15-P15 (unable to uncover pit under rubble)	15-P21	15	151.0333885	-33.8290136	16/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
15D300-15	18-P8	15-P21	15	151.0333847	-33.82899479	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D100-2a	16-P1	16-P4	16	151.0342978	-33.82928178	16/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-1	16P2	16P4	16	151.0343133	-33.82927587	16/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-3	16-P5	16-P4	16	151.0342641	-33.8292713	16/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D200-1	16-P8b	16-P8a	16	151.0341707	-33.82895405	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-1	16-P87	16-P8a	16	151.0341577	-33.82896075	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-1a	NA	16-P8a	16	151.0341667	-33.82895996	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-2	19-P1	16-P8a	16	151.0341719	-33.82894177	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-10	16-P13	16-P14	16	151.0344662	-33.82905736	17/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-4	16P6	16P5	16	151.0341064	-33.82925618	17/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-5	16-P8b	16-P10	16	151.0343756	-33.82897706	17/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-9	16-P12 (unable to locate)	16-P13	16	151.0344573	-33.82906549	17/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	0	0	0	0	0	0
16D230-1	16-P5	16-P7	16	151.0340807	-33.82911419	17/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-5	16-P8b	16-P10	16	151.0343756	-33.82897706	21/09/2020 0:28	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-11	16P14	16P10	16	151.0344468	-33.82897769	21/09/2020 0:28	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-3	16P21	16P20	16	151.0350384	-33.82977812	24/09/2020 5:39	concrete		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D380-1	NA (channel)	16P20	16	151.0350386	-33.82975989	24/09/2020 5:39	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11D300-1	11P2	15P29	15	151.0339967	-33.82975725	24/09/2020 5:39	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11D300-2	NA	15P29	15	151.0340053	-33.82973021	24/09/2020 5:39	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
15D300-20	15P29	15P30	15	151.0335645	-33.82963399	24/09/2020 5:39	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-22	NA	15P31	15	151.0334965	-33.82959518	24/09/2020 5:39	concrete		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
15D300-21	15-P31	15-P30	15	151.0335174	-33.82960666	24/09/2020 5:40	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D200-5	16P31	16P30	16	151.0341403	-33.82941141	24/09/2020 5:40	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D200-4	16P30	16P29	16	151.0342135	-33.82943882	24/09/2020 5:40	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D200-3	16P28	16P29	16	151.0343534	-33.82945633	24/09/2020 5:40	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-4	16P21	16P22	16	151.0347848	-33.82980624	24/09/2020 5:40	concrete		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19D300-1	19-P2	19-P3	19	151.0342795	-33.82868763	24/09/2020 5:40	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19D200-4	NA	19-P3	19	151.0342779	-33.82869153	24/09/2020 5:41	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D230-3	19P1a	16P17	16	151.0350338	-33.82908623	24/09/2020 5:41			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-a	NA (channel)	16P18	16	151.0351672	-33.82923526	24/09/2020 5:41	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-b	NA	16P18	16	151.0351766	-33.82923136	24/09/2020 5:41	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D230-5	16P19	16P20	16	151.0350203	-33.82975624	24/09/2020 5:41	concrete		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19D380-1	19-P2	19-P1	19	151.0341275	-33.82885447	25/09/2020 5:47	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18D380-6	18-P7	19-P1	19	151.0341516	-33.82886034	25/09/2020 5:47	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-26	16-P33 (unable to locate)	16-P31	16	151.0341411	-33.82887124	25/09/2020 5:47	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D230-4	NA (channel)	19P1a	19	151.0350608	-33.8289732	25/09/2020 5:48	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D150-2	9-P26	9-P27	9	151.032878	-33.83115057	28/09/2020 4:22	other	PVC	NA	MA	NA	NA	NA	0	0	0	0	0	NA	MA	NA	NA	NA	0	0	0	0	0
9D150-2a	NA	9-P27	9	151.0328668	-33.83114948	28/09/2020 4:22	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
9D230-2	9-P16	9-P17	9	151.0331387	-33.83094873	28/09/2020 5:26	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D230-3	9-P21	9-P170	9	151.0331563	-33.83097518	28/09/2020 5:26	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D230-1	9-P16	9-P15	9	151.0330491	-33.83088021	28/09/2020 5:26	steel		00	0	0	0	0	0	0	0	0	0	00	0	0	0	0	0	0	0	0	0
9D150-3	9-P29	9-P18	9	151.0331802	-33.83094341	29/09/2020 2:03	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D230-4	9-P18	9-P13	9	151.0331726	-33.83090435	29/09/2020 2:03	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D250-1	9-P5	9-P15	9	151.0330103	-33.83088541	29/09/2020 2:03	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D100-1	NA	9-P6	9	151.0330505	-33.83075855	29/09/2020 2:03	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
9D150-4	9-P30	9-P29	9	151.0331497	-33.8310595	29/09/2020 2:08	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D230-5	9-P14	9-P13 (unable to locate)	9	151.0334412	-33.83073625	29/09/2020 5:25	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D100-8	NA	9-P14	9	151.0336353	-33.830823	29/09/2020 5:25	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
9D150-8	9-P10 (does not appear to be a pit)	9-P9	9	151.0334241	-33.83077435	29/09/2020 5:25	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D150-9a	9-P12 (does not appear to be a pit)	9-P14	9	151.0336083	-33.83083361	29/09/2020 5:25	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
9D150-7	9-P9	9-P7	9	151.0334433	-33.83073709	29/09/2020 5:25	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D150-6	9-P8	9-P7	9	151.0334433	-33.83073709	29/09/2020 5:25	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12D150-3	NA	12-P5 (sewer man hole)	12	151.0338702	-33.83066651	2/10/2020 5:30	concrete		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12D150-1	NA	12-P4 (not a pit/ unable to locate pit)	12	151.0338149	-33.83157507	2/10/2020 5:30	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-a	15P38	15P37	15	151.0340478	-33.82895665	2/10/2020 5:30	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12D150-9	12-P9 (unable to locate)	12-P13	12	151.0351393	-33.83130228	2/10/2020 5:31	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
12D150-8	12-P12	12-P13	12	151.035167	-33.8312421	2/10/2020 5:31	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12D150-7	NA	12-P12	12	151.034838	-33.83137554	2/10/2020 5:31	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
12D230-2	NA	12-P10	12	151.0345695	-33.83141933	2/10/2020 5:31	concrete		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
12D230-1	NA	12-P10	12	151.0345747	-33.83143405	2/10/2020 5:31	concrete		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
9D460-6	10-P17	9-P4	9	151.0336699	-33.83059766	13/10/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-16	NA	15P28	15	151.0336967	-33.82902593	13/10/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
12D 460-1	12-P6	9-P4	12	151.0336261	-33.83061429	13/10/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D300-3	NA	12-P2	12	151.0338432	-33.83063056	13/10/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
11D460-2	NA	11-P5	15	151.0339776	-33.83023669	15/10/2020	concrete		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0

Pipe Details									Gas Testing - Upstream Pit (Pre-Cleaning)					Gas Testing - Downstream Pit (Pre-Cleaning)					Gas Testing - Upstream Pit (Post-Cleaning)					Gas Testing - Downstream Pit (Post-Cleaning)				
Pipe ID ("CDLD Area_Pipe Number")	Upstream Pit ID	Downstream Pit ID	Key Plan Area	x Co-Ords	Y Co-Ords	Date/time completed	Pipe Type	Other - Pipe Type	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%
15D230-2	15P9	15P10	15	151.031946	-33.82995144	4/09/2020	other	Could not uncover pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D100-10a	NA	15-P24	15	151.0339147	-33.82906322	16/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-2	NA	NA (neutralising	15	151.0336982	-33.82910262	16/09/2020	other	PVC	NA	NA	NA	NA	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-3	15-P17 (does not appear to be a pit - pipe put in clay)	15-P16 (shallow pit)	15	151.0336387	-33.82918174	16/09/2020	other	PVC	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-4	15-P16 (not a pit, but an inspection point)	NA (open neutralising pit)	15	151.0336657	-33.82907693	16/09/2020	other	PVC	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-5	15-P18 (inspection point, not a pit)	15-P19 (unable to uncover pit, concreted in)	15	151.0336365	-33.82902307	16/09/2020	other	Unable to locate pipe	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-6	NA	15-P19 (concreted in)	15	151.0341656	-33.82899164	16/09/2020	other	Unable to locate pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-7	15P20 (unable to uncover pit under rubble)	15P18 (inspection point, not a pit)	15	151.0336329	-33.82906373	16/09/2020	other	unable to locate pipe	NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-8	15-P15 (unable to locate pit)	15-P20 (unable to locate pit)	15	151.0334552	-33.82902995	16/09/2020	other	Unable to locate pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D100-1	NA	16P4	16	151.034273	-33.82926594	17/09/2020	other	Pipe does not exist	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-8	16P11	16P12 (unable to locate pit)	16	151.0344105	-33.82928581	17/09/2020	other	Unable to locate pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-14	16P17	16P18	16	151.0350787	-33.82923199	24/09/2020 5:39	concrete		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-a	NA(channel)	16P18	16	151.0351702	-33.82922994	24/09/2020 5:39	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15D300-18	NA	15P29	15	151.0339953	-33.82973868	24/09/2020 5:39	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D250-1	16P27 (under rubble stockpile)	16P26 (under rubble stockpile)	16	151.0344571	-33.82946748	24/09/2020 5:40	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D250-2	16P27 (under rubble stockpile)	16P28 (under rubble stockpile)	16	151.0343954	-33.82945939	24/09/2020 5:40	other	Unknown- unable to locate pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-17	NA	16P39	16	151.0348823	-33.82960386	24/09/2020 5:40	other	Unknown- unable to locate or does not exist	NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
19D200-5	19-P2	19-P3	19	151.0342519	-33.82871043	24/09/2020 5:40	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-18	16P35 (located under rubble stockpile)	16P34 (located under rubble stockpile)	16	151.0346492	-33.82945277	24/09/2020 5:41	other	Unknown- unable to locate pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D200-2	16P26 (located under rubble stockpile)	16P34 (located under rubble stockpile)	16	151.0346466	-33.8294542	24/09/2020 5:41	other	Unknown- unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D230-6	16P26 (under rubble stockpile)	16P25 (under rubble stockpile)	16	151.0346797	-33.8293402	24/09/2020 5:41	other	Unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D100-2	NA	16P24	16	151.0345212	-33.8293029	24/09/2020 5:41	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D150-15	16P25 (under rubble stockpile)	16P24	16	151.0345189	-33.82927906	24/09/2020 5:41	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D300-c	NA (channel)	16P18	16	151.0350773	-33.82922562	24/09/2020 5:41	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-2a	NA	19-P1	19	151.0339591	-33.82946752	25/09/2020 5:47	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D300-6	16P32 (unable to uncover)	16P30	16	151.0339591	-33.82946752	25/09/2020 5:47	other	Pipe does jot exist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-24	15P33	15P32	15	151.0335234	-33.82936648	25/09/2020 5:47	other	Unknown -pipe non existent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-23	NA	15P32	15	151.0335234	-33.82936648	25/09/2020 5:47	other	UNKNOWN -pipe does not exist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D230-1a	15P35	15P36	15	151.0335522	-33.82935282	25/09/2020 5:47	other	Unknown-pipe does not exist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D150-1	9-P23	9-P24	9	151.0329279	-33.83101994	28/09/2020 4:08	other	Unable to see pipe, appears to be concreted in	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D100-4	NA	9-P32 (not a drainage pit)	9	151.0331403	-33.8310849	29/09/2020 2:03	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D100-3	9-P32 (not a drainage pit)	9-P28 (not a drainage pit)	9	151.0331374	-33.83108456	29/09/2020 2:03	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D250-2	9-P2	9-P5	9	151.0329849	-33.83088574	29/09/2020 2:03	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D100-2	9-P20 (not a drainage pit)	9-P28 (not a drainage pit)	9	151.0331522	-33.83094186	29/09/2020 2:03	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D150-5	9-P31	9-P30	9	151.0334638	-33.83108293	29/09/2020 4:17	other	Pipe does not exist	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D230-6	NA	9-P14	9	151.0336256	-33.83083667	29/09/2020 5:25	other	Does not exist	Na	NA	NA	NA	NA	NA	NA	NA	NA	NA	Na	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D100-7	NA	9-P13 (inaccessible)	9	151.0335023	-33.83077959	29/09/2020 5:25	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D100-6	NA	9-P13 (inaccessible)	9	151.0334936	-33.83078168	29/09/2020 5:25	other	Unable to see pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D150-9	9-P12	9-P10 (does not appear to be a pit)	9	151.033526	-33.83079618	29/09/2020 5:25	terracotta		0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D300-1	NA	P-10a	9	151.0336546	-33.83082363	29/09/2020 5:35	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
20D100-2 through to 20D100-11 (entire network of tank farm pipes)	NA	NA	20	151.0345914	-33.82878025	30/09/2020 22:16	other	Unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20D200-4	NA	20-P1 (could not locate)	20	151.0345502	-33.82882128	30/09/2020 22:16	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12D300-1	NA	12-P1	12	151.033777	-33.83081047	2/10/2020 5:30	other	Nonexistent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-b	NA	15P37	15	151.0340452	-33.82895049	2/10/2020 5:31	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
12D150-2	NA	12-P4 (not a pit/ unable to locate)	12	151.0338251	-33.83157235	2/10/2020 5:31	other	Does not exist/ unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D150-10	NA	9-P5	9	151.0330303	-33.83059912	12/10/2020	other	Unknown, does not exist	NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D100-5	NA	NA	9	151.0331816	-33.83109462	12/10/2020	other	UNKNOWN- unable to locate pipe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12D150-5,6,10,11	NA	NA	12	151.0342005	-33.83064983	13/10/2020	other	Unknown - unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D300-19	NA	NA	15	151.0340998	-33.82972514	13/10/2020	other	UNKNOWN- unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D100-2	NA	16P24	16	151.034595	-33.82948466	13/10/2020	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-16,21,22	NA	NA	16	151.0346088	-33.82935268	13/10/2020	other	Unknown- unable to locate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-9	16P34 (under rubble stockpile)	16P37 (under rubble stockpile)	16	151.0346553	-33.82940192	21/10/2020	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-24	16P42	16P43	16	151.0348461	-33.82976144	24/09/2020 5:40	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-20	16P40	16P36	16	151.0348412	-33.82938697	24/09/2020 5:40	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D100-4	16P40	16P41	16	151.0349978	-33.82968202	24/09/2020 5:41	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D100-5	NA	16P41	16	151.0349963	-33.82968344	24/09/2020 5:41	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D100-3	NA	16P41	16	151.0350157	-33.82968336	24/09/2020 5:41	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9D100-9	NA	9-P33	9	151.0335931	-33.83114139	29/09/2020 4:20	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
9D300-2	9-P12 (- does not appear to be a pit)	NA	9	151.0336516	-33.83082271	29/09/2020 5:31	terracotta		NA	Na	NA	NA	NA	NA	NA	NA	NA	NA	NA	Na	NA	NA	NA	NA	NA	NA	NA	NA
15D100-4	15P7 (canno	15D100-4	15	151.0330859	-33.82914889	3/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D100-5	NA	15D100-5	15	151.0331798	-33.8292045	3/09/2020	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15D100-6	15-P27 (unable to uncover under stockpile)	15-P25	15	151.0340197	-33.82913707	16/09/2020	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D230-2	16-P7	15-P25	15	151.0340327	-33.82911532	16/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9D230-1a	NA	9-P15	9	151.0329481	-33.83089023	29/09/2020 2:03	concrete		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
15D300-1	NA	15-P6 (appear to be a very shallow pit)	15	151.0336086	-33.82919792	16/09/2020	other	PVC	NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-12	16-P14	16-P15	16	151.0345586	-33.82898917	17/09/2020	steel		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-13	16-P16	16-P15	16	151.0346115	-33.82899227	17/09/2020	steel		0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-6	16-P10	16-P9	16	151.0344151	-33.82904361	17/09/2020	terracotta		0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D150-7	16-P9	16-P8 (unable to locate)	16	151.0344151	-33.82906419	17/09/2020	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Pipe Details									Gas Testing - Upstream Pit (Pre-Cleaning)					Gas Testing - Downstream Pit (Pre-Cleaning)					Gas Testing - Upstream Pit (Post-Cleaning)					Gas Testing - Downstream Pit (Post-Cleaning)				
Pipe ID ("CDLD Area_Pipe Number")	Upstream Pit ID	Downstream Pit ID	Key Plan Area	x Co-Ords	Y Co-Ords	Date/time completed	Pipe Type	Other - Pipe Type	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%	VOC (ppm) - limit 100ppm	H2S (ppm) - limit 10ppm	CH4 (%) - record only	CO2 (%)	LEL (%) - limit 0.5%
16D150-7	16-P9	16-P8 (unable to	16	151.0344151	-33.82906419	21/09/2020 0:28	steel		NA	NA	NA	NA	NA	0	0	0	0	0	NA	NA	NA	NA	NA	0	0	0	0	0
16D150-23	16P40	16P42	16	151.0348578	-33.82975041	24/09/2020 5:41	terracotta		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D150-25	11P1 (unable to locate)	16P43	16	151.0341012	-33.82972749	13/10/2020	terracotta		NA	NA	NA	NA	NA	0	0	0	0	0	Na	NA	NA	NA	NA	NA	NA	NA	NA	NA
12D380-1	12-P7	12-P8	12	151.0348813	-33.83074036	13/10/2020	concrete		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16D300-5	16P22	16P23	16	151.0347875	-33.82979685	24/09/2020 5:40	concrete		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19D200-2	19-P4	19-P5	19	151.0345828	-33.82873172	24/09/2020 5:40	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20D200-1	20-P3	20-P4	20	151.0353008	-33.82787744	30/09/2020 22:16	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19D200-1	19-P7	19-P6	20	151.0351879	-33.8285521	30/09/2020 22:16	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20D100-1	NA	20-P2	20	151.034264	-33.82745754	30/09/2020 22:16	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20D200-3	20-P7	20-P8	20	151.0341866	-33.82794931	30/09/2020 22:16	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19D200-2	19-P4	19-P5	19	151.0345927	-33.8287927	30/09/2020 22:16	other	Unknown	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Stockpile ID	Location on Site (Remediation Stage)	Location on Site	Source	Backfill Location/ Destination	Dimensions		Est Volume (m3)	Material Description	Soil Sampling Required?	Existing Sample Numbers	Asbestos Present?	Asbestos comment	WARP - Suitable for re-use?	Report Reference
					Basal area (m2)	Average Height								
SP1	Stage 2	Tankfarm A3	AEC-9 Trial Excavation - biopiled material	ACTIVE	-	-	50	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2020) 0515132RP09_Clyde WARP RAP Stage 1_Draft_v2
SP2	Stage 2	Tankfarm A3	AEC-9 Trial Excavation - biopiled material	ACTIVE	-	-	50	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2020) 0515132RP09_Clyde WARP RAP Stage 1_Draft_v2
SP3	Stage 2	Tankfarm A3	AEC-9 Trial Excavation - landfarmed material	ACTIVE	-	-	50	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2020) 0515132RP09_Clyde WARP RAP Stage 1_Draft_v2
SP4	Stage 2	Near former AFFF storage tank	AEC-9 Trial Excavation - landfarmed material	ACTIVE	-	-	50	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2020) 0515132RP09_Clyde WARP RAP Stage 1_Draft_v2
SP5	Terminal	Combined SP5,6,7 - used by Viva for a Driveway?	Process East (trials Exc)	TBC - Viva Ops	-	-	10	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP6	Terminal	Combined SP5,6,7 - used by Viva for a Driveway?	Process East (trials Exc)	TBC - Viva Ops	-	-	10	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP7	Terminal	Combined SP5,6,7 - used by Viva for a Driveway?	Process East (trials Exc)	TBC - Viva Ops	-	-	10	Soil - biopile material	No	2	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP8	Stage 3	Process East - used for backfill	Recycled B&D material from Tankfarm B2	Process East	-	-	110	Soil - Fill (Crushed building materials)	No	5	No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP9	Stage 3	Process East	Recycled B&D material from Tankfarm B2	ACTIVE	-	-	38	Soil - Fill (Crushed building materials)	No	3	No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP10	Terminal	Sludge Drying Bay - relocated to adjacent landfarm area by Ventia, adjacent SP21	CTCP projects	ACTIVE	-	-	100	Soil and demolition rubble	No	4	Yes	2 x ACM fragments observed within eastern side of stockpile, quantification below on-site re-use criteria	Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP11	Terminal	Sludge Drying Bay - added to SP12	CTCP projects	Combined with SP12 prior to characterisation	20	0.5	10	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP12	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	100	1	100	Asphalt and soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP13	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE			10	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP14	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	43.47	1	43	Concrete	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP15	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	460	2	920	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP16	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	395	2	790	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP17	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	165	2	330	Concrete and Brick	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP18	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	105	2.5	263	Concrete (Large slabs)	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP19	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	80	1.2	96	Soil and Rubble	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP20	Terminal	Sludge Drying Bay (East)	CTCP projects	ACTIVE	500	2.5	1250	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP21	Terminal	Landfarm Area	CTCP projects	Landfarm Area	340	1.5	510	Concrete	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01

Stockpile ID	Location on Site (Remediation Stage)	Location on Site	Source	Backfill Location/ Destination	Dimensions		Est Volume (m3)	Material Description	Soil Sampling Required?	Existing Sample Numbers	Asbestos Present?	Asbestos comment	WARP - Suitable for re-use?	Report Reference
					Basal area (m2)	Average Height								
SP22	Terminal	Landfarm Area	Liberty Bio- Trial (Bitumen tankfarm)	Landfarm Area	410	0.5	205	Soil	Yes - completed		No		No	
SP23a	Terminal	Landfarm Area	CTCP projects	Landfarm Area	10	1	10	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP23b	Terminal	Landfarm Area	CTCP projects	Landfarm Area	10	1	10	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP24	Terminal	Landfarm Area	Liberty Bio- Trial (Bitumen tankfarm)	Landfarm Area	215	0.5	107.5	Soil	Yes - completed		No		No	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP25	Terminal	Landfarm Area	CTCP projects	Landfarm Area	90	2.5	225	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP26	Terminal	Landfarm Area	CTCP projects	Landfarm Area	138	3	414	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP27	Terminal	Landfarm Area	CTCP projects	Landfarm Area	80	3	240	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP28	Terminal	Landfarm Area	CTCP projects	Landfarm Area	110	3.5	385	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP29	Stage 2	Removed from site	Liberty Demo - Asbestos Waste	ACTIVE - disposed from site	55	1	55	Liberty Demo - Asbestos Waste	Yes - completed	3	Yes	Abundant bonded asbestos present	No	ERM (2022) - 0561882RP13 - AA1 Validation Report
SP30	Stage 2	Removed from site	Western Area Demo - 2020	Disposed from site	85	0.5	42.5	Brick and Concrete with ACM	Yes - completed	1 ACM	Yes	ACM unable to be quantified for validation in oversized material. 1 x fragment identified	No	ERM (2022) - 0561882RP14 - AA2 Validation Report
SP31	Stage 2 - AA2 and AA3	South of Tarkfarm A2	Western Area Demo - substation	ACTIVE	215	1.5	322.5	Brick, concrete and Metal	Yes - completed		No	No visible ACM	Yes	ERM 2021b - Stage 2 Stockpile Validation Report
SP32	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2020	ACTIVE	520	1.5	780	Brick, concrete and soil	Yes - completed	10	No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP33	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2020	ACTIVE	30	0.5	15	Concrete, Soil, Asphalt, Metal	Yes - completed	3	No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP34	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2020	ACTIVE	100	0.8	80	Brick	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP35	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2020	ACTIVE	90	1	90	Concrete	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP36	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2015	ACTIVE	60	0.5	30	Bricks and Concrete	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP37	Stage 2 - AA2 and AA3	Tankfarm J	Western Area Demo - 2015	ACTIVE	2250	2.3	5175	Soil, concrete and Bricks	Yes - completed	22	Yes	Compliant bonded asbestos present	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP38	Stage 2 - AA3	Tankfarm J	Western Area Demo - 2015	ACTIVE	520	0.5	260	Concrete	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP39	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2015	ACTIVE	1000	1.8	1800	Concrete	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP40	Stage 2 - AA3	Former laboratory area	Western Area Demo - 2020	ACTIVE	75	0.4	30	Brick, glass and concrete	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP41	Stage 2 - AA2	Former fire station area	Western Area Demo - 2015	ACTIVE	500	2.5	1250	Concrete, Brick	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP42	Stage 2 - AA2	Former fire station area	Western Area Demo - 2015	ACTIVE	175	1	175	Concrete, Brick	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP43	Stage 2 - AA2	South of former water tanks (88 and 89)	Western Area Demo - 2015	ACTIVE	210	1.2	252	Concrete, Brick	Yes - completed		No	No visible ACM	Yes	ERM 2021 - Stage 2 Stockpile Validation Report
SP44	Stage 1	Process West	Western Area Demo - 2015	Stage 1 - South east of AEC_9 Excavation	600	1.8	1080	Soil, Brick	Yes - completed	10	No		Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP45	Stage 3	Process East	Unknown onsite source	Combined with SP91 prior to characterisation	-	-	10	Hydrocarbon stained soil and rubble	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01

Stockpile ID	Location on Site (Remediation Stage)	Location on Site	Source	Backfill Location/ Destination	Dimensions		Est Volume (m3)	Material Description	Soil Sampling Required?	Existing Sample Numbers	Asbestos Present?	Asbestos comment	WARP - Suitable for re-use?	Report Reference
					Basal area (m2)	Average Height								
SP46	Stage 3	Process East	Unknown onsite source	Combined with SP91 prior to characterisation	-	-	5	Hydrocarbon stained soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP47	Stage 3	Process East	Unknown onsite source	Combined with SP91 prior to characterisation	-	-	5	Soil (clay) and bricks	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP48	Stage 3	Process East	Unknown onsite source	Combined with SP91 prior to characterisation	-	-	5	Soil (shale pieces throughout)	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP49	Stage 3	Process East	Unknown onsite source	ACTIVE	-	-	40	Soil - grass covered stockpile	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP50	Stage 3	Process East	Unknown onsite source	ACTIVE	340	0.8	272	Soil with demolition rubble throughout	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP51A	Stage 3	Process East	Unknown onsite source	ACTIVE	130	0.3	39	Soil - hydrocarbon stained	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP51B	Stage 3	Process East	Unknown onsite source	Combined with SP51A prior to characterisation	-	-	5	Soil - hydrocarbon stained	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP52A	Stage 3	Process East	Unknown onsite source	ACTIVE	35	0.5	17.5	Soil - clean river gravels/sand	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP52B	Stage 3	Process East	Unknown onsite source	ACTIVE	25	0.5	12.5	Soil - clean river gravels/sand	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP53	Stage 3	Process East	Unknown onsite source	ACTIVE	345	1	345	Soil, concrete, pipe lagging	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP54	Stage 3	Process East	Unknown onsite source	ACTIVE	25	0.5	30	Soil - sand, dark grey	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP55	Stage 3	WWTP (AEC-6), former sludge drying bay	Unknown onsite source	ACTIVE	95	0.8	76	Soil - Potential ACM identified during RSI works	Yes - completed		Yes		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP56	Stage 3	WWTP (AEC-6), former sludge drying bay	Unknown onsite source, used as earthen bund in sludge drying area	ACTIVE	95	0.8	76	Soil used for bunding of sludge drying bay - Potential ACM identified during RSI works	Yes - completed		Yes		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP57	Stage 3	WWTP (AEC-6), former sludge drying bay	Unknown onsite source, used as earthen bund in sludge drying area	ACTIVE	100	0.8	80	Soil used for bunding of sludge drying bay - Potential ACM identified during RSI works	Yes - completed		Yes		No	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP58A	Stage 3	WWTP (AEC-6), former sludge drying bay	Unknown onsite source, used as earthen bund in sludge drying area	ACTIVE	75	0.8	60	Soil used for bunding of sludge drying bay - Potential ACM identified during RSI works	Yes - completed		Yes		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP58B	Stage 3	WWTP (AEC-6), former sludge drying bay	Unknown onsite source, used as earthen bund in sludge drying area	ACTIVE	75	0.8	60	Soil used for bunding of sludge drying bay - Potential ACM identified during RSI works	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP59	Stage 3	WWTP (AEC-6), former sludge drying bay	Unknown onsite source, used as earthen bund in sludge drying area	ACTIVE	85	0.8	68	Soil used for bunding of sludge drying bay - Potential ACM identified during RSI works	Yes - completed		Yes		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP60	Terminal	Former State Office Building Footprint	Former State Office Demolition (2020)	ACTIVE	775	2	1550	Concrete, bricks	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP61	Terminal	Sludge Bay (central)	Approx 100 x 1m3 'Bulka Bags' of soil/ demolition waste from Gore Bay projects in late 2018	Disposed Offsite	-	-	100	Soil/ Demolition Waste in bulka bags (Gore Bay Terminal?)	Yes - completed		No		No	ERM (2021) Waste Classification Report - SP61, 23rd November 2021
SP62	Terminal	Sludge Bay (south-east)	Approx 20 x 1m3 'Bulka Bags' of soil/ demolition waste from Gore Bay Project completed in early 2019	Disposed Offsite	-	-	20	Soil/ Demolition Waste in bulka bags (Gore Bay Terminal)	Yes - completed		No		No	ERM (2021) Waste Classification Report - SP62, 23rd November 2021
SP63	Stage 2	Tankfarm A1	Sandy material excavated from previously backfilled drainage pits in Western Area, excavated by Ventia	Tankfarm A1 - spread out beneath biopile pad on 7/19/2020	-	-	45	Soil	Yes - completed	4	No	No visible ACM	Yes	N/A
Sandstone VENM	Stage 1	South of AEC-9 - J8/J9/J10/J11	Off site	AEC-9	-	-		Sandstone VENM	Yes - completed	NA	No	No visible ACM	Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)

Stockpile ID	Location on Site (Remediation Stage)	Location on Site	Source	Backfill Location/ Destination	Dimensions		Est Volume (m3)	Material Description	Soil Sampling Required?	Existing Sample Numbers	Asbestos Present?	Asbestos comment	WARP - Suitable for re-use?	Report Reference
					Basal area (m2)	Average Height								
SP64	Stage 1	Stage 1 - Former Process West adjacent SP44	Concrete hardstand from AEC-9 excavation	Handed over to Downer - Stage 1	-	-	1500	Hammered concrete of varying size with large quanity of reo	Yes - completed	NA	No	No visible ACM	Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP65	Stage 1	West of AEC-9	AEC-9 excavation - surface scrape	SP72 & SP73 (Material fed through the screen)	-	-	40	Light brown surface soil with metal	Yes - completed	3	No	Validated as suitable for re-use in accordance with NEPM	Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP66	Stage 1	West of AEC-9	AEC-9 excavation - surface scrape	Handed over to Downer - Stage 1	-	-	35	Dark brown surface soil	Yes - completed	3	No		Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP67	Stage 1	South of AEC-9 - H10/H11	AEC-9 excavation - impacted soil - C9/C10/D9/D10 - 1.6m BGL	Handed over to Downer - Stage 1	-	-	326	Impacted soil	Yes - completed	5	No		Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP68	Stage 1	South of AEC-9 - I10/I11	AEC-9 excavation - impacted soil - C11/D11/E11/F11 - 1.7m BGL	Handed over to Downer - Stage 1	-	-	353	Impacted soil	Yes - completed	4	No		Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP69	Stage 1	South of AEC-9 - H8/H9	AEC-9 excavation - impacted soil - E9/E10/F9/F10 - 1.7m BGL	SP72 & SP73 (Material fed through the screen)	-	-	331	Impacted soil	Yes - completed	N/A	No		N/A	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP70	Stage 1	South of AEC-9 - I9	AEC-9 excavation - less impacted soil	Consolidated with SP68 after SP68 was validated	-	-	3	Clay, less impacted	Yes - completed	N/A	No		N/A	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP71	Stage 1	South of AEC-9 - H4/H5/H6	AEC-9 excavation - impacted soil - E7/E8/F7/F8/E5/E6/F5/F6/E4/F4/C7/C8/ D7/D8/C6/D6/C5/D5 - 1.5m BGL	SP72 & SP73 (Material fed through the screen)	-	-	302	Impacted soil	Yes - completed	N/A	No		N/A	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP72	Stage 1	South of AEC-9 - J1/J2	AEC-9 excavation - screened oversize (50mm +)	Handed over to Downer - Stage 1	-	-	1622	Oversize soil (50mm +)	Yes - completed	N/A	No		No	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP73	Stage 1	South of AEC-9 - J3/J4	AEC-9 excavation - screened undersize (50mm -)	Stage 1 - South of AEC9 - J3/J4	-	-	1267	Undersize soil (50mm -)	Yes - completed	14	No		Yes	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP73a	N/A - combined		Screened oversize from AEC9 (50mm +)	Consolidated to biopiles, SP75, SP76	-	-	355	Clay oversize (odour, staining and localised LNAPL)	Yes - completed	N/A	No		No	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP74	Stage 1		Impacted Soils - B2/B3/C2/B3/D2/D3 - 2.2m BGL	SP72 & SP73 (Material fed through the screen)	-	-	427	Heavy staining / black material observed.	Yes - completed	N/A	No		N/A	ERM (2020) - Clyde WARP Stage 1 Validation (0561882_RP02)
SP75	Stage 2	Takfarm A2 - Consolidated into SP96	AEC-9 Excavated Soils (SP72, SP73a)	Consolidated into SP96 following biopile validation	-	-	1003	Biopile 1 of 3 - Tarped and connected to SVE system	Yes - completed	10	No		N/A	ERM 2021 - 0561882_RP10_Stage 1 Biopiles Validation
SP76	Stage 2	Takfarm A2 - Consolidated into SP96	AEC-9 Excavated Soils (SP72, SP73a)	Consolidated into SP96 following biopile validation	-	-	944	Biopile 2 of 3 - Tarped and connected to SVE system	Yes - completed	10	No		N/A	ERM 2021 - 0561882_RP10_Stage 1 Biopiles Validation
SP77	Stage 2	Takfarm A2 - Consolidated into SP96	AEC-9 Excavated Soils (SP72)	Consolidated into SP96 following biopile validation	-	-	427	Biopile 3 of 3 - Tarped and connected to SVE system	Yes - completed	10	No		N/A	ERM 2021 - 0561882_RP10_Stage 1 Biopiles Validation
SP78	Stage 2 - AA1	Tankfarm A2	Road 2 removal - Concrete kerbs	ACTIVE	-	-	400	Road 2 removal - Concrete kerbs	Yes - completed		No		Yes	ERM (2022) - 0561882RP13 - AA1 Validation Report

Stockpile ID	Location on Site (Remediation Stage)	Location on Site	Source	Backfill Location/ Destination	Dimensions		Est Volume (m3)	Material Description	Soil Sampling Required?	Existing Sample Numbers	Asbestos Present?	Asbestos comment	WARP - Suitable for re-use?	Report Reference
					Basal area (m2)	Average Height								
SP79	Stage 2 - AA1	Tankfarm A3	Road 2 removal - Asphalt	ACTIVE	-	-	675	Road 2 removal - Asphalt	Yes - completed		No		Yes	ERM (2022) - 0561882RP13 - AA1 Validation Report
SP80	Stage 2 -AA1	Tankfarm A3	Road 2 removal - Roadbase	ACTIVE	-	-	350	Road 2 removal - Roadbase	Yes - completed	10	No		Yes	1) 0561882_L01_Env Summary 2) 0561882_L03_Interim Asb Clearance_Road 2
SP81	Stage 2 - AA1 and AA3	Tankfarm A3	Road 2 utilities easement trench spoil	ACTIVE	-	-	630	Road 2 utilities easement trench spoil	Yes - completed	10	No		Yes	1) 0561882_L01_Env Summary 2) 0561882_L03_Interim Asb Clearance_Road 2
SP82	Stage 2 - AA1	Grassed Area - NW portion of site	Road 2 utility easement - degrub utility easement within the NE grassed area.	ACTIVE	-	-	206	Road 2 utility easement - degrub utility easement within the NE grassed area.	Yes - completed	9	No		Yes	1) 0561882_L01_Env Summary 2) 0561882_L04_Interim Asb Clearance_Road 2
SP83	Stage 2 - AA1	AA1 - Proposed Lot 52	Sediment Basin extent degrubbing spoil - primarily grass / shrub vegetation (<5% topsoil present)	ACTIVE	-	-	210	Sediment Basin extent degrubbing spoil - primarily grass / shrub vegetation (<5% topsoil present)	Yes - completed		No		Yes	N/A
SP84	Stage 2 - AA2	South of former water tanks (88 and 89)	Excavated material from Sediment Basin Extent - saturated yellow sandstone	ACTIVE	-	-	350	Excavated material from Sediment Basin Extent - saturated yellow sandstone	Yes - completed	0	No		Yes	ERM (2022) - 0561882RP14 - AA2 Validation Report
SP85	Stage 2 - AA3	North of Sediment Basin	Excavated material from Sediment Basin Extent - red clay (saturated)	Landformed North of sediment basin - beneath soil screening area (former Transformer 3 Location)	-	-	1799	Excavated material from Sediment Basin Extent - red clay (saturated)	Yes - completed		No		Yes	N/A
SP86	Stage 2 - AA2	South of former water tanks (88 and 89)	Excavated material from Sediment Basin Extent - grey clay	ACTIVE	-	-	1057	Excavated material from Sediment Basin Extent - grey clay	Yes - completed	0	No		Yes	ERM (2022) - 0561882RP14 - AA2 Validation Report
SP87	Stage 2 - AA3	North of Sediment Basin	Excavated material from Sediment Basin Extent - loamy soil (low% anthropogenic materials present)	Landformed North of sediment basin - beneath soil screening area (former Transformer 3 Location)	-	-	1015	Excavated material from Sediment Basin Extent - loamy soil (low% anthropogenic materials present)	Yes - completed		No		Yes	N/A
SP88	Stage 2 - AA3	North of Sediment Basin	Excavated material from Sediment Basin Extent - loamy soil (low% anthropogenic materials present)	Landformed North of sediment basin - beneath soil screening area (former Transformer 3 Location)	-	-	133	Excavated material from Sediment Basin Extent - loamy soil (low% anthropogenic materials present)	Yes - completed		No		Yes	N/A
SP89	Stage 2 - AA2	South of former water tanks (88 and 89)	Excavated material from Sediment Basin Extent - concrete from historical footings	ACTIVE	-	-	190	Excavated material from Sediment Basin Extent - concrete from historical footings	Yes - completed		No		Yes	ERM (2022) - 0561882RP14 - AA2 Validation Report
SP90	Stage 2 - AA1, AA2 and AA3	Tankfarm A2	Imported material from Stage 1 (Downer) - Saturated clays	ACTIVE	-	-	2800	Imported material from Stage 1 (Downer) - Saturated clays	Yes - completed		No		Yes	0561882_L10_SP90 Cover Letter AA1 Movement of excavated soil from Stage 1 to Stage 2 (Audit Area 1)
SP91	Stage 3	Process East	SP45-48 combined	ACTIVE	180	2	360	Soil	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP92	Stage 3	Process East	Unknown onsite source	ACTIVE	60	1	60	Concrete, bricks	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP93	Stage 3	Process East	Unknown onsite source	ACTIVE	10	1	10	Concrete, metal	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP94	Stage 3	Process East	Unknown onsite source	ACTIVE	10	1	10	Soil with building waste	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP95	Stage 3	Process East	Unknown onsite source	ACTIVE	15	1	15	Soil with building waste	Yes - completed		No		Yes	ERM (2021) 0561882_R16_Clyde Stage 3 SP Validation_Draft Rev01
SP96	Stage 2 - AA1 & AA2	Tankfarm A2	Biopiles generated from Stage 1 remediation works	ACTIVE	-	-	2,500	Light brown sandy clays	No		No		Yes	ERM 2021 - 0561882_RP10_Stage 1 Biopiles Validation

Stockpile ID	Location on Site (Remediation Stage)	Location on Site	Source	Backfill Location/ Destination	Dimensions		Est Volume (m3)	Material Description	Soil Sampling Required?	Existing Sample Numbers	Asbestos Present?	Asbestos comment	WARP - Suitable for re-use?	Report Reference
					Basal area (m2)	Average Height								
SP97	Stage 2 - AA2	Sample store	Concrete stockpile from Stage 2 AEC remediation areas	ACTIVE	-	-	413	Concrete - uncrushed	No		No		Yes	ERM (2022) - 0561882RP14 - AA2 Validation Report
SP98	Stage 2 - AA3	Stockpile screening area - screened for biopiles	Stockpiled material from AEC-14A, AEC14B, AEC-3A	>50mm fraction to SP102B <50mm fraction to temporary SP102A (final destination SP105 and SP106)			4,215	Red, brown, black clays, impacted with petroleum hydrocarbons	N/A - temporary stockpile		No		N/A	AA3 Validation Report
SP99	Stage 2 - AA2	Removed from site	Unexpected find - concrete encased asbestos pipe from under bridge on Road 12 A (AEC-14B)	Disposed Offsite (GSW-A)			4	Sols impacted with asbestos pipe and concrete	N/A - temporary stockpile		Yes		No	ERM (2022) - 0561882RP14 - AA2 Validation Report
SP100	Stage 2 - AA3	Stockpile screening area	Fill material separating AEC-3A/3B	ACTIVE				Sandy soils with building demolition rubble	Yes - completed		Yes	Suitable for site re-use, subject to no unexpected finds of ACM at finished ground surface once backfilled	Yes	AA3 Validation Report
SP101	Stage 2 - AA3	Stockpile screening area - screened for biopiles	Stockpiled material from AEC-3D	>50mm fraction to SP102B <50mm fraction to temporary SP102A (final destination SP107)			907	Red, brown, black clays, impacted with petroleum hydrocarbons	N/A - temporary stockpile		No		N/A	AA3 Validation Report
SP102A	Stage 2 - AA3	Stockpile screening area - screened for biopiles	Screened undersize materials from stockpiles 98, 101, 103 and 104	Progressively formed into biopiles SP105- SP109			N/A	<50mm homogenous clays	N/A - temporary stockpile		No		N/A	AA3 Validation Report
SP102B	Stage 2 - AA3	Stockpile screening area	Screened oversize materials from stockpiles 98, 101, 103 and 104	ACTIVE			3,724	>50mm oversized materials and clay (bricks, concrete, pipework)	Yes - results TBC		No		To be confirmed	AA3 Validation Report
SP103	Stage 2 - AA3	Stockpile screening area - screened for biopiles	Stockpiled material from AEC-3E	>50mm fraction to SP102B <50mm fraction to biopile SP102A			1,417	Red, brown, black clays, impacted with petroleum hydrocarbons	N/A - temporary stockpile		No		N/A	AA3 Validation Report
SP104	Stage 2 - AA3	Stockpile screening area - screened for biopiles	Stockpiled material from AEC-3E southern wall	>50mm fraction to SP102B <50mm fraction to biopile SP102A			324	Red, brown, black clays, impacted with petroleum hydrocarbons	N/A - temporary stockpile		No		N/A	AA3 Validation Report
SP105	Stage 2 - AA3	Biopad / Tankfarm A1	Stage 2 Biopile - 1 of 5 Screened <50mm fraction from SP98 (AEC-3A, 14A, 14B excavations)	ACTIVE			1,000	Screened (<50mm) homogenous clays, tarped	Yes - results TBC		No		To be confirmed following biopile treatment	AA3 Validation Report
SP106	Stage 2 - AA3	Biopad / Tankfarm A1	Stage 2 Biopile - 2 of 5 Screened <50mm fraction from SP98 (AEC-3A, 14A, 14B excavations)	ACTIVE			1,000	Screened (<50mm) homogenous clays, tarped	Yes - results TBC		No		To be confirmed following biopile treatment	AA3 Validation Report
SP107	Stage 2 - AA3	Biopad / Tankfarm A1	Stage 2 Biopile - 3 of 5 Screened <50mm fraction from SP98 (AEC-3A) and SP101 (AEC-3D excavations	ACTIVE			1,000	Screened (<50mm) homogenous clays, tarped	Yes - results TBC		No		To be confirmed following biopile treatment	AA3 Validation Report
SP108	Stage 2 - AA3	Biopad / Tankfarm A1	Stage 2 Biopile - 4 of 5 (AEC-3E excavation)	ACTIVE			1,000	Screened (<50mm) homogenous clays, tarped	Yes - results TBC		No		To be confirmed following biopile treatment	AA3 Validation Report
SP109	Stage 2 - AA3	Biopad / Tankfarm A1	Stage 2 Biopile - 5 of 5 AEC-3E excavation - post pipe removal)	ACTIVE			800	Screened (<50mm) homogenous clays, tarped	Yes - results TBC		No		To be confirmed following biopile treatment	AA3 Validation Report

Notes:

Dark grey shading illustrates stockpile no longer exists - removed from site or merged with other stockpile/s.

Light grey shading shows stockpiles located outside of the AA2 footprint

				BTEX						Naphthalene	TRH NEPM (1999)					TRH NEPM (2013)							Inorganics
				Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene	TRH C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	Moisture Content (dried @ 103°C)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL				0.1	0.1	0.1	0.1	0.2	0.3	0.5	20	20	50	50	50	20	20	50	50	100	100	100	1
Clyde WARP SSTL (Direct Contact - Commercial)				400						9800							28000		17000	27000		27000	
Clyde WARP SSTL (Direct Contact - Construction Worker)				1200						67000							69000		45000	64000		64000	
Clyde WARP SSTL (Direct Contact - IMW)				15000						810000							830000		540000	770000		770000	
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																							
0-0.99m				3.2						NL							600		NL				
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																							
1-1.99m				3.2						NL							770		NL				
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																							
2-3.99m				3.2						NL							NL		NL				
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																							
4-6m				3.2						NL							NL		NL				
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)				NL						NL							NL		NL				
Clyde WARP SSTL (Vapour Intrusion - IMW)				NL						NL							NL		NL				
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																700		1000		3500		10000	
Field_ID	**Location_Code**	**Sampled_Date_Time**	**Matrix_Description**																				
DUP01_220221	SP102B-14	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	68	300	<50	368	<20	<20	120	120	340	460	<100	17
SP102B-1	SP102B-1	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5 - 1.1	35	170	530	210	910	65	65	280	278.9	600	880	<100	21
SP102B-10	SP102B-10	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	57	<50	57	<20	<20	<50	<50	<100	<100	<100	17
SP102B-11	SP102B-11	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	42	23	54	<50	77	57	57	<50	<50	<100	<100	<100	20
SP102B-12	SP102B-12	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
SP102B-13	SP102B-13	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	110	290	750	95	1135	230	230	450	450	750	1200	<100	21
SP102B-14	SP102B-14	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	34	<20	53	<50	53	50	50	<50	<50	<100	<100	<100	17
SP102B-15	SP102B-15	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	160	530	100	790	29	29	260	260	680	1070	130	15
SP102B-2	SP102B-2	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	50	<20	<50	<50	<50	57	57	<50	<50	<100	<100	<100	20
SP102B-3	SP102B-3	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	88	480	82	650	<20	<20	220	220	440	660	<100	17
SP102B-4	SP102B-4	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	180	840	280	1300	<20	<20	380	380	890	1420	150	13
SP102B-5	SP102B-5	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	170	660	300	1130	<20	<20	310	310	780	1280	190	18
SP102B-6	SP102B-6	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	430	910	120	1460	44	44	700	700	730	1430	<100	17
SP102B-7	SP102B-7	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	300	71	371	<20	<20	68	68	310	378	<100	4.1
SP102B-8	SP102B-8	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	43	620	1800	700	3120	100	100	960	960	2000	3310	350	17
SP102B-9	SP102B-9	21/02/2022		<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	100	430	<50	530	24	24	210	210	440	650	<100	18
Statistical Summary																							
Number of Results				16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of Detects				0	0	0	0	0	0	1	6	11	14	9	14	9	9	11	11	11	11	4	16
Minimum Concentration				<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	4.1
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	34	23	53	71	53	24	24	68	68	310	378	130	4.1
Maximum Concentration				<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	1.1	110	620	1800	700	3120	230	230	960	960	2000	3310	350	21
Maximum Detect				ND	ND	ND	ND	ND	ND	1.1	110	620	1800	700	3120	230	230	960	960	2000	3310	350	21
Average Concentration				0.05	0.05	0.05	0.05	0.1	0.15	0.28	26	147	484	133	750	45	45	255	255	513	812	89	17
Median Concentration				0.05	0.05	0.05	0.05	0.1	0.15	0.25	10	94	455	76.5	590	26.5	26.5	215	215	440	655	50	17
Standard Deviation				0	0	0	0	0	0	0.11	27	173	461	177	798	56	56	267	267	498	844	82	4
Number of Guideline Exceedances				0	0	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

				PAH/Phenols																			
				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	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
Clyde WARP SSTL (Direct Contact - Commercial)											40												
Clyde WARP SSTL (Direct Contact - Construction Worker)											200												
Clyde WARP SSTL (Direct Contact - IMW)											3000												
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																							
0-0.99m																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																							
1-1.99m																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																							
2-3.99m																							
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																							
4-6m																							
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)																							
Clyde WARP SSTL (Vapour Intrusion - IMW)																							
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																							
Field_ID	**Location_Code**	**Sampled_Date_Time**	**Matrix_Description**																				
DUP01_220221	SP102B-14	21/02/2022		<0.5	<0.5	<0.5	0.6	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	0.6	0.5	2.7
SP102B-1	SP102B-1	21/02/2022		<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	<0.5	<0.5
SP102B-10	SP102B-10	21/02/2022		<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	<0.5	<0.5
SP102B-11	SP102B-11	21/02/2022		<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	<0.5	<0.5
SP102B-12	SP102B-12	21/02/2022		<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	<0.5	<0.5
SP102B-13	SP102B-13	21/02/2022		<0.5	<0.5	<0.5	2.7	1	1.9	2	1.9	0.6	<0.5	<0.5	3.5	0.5	0.8	0.7	<0.5	2.7	1.9	14.4
SP102B-14	SP102B-14	21/02/2022		<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	<0.5	<0.5
SP102B-15	SP102B-15	21/02/2022		<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	0.5	0.5
SP102B-2	SP102B-2	21/02/2022		<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	<0.5	<0.5
SP102B-3	SP102B-3	21/02/2022		<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	<0.5	<0.5
SP102B-4	SP102B-4	21/02/2022		<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	<0.5	<0.5
SP102B-5	SP102B-5	21/02/2022		<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	<0.5	<0.5
SP102B-6	SP102B-6	21/02/2022		<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	<0.5	<0.5
SP102B-7	SP102B-7	21/02/2022		<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	<0.5	<0.5
SP102B-8	SP102B-8	21/02/2022		<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	<0.5	<0.5
SP102B-9	SP102B-9	21/02/2022		<0.5	<0.5	<0.5	1	0.6	0.7	1.4	1	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	0.6	<0.5	1.8	1.4	7.6
Statistical Summary																							
Number of Results				16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of Detects				0	0	0	3	2	2	16	16	1	0	0	3	1	1	2	0	3	4	4
Minimum Concentration				<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	<0.5	<0.5
Minimum Detect				ND	ND	ND	0.6	0.6	0.7	1.2	0.6	0.6	ND	ND	1	0.5	0.8	0.6	ND	0.6	0.5	0.5
Maximum Concentration				<0.5	<0.5	<0.5	2.7	1	1.9	2	1.9	0.6	<0.5	<0.5	3.5	0.5	0.8	0.7	<0.5	2.7	1.9	14.4
Maximum Detect				ND	ND	ND	2.7	1	1.9	2	1.9	0.6	ND	ND	3.5	0.5	0.8	0.7	ND	2.7	1.9	14.4
Average Concentration				0.25	0.25	0.25	0.47	0.32	0.38	1.3	0.71	0.27	0.25	0.25	0.62	0.27	0.28	0.3	0.25	0.52	0.46	1.8
Median Concentration				0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation				0	0	0	0.63	0.2	0.42	0.2	0.33	0.088	0	0	0.92	0.063	0.14	0.14	0	0.7	0.48	3.9
Number of Guideline Exceedances				0	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

					Asbestos				BTEX						Naphthalene	TRH NEPM (1999)				
					FA- Comment	ACM - Comment	AF - Comment	Sample weight (dry)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene	TRH C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction
					Comment	Comment	Comment	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL									0.1	0.1	0.1	0.1	0.2	0.3	0.5	20	20	50	50	50
Clyde WARP SSTL (Direct Contact - Commercial)									**400**						**9800**					
Clyde WARP SSTL (Direct Contact - Construction Worker)									**1200**						**67000**					
Clyde WARP SSTL (Direct Contact - IMW)									**15000**						**810000**					
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																				
0-0.99m									**3.2**						**NL**					
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																				
1-1.99m									**3.2**						**NL**					
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																				
2-3.99m									**3.2**						**NL**					
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																				
4-6m									**3.2**						**NL**					
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)									**NL**						**NL**					
Clyde WARP SSTL (Vapour Intrusion - IMW)									**NL**						**NL**					
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																				
Field_ID	**Location_Code**	**Sampled_Date_Time**	**Lab_Report_Number**	**Sample_Type**																
SP81-1	SP81	21/02/2022	877406	Normal	ND	ND	ND	219	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50
SP81-10	SP81	21/02/2022	869608	Normal	ND	ND	ND	249	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50
SP81-2	SP81	21/02/2022	869608	Normal	ND	ND	ND	255	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50
SP81-3	SP81	21/02/2022	869608	Normal	ND	ND	ND	692	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50
SP81-4	SP81	21/02/2022	869608	Normal	ND	ND	ND	369	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	68	360	84	512
SP81-5	SP81	21/02/2022	869608	Normal	ND	ND	ND	342	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	66	330	85	481
SP81-6	SP81	21/02/2022	869608	Normal	ND	ND	ND	286	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	150	170	320
SP81-7	SP81	21/02/2022	869608	Normal	ND	ND	ND	662	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	110	91	201
SP81-8	SP81	21/02/2022	869608	Normal	ND	ND	ND	230	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50
SP81-9	SP81	21/02/2022	869608	Normal	ND	ND	ND	229	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	59	53	112
Statistical Summary																				
Number of Results					10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects					0	0	0	10	0	0	0	0	0	0	0	0	2	5	5	5
Minimum Concentration					0	0	0	219	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50
Minimum Detect					ND	ND	ND	219	ND	ND	ND	ND	ND	ND	ND	ND	66	59	53	112
Maximum Concentration					0	0	0	692	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	68	360	170	512
Maximum Detect					ND	ND	ND	692	ND	ND	ND	ND	ND	ND	ND	ND	68	360	170	512
Average Concentration					0	0	0	353	0.05	0.05	0.05	0.05	0.1	0.15	0.25	10	21	113	61	175
Median Concentration					0	0	0	271	0.05	0.05	0.05	0.05	0.1	0.15	0.25	10	10	42	39	68.5
Standard Deviation					0	0	0	178	0	0	0	0	0	0	0	0	24	130	48	196
Number of Guideline Exceedances					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

Notes:
ND - Non Detect.

					TRH NEPM (2013)							TRH	Inorganics	PAH/Phenols																			
					TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C40	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					20	20	50	50	100	100	100	100	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)						**28000**		**17000**	**27000**		**27000**										**40**												
Clyde WARP SSTL (Direct Contact - Construction Worker)						**69000**		**45000**	**64000**		**64000**										**200**												
Clyde WARP SSTL (Direct Contact - IMW)						**830000**		**540000**	**770000**		**770000**										**3000**												
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																																	
0-0.99m						**600**		**NL**																									
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-2m																																	
1-1.99m						**770**		**NL**																									
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2 - 4m																																	
2-3.99m						**NL**		**NL**																									
Clyde WARP SSTL (Vapour Intrusion - Commercial) > 4m																																	
4-6m						**NL**		**NL**																									
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)						**NL**		**NL**																									
Clyde WARP SSTL (Vapour Intrusion - IMW)						**NL**		**NL**																									
NEPM (1999) Management Limits - Commercial/Industrial (coarse)					**700**		**1000**		**3500**		**10000**																						
Field_ID	**Location_Code**	**Sampled_Date_Time**	**Lab_Report_Number**	**Sample_Type**																													
SP81-1	SP81	21/02/2022	877406	Normal	<20	<20	<50	<50	<100	<100	<100	-	18	<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	<0.5	<0.5	<0.5
SP81-10	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	<100	-	<100	<100	16	<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	<0.5	<0.5	<0.5
SP81-2	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	<100	-	<100	<100	10	<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	<0.5	<0.5	<0.5
SP81-3	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	<100	-	<100	<100	10	<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	<0.5	<0.5	<0.5
SP81-4	SP81	21/02/2022	869608	Normal	<20	<20	150	150	350	-	<100	500	14	<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	<0.5	<0.5	<0.5
SP81-5	SP81	21/02/2022	869608	Normal	<20	<20	130	130	330	-	<100	460	15	<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	<0.5	<0.5	<0.5
SP81-6	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	280	-	170	450	13	<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	<0.5	<0.5	<0.5
SP81-7	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	160	-	100	260	5.9	<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	<0.5	<0.5	<0.5
SP81-8	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	<100	-	<100	<100	20	<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	<0.5	<0.5	<0.5
SP81-9	SP81	21/02/2022	869608	Normal	<20	<20	<50	<50	<100	-	<100	<100	14	<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	<0.5	<0.5	<0.5
Statistical Summary																																	
Number of Results					10	10	10	10	10	1	10	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects					0	0	2	2	4	0	2	4	10	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					<20	<20	<50	<50	<100	<100	<100	<100	5.9	<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	<0.5	<0.5	<0.5
Minimum Detect					ND	ND	130	130	160	ND	100	260	5.9	ND	ND	ND	ND	ND	ND	1.2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					<20	<20	150	150	350	<100	170	500	20	<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	<0.5	<0.5	<0.5
Maximum Detect					ND	ND	150	150	350	ND	170	500	20	ND	ND	ND	ND	ND	ND	1.2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration					10	10	48	48	142		67	213	14	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Median Concentration					10	10	25	25	50	50	50	50	14	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation					0	0	49	49	129		39	205	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	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	0	0	0	0	0	0	0	0

Notes:
ND - Non Detect.

ERM

Table 12. Soil Screening Area Stockpile Footprints Soil Results Summary
Clyde WARP - Stage 2 - AA3 Validation
0561882

							BTEX							Naphthalene	TRH NEPM (1999)					TRH NEPM (2013)							Inorganics
							Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	Moisture Content (dried @ 103°C)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL							0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5	20	20	50	50	50	20	20	50	50	100	100	100	1
Clyde WARP SSTL (Direct Contact - Commercial)							400							9800							28000		17000	27000		27000	
Clyde WARP SSTL (Direct Contact - Construction Worker)							1200							67000							69000		45000	64000		64000	
Clyde WARP SSTL (Direct Contact - IMW)							15000							810000							830000		540000	770000		770000	
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																											
0-0.99m							3.2							NL							600		NL				
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)							NL							NL							NL		NL				
Clyde WARP SSTL (Vapour Intrusion - IMW)							NL							NL							NL		NL				
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																				700		1000		3500		10000	
Alternative_Name	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Sample_Depth_Range**	**Lab_Report_Number**																					
Lot 61	SSA-1	SSA-1	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16
Lot 61	SSA-10	SSA-10	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 61	SSA-11	SSA-11	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 61	SSA-12	SSA-12	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17
Lot 61	SSA-13	SSA-13	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 61	SSA-14	SSA-14	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 61	SSA-15	SSA-15	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	21
Lot 61	SSA-16	SSA-16	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	14
Lot 61	SSA-17	SSA-17	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.7	<20	<20	160	66	226	<20	<20	<50	<50	200	200	<100	16
Lot 61	SSA-18	SSA-18	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	150	<50	150	<20	<20	<50	<50	180	180	<100	18
Lot 61	SSA-19	SSA-19	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 61	SSA-2	SSA-2	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	160	860	54	1074	<20	<20	250	250	800	1050	<100	17
Lot 61	20220328-DUP1	SSA-2	28/03/2022	Field_D	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17
Lot 61	20220328_TRIP1	SSA-2	28/03/2022	Interlab_D	0-0.05	ES2211409	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<50	<100	16.2
Lot 61	SSA-20	SSA-20	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 61	SSA-21	SSA-21	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19
Lot 61	SSA-22	SSA-22	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 61	SSA-23	SSA-23	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19
Lot 61	SSA-24	SSA-24	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	19
Lot 61	SSA-25	SSA-25	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	14
Lot 61	SSA-26	SSA-26	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16
Lot 61	SSA-27	SSA-27	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16
Lot 61	SSA-28	SSA-28	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17
Lot 61	20220328-DUP2	SSA-28	28/03/2022	Field_D	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16
Lot 61	20220328_TRIP2	SSA-28	28/03/2022	Interlab_D	0-0.05	ES2211409	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<50	<100	16.3
Lot 58	SSA-29	SSA-29	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 61	SSA-3	SSA-3	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17
Lot 58	SSA-30	SSA-30	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	25
Lot 58	SSA-31	SSA-31	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 58	SSA-32	SSA-32	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	21
Lot 58	SSA-33	SSA-33	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 58	SSA-34	SSA-34	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	20
Lot 58	SSA-35	SSA-35	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	73	<50	73	<20	<20	<50	<50	<100	<100	<100	19
Lot 58	SSA-36	SSA-36	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	58	<50	58	<20	<20	<50	<50	<100	<100	<100	15
Lot 58	SSA-37	SSA-37	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 58	SSA-38	SSA-38	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	100	260	80	440	43	43	170	170	270	440	<100	18
Lot 58	SSA-39	SSA-39	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	15
Lot 61	SSA-4	SSA-4	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	17
Lot 58	SSA-40	SSA-40	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 58	SSA-41	SSA-41	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	91	400	270	761	22	22	150	150	550	700	<100	13
Lot 58	SSA-42	SSA-42	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	9.3
Lot 58	SSA-43	SSA-43	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	8.4
Lot 61	SSA-44	SSA-44	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	65	<50	65	<20	<20	<50	<50	<100	<100	<100	12
Lot 61	D06_20220503	SSA-44	3/05/2022	Field_D	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	31
Lot 61	T04_20220503	SSA-44	3/05/2022	Field_D	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	24
Lot 61	SSA-45	SSA-45	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	190	140	330	<20	<20	<50	<50	290	290	<100	13
Lot 61	SSA-46	SSA-46	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	89	56	145	<20	<20	<50	<50	130	130	<100	27
Lot 61	SSA-47	SSA-47	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	86	51	137	<20	<20	<50	<50	110	110	<100	13
Lot 61	SSA-48	SSA-48	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	180	100	280	<20	<20	<50	<50	240	240	<100	10
Lot 61	SSA-49	SSA-49	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	23
Lot 61	SSA-5	SSA-5	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	170	<50	170	<20	<20	<50	<50	250	250	<100	18
Lot 61	SSA-50	SSA-50	3/05/2022	Normal	0-0.05	884533	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16
Lot 61	SSA-6	SSA-6	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	78	<50	78	<20	<20	<50	<50	100	100	<100	16
Lot 61	SSA-7	SSA-7	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	18
Lot 61	SSA-8	SSA-8	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	16
Lot 61	SSA-9	SSA-9	28/03/2022	Normal	0-0.05	875654	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	51	<50	51	<20	<20	<50	<50	<100	<100	<100	18
Statistical Summary																											
Number of Results							56	56	56	56	56	56	2	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Number of Detects							0	0	0	0	0	0	0	1	0	3	15	8	15	2	2	3	3	11	11	0	56
Minimum Concentration							<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5	<10	<20	<50	<50	<50	<10	<10	<50	<50	<100	<50	<100	8.4
Minimum Detect							ND	ND	ND	ND	ND	ND	ND	ND	ND	91	51	51	51	22	22	150	150	100	100	ND	8.4
Maximum Concentration							<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	1.7	<20	160	860	270	1074	43	43	250	250	800	1050	<100	31
Maximum Detect							ND	ND	ND	ND	ND	ND	ND	1.7	ND	160	860	270	1074	43	43	250	250	800	1050	ND	31
Average Concentration							0.052	0.057	0.057	0.057	0.11	0.15		0.26	9.8	16	70	37	90	11	11	34	34	96	105	50	17
Median Concentration							0.05	0.05	0.05	0.05	0.1	0.15	0.1	0.25	10	10	25	25	25	10	10	25	25	50	50	50	17
Standard Deviation							0.0094	0.037	0.037	0.037	0.028	0.019		0.097	0.94	25	128	38	183	4.8	4.8	39	39	130	170	0	3.9
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
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

	PAH/Phenols																		
	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	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
Clyde WARP SSTL (Direct Contact - Commercial)								40											
Clyde WARP SSTL (Direct Contact - Construction Worker)								200											
Clyde WARP SSTL (Direct Contact - IMW)								3000											
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m																			
0-0.99m																			
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)																			
Clyde WARP SSTL (Vapour Intrusion - IMW)																			
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
SSA-1	<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	<0.5	<0.5
SSA-10	<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	<0.5	<0.5
SSA-11	<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	<0.5	<0.5
SSA-12	<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	<0.5	<0.5
SSA-13	<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	<0.5	<0.5
SSA-14	<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	<0.5	<0.5
SSA-15	<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	<0.5	<0.5
SSA-16	<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	<0.5	<0.5
SSA-17	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	1.3	0.6	5.6
SSA-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.2
SSA-19	<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	<0.5	<0.5
SSA-2	<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	<0.5	<0.5
20220328-DUP1	<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	<0.5	<0.5
20220328_TRIP1	<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	<0.5	<0.5
SSA-20	<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	<0.5	<0.5
SSA-21	<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	<0.5	<0.5
SSA-22	<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	<0.5	<0.5
SSA-23	<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	<0.5	<0.5
SSA-24	<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	<0.5	<0.5
SSA-25	<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	<0.5	<0.5
SSA-26	<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	<0.5	<0.5
SSA-27	<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	<0.5	<0.5
SSA-28	<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	<0.5	<0.5
20220328-DUP2	<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	<0.5	<0.5
20220328_TRIP2	<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	<0.5	<0.5
SSA-29	<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	<0.5	<0.5
SSA-3	<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	<0.5	<0.5
SSA-30	<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	<0.5	<0.5
SSA-31	<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	<0.5	<0.5
SSA-32	<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	<0.5	<0.5
SSA-33	<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	<0.5	<0.5
SSA-34	<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	<0.5	<0.5
SSA-35	<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	<0.5	<0.5
SSA-36	<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	<0.5	<0.5
SSA-37	<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	<0.5	<0.5
SSA-38	<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	<0.5	<0.5
SSA-39	<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	<0.5	<0.5
SSA-4	<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	<0.5	<0.5
SSA-40	<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	<0.5	<0.5
SSA-41	<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	<0.5	<0.5
SSA-42	<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	<0.5	<0.5
SSA-43	<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	<0.5	<0.5
SSA-44	<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	<0.5	<0.5
D06_20220503	<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	<0.5	<0.5
T04_20220503	<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	<0.5	<0.5
SSA-45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
SSA-46	<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	<0.5	<0.5
SSA-47	<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	<0.5	<0.5
SSA-48	<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	<0.5	<0.5
SSA-49	<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	<0.5	<0.5
SSA-5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2
SSA-50	<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	<0.5	<0.5
SSA-6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1
SSA-7	<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	<0.5	<0.5
SSA-8	<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	<0.5	<0.5
SSA-9	<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	<0.5	<0.5
Number of Results	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Number of Detects	0	0	0	2	0	0	56	56	0	0	0	5	0	0	0	0	2	1	5
Minimum Concentration	<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	<0.5	<0.5
Minimum Detect	ND	ND	ND	0.7	ND	ND	1.2	0.6	ND	ND	ND	0.6	ND	ND	ND	ND	0.5	0.6	0.6
Maximum Concentration	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	1.3	0.6	5.6
Maximum Detect	ND	ND	ND	0.8	ND	ND	1.2	0.7	ND	ND	ND	1.3	ND	ND	ND	ND	1.3	0.6	5.6
Average Concentration	0.25	0.25	0.25	0.27	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.31	0.25	0.25	0.25	0.25	0.27	0.26	0.41
Median Concentration	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation	0	0	0	0.094	0	0	0	0.019	0	0	0	0.22	0	0	0	0	0.14	0.047	0.76
Number of Guideline Exceedances	0	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

Table 13. Biopile Results Summary
Clyde WARP - Stage 2 - AA3
0561882

Field_ID	LocCode	Sample_Type	Lab_Report_Number	Naphthalene	TRH NEPM (1999)					TRH NEPM (2013)						
				Naphthalene	TRH C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction
				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	20	20	50	50	50	20	20	50	50	100	100	100
Clyde WARP SSTL (Direct Contact - Commercial)				9800							28000		17000	27000		27000
Clyde WARP SSTL (Direct Contact - Construction Worker)				67000							69000		45000	64000		64000
Clyde WARP SSTL (Direct Contact - IMW)				810000							830000		540000	770000		770000
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m				NL							600		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-1.99m				NL							770		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2-3.99m				NL							NL		NL			
Clyde WARP SSTL (Vapour Intrusion - Commercial) >4-6m				NL							NL		NL			
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)				NL							NL		NL			
Clyde WARP SSTL (Vapour Intrusion - IMW)				NL							NL		NL			
NEPM (1999) Management Limits - Commercial/Industrial (coarse)										700		1000		3500		10000
SP105_01	SP105	Normal	884529	<0.5	<20	26	240	130	396	<20	<20	55	55	320	375	<100
SP105_02	SP105	Normal	884529	<0.5	<20	<20	63	<50	63	<20	<20	<50	<50	<100	<100	<100
SP105_03	SP105	Normal	884529	<0.5	<20	<20	160	110	270	<20	<20	<50	<50	240	240	<100
SP105_04	SP105	Normal	884529	<0.5	<20	23	170	99	292	<20	<20	<50	<50	230	230	<100
SP105_05	SP105	Normal	884529	<0.5	<20	20	140	100	260	<20	<20	<50	<50	210	210	<100
SP105_06	SP105	Normal	884529	<0.5	<20	21	91	79	191	<20	<20	<50	<50	140	140	<100
SP105_07	SP105	Normal	884529	<0.5	<20	<20	160	120	280	<20	<20	<50	<50	230	230	<100
SP105_08	SP105	Normal	884529	<0.5	<20	<20	110	78	188	<20	<20	<50	<50	140	140	<100
SP105_09	SP105	Normal	884529	<0.5	<20	<20	170	140	310	<20	<20	<50	<50	260	260	<100
SP105_10	SP105	Normal	884529	<0.5	<20	20	190	150	360	<20	<20	<50	<50	260	370	110
DO1-20220502	SP105	Field_D	884529	<0.5	<20	<20	120	80	200	<20	<20	<50	<50	150	150	<100
T01_20220502	SP105	Interlab_D	884529	<0.5	<20	<20	190	130	320	<20	<20	<50	<50	230	230	<100
SP106_01	SP106	Normal	884529	<0.5	<20	<20	120	110	230	<20	<20	<50	<50	180	180	<100
SP106_02	SP106	Normal	884529	<0.5	<20	63	280	190	533	<20	<20	110	110	350	590	130
SP106_03	SP106	Normal	884529	<0.5	<20	46	150	110	306	24	24	52	52	200	252	<100
SP106_04	SP106	Normal	884529	<0.5	<20	34	83	67	184	<20	<20	<50	<50	110	110	<100
SP106_05	SP106	Normal	884529	<0.5	<20	60	240	560	860	<20	<20	<100	<100	540	1300	760
SP106_06	SP106	Normal	884529	<0.5	<20	<20	120	140	260	<20	<20	<50	<50	190	330	140
SP106_07	SP106	Normal	884529	<0.5	<20	<20	160	170	330	<20	<20	<50	<50	250	380	130
SP106_08	SP106	Normal	884529	<0.5	<20	<20	110	65	175	<20	<20	<50	<50	150	150	<100
SP106_09	SP106	Normal	884529	<0.5	<20	58	590	300	948	<20	<20	130	130	760	1050	160
SP106_10	SP106	Normal	884529	<0.5	<20	57	570	330	957	<20	<20	120	120	780	1100	200
DO2-20220502	SP106	Field_D	884529	<0.5	<20	<20	88	89	177	<20	<20	<50	<50	150	150	<100
SP107_01	SP107	Normal	884529	<0.5	<20	46	550	270	866	<20	<20	120	120	690	980	170
SP107_02	SP107	Normal	884529	<0.5	<20	81	640	240	961	<20	<20	190	190	730	1050	130
SP107_03	SP107	Normal	884529	<0.5	<20	220	1200	730	2150	<20	<20	430	430	1600	2490	460
SP107_04	SP107	Normal	884529	<0.5	<20	28	320	140	488	<20	<20	63	63	390	453	<100
SP107_05	SP107	Normal	884529	<0.5	<20	46	600	360	1006	<20	<20	110	110	820	1120	190
SP107_06	SP107	Normal	884529	<0.5	<20	<20	570	290	860	<20	<20	79	79	760	989	150
SP107_07	SP107	Normal	884529	<0.5	<20	82	550	120	752	<20	<20	190	190	540	730	<100
SP107_08	SP107	Normal	884529	<0.5	<20	53	820	280	1153	<20	<20	200	200	930	1280	150
SP107_09	SP107	Normal	884529	<0.5	<20	<200	1400	760	2160	<20	<20	<500	<500	1800	1800	<1000
SP107_10	SP107	Normal	884529	<0.5	<20	48	850	370	1268	<20	<20	140	140	1100	1430	190
DO3-20220502	SP107	Field_D	884529	<0.5	<20	30	830	340	1200	<20	<20	130	130	890	1190	170
T02_20220502	SP107	Interlab_D	884529	<0.5	<20	30	610	260	900	<20	<20	120	120	740	1000	140
SP108_01	SP108	Normal	884529	<0.5	<20	140	470	210	820	36	36	230	230	570	920	120
SP108_02	SP108	Normal	884529	<0.5	<20	94	1100	450	1644	<20	<20	220	220	1300	1780	260
SP108_03	SP108	Normal	884529	<0.5	<20	86	1300	500	1886	<20	<20	240	240	1500	2010	270
SP108_04	SP108	Normal	884529	<0.5	<20	77	420	230	727	<20	<20	140	140	540	820	140
SP108_05	SP108	Normal	884529	<0.5	<20	21	480	280	781	<20	<20	76	76	670	896	150
SP108_06	SP108	Normal	884529	<0.5	<20	210	650	290	1150	38	38	320	320	760	1240	160
SP108_07	SP108	Normal	884529	<0.5	<20	56	770	350	1176	<20	<20	170	170	970	1330	190
SP108_08	SP108	Normal	884529	<0.5	<20	110	860	400	1370	<20	<20	200	200	1100	1530	230
SP108_09	SP108	Normal	884529	<0.5	<20	110	830	360	1300	<20	<20	250	250	1000	1450	200
SP108_10	SP108	Normal	884529	<0.5	<20	25	350	190	565	<20	<20	57	57	460	637	120
DO4-20220502	SP108	Field_D	884529	<0.5	<20	36	500	280	816	<20	<20	110	110	660	920	150
SP109_01	SP109	Normal	884529	<0.5	<20	90	590	310	990	23	23	190	190	750	1120	180
SP109_02	SP109	Normal	884529	<0.5	<20	99	710	360	1169	<20	<20	200	200	900	1310	210
SP109_03	SP109	Normal	884529	<0.5	23	78	450	260	788	28	28	160	160	610	920	150
SP109_04	SP109	Normal	884529	<0.5	<20	99	250	56	405	24	24	160	160	230	390	<100
SP109_05	SP109	Normal	884529	<0.5	<20	170	580	58	808	<20	<20	340	340	400	740	<100
SP109_06	SP109	Normal	884529	<0.5	<20	220	400	89	709	<20	<20	340	340	360	700	<100
SP109_07	SP109	Normal	884529	<0.5	<20	92	380	68	540	<20	<20	200	200	290	490	<100
SP109_08	SP109	Normal	884529	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100
SP109_09	SP109	Normal	884529	<0.5	<20	150	330	<50	480	<20	<20	250	250	230	480	<100
SP109_10	SP109	Normal	884529	<0.5	<20	170	820	270	1260	<20	<20	350	350	880	1360	130
DO5-20220503	SP109	Field_D	884529	<0.5	<20	250	530	70	850	22	22	430	430	450	880	<100
T03_20220503	SP109	Interlab_D	884529	<0.5	<20	250	790	93	1133	22	22	470	470	570	1040	<100

Field_ID	BTEX						Inorganics	PAH/Phenols																		
	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.2	0.3	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)	400														40											
Clyde WARP SSTL (Direct Contact - Construction Worker)	1200														200											
Clyde WARP SSTL (Direct Contact - IMW)	15000														3000											
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m	3.2																									
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-1.99m	3.2																									
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2-3.99m	3.2																									
Clyde WARP SSTL (Vapour Intrusion - Commercial) >4-6m	3.2																									
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)	NL																									
Clyde WARP SSTL (Vapour Intrusion - IMW)	NL																									
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																										
SP105_01	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<0.5	<0.5	<0.5	0.7	0.7	0.8	1.4	1.1	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	3.1
SP105_02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<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	<0.5	<0.5
SP105_03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
SP105_04	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	20	<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	<0.5	<0.5
SP105_05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<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	<0.5	<0.5
SP105_06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<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	<0.5	<0.5
SP105_07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<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	<0.5	<0.5
SP105_08	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	15	<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	<0.5	<0.5
SP105_09	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<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	<0.5	<0.5
SP105_10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
DO1-20220502	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<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	<0.5	<0.5
T01_20220502	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	15	<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	<0.5	<0.5
SP106_01	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	14	<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	<0.5	<0.5
SP106_02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
SP106_03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
SP106_04	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
SP106_05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	15	<0.5	<0.5	<0.5	<0.5	1.2	1.3	2	1.6	<0.5	2.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	4.7
SP106_06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<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	<0.5	<0.5
SP106_07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<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	<0.5	<0.5
SP106_08	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<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	<0.5	<0.5
SP106_09	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	<0.5	<0.5	2.3	1.2	6.8
SP106_10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	14	<0.5	<0.5	<0.5	1	0.6	0.7	1.4	1	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<0.5	0.8	0.9	4.9
DO2-20220502	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
SP107_01	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	7.4	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	<0.5	<0.5	2.3	1.3	6.6
SP107_02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	9.8	<1	<1	<1	1.9	0.7	1	1.6	1.3	0.7	<0.5	<0.5	3.3	<0.5	<0.5	<1	<0.5	1.8	1.9	10
SP107_03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.8	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.3	<0.5	0.7	<0.5	<0.5	<0.5	1.2	3.9
SP107_04	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	11	<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	<0.5	<0.5
SP107_05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.5	<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	0.6	0.6
SP107_06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	7.6	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	1.2	0.7	<0.5	<0.5	0.5	1.2	<0.5	0.5	<0.5	<0.5	1.9	0.8	5.6
SP107_07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.4	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	1	<0.5	2.3
SP107_08	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	10	<0.5	<0.5	<0.5	1.7	0.6	0.9	1.5	1.2	<0.5	<0.5	0.8	2.4	<0.5	<0.5	0.6	<0.5	3.2	1.5	11
SP107_09	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	9.1	0.7	<0.5	<0.5	1.6	0.9	1.4	1.9	1.6	1	1.1	1.4	3.9	<0.5	0.7	0.9	<0.5	3.7	2.5	18
SP107_10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.2	0.5	<0.5	<0.5	2	0.8	1.7	1.8	1.7	0.6	<0.5	1.2	3.4	0.5	0.8	<0.5	<0.5	2.8	2.4	15
DO3-20220502	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.3	<0.5	<0.5	<0.5	1.5	0.9	1.8	2	1.9	<0.5	<1	<1	2.4	0.7	0.6	<0.5	<0.5	2.8	2.4	11
T02_20220502	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.6	<0.5	<0.5	<0.5	1.9	0.8	1.8	1.9	1.8	0.6	0.6	<0.5	3	0.7	0.6	0.5	<0.5	4	2.1	15
SP108_01	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	22	<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	<0.5	<0.5
SP108_02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	10	<0.5	<0.5	0.6	6.5	2.1	4.5	4.5	4.5	1.7	0.6	3	9.3	1.1	2.2	0.6	0.7	12	5.1	46
SP108_03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	7.9	<0.5	<0.5	<0.5	6.9	2.3	5.2	5.2	5.2	1.8	1	3.4	11	1.5	2.6	0.6	0.9	10	6.2	48
SP108_04	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	12	<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	<0.5	<0.5
SP108_05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.1	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	1	0.7	3.1
SP108_06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	12	<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	<0.5	<0.5
SP108_07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	11	<0.5	<0.5	<0.5	2.9	1	1.5	2	1.7	0.8	<0.5	0.6	3.8	<0.5	0.7	<0.5	<0.5	<0.5	2.8	13
SP108_08	<0.1	0.8	<0.1	<0.1	<0.2	<0.3	12	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	2.1
SP108_09	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	8.8	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	0.6	1.1	4
SP108_10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	1.3	0.7	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	3.1
DO4-20220502	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	11	<0.5	<0.5	<0.5	0.9	0.5	0.6	1.3	0.9	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	3.6
SP109_01	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<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	0.6	0.6
SP109_02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.6
SP109_03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	0.7	<0.5	<0.5	<0.5	0.8	1.5
SP109_04	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<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	<0.5	<0.5
SP109_05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
SP109_06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
SP109_07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	17	<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	<0.5	<0.5
SP109_08	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	14	<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	<0.5	<0.5
SP109_09	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	19	<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	<0.5	<0.5
SP109_10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	11	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	1.2	0.7	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	1	2.8
DO5-20220503	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5
T03_20220503	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	16	<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	<0.5	<0.5

Statistical Summary

	Naphthalene	TRH C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction
Number of Results	58	58	58	58	58	58	58	58	58	58	58	58	58
Number of Detects	0	1	43	57	55	57	8	8	38	38	56	56	31

	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (Sum of total)
Number of Results	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Number of Detects	0	1	0	0	0	0	58	2	0	1	22	13	13	58	58	7	5	7	25	5	10	5	3	16	24	29

	Naphthalene	TRH NEPM (1999)					TRH NEPM (2013)							BTEX						Inorganics	PAH/Phenols																						
	Naphthalene	TRH C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Moisture Content (dried @ 103°C)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(bk)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (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	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	20	20	50	50	50	20	20	50	50	100	100	100	0.1	0.1	0.1	0.1	0.2	0.3	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Clyde WARP SSTL (Direct Contact - Commercial)	9800							28000		17000	27000		27000	400														40														
Clyde WARP SSTL (Direct Contact - Construction Worker)	67000							69000		45000	64000		64000	1200														200														
Clyde WARP SSTL (Direct Contact - IMW)	810000							830000		540000	770000		770000	15000														3000														
Clyde WARP SSTL (Vapour Intrusion - Commercial) 0.15m	NL							600		NL				3.2																												
Clyde WARP SSTL (Vapour Intrusion - Commercial) >1-1.99m	NL							770		NL				3.2																												
Clyde WARP SSTL (Vapour Intrusion - Commercial) >2-3.99m	NL							NL		NL				3.2																												
Clyde WARP SSTL (Vapour Intrusion - Commercial) >4-6m	NL							NL		NL				3.2																												
Clyde WARP SSTL (Vapour Intrusion - Construction Worker)	NL							NL		NL				NL																												
Clyde WARP SSTL (Vapour Intrusion - IMW)	NL							NL		NL				NL																												
NEPM (1999) Management Limits - Commercial/Industrial (coarse)							700		1000		3500		10000																													

Field_ID LocCode Sample_Type Lab_Report_Number

Minimum Concentration	<0.5	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	7.4	<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	<0.5	<0.5	<0.5	<0.5	<0.5
Minimum Detect	ND	23	20	63	56	63	22	22	52	52	110	110	110	ND	0.8	ND	ND	ND	ND	7.4	0.5	ND	0.6	0.5	0.5	0.6	1.2	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Maximum Concentration	<0.5	23	250	1400	760	2160	38	38	<500	<500	1800	2490	<1000	<0.1	0.8	<0.1	<0.1	<0.2	<0.3	22	<1	<1	<1	6.9	2.3	5.2	5.2	5.2	1.8	2.8	3.4	11	1.5	2.6	<1	0.9	12	6.2	48				
Maximum Detect	ND	23	250	1400	760	2160	38	38	470	470	1800	2490	760	ND	0.8	ND	ND	ND	ND	22	0.7	ND	0.6	6.9	2.3	5.2	5.2	5.2	1.8	2.8	3.4	11	1.5	2.6	0.9	0.9	12	6.2	48			
Average Concentration	0.25	10	68	463	220	746	12	12	140	140	558	789	135	0.05	0.063	0.05	0.05	0.1	0.15	13	0.27	0.25	0.26	0.79	0.42	0.59	1.4	0.92	0.34	0.34	0.41	1.2	0.31	0.38	0.29	0.28	1.1	0.84	4.4			
Median Concentration	0.25	10	47	435	180	766.5	10	10	120	120	500	780	125	0.05	0.05	0.05	0.05	0.1	0.15	13.5	0.25	0.25	0.25	0.25	0.25	0.25	1.2	0.6	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.425			
Standard Deviation	0	1.7	66	331	162	502	6.4	6.4	119	119	401	556	125	0	0.098	0	0	0	0	3.5	0.074	0.033	0.056	1.3	0.41	0.92	0.69	0.83	0.31	0.37	0.57	2	0.21	0.41	0.12	0.12	2.1	1.1	9.2			
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Appendix C-2 Tables from Stage 2 AAQ summary

TABLE 1 - SUMMARY OF IMPLEMENTATION OF AQ MANAGEMENT PROCEDURE				
Day of Week	Date	Activities Undertaken	Trigger Level Reached (Y/N)	Action(s) taken in response to Trigger Level
Monday	15/11/2021	Contaminated Soil Screening	N	-
Tuesday	16/11/2021	Excavation (AEC-3E), Contaminated Soil Screening	N	-
Wednesday	17/11/2021	Excavation (AEC-3E), Contaminated Soil Screening, VENM import/backfilling (AEC-3A, AEC-3B)	N	-
Thursday	18/11/2021	Contaminated Soil Screening / MPG Waterline installation	N	-
Friday	19/11/2021	Biopile construction / Stockpiling and VENM import for 3A & B co	N	-
Saturday	20/11/2021			
Sunday	21/11/2021			
Monday	22/11/2021	No works - inclement weather and waterlogged site conditions	N/A	-
Tuesday	23/11/2021	No works - inclement weather and waterlogged site conditions	N/A	-
Wednesday	24/11/2021	No works - inclement weather and waterlogged site conditions	N/A	-
Thursday	25/11/2021	No works - inclement weather and waterlogged site conditions	N/A	-
Friday	26/11/2021	No works - inclement weather and waterlogged site conditions	N/A	-
Saturday	27/11/2021			
Sunday	28/11/2021			
Monday	29/11/2021	No works due to waterlogged site conditions	N	-
Tuesday	30/11/2021	No works due to waterlogged site conditions	N	-
Wednesday	1/12/2021	No works due to waterlogged site conditions	N	-
Thursday	2/12/2021	No works due to waterlogged site conditions	N	-
Friday	3/12/2021	No works due to waterlogged site conditions	N	-
Saturday	4/12/2021			
Sunday	5/12/2021			
Monday	6/12/2021	Screening, levelling/compacting	N	-
Tuesday	7/12/2021	Screening, backfilling of 3D	N	-
Wednesday	8/12/2021	Screening, compacting, backfilling	N	-
Thursday	9/12/2021	No works due to inclement weather	N	-
Friday	10/12/2021	No works due to inclement weather	N	-
Saturday	11/12/2021			
Sunday	12/12/2021			
Monday	13/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Tuesday	14/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Wednesday	15/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Thursday	16/12/2021	Contaminated Soil Screening, transport to biopile area, backfilling (AEC-3D)	N	-
Friday	17/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Saturday	18/12/2021			
Sunday	19/12/2021			
Monday	20/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Tuesday	21/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Wednesday	22/12/2021	Contaminated Soil Screening, transport to biopile area	N	-
Thursday	23/12/2021	Site control setup	N/A	-
Friday	24/12/2021	**No work - Christmas shutdown**		
Saturday	25/12/2021	**No work - Christmas shutdown**		
Sunday	26/12/2021	**No work - Christmas shutdown**		
Monday	27/12/2021	**No work - Christmas shutdown**		
Tuesday	28/12/2021	**No work - Christmas shutdown**		
Wednesday	29/12/2021	**No work - Christmas shutdown**		
Thursday	30/12/2021	**No work - Christmas shutdown**		
Friday	31/12/2021	**No work - Christmas shutdown**		
Saturday	1/01/2022	**No work - Christmas shutdown**		
Sunday	2/01/2022	**No work - Christmas shutdown**		
Monday	3/01/2022	**No work - Christmas shutdown**		
Tuesday	4/01/2022	**No work - Christmas shutdown**		
Wednesday	5/01/2022	**No work - Christmas shutdown**		
Thursday	6/01/2022	**No work - Christmas shutdown**		
Friday	7/01/2022	**No work - Christmas shutdown**		
Saturday	8/01/2022	**No work - Christmas shutdown**		
Sunday	9/01/2022	**No work - Christmas shutdown**		
Monday	10/01/2022	No works - inclement weather and waterlogged site conditions	N	-
Tuesday	11/01/2022	VENM import (AEC-3E), SVE system commissioning	N	-
Wednesday	12/01/2022	Contaminated Soil Screening, transport to biopile area	N	-
Thursday	13/01/2022	No works - inclement weather and waterlogged site conditions	N	-
Friday	14/01/2022	No works - inclement weather and waterlogged site conditions	N	-
Saturday	15/01/2022			
Sunday	16/01/2022			
Monday	17/01/2022	Contaminated Soil Screening, transport to biopile area	N	-
Tuesday	18/01/2022	Contaminated Soil Screening, transport to biopile area and MGP sewer installation	N	-
Wednesday	19/01/2022	No works - inclement weather and waterlogged site conditions	N	-
Thursday	20/01/2022	Contaminated Soil Screening, transport to biopile area	N	-
Friday	21/01/2022	Contaminated Soil Screening, transport to biopile area	N	-
Saturday	22/01/2022			
Sunday	23/01/2022			
Monday	24/01/2022	SVE System commissioning	N	-
Tuesday	25/01/2022	SVE System commissioning	N	-
Wednesday	26/01/2022	PUBLIC HOLIDAY	N	-
Thursday	27/01/2022	SVE System commissioning	N	-
Friday	28/01/2022	SVE System commissioning	N	-
Saturday	29/01/2022			
Sunday	30/01/2022			
Monday	31/01/2022	SVE System commissioning	N	-
Tuesday	1/02/2022	SVE System commissioning	N	-
Wednesday	2/02/2022	SVE System commissioning	N	-
Thursday	3/02/2022	SVE System commissioning	N	-
Friday	4/02/2022	SVE System commissioning	N	-
	5/02/2022			
	6/02/2022			

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
2/09/2021			SSA-SW	Area	0	N	-	N	-	N	
2/09/2021			SSA-CW	Area	0	N	-	N	-	N	
2/09/2021			SSA-NW	Area	0	N	-	N	-	N	
2/09/2021			SSA-NE	Area	0	N	-	N	-	N	
2/09/2021			SSA-CE	Area	0	N	-	N	-	N	
2/09/2021			SSA-SE	Area	0	N	-	N	-	N	
14/09/2021			N BP Place	Area	0.3	N	-	Y	Very minor	N	
14/09/2021	9:30		S BP Place	Area	0.2	N	-	Y	Very minor	N	
14/09/2021	9:30		S Biopile	Area	1.6	N	-	Y	Very minor	N	
14/09/2021	9:30		N Biopile	Area	1	N	-	Y	Very minor	N	
14/09/2021	9:30		SSA NW	Area	0.1	N	-	N	N	N	
14/09/2021	9:30		SSA NE	Area	0	N	-	N	N	N	
15/09/2021	8:30		Biopile East	Area	0	N	-	N	-	N	
15/09/2021	8:30		Biopile West	Area	0.1	N	-	N	-	N	
15/09/2021	8:30		AEC-14B	Area	0	N	-	N	-	N	
15/09/2021	8:30		Tank Farm A1	Area	0.2	N	-	N	-	N	
15/09/2021	8:30		SSA-NE	Area	0.1	N	-	N	-	N	
15/09/2021	8:30		SSA-SE	Area	0	N	-	N	-	N	
15/09/2021	11:00		Biopile East	Area	0.7	N	-	N	-	N	
15/09/2021	11:00		Biopile West	Area	0.8	N	-	Y	HC localised odour present	N	
15/09/2021	11:00		AEC-14B	Area	0.7	N	-	N	-	N	
15/09/2021	11:00		Tank Farm A1	Area	0.7	N	-	N	-	N	
15/09/2021	11:00		SSA-NW	Area	0.7	N	-	N	-	N	
15/09/2021	11:00		SSA-NE	Area	0.7	N	-	N	-	N	
15/09/2021	11:00		SSA-SE	Area	0.7	N	-	N	-	N	
16/09/2021	8:33	NW	Biopile East	Area	0	N	-	N	-	N	
16/09/2021	8:33	NW	Biopile West	Area	0	N	-	N	-	N	
16/09/2021	8:33	NW	Tank Farm A1	Area	0	N	-	Y	very faint organic odour during loading of piles	N	
16/09/2021	8:33	NW	SSA-SW	Area	0	N	-	N	-	N	
16/09/2021	10:17		Biopile East	Area	0.1	N	-	N	-	N	
16/09/2021	10:17		Biopile West	Area	0	N	-	N	-	N	
16/09/2021	10:17		Tank Farm A1	Area	0	N	-	N	-	N	
16/09/2021	10:17		SSA-SW	Area	0.1	N	Minor dust during dumping	Y	Faint earthy odour	N	
16/09/2021	12:00		Biopile East	Area	0	N	-	N	-	N	
16/09/2021	12:00		Biopile West	Area	0	N	-	N	-	N	
16/09/2021	12:00		Tank Farm A1	Area	0.1	N	-	N	-	N	
16/09/2021	12:00		SSA-SW	Area	0.1	N	-	N	-	N	
16/09/2021	21:30		Biopile East	Area	0	N	-	N	-	N	
16/09/2021	21:30		Biopile West	Area	0	N	-	N	-	N	
16/09/2021	21:30		Tank Farm A1	Area	0	N	-	N	-	N	
16/09/2021	21:30		SSA-SW	Area	0	N	-	N	-	N	
17/09/2021	8:30		Biopile (DW)	Area	0	N	-	N	-	N	
17/09/2021	8:30		Tank Farm A1	Area	0.1	N	-	N	-	N	
17/09/2021	8:30		3A-NE	Area	0.1	Y	Minor dust during loading	N	-	N	
17/09/2021	8:30		Biopile	Area	0.1	N	-	N	-	N	
17/09/2021	10:00		Biopile	Area	0.3	N	-	N	-	N	
17/09/2021	10:00		Downer	Area	0	N	-	N	-	N	
17/09/2021	10:00		Tank Farm A1	Area	0	Y	Minor dust from machinery	N	-	N	
17/09/2021	10:00		VENM Import	Area	0.1	N	-	N	-	N	
17/09/2021	12:00		Biopile	Area	0.1	N	-		-	N	
17/09/2021	12:00		Downer	Area	0.5	N	-		-	N	
17/09/2021	12:00		Tank Farm A1	Area	0.5	Y	Minor dust from machinery	Y	Minimal HC odour	N	
17/09/2021	12:00		VENM Import	Area	0.4	N	-	N	-	N	
17/09/2021	14:00		Biopile	Area	0	Y	Dust generation in biopile pay	N	-	N	
17/09/2021	14:00		Downer	Area	0.1	Y	Minor dust from dump trucks	N	-	N	
17/09/2021	14:00		Tank Farm A1	Area	0.1	N	-	N	-	N	
17/09/2021	14:00		VENM Import	Area	0.3	Y	Moderate dust from VENM import trucks	N	-	N	
21/09/2021	8:45		Treated Placement AS	Area	0.1	N	-	Y	Minor	N	
21/09/2021	8:45		Treated Placement AE	Area	0.9	N	-	Y	Minor	N	
21/09/2021	8:45		Treated Placement AN	Area	0.1	N	-	Y	Minor	N	
21/09/2021	8:45		Bioplile West	Area	0.8	N	-	N	-	N	
21/09/2021	8:45		Bioplile North	Area	0.8	N	-	N	-	N	
21/09/2021	8:45		Bioplile East	Area	0.9	N	-	N	-	N	
21/09/2021	8:45		Bioplile South	Area	0.8	N	-	N	-	N	
22/09/2021	9:30	SW / 12	14B-NW	Area	0.5	N	-	N	-	N	
22/09/2021	9:30	SW / 12	14B-SW	Area	0.2	N	-	N	-	N	
22/09/2021	9:30	SW / 12	14B-W	Area	0.2	N	-	N	-	N	
22/09/2021	15:20		14B-W	Area	4	N	-	Y	Due to excavation	N	
22/09/2021	15:20		14B-NW	Area	3.3	N	-	N	-	N	
22/09/2021	15:20		14B-SW	Area	3	N	-	N	-	N	
23/09/2021	14:00	NW	14B-NW	Area	0.1	N	-	N	-	N	
23/09/2021	14:00	NW	14B-SW	Area	0.1	N	-	N	-	N	
23/09/2021	14:00	NW	14B-W	Area	0.1	N	-	N	-	N	
23/09/2021	14:00	NW	SSA-CW	Area	0.1	N	-	N	-	N	
23/09/2021	14:00	NW	SSA-SW	Area	0	N	-	N	-	N	
23/09/2021	14:00	NW	SSA-SE	Area	0	N	-	N	-	N	
23/09/2021	14:00	NW	SSA-CE	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	14B-NW	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	14B-SW	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	14B-W	Area	0.1	N	-	N	-	N	
24/09/2021	11:00	NW / 12	SSA-CW	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	SSA-SW	Area	0.2	N	-	N	-	N	
24/09/2021	11:00	NW / 12	SSA-CE	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	SSA-SE	Area	0.3	N	-	N	-	N	
24/09/2021	11:00	NW / 12	3A-S	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	3A-NW	Area	0	N	-	N	-	N	
24/09/2021	11:00	NW / 12	3A-NE	Area	1.2	N	-	Y	Moderate HC odour	N	
24/09/2021	14:20		14B-NW	Area	0.2	N	-	N	-	N	
24/09/2021	14:20		14B-SW	Area	0.2	N	-	N	-	N	
24/09/2021	14:20		14B-W	Area	0.2	N	-	N	-	N	
24/09/2021	14:20		SSA-SW	Area	0.4	N	-	N	-	N	
24/09/2021	14:20		SSA-SE	Area	0.6	N	-	N	-	N	
24/09/2021	14:20		SSA-CE	Area	0.5	N	-	N	-	N	
24/09/2021	14:20		SSA-CW	Area	0.4	N	-	N	-	N	
24/09/2021	14:20		3A-NW	Area	0.5	N	-	N	-	N	
24/09/2021	14:20		3A-NE	Area	1	Y	Dust generated with wind	Y	Faint HC odour	N	
24/09/2021	14:20		3A-S	Area	0.4	N	-	N	-	N	
24/09/2021	11:00		AS-01	Boundary	0.3	N	-	N	-	N	
24/09/2021	11:00		AS-04	Boundary	0.2	N	-	N	-	N	
24/09/2021	11:00		AS-02	Boundary	0	N	-	N	-	N	
24/09/2021	14:00		AS-01	Boundary	0.4	N	-	N	-	N	
24/09/2021	14:00		AS-04	Boundary	0.3	N	-	N	-	N	
24/09/2021	14:00		AS-02	Boundary	0.3	N	-	N	-	N	
27/09/2021	7:30		14B-NW	Area	0	N	-	N	-	N	
27/09/2021	7:30		14B-SW	Area	0	N	-	N	-	N	
27/09/2021	7:30		14B-W	Area	0	N	-	N	-	N	
27/09/2021	7:30		SSA-CW	Area	0	N	-	N	-	N	
27/09/2021	7:30		SSA-SW	Area	0.1	N	-	N	-	N	
27/09/2021	7:30		SSA-CE	Area	0.1	N	-	N	-	N	
27/09/2021	7:30		SSA-SE	Area	0.1	N	-	Y	Minor potential HC odour	N	
27/09/2021	11:46	-	3A-NW	Area	0.6	N	-	Y	-	N	
27/09/2021	11:46	-	3A-NE	Area	0	N	-	Y	-	N	
27/09/2021	11:46	-	SSA-SW	Area	2	N	-	Y	-	N	
27/09/2021	11:46	-	SSA-CW	Area	0	N	-	N	-	N	
27/09/2021	11:46	-	SSA-NW	Area	0	N	-	N	-	N	
27/09/2021	11:46	-	SSA-NE	Area	0	N	-	N	-	N	
27/09/2021	11:46	-	SSA-CE	Area	0	N	-	N	-	N	
27/09/2021	11:46	-	SSA-SE	Area	0	N	-	N	-	N	
27/09/2021	14:25		3A-NW	Area	0.1	N	-	Y	-	N	
27/09/2021	14:25		3A-NE	Area	0.3	N	-	N	-	N	
27/09/2021	14:25		3A-S	Area	0	N	-	N	-	N	
27/09/2021	14:25		SSA-SW	Area	3.9	N	-	Y	-	N	
27/09/2021	14:25		SSA-CW	Area	0.5	N	-	Y	-	N	
27/09/2021	14:25		SSA-NW	Area	0	N	-	N	-	N	
27/09/2021	14:25		SSA-NE	Area	0	N	-	N	-	N	
27/09/2021	14:25		SSA-CE	Area	0	N	-	N	-	N	

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
27/09/2021	14:25		SSA-SE	Area	0	N	-	N	-	N	
27/09/2021	16:10		3A-NW	Area	0.3	N	-	N	-	N	
27/09/2021	16:10		3A-NE	Area	0	N	-	N	-	N	
27/09/2021	16:10		3A-S	Area	0	N	-	N	-	N	
27/09/2021	16:10		SSA-SW	Area	3	N	-	N	-	N	
27/09/2021	16:10		SSA-CW	Area	0.9	N	-	N	-	N	
27/09/2021	16:10		SSA-NW	Area	0	N	-	N	-	N	
27/09/2021	16:10		SSA-NE	Area	0	N	-	N	-	N	
27/09/2021	16:10		SSA-CE	Area	0	N	-	N	-	N	
27/09/2021	16:10		SSA-SE	Area	0	N	-	N	-	N	
27/09/2021	16:00		AS-01	Boundary	0	N	-	N	-	N	
27/09/2021	16:00		AS-02	Boundary	0	N	-	N	-	N	
27/09/2021	16:00		AS-03	Boundary	0.9	N	-	Y	-	N	
27/09/2021	16:00		AS-04	Boundary	0	N	-	N	-	N	
28/09/2021	8:00		3A-NW	Area	0.1	N	-	N	-	N	
28/09/2021	8:00		3A-NE	Area	0	N	-	N	-	N	
28/09/2021	8:00		3A-S	Area	0	N	-	Y	minimal	N	
28/09/2021	8:00		SSA-SW	Area	0	N	-	N	-	N	
28/09/2021	8:00		SSA-CW	Area	0.1	Y	minimal; dumping of fresh soil for compacting	N	-	N	
28/09/2021	8:00		SSA-NW	Area	0	N	-	N	-	N	
28/09/2021	8:00		SSA-NE	Area	0	N	-	N	-	N	
28/09/2021	8:00		SSA-CE	Area	0	N	-	N	-	N	
28/09/2021	8:00		SSA-SE	Area	0	N	-	N	-	N	
28/09/2021	15:00		3A-NW	Area	0.1	N	-	N	-	N	
28/09/2021	15:00		3A-NE	Area	0	N	sighted dust suppression	N	-	N	
28/09/2021	15:00		3A-S	Area	0.1	N	sighted dust suppression	N	-	N	
28/09/2021	15:00		SSA-SW	Area	1.8	N	-	Y	minimal	N	
28/09/2021	15:00		SSA-CW	Area	0.3	N	-	N	-	N	
28/09/2021	15:00		SSA-NW	Area	0	N	no stockpiling; compacting of segregation area	N	-	N	
28/09/2021	15:00		SSA-NE	Area	0	N	-	N	-	N	
28/09/2021	15:00		SSA-CE	Area	0	N	-	N	-	N	
28/09/2021	15:00		SSA-SE	Area	0	N	-	N	-	N	
28/09/2021	16:30		3A-NW	Area	n/a	N	-	N	-	N	no excavation
28/09/2021	16:30		3A-NE	Area	n/a	N	-	N	-	N	no excavation
28/09/2021	16:30		3A-S	Area	n/a	N	-	N	-	N	no excavation
28/09/2021	16:30		SSA-SW	Area	0.2	N	-	N	-	N	
28/09/2021	16:30		SSA-CW	Area	0.2	N	-	N	-	N	
28/09/2021	16:30		SSA-NW	Area	0	N	-	N	-	N	
28/09/2021	16:30		SSA-NE	Area	0	N	-	N	-	N	
28/09/2021	16:30		SSA-CE	Area	0	N	-	N	-	N	
28/09/2021	16:30		SSA-SE	Area	0	N	-	N	-	N	
28/09/2021	16:40		AS-01	Boundary	0	N	-	N	-	N	
28/09/2021	16:40		AS-02	Boundary	0	N	-	N	-	N	
28/09/2021	16:40		AS-03	Boundary	0	N	-	N	-	N	
28/09/2021	16:40		AS-04	Boundary	0	N	-	N	-	N	
29/09/2021	9:30		3A-NW	Area	0	N	-	N	-	N	
29/09/2021	9:30		3A-NE	Area	0.1	N	-	N	-	N	
29/09/2021	9:30		3A-S	Area	0.1	N	-	Y	very weak	N	
29/09/2021	9:30		SSA-SW	Area	0	N	-	N	-	N	
29/09/2021	9:30		SSA-CW	Area	0	N	-	N	-	N	
29/09/2021	9:30		SSA-NW	Area	0	N	-	N	-	N	
29/09/2021	9:30		SSA-NE	Area	0	N	-	N	-	N	
29/09/2021	9:30		SSA-CE	Area	0	N	-	N	-	N	
29/09/2021	9:30		SSA-SE	Area	0	N	-	N	-	N	
29/09/2021	10:20		3A-NW	Area	5.3	N	-	Y	heavy HC smell	Y	notified EPS; reduced material of concern
29/09/2021	10:20		3A-NE	Area	0.6	N	-	N	-	N	
29/09/2021	10:20		3A-S	Area	0	N	-	Y	minimal	N	
29/09/2021	10:20		SSA-SW	Area	0.1	N	-	N	-	N	dust suppression in progress
29/09/2021	10:20		SSA-CW	Area	0.1	N	-	N	-	N	
29/09/2021	10:20		SSA-NW	Area	0	N	-	N	-	N	
29/09/2021	10:20		SSA-NE	Area	0	N	-	N	-	N	
29/09/2021	10:20		SSA-CE	Area	0	N	-	N	-	N	
29/09/2021	10:20		SSA-SE	Area	1	N	-	N	-	N	
30/09/2021	14:00		3A-NW	Area	0.4	N	-	Y	-	N	
30/09/2021	14:00		3A-NE	Area	0.9	N	-	Y	HC odour evident during dumping	N	
30/09/2021	14:00		3A-S	Area	0.2	N	-	N	-	N	
30/09/2021	14:00		SSA-SW	Area	0.2	N	-	N	no piling acyivity opposite the sampling pt.	N	
30/09/2021	14:00		SSA-CW	Area	0.2	N	-	N	-	N	
30/09/2021	14:00		SSA-NW	Area	0	N	-	N	-	N	
30/09/2021	14:00		SSA-NE	Area	0	N	-	N	-	N	
30/09/2021	14:00		SSA-CE	Area	0	N	-	N	-	N	
30/09/2021	14:00		SSA-SE	Area	0	N	-	N	-	N	
1/10/2021	9:00	NW	3A-NW	Area	0.1	N		N		N	
1/10/2021	9:00	NW	3A-NE	Area	0	N		N		N	
1/10/2021	9:00	NW	3A-S	Area	1.4	N	Watered temp stockpille	Y	Neutral; very weak	N	
1/10/2021	9:00	NW	SSA-SW	Area	0	N		N		N	
1/10/2021	9:00	NW	SSA-CW	Area	0	N		N		N	
1/10/2021	9:00	NW	SSA-NW	Area	0	N		N		N	
1/10/2021	9:00	NW	SSA-NE	Area	0	N		N		N	
1/10/2021	9:00	NW	SSA-CE	Area	0	N		N		N	
1/10/2021	9:00	NW	SSA-SE	Area	0	N		N		N	
1/10/2021	15:40	E	3A-NW	Area	0.1	N		N		N	
1/10/2021	15:40	E	3A-NE	Area	0	N		N		N	
1/10/2021	15:40	E	3A-S	Area	0.2	N		Y	very weak	N	
1/10/2021	15:40	E	SSA-SW	Area	0	N		N		N	
1/10/2021	15:40	E	SSA-CW	Area	0	N		N		N	
1/10/2021	15:40	E	SSA-NW	Area	0	N		N		N	
1/10/2021	15:40	E	SSA-NE	Area	0	N		N		N	
1/10/2021	15:40	E	SSA-CE	Area	0	N		N		N	
1/10/2021	15:40	E	SSA-SE	Area	0	N		N		N	
1/10/2021	11:35	NE	AS-01	Boundary	0	N		N		N	
1/10/2021	11:35	NE	AS-02	Boundary	0	N		N		N	
1/10/2021	11:35	NE	AS-03	Boundary	0	N		N		N	
1/10/2021	11:35	NE	AS-04	Boundary	0	N		N		N	
1/10/2021	15:40	E	AS-01	Boundary	0	N		N		N	
1/10/2021	15:40	E	AS-02	Boundary	0	N		N		N	
1/10/2021	15:40	E	AS-03	Boundary	0	N		N		N	
1/10/2021	15:40	E	AS-04	Boundary	0	N		N		N	
5/10/2021	8:00	calm	3A-NW	Area	5.5	N	-	Y	distinct, neutral, diesel	Y	informed EPS
5/10/2021	8:00	calm	3A-NE	Area	0	N	-	N	-	N	
5/10/2021	8:00	calm	3A-S	Area	0.4	N	sighted dust suppression	Y	-	N	
5/10/2021	8:00	calm	SSA-SW	Area	0	N	-	N	-	N	
5/10/2021	8:00	calm	SSA-CW	Area	0	N	-	N	-	N	
5/10/2021	8:00	calm	SSA-NW	Area	0	N	-	N	-	N	
5/10/2021	8:00	calm	SSA-NE	Area	0	N	-	N	-	N	
5/10/2021	8:00	calm	SSA-CE	Area	0	N	-	N	-	N	
5/10/2021	8:00	calm	SSA-SE	Area	0	N	-	N	-	N	
5/10/2021	9:00	SW	AS-01	Boundary	0	N	-	N	-	N	
5/10/2021	9:00	SW	AS-02	Boundary	0	N	-	N	-	N	
5/10/2021	9:00	SW	AS-03	Boundary	0	N	-	N	-	N	
5/10/2021	9:00	SW	AS-04	Boundary	0	N	-	N	-	N	
6/10/2021	15:00	NW	3A-NW	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	3A-NE	Area	0.7	N	-	N	-	N	
6/10/2021	15:00	NW	3A-S	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	SSA-SW	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	SSA-CW	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	SSA-NW	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	SSA-NE	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	SSA-CE	Area	0	N	-	N	-	N	
6/10/2021	15:00	NW	SSA-SE	Area	0	N	-	N	-	N	
7/10/2021	8:30	N	3A-NW	Area	0	N	-	N	-		
7/10/2021	8:30	N	3A-NE	Area	0	N	-	N	-		
7/10/2021	8:30	N	3A-S	Area	0	N	-	N	-		
7/10/2021	8:30	N	SSA-SW	Area	0	N	sighted dust suppression	N	-		
7/10/2021	8:30	N	SSA-CW	Area	11	N	-	Y	-	Y	informed EPS, installed misting system
7/10/2021	8:30	N	SSA-NW	Area	0	N	-	N	-		

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
7/10/2021	8:30	N	SSA-NE	Area	0	N	-	N	-		
7/10/2021	8:30	N	SSA-CE	Area	0	N	-	N	-		
7/10/2021	8:30	N	SSA-SE	Area	0	N	-	N	-		
19/10/2021	11:00	SSE	3A-NW	Area	0	N	-	N			
19/10/2021	11:00	SSE	3A-NE	Area	0	N	-	N			
19/10/2021	11:00	SSE	3A-S	Area	0.1	N	-	N			
19/10/2021	11:00	SSE	SSA-SW	Area	0.8	N	-	Y			
19/10/2021	11:00	SSE	SSA-CW	Area	5.2	N	-	Y			informed EPS; activated anotec odour misting system
19/10/2021	11:00	SSE	SSA-NW	Area	0.8	N	-	N			
19/10/2021	11:00	SSE	SSA-NE	Area	0	N	-	N			
19/10/2021	11:00	SSE	SSA-CE	Area	0	N	-	N			
19/10/2021	11:00	SSE	SSA-SE	Area	0	N	-	N			
19/10/2021	16:00	SE	AS-01	Boundary	0	N	-	N			
19/10/2021	16:00	SE	AS-02	Boundary	0	N	-	N			
19/10/2021	16:00	SE	AS-03	Boundary	0	N	-	N			
19/10/2021	16:00	SE	AS-04	Boundary	0	N	-	N			
8/10/2021	11:10		3A-NW	Area	2.2	N	-	Y	Diesel	N	
8/10/2021	11:10		3A-NE	Area	0	N	-	N	-	N	
8/10/2021	11:10		3A-S	Area	0	N	-	N	-	N	
8/10/2021	11:10		SSA-SW	Area	0	N	-	N	-	N	
8/10/2021	11:10		SSA-CW	Area	0	N	-	N	-	N	
8/10/2021	11:10		SSA-NW	Area	0	N	-	N	-	N	
8/10/2021	11:10		SSA-NE	Area	0	N	-	N	-	N	
8/10/2021	11:10		SSA-CE	Area	0	N	-	N	-	N	
8/10/2021	11:10		SSA-SE	Area	0	N	-	N	-	N	
20/10/2021	8:20	WSW	3A-NW	Area		N	-		-	N	
20/10/2021	8:20	WSW	3A-NE	Area		N	-		-	N	
20/10/2021	8:20	WSW	3A-S	Area	1	N	-	Y	Weak, neutral	N	
20/10/2021	8:20	WSW	SSA-SW	Area	0	N	-		-	N	
20/10/2021	8:20	WSW	SSA-CW	Area	0	N	-		-	N	
20/10/2021	8:20	WSW	SSA-NW	Area	0	N	-		-	N	
20/10/2021	8:20	WSW	SSA-NE	Area	0	N	-		-	N	
20/10/2021	8:20	WSW	SSA-CE	Area	0.1	N	-	Y	Very weak, pleasant	N	
20/10/2021	8:20	WSW	SSA-SE	Area	0	N	-		-	N	
20/10/2021	12:00	SSE	3D-NW	Area	0.9	Y	Dust suppression	Y	-	N	
20/10/2021	12:00	SSE	3D-SW	Area	0.1	Y	Dust suppression	N	-	N	
20/10/2021	12:00	SSE	3D-E	Area	0	Y	Dust suppression	N	-	N	
20/10/2021	12:30		AS-01	Boundary	0	N	-		-	N	
20/10/2021	12:30		AS-02	Boundary	0	N	-		-		
20/10/2021	12:30		AS-03	Boundary	0	Y	Minimal	N	0-0.4ppm recorded at 50m NW of 3D; odour: weak, pleasant	N	
20/10/2021	12:30		AS-04	Boundary	0	N	-	N	-	N	
21/10/2021	7:30	WSW	3D-NW	Area	0	N	-	N	-	N	
21/10/2021	7:30	WSW	3D-SW	Area	0	N	-	N	-	N	
21/10/2021	7:30	WSW	3D-E	Area	0	N	-	N	-	N	
21/10/2021	7:30	WSW	SSA-CE	Area	0	N	-	N	-	N	
21/10/2021	11:00	ENE	3D-NW	Area	0	N	-	N	-	N	
21/10/2021	11:00	ENE	3D-SW	Area	0.2	N	-	N	-	N	
21/10/2021	11:00	ENE	3D-E	Area	0	N	-	N	-	N	
21/10/2021	11:00	ENE	SSA-CE	Area	0	N	-	N	-	N	
21/10/2021	3:00		AS-01	Boundary	0.2	N	-	N	-	N	
21/10/2021	3:00		AS-02	Boundary	0	N	-	N	-	N	
21/10/2021	3:00		AS-03	Boundary	0.1	N	-	N	-	N	
21/10/2021	3:00		AS-04	Boundary	0.1	N	-	N	-	N	
22/10/2021	7:30	NNW	3D-NW	Area	0	N	-	Y	Faint chemical odour	N	
22/10/2021	7:30	NNW	3D-SW	Area	0.1	N	-	N		N	
22/10/2021	7:30	NNW	3D-E	Area	0.4	N	-	Y	Faint chemical odour	N	
22/10/2021	7:30	NNW	14B-W	Area	0.1	N	-	N		N	
22/10/2021	11:00	NNW	3D-NW	Area	0	N	-	N	Faint chemical odour	N	
22/10/2021	11:00	NNW	3D-SW	Area	0	N	-	N		N	
22/10/2021	11:00	NNW	3D-E	Area	0	N	-	N		N	
22/10/2021	11:00	NNW	14B-SW	Area	0.1	Y	minor dust generation from machinery	N		N	
22/10/2021	11:00	NNW	14B-W	Area	0.1	N	-	N		N	
25/10/2021	7:40	WNW	14B-NW	Area	0	N	-	N		N	
25/10/2021	7:40	WNW	14B-SW	Area	0	N	-	N		N	
25/10/2021	7:40	WNW	14B-W	Area	0	N	-	N		N	
25/10/2021	11:15	WNW	SSA-CW	Area	0	N	-	N		N	
25/10/2021	11:15	WNW	SSA-SW	Area	0	N	-	N		N	
25/10/2021	11:15	WNW	SSA-CE	Area	0	N	-	N		N	
25/10/2021	11:15	WNW	SSA-SE	Area	0	N	-	N		N	
25/10/2021	15:00	SE	SSA-NW	Area	0	N	-	N		N	
25/10/2021	15:00	SE	SSE-NE	Area	0	N	-	N		N	
25/10/2021	15:00	SE	SSE-SE	Area	0	N	-	N		N	
25/10/2021	15:00	SE	SSE-SW	Area	0	N	-	N		N	
25/10/2021			AS-01	Boundary	0.2	N	-	N		N	
25/10/2021			AS-02	Boundary	0.4	N	-	N		N	
25/10/2021			AS-03	Boundary	0.1	N	-	N		N	
25/10/2021			AS-04	Boundary	0	N	-	N		N	
26/10/2021	7:40	calm	SSE-SW	Area	0	N	-	N		N	
26/10/2021	7:40	calm	SSE-SE	Area	0	N	-	N		N	
26/10/2021	7:40	calm	SSE-NW	Area	0	N	-	N		N	
26/10/2021	7:40	calm	SSE-NE	Area	0	N	-	N		N	
26/10/2021	7:40	calm	14A-NE	Area	0	N	-	N		N	
26/10/2021	10:30	calm	SSA-SW	Area	0	N	-	N		N	
26/10/2021	10:30	calm	SSA-SE	Area	0	N	-	N		N	
26/10/2021	10:30	calm	SSA-CW	Area	0	N	-	N		N	
26/10/2021	10:30	calm	SSA-CE	Area	0	N	-	N		N	
26/10/2021	14:45	NW	SSA-SW	Area	0	N	-	N		N	
26/10/2021	14:45	NW	SSA-SE	Area	0	N	-	N		N	
26/10/2021	14:45	NW	SSA-CW	Area	0	N	-	N		N	
26/10/2021	14:45	NW	SSA-CE	Area	0	N	-	N		N	
26/10/2021	14:45	NW	SSA-NW	Area	0	N	-	N		N	
26/10/2021	14:45	NW	SSA-NE	Area	0	N	-	N		N	
26/10/2021	14:45	NW	AS-01	Boundary	0	N	-	N		N	
26/10/2021	14:45	NW	AS-02	Boundary	0	N	-	N		N	
26/10/2021	14:45	NW	AS-03	Boundary	0	N	-	N		N	
26/10/2021	14:45	NW	AS-04	Boundary	0	N	-	N		N	
27/10/2021	8:30	W	SSA-SW	Area	0	N	-	N	-	N	
27/10/2021	8:30	W	SSA-CW	Area	0	N	-	N	-	N	
27/10/2021	8:30	W	SSA-NW	Area	0	N	-	N	-	N	
27/10/2021	8:30	W	SSA-NE	Area	0	N	-	N	-	N	
27/10/2021	8:30	W	SSA-CE	Area	0.3	N	-	Y	Neutral, gasoline	N	
27/10/2021	8:30	W	SSA-SE	Area	0.1	N	-	Y	Neutral, gasoline	N	
27/10/2021	10:30	N	SSA-SW	Area	0	N	-	N	-	N	
27/10/2021	10:30	N	SSA-CW	Area	0.3	N	-	Y	very weak, neutral, gasoline	N	
27/10/2021	10:30	N	SSA-NW	Area	0	N	-	N	-	N	
27/10/2021	10:30	N	SSA-NE	Area	0	N	-	N	-	N	
27/10/2021	10:30	N	SSA-CE	Area	0	N	-	N	-	N	
27/10/2021	10:30	N	SSA-SE	Area	0	N	-	N	-	N	
27/10/2021	14:30	E	SSA-SW	Area	0	N	-	N	-	N	
27/10/2021	14:30	E	SSA-CW	Area	0	N	-	N	-	N	
27/10/2021	14:30	E	SSA-NW	Area	0	N	-	N	-	N	
27/10/2021	14:30	E	SSA-NE	Area	0	N	-	N	-	N	
27/10/2021	14:30	E	SSA-CE	Area	0	N	-	N	-	N	
27/10/2021	14:30	E	SSA-SE	Area	0	N	-	N	-	N	
27/10/2021	16:30	E	SSA-SW	Area	0	N	-	N	-	N	
27/10/2021	16:30	E	SSA-CW	Area	0.1	N	-	N	very weak, neutral, gasoline	N	
27/10/2021	16:30	E	SSA-NW	Area	0	N	-	N	-	N	
27/10/2021	16:30	E	SSA-NE	Area	0	N	-	N	-	N	
27/10/2021	16:30	E	SSA-CE	Area	0	N	-	N	-	N	
27/10/2021	16:30	E	SSA-SE	Area	0	N	-	N	-	N	
27/10/2021	9:00	WNW	AS-01	Boundary	0	N	-	N	-	N	
27/10/2021	9:00	WNW	AS-02	Boundary	0	N	-	N	-	N	
27/10/2021	9:00	WNW	AS-03	Boundary	0	N	-	N	-	N	
27/10/2021	9:00	WNW	AS-04	Boundary	0	N	-	N	-	N	
27/10/2021	9:00	WNW	AS-05	Boundary	0.3	N	-	Y	very weak, neutral, gasoline	N	
27/10/2021	16:40	E	AS-01	Boundary	0	N	-	N	-	N	
27/10/2021	16:40	E	AS-02	Boundary	0	N	-	N	-	N	
27/10/2021	16:40	E	AS-03	Boundary	0	N	-	N	-	N	
27/10/2021	16:40	E	AS-04	Boundary	0	N	-	N	-	N	
27/10/2021	16:40	E	AS-05	Boundary	0.1	N	-	Y	very weak, neutral, gasoline	N	

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
28/10/2021	11:00	NW	SSA-SW	Area	0	Y	Informed PE to send dust suppression mobile tank in the area.	N	-	Y	Dust supprressionhas been carried out
28/10/2021	11:00	NW	SSA-CW	Area	0	N	-	N	-	N	
28/10/2021	11:00	NW	SSA-NW	Area	0	N	-	N	-	N	
28/10/2021	11:00	NW	SSA-NE	Area	0	N	-	N	-	N	
28/10/2021	11:00	NW	SSA-CE	Area	0	N	-	N	-	N	
28/10/2021	11:00	NW	SSA-SE	Area	0	N	-	N	-	N	
28/10/2021	14:45	ENE	SSA-SW	Area	0	N	-	N	-	N	
28/10/2021	14:45	ENE	SSA-CW	Area	0	N	-	N	-	N	
28/10/2021	14:45	ENE	SSA-NW	Area	0	N	-	N	-	N	
28/10/2021	14:45	ENE	SSA-NE	Area	0	N	-	N	-	N	
28/10/2021	14:45	ENE	SSA-CE	Area	0	N	-	N	-	N	
28/10/2021	14:45	ENE	SSA-SE	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	3E-SW	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	3E-SE	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	3E-N	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	SSA-SW	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	SSA-CW	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	SSA-NW	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	SSA-NE	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	SSA-CE	Area	0	N	-	N	-	N	
29/10/2021	11:00	NNW	SSA-SE	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	3E-SW	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	3E-SE	Area	0	N	-	Y	very weak	N	
29/10/2021	12:00	NW	3E-N	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	SSA-SW	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	SSA-CW	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	SSA-NW	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	SSA-NE	Area	0	N	-	N	-	N	
29/10/2021	12:00	NW	SSA-CE	Area	2	N	-	Y	Slightly unpleasant, weak, gasoline	N	
29/10/2021	12:00	NW	SSA-SE	Area	0	N	-	N	-	N	
29/10/2021	9:30	NW	AS-01	Boundary	0	N	-	Y	diesel-seems coming from the truck	N	
29/10/2021	9:30	NW	AS-02	Boundary	0	Y	call PE's attention	N	-	Y	Dust suppresion carried out
29/10/2021	9:30	NW	AS-03	Boundary	0	N	-	N	-	N	
29/10/2021	9:30	NW	AS-04	Boundary	0	Y	call PE's attention	N	-	Y	Dust suppresion carried out
29/10/2021	9:30	NW	AS-05	Boundary	0	N	-	N	-	N	
1/11/2021	9:30	NNW	3E-SW	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	3E-SE	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	3E-N	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	SSA-SW	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	SSA-CW	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	SSA-NW	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	SSA-NE	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	SSA-CE	Area	0	N	-	N	-	N	
1/11/2021	9:30	NNW	SSA-SE	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	3E-SW	Area	1.4	N	-	Y	Weak, slightly unpleasant, diesel	N	
1/11/2021	11:30	NNW	3E-SE	Area	1.3	N	-	Y	Weak, slightly unpleasant, diesel	N	
1/11/2021	11:30	NNW	3E-N	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	SSA-SW	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	SSA-CW	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	SSA-NW	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	SSA-NE	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	SSA-CE	Area	0	N	-	N	-	N	
1/11/2021	11:30	NNW	SSA-SE	Area	0	N	-	N	-	N	
1/11/2021	14:00	ENE	3E-SW	Area	0.1	N	-	Y	very weak, neutral, diesel	N	
1/11/2021	14:00	ENE	3E-SE	Area	0	N	-		-	N	
1/11/2021	14:00	ENE	3E-N	Area	0	N	-		-	N	
1/11/2021	14:00	ENE	SSA-SW	Area	0	N	-		-	N	
1/11/2021	14:00	ENE	SSA-CW	Area	0.2	N	-	Y	very weak, neutral, diesel	N	
1/11/2021	14:00	ENE	SSA-NW	Area	0	N	-		-	N	
1/11/2021	14:00	ENE	SSA-NE	Area	0	N	-		-	N	
1/11/2021	14:00	ENE	SSA-CE	Area	0	N	-		-	N	
1/11/2021	14:00	ENE	SSA-SE	Area	0	N	-		-	N	
1/11/2021	16:00	E	3E-SW	Area	1.6	N	-	Y	very weak, neutral, gasoline	N	
1/11/2021	16:00	E	3E-SE	Area	0	N	-		-	N	
1/11/2021	16:00	E	3E-N	Area	0	N	-		-	N	
1/11/2021	16:00	E	SSA-SW	Area	0	N	-		-	N	
1/11/2021	16:00	E	SSA-CW	Area	0	N	-		-	N	
1/11/2021	16:00	E	SSA-NW	Area	0	N	-		-	N	
1/11/2021	16:00	E	SSA-NE	Area	0	N	-		-	N	
1/11/2021	16:00	E	SSA-CE	Area	0	N	-		-	N	
1/11/2021	16:00	E	SSA-SE	Area	0	N	-		-	N	
1/11/2021	13:00	ENE	AS-01	Boundary	0	N	-		-	N	
1/11/2021	13:00	ENE	AS-02	Boundary	0	N	-		-	N	
1/11/2021	13:00	ENE	AS-03	Boundary	0	N	-		-	N	
1/11/2021	13:00	ENE	AS-04	Boundary	0	N	-		-	N	
2/11/2021	9:30	ENE	3E-SW	Area	0.4	N	-	Y	Very weak; Pleasant	N	
2/11/2021	9:30	ENE	3E-SE	Area	0.5	N	-	Y	Very weak; Pleasant	N	
2/11/2021	9:30	ENE	3E-N	Area	0	N	-	N	-	N	
2/11/2021	9:30	ENE	SSA-SW	Area	0	N	-	N	-	N	
2/11/2021	9:30	ENE	SSA-CW	Area	0.3	N	-	Y	ND; Pleasant	N	
2/11/2021	9:30	ENE	SSA-NW	Area	0	N	-		-	N	
2/11/2021	9:30	ENE	SSA-NE	Area	0	N	-		-	N	
2/11/2021	9:30	ENE	SSA-CE	Area	0	N	-		-	N	
2/11/2021	9:30	ENE	SSA-SE	Area	0	N	-		-	N	
2/11/2021	11:40	E	3E-SW	Area	0	N	-		-	N	
2/11/2021	11:40	E	3E-SE	Area	0.3	N	-	Y	Very weak	N	
2/11/2021	11:40	E	3E-N	Area	0	N	-		-	N	
2/11/2021	11:40	E	SSA-SW	Area	0	N	-		-	N	
2/11/2021	11:40	E	SSA-CW	Area	0.7	N	-	Y	ND; Pleasant	N	
2/11/2021	11:40	E	SSA-NW	Area	0	N	-		-	N	
2/11/2021	11:40	E	SSA-NE	Area	0	N	-		-	N	
2/11/2021	11:40	E	SSA-CE	Area	0	N	-		-	N	
2/11/2021	11:40	E	SSA-SE	Area	0	N	-		-	N	
2/11/2021	14:10	E	3E-SW	Area	-	N	-		-	N	
2/11/2021	14:10	E	3E-SE	Area	-	N	-		-	N	
2/11/2021	14:10	E	3E-N	Area	-	N	-		-	N	
2/11/2021	14:10	E	SSA-SW	Area	0	N	-		-	N	
2/11/2021	14:10	E	SSA-CW	Area	0.4	N	-	Y	Very weak	N	
2/11/2021	14:10	E	SSA-NW	Area	0	N	-	N	-	N	
2/11/2021	14:10	E	SSA-NE	Area	0	N	-	N	-	N	
2/11/2021	14:10	E	SSA-CE	Area	0	N	-	N	-	N	
2/11/2021	14:10	E	SSA-SE	Area	0	N	-	N	-	N	
2/11/2021	16:00	E	AS-01	Boundary	0	N	-	N	-	N	
2/11/2021	16:00	E	AS-02	Boundary	0	N	-	N	-	N	
2/11/2021	16:00	E	AS-03	Boundary	0	N	-	N	-	N	
2/11/2021	16:00	E	AS-04	Boundary	0	N	-	N	-	N	
3/11/2021	9:45	N	3E-SW	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	3E-SE	Area	1	N	-	Y	Weak, gasoline	N	
3/11/2021	9:45	N	3E-N	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	SSA-SW	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	SSA-CW	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	SSA-NW	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	SSA-NE	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	SSA-CE	Area	0	N	-	N	-	N	
3/11/2021	9:45	N	SSA-SE	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	3E-SW	Area	0.3	N	-	N	Very weak	N	
3/11/2021	11:35	ENE	3E-SE	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	3E-N	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	SSA-SW	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	SSA-CW	Area	0.1	N	-	Y	Very weak, neutral	N	
3/11/2021	11:35	ENE	SSA-NW	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	SSA-NE	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	SSA-CE	Area	0	N	-	N	-	N	
3/11/2021	11:35	ENE	SSA-SE	Area	0	N	-	N	-	N	
3/11/2021	14:30	E	3E-SW	Area	0	N	-	N	-	N	
3/11/2021	14:30	E	3E-SE	Area	0	N	-	N	-	N	
3/11/2021	14:30	E	3E-N	Area	0	N	-	N	-	N	
3/11/2021	14:30	E	SSA-SW	Area	0	N	-	N	-	N	no screening
3/11/2021	14:30	E	SSA-CW	Area	0	N	-	N	-	N	no screening
3/11/2021	14:30	E	SSA-NW	Area	0	N	-	N	-	N	no screening
3/11/2021	14:30	E	SSA-NE	Area	0	N	-	N	-	N	no screening
3/11/2021	14:30	E	SSA-CE	Area	0	N	-	N	-	N	no screening
3/11/2021	14:30	E	SSA-SE	Area	0	N	-	N	-	N	no screening

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
3/11/2021	16:20	ENE	3E-SW	Area	-	N	-	N	-	N	Excavation completed at 3:30pm
3/11/2021	16:20	ENE	3E-SE	Area	-	N	-	N	-	N	Excavation completed at 3:30pm
3/11/2021	16:20	ENE	3E-N	Area	-	N	-	N	-	N	Excavation completed at 3:30pm
3/11/2021	16:20	ENE	SSA-SW	Area	0	N	-	N	-	N	
3/11/2021	16:20	ENE	SSA-CW	Area	0.3	N	-	N	-	N	
3/11/2021	16:20	ENE	SSA-NW	Area	0	N	-	N	-	N	
3/11/2021	16:20	ENE	SSA-NE	Area	0	N	-	N	-	N	
3/11/2021	16:20	ENE	SSA-CE	Area	0	N	-	N	-	N	
3/11/2021	16:20	ENE	SSA-SE	Area	0	N	-	N	-	N	
3/11/2021	16:15	NE	AS-01	Boundary	0	N	-	N	-	N	
3/11/2021	16:15	NE	AS-02	Boundary	0	N	-	N	-	N	
3/11/2021	16:15	NE	AS-03	Boundary	0	N	-	N	-	N	
3/11/2021	16:15	NE	AS-04	Boundary	0	N	-	N	-	N	
3/11/2021	16:15	NE	AS-05	Boundary	0	N	-	N	-	N	
16/11/2021	12:50	S	SSA-SW	Area	0	N	-	N	-	N	
16/11/2021	12:50	S	SSA-CW	Area	0	N	-	N	-	N	
16/11/2021	12:50	S	SSA-NW	Area	0	N	-	N	-	N	
16/11/2021	12:50	S	SSA-NE	Area	0	N	-	N	-	N	
16/11/2021	12:50	S	SSA-CE	Area	0	N	-	N	-	N	
16/11/2021	12:50	S	SSA-SE	Area	0	N	-	N	-	N	
16/11/2021	13:00	S	AS-01	Boundary	0	N	-	N	-	N	
16/11/2021	13:00	S	AS-02	Boundary	0	N	-	N	-	N	
16/11/2021	13:00	S	AS-03	Boundary	0	N	-	N	-	N	
16/11/2021	13:00	S	AS-04	Boundary	0	N	-	N	-	N	
17/11/2021	11:00	E	SSA-SW	Area	0	N	-	N	-	N	
17/11/2021	11:00	E	SSA-CW	Area	0	N	-	N	-	N	
17/11/2021	11:00	E	SSA-NW	Area	0	N	-	N	-	N	
17/11/2021	11:00	E	SSA-NE	Area	0	N	-	N	-	N	
17/11/2021	11:00	E	SSA-CE	Area	0	N	-	N	-	N	
17/11/2021	11:00	E	SSA-SE	Area	0	N	-	N	-	N	
17/11/2021	14:00	E	SSA-SW	Area	0	N	-	N	-	N	
17/11/2021	14:00	E	SSA-CW	Area	0	N	-	N	-	N	
17/11/2021	14:00	E	SSA-NW	Area	0	N	-	N	-	N	
17/11/2021	14:00	E	SSA-NE	Area	0	N	-	N	-	N	
17/11/2021	14:00	E	SSA-CE	Area	0	N	-	N	-	N	
17/11/2021	14:00	E	SSA-SE	Area	0	N	-	N	-	N	
17/11/2021	16:15	ESE	SSA-SW	Area	0	N	-	N	-	N	
17/11/2021	16:15	ESE	SSA-CW	Area	0.1	N	-	Y	Very weak; neutral	N	
17/11/2021	16:15	ESE	SSA-NW	Area	0	N	-	N	-	N	
17/11/2021	16:15	ESE	SSA-NE	Area	0	N	-	N	-	N	
17/11/2021	16:15	ESE	SSA-CE	Area	0	N	-	N	-	N	
17/11/2021	16:15	ESE	SSA-SE	Area	0	N	-	N	-	N	
17/11/2021	11:20	E	AS-01	Boundary	0	N	-	N	-	N	
17/11/2021	11:20	E	AS-02	Boundary	0	N	-	N	-	N	
17/11/2021	11:20	E	AS-03	Boundary	0	N	-	N	-	N	
17/11/2021	11:20	E	AS-04	Boundary	0	N	-	N	-	N	
19/11/2021	14:45	N	SSA-SW	Area	0	N	-	N	-	N	
19/11/2021	14:45	N	SSA-CW	Area	0	N	-	N	-	N	
19/11/2021	14:45	N	SSA-NW	Area	0	N	-	N	-	N	
19/11/2021	14:45	N	SSA-NE	Area	0	N	-	N	-	N	
19/11/2021	14:45	N	SSA-CE	Area	0	N	-	N	-	N	
19/11/2021	14:45	N	SSA-SE	Area	0	N	-	N	-	N	
19/11/2021	16:20	N	SSA-SW	Area	0	N	-	N	-	N	
19/11/2021	16:20	N	SSA-CW	Area	0	N	-	N	-	N	
19/11/2021	16:20	N	SSA-NW	Area	0	N	-	N	-	N	
19/11/2021	16:20	N	SSA-NE	Area	0	N	-	N	-	N	
19/11/2021	16:20	N	SSA-CE	Area	0	N	-	N	-	N	
19/11/2021	16:20	N	SSA-SE	Area	0	N	-	N	-	N	
19/11/2021	15:20	N	AS-01	Boundary	0	N	-	N	-	N	
19/11/2021	15:20	N	AS-02	Boundary	0	N	-	N	-	N	
19/11/2021	15:20	N	AS-03	Boundary	0	N	-	N	-	N	
19/11/2021	15:20	N	AS-04	Boundary	0	N	-	N	-	N	
6/12/2021	10:00	East / 15	SSA-SW	Area	1.5	N	-	Y	weak, slight unpleasant, diesel	N	N
6/12/2021	10:00	East / 15	SSA-CW	Area	0.3	N	-	Y	weak, slight unpleasant, diesel	N	N
6/12/2021	10:00	East / 15	SSA-NW	Area	0	N	-	N	-	-	-
6/12/2021	10:00	East / 15	SSA-NE	Area	0	N	-	N	-	-	-
6/12/2021	10:00	East / 15	SSA-CE	Area	0	N	-	N	-	-	-
6/12/2021	10:00	East / 15	SSA-SE	Area	0	N	-	N	-	-	-
6/12/2021	12:50	NE / 19	SSA-SW	Area	0	N	-	N	-	-	-
6/12/2021	12:50	NE / 19	SSA-CW	Area	0	N	-	N	-	-	-
6/12/2021	12:50	NE / 19	SSA-NW	Area	0	N	-	N	-	-	-
6/12/2021	12:50	NE / 19	SSA-NE	Area	0	N	-	N	-	-	-
6/12/2021	12:50	NE / 19	SSA-CE	Area	0	N	-	N	-	-	-
6/12/2021	12:50	NE / 19	SSA-SE	Area	0	N	-	N	-	-	-
6/12/2021	14:00	NE / 13	SSA-SW	Area	1.7	N	-	N	weak, slight unpleasant, rotten egg		
6/12/2021	14:00	NE / 13	SSA-CW	Area	1.3	N	-	N	weak, slight unpleasant, rotten egg		
6/12/2021	14:00	NE / 13	SSA-NW	Area	0	N	-	N	-		
6/12/2021	14:00	NE / 13	SSA-NE	Area	0	N	-	N	-		
6/12/2021	14:00	NE / 13	SSA-CE	Area	0	N	-	N	-		
6/12/2021	14:00	NE / 13	SSA-SE	Area	0	N	-	N	weak, slight unpleasant, rotten egg		
6/12/2021	16:30	NE / 13	SSA-SW	Area	0	N	-	N	-		
6/12/2021	16:30	NE / 13	SSA-CW	Area	0.1	N	-	N	very weak, neutral, burnt rubber		
6/12/2021	16:30	NE / 13	SSA-NW	Area	0	N	-	N	-		
6/12/2021	16:30	NE / 13	SSA-NE	Area	0	N	-	N	-		
6/12/2021	16:30	NE / 13	SSA-CE	Area	0	N	-	N	very weak, neutral, H2S/rotten egg		
6/12/2021	16:30	NE / 13	SSA-SE	Area	0	N	-	N	very weak, neutral, H2S/rotten egg		
6/12/2021	16:30	NE / 13	AS-01	Boundary	0	N	-	N	-		
6/12/2021	16:30	NE / 13	AS-02	Boundary	0	N	-	N	-		
6/12/2021	16:30	NE / 13	AS-03	Boundary	0	N	-	N	-		
6/12/2021	16:30	NE / 13	AS-04	Boundary	0	N	-	N	very weak, neutral, H2S/rotten egg		
7/12/2021	7:54	calm	SSA-SW	Area	0	N	-	N	-		
7/12/2021	7:54	calm	SSA-CW	Area	0	N	-	N	-		
7/12/2021	7:54	calm	SSA-NW	Area	0	N	-	N	-		
7/12/2021	7:54	calm	SSA-NE	Area	0	N	-	N	-		
7/12/2021	7:54	calm	SSA-CE	Area	0	N	-	N	-		
7/12/2021	7:54	calm	SSA-SE	Area	0	N	-	N	-		
7/12/2021	9:30	NW / 4	SSA-SW	Area	0	N	-	N	-		
7/12/2021	9:30	NW / 4	SSA-CW	Area	0	N	-	N	-		
7/12/2021	9:30	NW / 4	SSA-NW	Area	0	N	-	N	-		
7/12/2021	9:30	NW / 4	SSA-NE	Area	0	N	-	N	-		
7/12/2021	9:30	NW / 4	SSA-CE	Area	0	N	-	N	-		
7/12/2021	9:30	NW / 4	SSA-SE	Area	0	N	-	N	-		
7/12/2021	13:55	ESE / 7	SSA-SW	Area	0	N	-	N	-		
7/12/2021	13:55	ESE / 7	SSA-CW	Area	0	N	-	N	-		
7/12/2021	13:55	ESE / 7	SSA-NW	Area	0	N	-	N	-		
7/12/2021	13:55	ESE / 7	SSA-NE	Area	0	N	-	N	-		
7/12/2021	13:55	ESE / 7	SSA-CE	Area	0	N	-	N	-		
7/12/2021	13:55	ESE / 7	SSA-SE	Area	0	N	-	N	-		
7/12/2021	15:55	NNE / 6	SSA-SW	Area	0	N	-	N	-		
7/12/2021	15:55	NNE / 6	SSA-CW	Area	0	N	-	N	-		
7/12/2021	15:55	NNE / 6	SSA-NW	Area	0	N	-	N	-		
7/12/2021	15:55	NNE / 6	SSA-NE	Area	0	N	-	N	-		
7/12/2021	15:55	NNE / 6	SSA-CE	Area	0	N	-	N	-		
7/12/2021	15:55	NNE / 6	SSA-SE	Area	0	N	-	N	-		
7/12/2021	15:20	NNE / 6	AS-01	Boundary	0	N	-	N	-		
7/12/2021	15:20	NNE / 6	AS-02	Boundary	0	N	-	N	-		
7/12/2021	15:20	NNE / 6	AS-03	Boundary	0	N	-	N	-		
7/12/2021	15:20	NNE / 6	AS-04	Boundary	0	N	-	N	-		
8/12/2021	7:40	S / 9	SSA-SW	Area	0	N	-	N	-		
8/12/2021	7:40	S / 9	SSA-CW	Area	0	N	-	N	very weak, neutral, diesel	N	
8/12/2021	7:40	S / 9	SSA-NW	Area	0	N	-	N	-	N	
8/12/2021	7:40	S / 9	SSA-NE	Area	0	N	-	N	-	N	
8/12/2021	7:40	S / 9	SSA-CE	Area	0	N	-	N	-	N	
8/12/2021	7:40	S / 9	SSA-SE	Area	0	N	-	N	-	N	
8/12/2021	9:05	S / 13	SSA-SW	Area	0	N	-	N	-	N	
8/12/2021	9:05	S / 13	SSA-CW	Area	0	N	-	N	-	N	
8/12/2021	9:05	S / 13	SSA-NW	Area	0	N	-	N	-	N	
8/12/2021	9:05	S / 13	SSA-NE	Area	0	N	-	N	-	N	
8/12/2021	9:05	S / 13	SSA-CE	Area	0	N	-	N	-	N	
8/12/2021	9:05	S / 13	SSA-SE	Area	0	N	-	N	-	N	
8/12/2021	11:30	SE / 11	SSA-SW	Area	0.7	N	-	N	-	N	
8/12/2021	11:30	SE / 11	SSA-CW	Area	0.1	N	-	N	-	N	
8/12/2021	11:30	SE / 11	SSA-NW	Area	0	N	-	N	-	N	
8/12/2021	11:30	SE / 11	SSA-NE	Area	0	N	-	N	-	N	
8/12/2021	11:30	SE / 11	SSA-CE	Area	0	N	-	N	-	N	

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
8/12/2021	11:30	SE / 11	SSA-SE	Area	0	N	-	N	-	N	
8/12/2021	14:00	SSE / 15	SSA-SW	Area	0	N	-	N	very weak, neutral, diesel	N	
8/12/2021	14:00	SSE / 15	SSA-CW	Area	0	N	-	N	-	N	
8/12/2021	14:00	SSE / 15	SSA-NW	Area	0	N	-	N	-	N	
8/12/2021	14:00	SSE / 15	SSA-NE	Area	0	N	-	N	-	N	
8/12/2021	14:00	SSE / 15	SSA-CE	Area	0	N	-	N	-	N	
8/12/2021	14:00	SSE / 15	SSA-SE	Area	0	N	-	N	-	N	
8/12/2021	13:20	S / 15	SSA-SW	Area	0	N	-	N	-	N	
8/12/2021	13:20	S / 15	SSA-CW	Area	0.2	N	-	N	very weak, neutral, diesel	N	
8/12/2021	13:20	S / 15	SSA-NW	Area	0	N	-	N	-	N	
8/12/2021	13:20	S / 15	SSA-NE	Area	0	N	-	N	-	N	
8/12/2021	13:20	S / 15	SSA-CE	Area	0	N	-	N	-	N	
8/12/2021	13:20	S / 15	SSA-SE	Area	0	N	-	N	-	N	
8/12/2021	15:40	S / 13	AS-01	Boundary	0	N	-	N	-	N	
8/12/2021	15:40	S / 13	AS-02	Boundary	0	N	-	N	-	N	
8/12/2021	15:40	S / 13	AS-03	Boundary	0	N	-	N	-	N	
8/12/2021	15:40	S / 13	AS-04	Boundary	0	N	-	N	-	N	
14/12/2021	8:00	Calm / 0	SSA-SW	Area	0	N	-	N	-	N	
14/12/2021	8:00	Calm / 0	SSA-CW	Area	0	N	-	N	-	N	
14/12/2021	8:00	Calm / 0	SSA-NW	Area	0	N	-	N	-	N	
14/12/2021	8:00	Calm / 0	SSA-NE	Area	0	N	-	N	-	N	
14/12/2021	8:00	Calm / 0	SSA-CE	Area	0	N	-	N	-	N	
14/12/2021	8:00	Calm / 0	SSA-SE	Area	0	N	-	N	-	N	
14/12/2021	10:20	ESE / 7	SSA-SW	Area	0	N	-	N	-	N	
14/12/2021	10:20	ESE / 7	SSA-CW	Area	0	N	-	N	-	N	
14/12/2021	10:20	ESE / 7	SSA-NW	Area	0	N	-	N	-	N	
14/12/2021	10:20	ESE / 7	SSA-NE	Area	0	N	-	N	-	N	
14/12/2021	10:20	ESE / 7	SSA-CE	Area	0	N	-	N	-	N	
14/12/2021	10:20	ESE / 7	SSA-SE	Area	0	N	-	N	-	N	
14/12/2021	12:45	E / 11	SSA-SW	Area	0	N	-	N	-	N	
14/12/2021	12:45	E / 11	SSA-CW	Area	0	N	-	N	-	N	
14/12/2021	12:45	E / 11	SSA-NW	Area	0.2	N	-	Y	very weak, neutral, diesel	N	
14/12/2021	12:45	E / 11	SSA-NE	Area	0	N	-	N	-	N	
14/12/2021	12:45	E / 11	SSA-CE	Area	0	N	-	N	-	N	
14/12/2021	12:45	E / 11	SSA-SE	Area	0	N	-	N	-	N	
14/12/2021	14:30	E / 15	SSA-SW	Area	0	N	-	N	-	N	
14/12/2021	14:30	E / 15	SSA-CW	Area	0	N	-	N	-	N	
14/12/2021	14:30	E / 15	SSA-NW	Area	0	N	-	N	-	N	
14/12/2021	14:30	E / 15	SSA-NE	Area	0	N	-	N	-	N	
14/12/2021	14:30	E / 15	SSA-CE	Area	0	N	-	N	-	N	
14/12/2021	14:30	E / 15	SSA-SE	Area	0	N	-	N	-	N	
14/12/2021	16:15	E / 17	SSA-SW	Area	0	N	-	N	-	N	
14/12/2021	16:15	E / 17	SSA-CW	Area	0	N	-	N	-	N	
14/12/2021	16:15	E / 17	SSA-NW	Area	0	N	-	N	-	N	
14/12/2021	16:15	E / 17	SSA-NE	Area	0	N	-	N	-	N	
14/12/2021	16:15	E / 17	SSA-CE	Area	0	N	-	N	-	N	
14/12/2021	16:15	E / 17	SSA-SE	Area	0	N	-	N	-	N	
15/12/2021	8:00	WNW / 4	SSA-SW	Area	0	N	-	N	-	N	
15/12/2021	8:00	WNW / 4	SSA-CW	Area	0	N	-	N	-	N	
15/12/2021	8:00	WNW / 4	SSA-NW	Area	0	N	-	N	-	N	
15/12/2021	8:00	WNW / 4	SSA-NE	Area	0	N	-	N	-	N	
15/12/2021	8:00	WNW / 4	SSA-CE	Area	0	N	-	N	-	N	
15/12/2021	8:00	WNW / 4	SSA-SE	Area	0	N	-	N	-	N	
15/12/2021	10:20	ENE / 7	SSA-SW	Area	0	N	-	N	-	N	
15/12/2021	10:20	ENE / 7	SSA-CW	Area	0	N	-	N	-	N	
15/12/2021	10:20	ENE / 7	SSA-NW	Area	0	N	-	N	-	N	
15/12/2021	10:20	ENE / 7	SSA-NE	Area	0	N	-	N	-	N	
15/12/2021	10:20	ENE / 7	SSA-CE	Area	0	N	-	N	-	N	
15/12/2021	10:20	ENE / 7	SSA-SE	Area	0.5	N	-	N	very weak, neutral, diesel	N	
15/12/2021	13:50	ESE	SSA-SW	Area	0	N	-	N	-	N	
15/12/2021	13:50	ESE	SSA-CW	Area	0	N	-	N	-	N	
15/12/2021	13:50	ESE	SSA-NW	Area	0	N	-	N	-	N	
15/12/2021	13:50	ESE	SSA-NE	Area	0	N	-	N	-	N	
15/12/2021	13:50	ESE	SSA-CE	Area	0	N	-	N	-	N	
15/12/2021	13:50	ESE	SSA-SE	Area	0	N	-	N	-	N	
15/12/2021	16:20	E / 17	SSA-SW	Area	0	N	-	N	-	N	
15/12/2021	16:20	E / 17	SSA-CW	Area	0	N	-	N	-	N	
15/12/2021	16:20	E / 17	SSA-NW	Area	0	N	-	N	-	N	
15/12/2021	16:20	E / 17	SSA-NE	Area	0	N	-	N	-	N	
15/12/2021	16:20	E / 17	SSA-CE	Area	0	N	-	N	-	N	
15/12/2021	16:20	E / 17	SSA-SE	Area	0	N	-	N	-	N	
15/12/2021	16:30	E / 17	AS-01	Boundary	0	N	-	N	-	N	
15/12/2021	16:30	E / 17	AS-02	Boundary	0	N	-	N	-	N	
15/12/2021	16:30	E / 17	AS-03	Boundary	0	N	-	N	-	N	
15/12/2021	16:30	E / 17	AS-04	Boundary	0	N	-	N	-	N	
16/12/2021	8:30	S / 9	SSA-SW	Area	0	N	-	N	-	N	
16/12/2021	8:30	S / 9	SSA-CW	Area	0	N	-	N	-	N	
16/12/2021	8:30	S / 9	SSA-NW	Area	0	N	-	N	-	N	
16/12/2021	8:30	S / 9	SSA-NE	Area	0	N	-	N	-	N	
16/12/2021	8:30	S / 9	SSA-CE	Area	0	N	-	N	-	N	
16/12/2021	8:30	S / 9	SSA-SE	Area	0	N	-	N	-	N	
16/12/2021	13:00	ESE / 30	SSA-SW	Area	0	N	-	N	-	N	
16/12/2021	13:00	ESE / 30	SSA-CW	Area	0	N	-	N	-	N	
16/12/2021	13:00	ESE / 30	SSA-NW	Area	0	N	-	N	-	N	
16/12/2021	13:00	ESE / 30	SSA-NE	Area	0	N	-	N	-	N	
16/12/2021	13:00	ESE / 30	SSA-CE	Area	0	N	-	N	-	N	
16/12/2021	13:00	ESE / 30	SSA-SE	Area	0	N	-	N	-	N	
16/12/2021	15:40	SE / 26	SSA-SW	Area	0	N	-	N	-	N	
16/12/2021	15:40	SE / 26	SSA-CW	Area	0	N	-	N	-	N	
16/12/2021	15:40	SE / 26	SSA-NW	Area	0	N	-	N	-	N	
16/12/2021	15:40	SE / 26	SSA-NE	Area	0	N	-	N	-	N	
16/12/2021	15:40	SE / 26	SSA-CE	Area	0	N	-	N	-	N	
16/12/2021	15:40	SE / 26	SSA-SE	Area	0	N	-	N	-	N	
16/12/2021	16:00	SE / 20	AS-01	Boundary	0	N	-	N	-	N	
16/12/2021	16:00	SE / 20	AS-02	Boundary	0	N	-	N	-	N	
16/12/2021	16:00	SE / 20	AS-03	Boundary	0	N	-	N	-	N	
16/12/2021	16:00	SE / 20	AS-04	Boundary	0	N	-	N	-	N	
20/12/2021	10:00	SE / 12	3D-NW	Area	0	N	-	N	-	N	
20/12/2021	10:00	SE / 12	3D-SW	Area	0	N	-	N	-	N	
20/12/2021	10:00	SE / 12	SSA-NW	Area	0.1	N	-	N	-	N	
20/12/2021	10:00	SE / 12	SSA-CW	Area	0.1	N	-	N	-	N	
20/12/2021	13:00	SE / 12	3D-NW	Area	0	N	-	N	-	N	
20/12/2021	13:00	SE / 12	3D-SW	Area	0	N	-	N	-	N	
20/12/2021	13:00	SE / 12	SSA-NW	Area	0.1	N	-	N	-	N	
20/12/2021	13:00	SE / 12	SSA-CW	Area	0	N	-	N	-	N	
21/12/2021	8:00	SE / 12	SSA-NW	Area	0.1	Y	minor generation from plant movement	N	-	N	
21/12/2021	8:00	SE / 12	SSA-NE	Area	0.1	Y	minor generation from plant movement	N	-	N	
21/12/2021	8:00	SE / 12	SSA-CE	Area	0	N		N	-	N	
21/12/2021	8:00	SE / 12	SSA-SE	Area	0	N		N	-	N	
21/12/2021	8:00	SE / 12	SSA-SW	Area	0	N		N	-	N	
21/12/2021	8:00	SE / 12	SSA-CW	Area	0	N		N	-	N	
21/12/2021	8:00	SE / 12	Tankfarm A1	Area	0	N		N	-	N	
21/12/2021	13:00	SE / 12	SSA-NW	Area	0.1	Y	minor generation from plant movement	N	-	N	
21/12/2021	13:00	SE / 12	SSA-NE	Area	0.1	Y	minor generation from plant movement	N	-	N	
21/12/2021	13:00	SE / 12	SSA-CE	Area	0.1	N		N	-	N	
21/12/2021	13:00	SE / 12	SSA-SE	Area	0.1	N		N	-	N	
21/12/2021	13:00	SE / 12	SSA-SW	Area	0	N		N	-	N	
21/12/2021	13:00	SE / 12	SSA-CW	Area	0	N		N	-	N	
21/12/2021	13:00	SE / 12	Tankfarm A1	Area	0	N		N	-	N	
21/12/2021	16:00	SE / 12	SSA-NW	Area	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	SSA-NE	Area	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	SSA-CE	Area	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	SSA-SE	Area	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	SSA-SW	Area	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	SSA-CW	Area	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	Tankfarm A1	Area	0	N		N	-	N	
21/12/2021	16:00	SE / 12	AS01	Boundary	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	AS02	Boundary	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	AS03	Boundary	0.1	N		N	-	N	
21/12/2021	16:00	SE / 12	AS04	Boundary	0.1	N		N	-	N	
22/12/2021	7:30	SE / 12	SSA-NW	Area	0	N		N	-	N	

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
22/12/2021	7:30	SE / 12	SSA-NE	Area	0	N		N	-	N	
22/12/2021	7:30	SE / 12	SSA-CE	Area	0	N		N	-	N	
22/12/2021	7:30	SE / 12	SSA-SE	Area	0	N		N	-	N	
22/12/2021	7:30	SE / 12	SSA-SW	Area	0	N		N	-	N	
22/12/2021	7:30	SE / 12	SSA-CW	Area	0	N		N	-	N	
22/12/2021	11:00	SE / 12	3D-NW	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	SSA-NW	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	SSA-NE	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	SSA-CE	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	SSA-SE	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	SSA-SW	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	SSA-CW	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	11:00	SE / 12	Tankfarm A1	Area	0	Y	minor generation from plant movement	N	-	N	
22/12/2021	15:00	SE / 12	3D-NW	Area	0.1	Y	minor generation from plant movement	N	-	N	
22/12/2021	15:00	SE / 12	SSA-NW	Area	0	N		N	-	N	
22/12/2021	15:00	SE / 12	SSA-CW	Area	0	N		N	-	N	
22/12/2021	15:00	SE / 12	SSA-NE	Area	0	N		N	-	N	
22/12/2021	15:00	SE / 12	SSA-CE	Area	0	N		N	-	N	
22/12/2021	15:00	SE / 12	SSA-SE	Area	0	N		N	-	N	
22/12/2021	15:00	SE / 12	SSA-SW	Area	0	N		N	-	N	
22/12/2021	15:00	SE / 12	SSA-CW	Area	0.2	Y	minor generation from plant movement	N	-	N	
22/12/2021	15:00	SE / 12	Tankfarm A1	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	3D-NW	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	SSA-NW	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	SSA-CW	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	SSA-NE	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	SSA-CE	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	SSA-SE	Area	0	N		N	-	N	
11/01/2022	8:00	NE / 12	SSA-SW	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	3D-NW	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	SSA-NW	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	SSA-CW	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	SSA-NE	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	SSA-CE	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	SSA-SE	Area	0	N		N	-	N	
11/01/2022	12:00	NE / 12	SSA-SW	Area	0	N		N	-	N	
12/01/2022	8:00	12 / S	SSA-NW	Area	0	N		N	-	N	
12/01/2022	8:00	12 / S	SSA-CW	Area	0	N		N	-	N	
12/01/2022	8:00	12 / S	SSA-NE	Area	0	N		N	-	N	
12/01/2022	8:00	12 / S	SSA-CE	Area	0	N		N	-	N	
12/01/2022	8:00	12 / S	SSA-SE	Area	0	N		N	-	N	
12/01/2022	8:00	12 / S	SSA-SW	Area	0	N		N	-	N	
12/01/2022	12:20	12 / S	SSA-NW	Area	0	N		N	-	N	
12/01/2022	12:20	12 / S	SSA-CW	Area	0.1	N		N	-	N	
12/01/2022	12:20	12 / S	SSA-NE	Area	0	N		N	-	N	
12/01/2022	12:20	12 / S	SSA-CE	Area	0	N		N	-	N	
12/01/2022	12:20	12 / S	SSA-SE	Area	0	N		N	-	N	
12/01/2022	12:20	12 / S	SSA-SW	Area	0.1	N		N	-	N	
12/01/2022	14:00	12 / SW	SSA-NW	Area	0	N		N	-	N	
12/01/2022	14:00	12 / SW	SSA-CW	Area	0	N		N	-	N	
12/01/2022	14:00	12 / SW	SSA-NE	Area	0	N		N	-	N	
12/01/2022	14:00	12 / SW	SSA-CE	Area	0	N		N	-	N	
12/01/2022	14:00	12 / SW	SSA-SE	Area	0	N		N	-	N	
12/01/2022	14:00	12 / SW	SSA-SW	Area	0	N		N	-	N	
12/01/2022	14:00	12 / SW	AS01	Boundary	0	N		N	-	N	
12/01/2022	14:00	12 / SW	AS02	Boundary	0	N		N	-	N	
12/01/2022	14:00	12 / SW	AS03	Boundary	0	N		N	-	N	
12/01/2022	14:00	12 / SW	AS04	Boundary	0	N		N	-	N	
17/01/2022	8:30	SE	SSA-NW	Area	0	N		N	-	N	
17/01/2022	8:30	SE	SSA-CW	Area	0	N		N	-	N	
17/01/2022	8:30	SE	SSA-NE	Area	0	N		N	-	N	
17/01/2022	8:30	SE	SSA-CE	Area	0	N		N	-	N	
17/01/2022	8:30	SE	SSA-SE	Area	0	N		N	-	N	
17/01/2022	8:30	SE	SSA-SW	Area	0	N		N	-	N	
17/01/2022	12:00	SE	SSA-NW	Area	0	N		N	-	N	
17/01/2022	12:00	SE	SSA-CW	Area	0	N		N	-	N	
17/01/2022	12:00	SE	SSA-NE	Area	0	N		N	-	N	
17/01/2022	12:00	SE	SSA-CE	Area	0	N		N	-	N	
17/01/2022	12:00	SE	SSA-SE	Area	0.1	N		N	-	N	
17/01/2022	12:00	SE	SSA-SW	Area	0	N		N	-	N	
17/01/2022	15:00	SE	SSA-NW	Area	0.4	N		N	-	N	
17/01/2022	15:00	SE	SSA-CW	Area	0.3	N		N	-	N	
17/01/2022	15:00	SE	SSA-NE	Area	0.3	N		N	-	N	
17/01/2022	15:00	SE	SSA-CE	Area	0.2	N		N	-	N	
17/01/2022	15:00	SE	SSA-SE	Area	0.2	N		N	-	N	
17/01/2022	15:00	SE	SSA-SW	Area	0.2	N		N	-	N	
17/01/2022	15:00	SE	AS01	Boundary	0.2	N		N	-	N	
17/01/2022	15:00	SE	AS02	Boundary	0.2	N		N	-	N	
17/01/2022	15:00	SE	AS03	Boundary	0	N		N	-	N	
17/01/2022	15:00	SE	AS04	Boundary	0	N		N	-	N	
18/01/2022	8:00	SSE / 13	SSA-NW	Area	0	N		N	-	N	
18/01/2022	8:00	SSE / 13	SSA-CW	Area	0	N		N	-	N	
18/01/2022	8:00	SSE / 13	SSA-NE	Area	0	N		N	-	N	
18/01/2022	8:00	SSE / 13	SSA-CE	Area	0	N		N	-	N	
18/01/2022	8:00	SSE / 13	SSA-SE	Area	0	N		N	-	N	
18/01/2022	8:00	SSE / 13	SSA-SW	Area	0	N		N	-	N	
18/01/2022	12:00	SSE / 13	SSA-NW	Area	0	N		N	-	N	
18/01/2022	12:00	SSE / 13	SSA-CW	Area	0	N		N	-	N	
18/01/2022	12:00	SSE / 13	SSA-NE	Area	0	N		N	-	N	
18/01/2022	12:00	SSE / 13	SSA-CE	Area	0	N		N	-	N	
18/01/2022	12:00	SSE / 13	SSA-SE	Area	0	N		N	-	N	
18/01/2022	12:00	SSE / 13	SSA-SW	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	SSA-NW	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	SSA-CW	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	SSA-NE	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	SSA-CE	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	SSA-SE	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	SSA-SW	Area	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	AS01	Boundary	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	AS02	Boundary	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	AS03	Boundary	0	N		N	-	N	
18/01/2022	15:00	SSE / 13	AS04	Boundary	0	N		N	-	N	
20/01/2022	9:30	SE / 28	SSA-NW	Area	0	N		N	-	N	
20/01/2022	9:30	SE / 28	SSA-CW	Area	0	N		N	-	N	
20/01/2022	9:30	SE / 28	SSA-NE	Area	0	N		N	-	N	
20/01/2022	9:30	SE / 28	SSA-CE	Area	0	N		N	-	N	
20/01/2022	9:30	SE / 28	SSA-SE	Area	0	N		N	-	N	
20/01/2022	9:30	SE / 28	SSA-SW	Area	0	N		N	-	N	
20/01/2022	12:15	SE / 28	SSA-NW	Area	0	N		N	-	N	
20/01/2022	12:15	SE / 28	SSA-CW	Area	0	N		N	-	N	
20/01/2022	12:15	SE / 28	SSA-NE	Area	0	N		N	-	N	
20/01/2022	12:15	SE / 28	SSA-CE	Area	0	N		N	-	N	
20/01/2022	12:15	SE / 28	SSA-SE	Area	0	N		N	-	N	
20/01/2022	12:15	SE / 28	SSA-SW	Area	0	N		N	-	N	
20/01/2022	15:00	SE / 28	SSA-NW	Area	0	N		N	-	N	
20/01/2022	15:00	SE / 28	SSA-CW	Area	0.1	N		N	-	N	
20/01/2022	15:00	SE / 28	SSA-NE	Area	0	N		N	-	N	
20/01/2022	15:00	SE / 28	SSA-CE	Area	0	N		N	-	N	
20/01/2022	15:00	SE / 28	SSA-SE	Area	0	N		N	-	N	
20/01/2022	15:00	SE / 28	SSA-SW	Area	0	N		N	-	N	
20/01/2022	15:00	SE / 28	AS01	Boundary	0	N		N	-	N	
20/01/2022	15:00	SE / 28	AS02	Boundary	0	N		N	-	N	
20/01/2022	15:00	SE / 28	AS03	Boundary	0.1	N		N	-	N	
20/01/2022	15:00	SE / 28	AS04	Boundary	0	N		N	-	N	
21/01/2022	9:00	SE / 12	SSA-NW	Area	0	N		N	-	N	

TABLE 2 - AMBIENT AIR MONITORING DATA SUMMARY											
Date	Time	Wind Direction/ Speed (km/h)	Monitoring Location	Monitoring Location Type - Boundary/Area Monitoring	PID Measurement - Total VOCs (ppm)	Dust Present (Y/N)	Dust Comment	Odour Present (Y/N)	Odour Comment	Action Required (Y/N)	Action Comment
21/01/2022	9:00	SE / 12	SSA-CW	Area	0	N		N	-	N	
21/01/2022	9:00	SE / 12	SSA-NE	Area	0	N		N	-	N	
21/01/2022	9:00	SE / 12	SSA-CE	Area	0	N		N	-	N	
21/01/2022	9:00	SE / 12	SSA-SE	Area	0	N		N	-	N	
21/01/2022	9:00	SE / 12	SSA-SW	Area	0	N		N	-	N	
21/01/2022	12:00	SE / 28	SSA-NW	Area	0	N		N	-	N	
21/01/2022	12:00	SE / 28	SSA-CW	Area	0	N		N	-	N	
21/01/2022	12:00	SE / 28	SSA-NE	Area	0	N		N	-	N	
21/01/2022	12:00	SE / 28	SSA-CE	Area	0	N		N	-	N	
21/01/2022	12:00	SE / 28	SSA-SE	Area	0	N		N	-	N	
21/01/2022	12:00	SE / 28	SSA-SW	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	SSA-NW	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	SSA-CW	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	SSA-NE	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	SSA-CE	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	SSA-SE	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	SSA-SW	Area	0	N		N	-	N	
21/01/2022	15:00	SE / 24	AS01	Boundary	0	N		N	-	N	
21/01/2022	15:00	SE / 24	AS02	Boundary	0.1	N		N	-	N	
21/01/2022	15:00	SE / 24	AS03	Boundary	0	N		N	-	N	
21/01/2022	15:00	SE / 24	AS04	Boundary	0.1	N		N	-	N	

Appendix C-3 Tables from Remediation GME 1 report

4. RESULTS

4.1 Baseline Dataset

Baseline sampling of pH was undertaken on 8th July 2021, prior to commencement of excavation works. Baseline pH sampling was undertaken within selected wells within the excavation area monitoring network, outlined within *Table 1* below.

The most recent groundwater levels and LNAPL gauging data is summarised in *Table 1* below and provided in *Table B-2* within *Attachment B*. *Table B-2* outlines the date for each well used as the baseline data.

Historical groundwater levels and LNAPL gauging is provided as *Table B-3* and historical pH data is provided as *Table B-4* in *Attachment B*.

Table 4-1. Pre-remediation Baseline Summary

Well ID	pH	Groundwater Depth (m BTOC)	LNAPL Thickness
BH210	4.52	0.934	No LNAPL detected
MW98/4	4.84	0.64	No LNAPL detected
MW11/15	4.75*	1.515	No LNAPL detected
MW11/18	4.60*	0.965	No LNAPL detected
MW11/19	5.07*	0.462	No LNAPL detected
MW11/20	5.68	0.745	No LNAPL detected
MW12/03	6.52	0.88	No LNAPL detected
MW12/20	6.63*	1.682	No LNAPL detected
MW18/23	6.21*	1.264	No LNAPL detected
MW12/21	7.36*	1.495	No LNAPL detected

Notes:

m BTOC = metres below top of casing.

*Baseline pH data on 8th July 2021 not collected. Baseline data obtained from historical average pH.

4.2 Fieldwork and Results

Remediation works, consisting of excavation of hydrocarbon impacted soils, commenced within Stage 2 on 22nd September 2021. Hydrocarbon impacted soils excavated during month 1 of remediation consisted of the below areas of environmental concern, with excavation date ranges outlined.

- AEC-14a: 24th September to 8th October 2021;

Table 4-2. Month 1 Groundwater Level Summary

Well ID	Baseline Groundwater Level	Groundwater Level – 27th September 2021	Groundwater Level – 12th October 2021	Groundwater Level – 18th October 2021	Groundwater Level – 22nd October 2021	Comments
BH210	0.934 (5th July 2021)	0.9	0.88	0.823	0.847	Down-gradient of AEC-3a, AEC-3b, AEC3-d and AEC-3e excavations.
MW98/4	0.64 (6th July 2021)	0.58	0.68	0.663	0.681	Down-gradient of AEC-3a and AEC-3b excavations.
MW11/15	1.515 (15th August 2016)	Not gauged	0.75	0.856	0.902	Up-gradient of AEC-3a, supplementary well for MW11/18.
MW11/18	0.965 (19th November 2019)	Inaccessible	Inaccessible	Inaccessible	Inaccessible	Up-gradient of AEC-3a. Well noted to be inaccessible due to well being clogged with mud.
MW11/19	0.462 (19th November 2019)	0.8	0.62	0.896	0.666	Up-gradient of AEC-3a and AEC-3b excavations.
MW11/20	0.745 (7th July 2021)	0.55	0.38	0.644	0.482	Down-gradient of AEC-3a and AEC-3b excavations.
MW12/03	0.88 (5th July 2021)	0.69	0.0 – well full of water	0.6	0.632	Up-gradient of AEC-3d excavation.

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Well ID	Baseline Groundwater Level	Groundwater Level – 27th September 2021	Groundwater Level – 12th October 2021	Groundwater Level – 18th October 2021	Groundwater Level – 22nd October 2021	Comments
MW12/20	1.682 (7th July 2021)	Not gauged	1.57	Not gauged	Not gauged	Down-gradient of AEC-3a, AEC-3b, AEC3-d and AEC-3e excavations.
MW18/23	1.264 (6th July 2021)	Not gauged	1.29	Not gauged	Not gauged	Down-gradient of AEC-3a and AEC-3b excavations.
MW12/21	1.495 (6th July 2021)	Not gauged	1.64	Not gauged	Not gauged	Down-gradient of AEC-3a and AEC-3b excavations.

Table 4-3. Month 1 LNAPL Summary

Well ID	Baseline LNAPL Thickness	LNAPL Thickness – 27th September 2021	LNAPL Thickness – 12th October 2021	LNAPL Thickness – 18th October 2021	LNAPL Thickness – 22nd October 2021
BH210	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW98/4	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW11/15	No LNAPL	Supplementary well for MW11/18, not added to monitoring network until week 2.	No LNAPL	No LNAPL	No LNAPL
MW11/18	No LNAPL	Inaccessible[1]	Inaccessible[1]	Inaccessible[1]	Inaccessible[1]
MW11/19	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW11/20	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW12/03	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW12/20	No LNAPL	Not required for weekly monitoring	No LNAPL	Not required for weekly monitoring	Not required for weekly monitoring
MW18/23	No LNAPL	Not required for weekly monitoring	No LNAPL	Not required for weekly monitoring	Not required for weekly monitoring
MW12/21	No LNAPL	Not required for weekly monitoring	No LNAPL	Not required for weekly monitoring	Not required for weekly monitoring

Notes:

m BTOC = metres below top of casing.

N/A = not applicable

1. MW11/18 noted to be inaccessible due to well being clogged with mud.

LNAPL was not detected in the subject wells prior to remediation works and was not detected throughout the month 1 monitoring, indicating that remediation works do not appear to be mobilising LNAPL.

Table 4-4. Month 1 Groundwater pH Summary – 12th October 2021

Well ID	Baseline pH	pH – 12th October 2021	Comments
BH210	4.52	5.7	None
MW98/4	4.84	4.7	None
MW11/15	4.75 [2]	5.7	None
MW11/18	4.60 [1]	Not collected	Unable to sample from well – inaccessible due to being clogged with mud
MW11/19	5.07 [1]	5.8	None
MW11/20	5.6	5.6	None
MW12/03	6.52	5.4	None
MW12/20	6.63 [1]	6.7	None
MW18/23	6.21 [1]	N/A	Unable to sample as hydrasleeve could not be removed from well
MW12/21	7.36 [1]	7.3	None

Notes:

N/A = not applicable

1. Baseline pH data on 8th July not collected. Baseline data obtained from historical average pH.

Comparisons between baseline pH data to the month 1 remediation phase pH indicate minor differences; however, no observable acidification of groundwater conditions was noted. Data collected during remediation works to date does not indicate the remediation works have adversely impacted or caused environmental harm to the Duck River.

As such, contingency actions as per the GWMP are not required to be implemented.

Refer to *Attachment C* for laboratory analytical reports.

5. CONCLUSIONS

As per the gauging and sampling data collected throughout month 1 of the Stage 2 remediation phase, remediation works do not appear to be mobilising LNAPL or causing environmental harm to the down-gradient Duck River.

Alternative_Name	Well	Sampled_Date_Time	ChemName	Concentration	Output Unit	ChemCode	SampleComments
Road alignment	BH210	5/12/2013 0:00	pH	5.21	pH units	pH	
Road alignment	BH210	5/12/2013 0:00	pH (Field)	5.21	pH units	pH_Field	
Road alignment	BH210	20/07/2020 0:00	pH (Field)	5.19	pH units	pH_Field	
Road alignment	BH210	4/12/2020 8:32	pH	5.08	pH units	pH	Clear, colourless, odourless
Road alignment	BH210	8/07/2021 13:25	pH (Lab)	4.52	pH units	pH_Lab	
Lot 61	MW11/15	19/08/2016 0:00	pH	4.75	pH units	pH	Cloudy orange brown, no odour.
Lot 61	MW11/15	19/08/2016 0:00	pH (Field)	4.75	pH units	pH_Field	Cloudy orange brown, no odour.
Lot 61	MW11/18	28/05/2014 0:00	pH (Field)	4.69	pH units	pH_Field	Cloudy, no odour
Lot 61	MW11/18	11/12/2013 0:00	pH	4.5	pH units	pH	
Lot 61	MW11/18	11/12/2013 0:00	pH (Field)	4.5	pH units	pH_Field	
Lot 63	MW11/19	18/08/2016 0:00	pH	4.47	pH units	pH	Cloudy, orange, no odour.
Lot 63	MW11/19	18/08/2016 0:00	pH (Field)	4.47	pH units	pH_Field	Cloudy, orange, no odour.
Lot 63	MW11/19	22/11/2019 0:00	pH (Field)	5.67	pH units	pH_Field	
Lot 62	MW11/20	18/08/2016 0:00	pH	6.63	pH units	pH	Cloudy, orange, no odour.
Lot 62	MW11/20	18/08/2016 0:00	pH (Field)	6.63	pH units	pH_Field	Cloudy, orange, no odour.
Lot 62	MW11/20	3/12/2020 12:00	pH	6.62	pH units	pH	Clear, colourless, odourless, Road melted over cap
Lot 62	MW11/20	8/07/2021 13:29	pH (Lab)	5.6	pH units	pH_Lab	
Lot 62	MW11/20	8/07/2021 13:31	pH (Lab)	5.68	pH units	pH_Lab	
Lot 63	MW12/03	20/05/2014 0:00	pH (Field)	4.51	pH units	pH_Field	Cloudy, chemical odour
Lot 63	MW12/03	5/12/2013 0:00	pH	4.33	pH units	pH	
Lot 63	MW12/03	5/12/2013 0:00	pH (Field)	4.33	pH units	pH_Field	
Lot 63	MW12/03	5/12/2014 0:00	pH	4.8	pH units	pH	
Lot 63	MW12/03	5/12/2014 0:00	pH (Field)	4.8	pH units	pH_Field	
Lot 63	MW12/03	17/08/2016 0:00	pH	5.21	pH units	pH	Cloudy, orange iron precipitate, no odour.
Lot 63	MW12/03	17/08/2016 0:00	pH (Field)	5.21	pH units	pH_Field	Cloudy, orange iron precipitate, no odour.
Lot 63	MW12/03	14/12/2016 0:00	pH (Field)	5.79	pH units	pH_Field	Clear, no odour.
Lot 63	MW12/03	6/12/2017 0:00	pH (Field)	5.97	pH units	pH_Field	Clear, colourless, no odour
Lot 63	MW12/03	11/06/2019 0:00	pH (Field)	5.16	pH units	pH_Field	Cloudy, chemical odour
Lot 63	MW12/03	22/11/2019 0:00	pH (Field)	5.51	pH units	pH_Field	
Lot 63	MW12/03	4/12/2020 13:15	pH	5.84	pH units	pH	Clear, colourless, potential hydrocarbon Odour
Lot 63	MW12/03	8/07/2021 13:20	pH (Lab)	6.52	pH units	pH_Lab	
Lot 63	MW12/03	8/07/2021 13:14	pH (Lab)	6.23	pH units	pH_Lab	
Lot 64	MW12/20	27/05/2014 0:00	pH (Field)	6.77	pH units	pH_Field	Turbid, brown, no odour
Lot 64	MW12/20	10/12/2013 0:00	pH	6.86	pH units	pH	
Lot 64	MW12/20	10/12/2013 0:00	pH (Field)	6.86	pH units	pH_Field	
Lot 64	MW12/20	10/12/2014 0:00	pH	7.03	pH units	pH	
Lot 64	MW12/20	10/12/2014 0:00	pH (Field)	7.03	pH units	pH_Field	
Lot 64	MW12/20	15/12/2016 0:00	pH (Field)	6.61	pH units	pH_Field	Organic odour, cloudy.
Lot 64	MW12/20	29/05/2017 0:00	pH (Field)	6.39	pH units	pH_Field	Clear, colourless, slight HC odour. Organics and bugs.
Lot 64	MW12/20	7/06/2019 0:00	pH (Field)	6.14	pH units	pH_Field	Black staining on hydrasleeve and colar, stagnant odour, black suspended particles
Lot 62	MW12/21	27/05/2014 0:00	pH (Field)	7.07	pH units	pH_Field	Turbid, black, no odour
Lot 62	MW12/21	10/12/2013 0:00	pH	7.14	pH units	pH	
Lot 62	MW12/21	10/12/2013 0:00	pH (Field)	7.14	pH units	pH_Field	
Lot 62	MW12/21	10/12/2014 0:00	pH	7.57	pH units	pH	
Lot 62	MW12/21	10/12/2014 0:00	pH (Field)	7.57	pH units	pH_Field	
Lot 62	MW12/21	18/08/2016 0:00	pH	7.03	pH units	pH	Yellow, black suspended sediment, hydrogen sulphide odour.
Lot 62	MW12/21	18/08/2016 0:00	pH (Field)	7.03	pH units	pH_Field	Yellow, black suspended sediment, hydrogen sulphide odour.
Lot 62	MW12/21	29/05/2017 0:00	pH (Field)	7.02	pH units	pH_Field	Clear, colourless, no odour. Organics and bugs.
Lot 62	MW12/21	6/06/2019 0:00	pH (Field)	7.15	pH units	pH_Field	Cloudy, suspended black globules
Lot 62	MW12/21	20/11/2019 0:00	pH (Field)	7.5	pH units	pH_Field	
Lot 62	MW12/21	3/12/2020 11:39	pH	8.43	pH units	pH	Mild blue tinge
Lot 62	MW18/23	6/06/2019 0:00	pH (Field)	6.81	pH units	pH_Field	Turbid, yellow/brown, no odour
Lot 62	MW18/23	25/11/2019 0:00	pH (Field)	5.61	pH units	pH_Field	
Lot 62	MW98/4	27/05/2014 0:00	pH (Field)	4.69	pH units	pH_Field	Clear, no odour
Lot 62	MW98/4	14/12/2000 0:00	pH	3.92	pH units	pH	
Lot 62	MW98/4	25/06/2001 0:00	pH	4.15	pH units	pH	
Lot 62	MW98/4	22/12/2003 0:00	pH	4.21	pH units	pH	
Lot 62	MW98/4	15/03/2005 0:00	pH	6.24	pH units	pH	
Lot 62	MW98/4	13/09/2005 0:00	pH	4.08	pH units	pH	
Lot 62	MW98/4	23/03/2006 0:00	pH	4.3	pH units	pH	
Lot 62	MW98/4	27/09/2006 0:00	pH	4.42	pH units	pH	
Lot 62	MW98/4	25/02/2008 0:00	pH	4.63	pH units	pH	Clear, no odour, no sheen
Lot 62	MW98/4	13/11/2008 0:00	pH	4.38	pH units	pH	clear with organic particles suspended, coloured rust particles
Lot 62	MW98/4	21/04/2009 0:00	pH	4.51	pH units	pH	
Lot 62	MW98/4	17/11/2009 0:00	pH	4.46	pH units	pH	
Lot 62	MW98/4	10/12/2013 0:00	pH	4.49	pH units	pH	
Lot 62	MW98/4	10/12/2013 0:00	pH (Field)	4.49	pH units	pH_Field	
Lot 62	MW98/4	10/12/2014 0:00	pH	4.57	pH units	pH	
Lot 62	MW98/4	10/12/2014 0:00	pH (Field)	4.57	pH units	pH_Field	
Lot 62	MW98/4	17/08/2016 0:00	pH	4.85	pH units	pH	Clear, colourless, no odour.
Lot 62	MW98/4	17/08/2016 0:00	pH (Field)	4.85	pH units	pH_Field	Clear, colourless, no odour.
Lot 62	MW98/4	14/12/2016 0:00	pH (Field)	5.13	pH units	pH_Field	Clear, strong yellow tinge, no odour.
Lot 62	MW98/4	7/06/2019 0:00	pH (Field)	3.97	pH units	pH_Field	Cloudy, hydrasleeve stained orange
Lot 62	MW98/4	25/11/2019 0:00	pH (Field)	5.05	pH units	pH_Field	
Lot 62	MW98/4	3/12/2020 13:32	pH	5.26	pH units	pH	Clear, colourless, odourless
Lot 62	MW98/4	8/07/2021 13:36	pH (Lab)	4.77	pH units	pH_Lab	
Lot 62	MW98/4	8/07/2021 13:35	pH (Lab)	4.84	pH units	pH_Lab	

Appendix C-4 Tables from Remediation GME 2 report

Table 4-2. Month 2 Groundwater Level Summary

Well ID	Baseline Groundwater Level	Groundwater Level – 27th October 2021 (m BTOC)	Groundwater Level – 3rd November 2021 (m BTOC)	Groundwater Level – 15th November 2021 (m BTOC)	Groundwater Level – 18th November 2021 (m BTOC)	Comments
BH210	0.934 (5 July 2021)	0.872	0.921	0.771	0.866	Down-gradient of AEC-3a, AEC-3b, AEC3-d and AEC-3e excavations.
MW98/4	0.64 (6 July 2021)	0.738	0.774	0.666	0.683	Down-gradient of AEC-3a and AEC-3b excavations.
MW11/15	1.515 (15 August 2016)	0.946	1.000	0.903	1.016	Up-gradient of AEC-3a, supplementary well for MW11/18.
MW11/18	0.965 (19 November 2019)	Inaccessible [1]	Inaccessible [1]	Inaccessible [1]	Inaccessible [1]	Up-gradient of AEC-3a. Well noted to be inaccessible due to being clogged with mud.
MW11/19	0.462 (19 November 2019)	0.666	0.745	0.716	0.840	Up-gradient of AEC-3a and AEC-3b excavations.
MW11/20	0.745 (7 July 2021)	0.689	0.891	0.166 [2]	0.374	Down-gradient of AEC-3a and AEC-3b excavations.
MW12/03	0.88 (5 July 2021)	0.671	0.748	0.556	0.714	Up-gradient of AEC-3d excavation.

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Well ID	Baseline Groundwater Level	Groundwater Level – 27th October 2021 (m BTOC)	Groundwater Level – 3rd November 2021 (m BTOC)	Groundwater Level – 15th November 2021 (m BTOC)	Groundwater Level – 18th November 2021 (m BTOC)	Comments
MW12/20	1.682 (7th July 2021)	Not required for weekly monitoring	Not required for weekly monitoring	1.556	Not required for weekly monitoring	Down-gradient of AEC-3a, AEC-3b, AEC3-d and AEC-3e excavations.
MW18/23	1.264 (6th July 2021)	Not required for weekly monitoring	Not required for weekly monitoring	1.284	Not required for weekly monitoring	Down-gradient of AEC-3a and AEC-3b excavations.
MW12/21	1.495 (6th July 2021)	Not required for weekly monitoring	Not required for weekly monitoring	1.554	Not required for weekly monitoring	Down-gradient of AEC-3a and AEC-3b excavations.

Notes:

m BTOC = metres below top of casing.

1. MW11/18 noted to be inaccessible due to well being clogged with mud.
2. MW11/20 is presumed to be impacted with seepage from rainwater and water trucks, based on the field observation of an unsecure well cap due to the presence of tar-like substance below top of casing.

Table 4-3. Month 2 LNAPL Observations Summary

Well ID	Baseline LNAPL Thickness	LNAPL Thickness – 27 October 2021	LNAPL Thickness – 3 November 2021	LNAPL Thickness – 15 November 2021	LNAPL Thickness – 18 November 2021
BH210	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW98/4	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW11/15	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW11/18	No LNAPL	Inaccessible[1]	Inaccessible[1]	Inaccessible[1]	Inaccessible[1]
MW11/19	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW11/20	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW12/03	No LNAPL	No LNAPL	No LNAPL	No LNAPL	No LNAPL
MW12/20	No LNAPL	Not required for weekly monitoring	Not required for weekly monitoring	No LNAPL	Not required for weekly monitoring
MW18/23	No LNAPL	Not required for weekly monitoring	Not required for weekly monitoring	No LNAPL	Not required for weekly monitoring
MW12/21	No LNAPL	Not required for weekly monitoring	Not required for weekly monitoring	No LNAPL	Not required for weekly monitoring

Notes:

1. MW11/18 noted to be inaccessible due to well being clogged with mud.

LNAPL was not detected in the subject wells prior to remediation works and was not detected throughout the month 2 monitoring, indicating that remediation works do not appear to be mobilising LNAPL.

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Table 4-4. Month 2 Groundwater pH Summary – 15 November 2021

Well ID	Baseline pH	pH – 15th November 2021	Comments
BH210	4.52	4.4	None
MW98/4	4.84	5.3	None
MW11/15	4.75 [2]	5.4[2]	None
MW11/18	4.60 [1]	Not collected	Unable to sample from well – inaccessible due to being clogged with mud
MW11/19	5.07 [1]	5.3	None
MW11/20	5.6	6.1	None
MW12/03	6.52	5.0	None
MW12/20	6.63 [1]	7.2	None
MW18/23	6.21 [1]	Not collected	Unable to sample as hydrasleeve could not be removed from well
MW12/21	7.36 [1]	7.3	None

Notes:

1. Baseline pH data on 8 July not collected. Baseline data obtained from historical average pH.
2. MW11/15 sample collected on 16 November 2021.

Comparisons between baseline pH data to the month 2 remediation phase pH indicate minor differences considered to be within the natural range of variability; however, no observable acidification of groundwater conditions was noted. Data collected during remediation works to date does not indicate the remediation works have adversely impacted or caused environmental harm to the Duck River.

As such, contingency actions as per the GWMP are not required to be implemented.

Refer to *Attachment C* for laboratory analytical reports.

5. CONCLUSIONS

As per the gauging and sampling data collected throughout month 2 of the Stage 2 remediation phase, remediation works do not appear to be mobilising LNAPL or have resulted in the oxidation of PASS, which may cause environmental harm to the down-gradient Duck River.

Groundwater flow appears to have slightly altered from a south easterly flow prior to remediation to a southerly flow during month 2 of remediation. The slight change in observed groundwater

Alternative_Name	Well	TOC	Date_Time	Monitoring_Round	Top_Depth	Water_Depth	Product_Depth	LNAPL_or_DNAPL	LNAPL_Thickness	Product_Corrected_Water_Level	LNAPL_Rel_Density
Road alignment	BH210	3.758	5/07/2021 0:00	-	0.934	0.934	None	None	None	2.824	0.76
Lot 61	MW11/15	5.01	15/08/2016 0:00	Q2 2016	1.515	1.515	None	None	None	3.495	0.76
Lot 61	MW11/18	5.02	19/11/2019 0:00	-	0.965	0.965	None	None	None	4.055	0.76
Lot 63	MW11/19	4.55	19/11/2019 0:00	-	0.462	0.462	None	None	None	4.088	0.76
Lot 62	MW11/20	4.18	7/07/2021 0:00	-	0.745	0.745	None	None	None	3.435	0.76
Lot 63	MW12/03	4.59	5/07/2021 0:00	-	0.88	0.88	None	None	None	3.71	0.76
Lot 64	MW12/20	2.94	7/07/2021 0:00	-	1.682	1.682	None	None	None	1.258	0.76
Lot 62	MW12/21	2.86	6/07/2021 0:00	-	1.495	1.495	None	None	None	1.365	0.76
Lot 62	MW18/23	-	6/07/2021 0:00	-	1.264	1.264	None	None	None	1.156	0.76
Lot 62	MW98/4	4.195	6/07/2021 0:00	-	0.64	0.64	None	None	None	3.555	0.76

Alternative_Name	Well	TOC	Date_Time	Monitoring_Round	Top_Depth	Water_Depth	Product_Depth	LNAPL_or_DNAPL	LNAPL_Thickness	Product_Corrected_Water_Level	LNAPL_Rel_Density
Road alignment	BH210	3.758	21/06/2010 0:00	Q2 2010	1.266	1.266	None	None	None	2.492	0.76
Road alignment	BH210	3.758	22/11/2010 0:00	Q4 2010	0.917	0.917	None	None	None	2.841	0.76
Road alignment	BH210	3.758	7/06/2011 0:00	Q2 2011	1.165	1.165	None	None	None	2.593	0.76
Road alignment	BH210	3.758	7/10/2011 0:00	Q4 2011	1.016	1.016	None	None	None	2.742	0.76
Road alignment	BH210	3.758	4/12/2012 0:00	Q4 2012	1.01	1.01	None	None	None	2.748	0.76
Road alignment	BH210	3.758	5/12/2013 0:00	Q4 2013	0.91	0.91	None	None	None	2.84	0.76
Road alignment	BH210	3.758	4/12/2014 0:00	Q4 2014	-	-	None	None	None	-	0.76
Road alignment	BH210	3.758	20/07/2020 0:00	-	1.049	1.049	None	None	None	2.709	0.76
Road alignment	BH210	3.758	28/07/2020 0:00	-	0.954	0.954	None	None	None	2.804	0.76
Road alignment	BH210	3.758	14/08/2020 0:00	-	1.9	1.9	None	None	None	1.858	0.76
Road alignment	BH210	3.758	2/12/2020 0:00	-	0.712	0.712	None	None	None	3.046	0.76
Road alignment	BH210	3.758	2/12/2020 0:00	-	0.712	0.712	None	None	None	3.046	0.76
Road alignment	BH210	3.758	5/07/2021 0:00	-	0.934	0.934	None	None	None	2.824	0.76
Lot 61	MW11/15	5.01	4/10/2011 0:00	Oct 2011	-	-	None	None	None	3.51	0.76
Lot 61	MW11/15	5.01	13/03/2013 0:00	Q1 2013	1.395	1.395	None	None	None	3.615	0.76
Lot 61	MW11/15	5.01	15/08/2016 0:00	Q2 2016	1.515	1.515	None	None	None	3.495	0.76
Lot 61	MW11/18	5.02	4/10/2011 0:00	Oct 2011	-	-	None	None	None	3.84	0.76
Lot 61	MW11/18	5.02	19/03/2012 0:00	Q1 2012	0.985	0.985	None	None	None	4.035	0.76
Lot 61	MW11/18	5.02	5/06/2012 0:00	Q2 2012	1.199	1.199	None	None	None	3.821	0.76
Lot 61	MW11/18	5.02	17/09/2012 0:00	Q3 2012	1.285	1.285	None	None	None	3.735	0.76
Lot 61	MW11/18	5.02	3/12/2012 0:00	Q4 2012	1.01	1.01	None	None	None	4.01	0.76
Lot 61	MW11/18	5.02	13/03/2013 0:00	Q1 2013	0.984	0.984	None	None	None	4.036	0.76
Lot 61	MW11/18	5.02	17/06/2013 0:00	Q2 2013	1.208	1.208	None	None	None	3.812	0.76
Lot 61	MW11/18	5.02	24/09/2013 0:00	Q3 2013	1.105	1.105	None	None	None	3.915	0.76
Lot 61	MW11/18	5.02	2/12/2013 0:00	Q4 2013	1.074	1.074	None	None	None	3.946	0.76
Lot 61	MW11/18	5.02	27/03/2014 0:00	Q1 2014	1.14	1.14	None	None	None	3.88	0.76
Lot 61	MW11/18	5.02	19/05/2014 0:00	Q2 2014	1.353	1.353	None	None	None	3.667	0.76
Lot 61	MW11/18	5.02	24/09/2014 0:00	Q3 2014	-	-	None	None	None	-	0.76
Lot 61	MW11/18	5.02	9/12/2014 0:00	Q4 2014	0.946	0.946	None	None	None	4.074	0.76
Lot 61	MW11/18	5.02	15/08/2016 0:00	Q2 2016	1.25	1.25	None	None	None	3.77	0.76
Lot 61	MW11/18	5.02	13/12/2016 0:00	-	0.983	0.983	None	None	None	4.037	0.76
Lot 61	MW11/18	5.02	3/12/2018 0:00	-	0.965	0.965	None	None	None	4.055	0.76
Lot 61	MW11/18	5.02	19/11/2019 0:00	-	0.965	0.965	None	None	None	4.055	0.76
Lot 63	MW11/19	4.55	4/10/2011 0:00	Oct 2011	-	-	None	None	None	3.726	0.76
Lot 63	MW11/19	4.55	5/12/2011 0:00	Q4 2011	0.802	0.802	None	None	None	3.748	0.76
Lot 63	MW11/19	4.55	15/08/2016 0:00	Q2 2016	1.045	1.045	None	None	None	3.505	0.76
Lot 63	MW11/19	4.55	19/11/2019 0:00	-	0.462	0.462	None	None	None	4.088	0.76
Lot 62	MW11/20	4.18	4/10/2011 0:00	Oct 2011	-	-	None	None	None	2.991	0.76
Lot 62	MW11/20	4.18	15/08/2016 0:00	Q2 2016	0.93	0.93	None	None	None	3.25	0.76
Lot 62	MW11/20	4.18	3/12/2018 0:00	-	0.925	0.925	None	None	None	3.255	0.76
Lot 62	MW11/20	4.18	1/12/2020 0:00	-	0.663	0.663	None	None	None	3.517	0.76
Lot 62	MW11/20	4.18	1/12/2020 0:00	-	0.663	0.663	None	None	None	3.517	0.76
Lot 62	MW11/20	4.18	7/07/2021 0:00	-	0.745	0.745	None	None	None	3.435	0.76
Lot 63	MW12/03	4.59	23/03/2012 0:00	Q1 2012	-	-	None	None	None	3.812	0.76
Lot 63	MW12/03	4.59	4/06/2012 0:00	Q2 2012	0.87	0.87	None	None	None	3.72	0.76
Lot 63	MW12/03	4.59	18/09/2012 0:00	Q3 2012	0.905	0.905	None	None	None	3.685	0.76
Lot 63	MW12/03	4.59	4/12/2012 0:00	Q4 2012	0.8	0.8	None	None	None	3.79	0.76
Lot 63	MW12/03	4.59	14/03/2013 0:00	Q1 2013	0.64	0.64	None	None	None	3.95	0.76
Lot 63	MW12/03	4.59	18/06/2013 0:00	Q2 2013	0.884	0.884	None	None	None	3.706	0.76
Lot 63	MW12/03	4.59	24/09/2013 0:00	Q3 2013	0.958	0.958	None	None	None	3.632	0.76
Lot 63	MW12/03	4.59	2/12/2013 0:00	Q4 2013	0.872	0.872	None	None	None	3.718	0.76
Lot 63	MW12/03	4.59	28/03/2014 0:00	Q1 2014	0.72	0.72	None	None	None	3.87	0.76
Lot 63	MW12/03	4.59	20/05/2014 0:00	Q2 2014	0.96	0.96	None	None	None	3.63	0.76
Lot 63	MW12/03	4.59	24/09/2014 0:00	Q3 2014	1.05	1.05	None	None	None	3.54	0.76
Lot 63	MW12/03	4.59	4/12/2014 0:00	Q4 2014	0.754	0.754	None	None	None	3.836	0.76
Lot 63	MW12/03	4.59	11/03/2015 0:00	Q1 2015	0.709	0.709	None	None	None	3.881	0.76
Lot 63	MW12/03	4.59	19/06/2015 0:00	Q2 2015	0.925	0.925	None	None	None	3.665	0.76
Lot 63	MW12/03	4.59	25/11/2015 0:00	Q4 2015	0.743	0.743	None	None	None	3.847	0.76
Lot 63	MW12/03	4.59	16/08/2016 0:00	Q2 2016	1.04	1.04	None	None	None	3.55	0.76
Lot 63	MW12/03	4.59	12/12/2016 0:00	-	0.865	0.865	None	None	None	3.725	0.76
Lot 63	MW12/03	4.59	4/12/2017 0:00	Q4 2017	0.884	0.884	None	None	None	3.706	0.76
Lot 63	MW12/03	4.59	21/06/2018 0:00	Q2 2018	1.155	1.155	None	None	None	3.435	0.76
Lot 63	MW12/03	4.59	5/12/2018 0:00	-	0.64	0.64	None	None	None	3.95	0.76
Lot 63	MW12/03	4.59	3/06/2019 0:00	-	0.97	0.97	None	None	None	3.62	0.76
Lot 63	MW12/03	4.59	19/11/2019 0:00	-	0.706	0.706	None	None	None	3.884	0.76
Lot 63	MW12/03	4.59	1/12/2020 0:00	-	0.588	0.588	None	None	None	4.002	0.76
Lot 63	MW12/03	4.59	1/12/2020 0:00	-	0.588	0.588	None	None	None	4.002	0.76
Lot 63	MW12/03	4.59	5/07/2021 0:00	-	0.88	0.88	None	None	None	3.71	0.76
Lot 64	MW12/20	2.94	21/03/2012 0:00	Q1 2012	-	-	None	None	None	1.284	0.76
Lot 64	MW12/20	2.94	5/06/2012 0:00	Q2 2012	1.68	1.68	None	None	None	1.26	0.76
Lot 64	MW12/20	2.94	4/12/2012 0:00	Q4 2012	1.987	1.987	None	None	None	0.953	0.76
Lot 64	MW12/20	2.94	17/06/2013 0:00	Q2 2013	1.745	1.745	None	None	None	1.195	0.76
Lot 64	MW12/20	2.94	10/12/2013 0:00	Q4 2013	1.805	1.805	None	None	None	1.135	0.76
Lot 64	MW12/20	2.94	19/05/2014 0:00	Q2 2014	1.93	1.93	None	None	None	1.01	0.76
Lot 64	MW12/20	2.94	9/12/2014 0:00	Q4 2014	1.64	1.64	None	None	None	1.3	0.76
Lot 64	MW12/20	2.94	19/06/2015 0:00	Q2 2015	1.476	1.476	None	None	None	1.464	0.76
Lot 64	MW12/20	2.94	26/11/2015 0:00	Q4 2015	1.86	1.86	None	None	None	1.08	0.76
Lot 64	MW12/20	2.94	15/08/2016 0:00	Q2 2016	1.745	1.745	None	None	None	1.195	0.76
Lot 64	MW12/20	2.94	13/12/2016 0:00	-	2.207	2.207	None	None	None	0.733	0.76
Lot 64	MW12/20	2.94	25/05/2017 0:00	Q2 2017	1.91	1.91	None	None	None	1.03	0.76
Lot 64	MW12/20	2.94	21/06/2018 0:00	Q2 2018	1.23	1.23	None	None	None	1.71	0.76
Lot 64	MW12/20	2.94	5/12/2018 0:00	-	1.771	1.771	None	None	None	1.169	0.76
Lot 64	MW12/20	2.94	7/06/2019 0:00	-	1.7	1.7	None	None	None	1.24	0.76
Lot 64	MW12/20	2.94	20/11/2019 0:00	-	2.496	2.496	None	None	None	0.444	0.76
Lot 64	MW12/20	2.94	20/07/2020 0:00	-	1.683	1.683	None	None	None	1.257	0.76
Lot 64	MW12/20	2.94	7/07/2021 0:00	-	1.682	1.682	None	None	None	1.258	0.76

Alternative_Name	Well	TOC	Date_Time	Monitoring_Round	Top_Depth	Water_Depth	Product_Depth	LNAPL_or_DNAPL	LNAPL_Thickness	Product_Corrected_Water_Level	LNAPL_Rel_Density
Lot 62	MW12/21	2.86	22/03/2012 0:00	Q1 2012	-	-	None	None	None	1.799	0.76
Lot 62	MW12/21	2.86	6/06/2012 0:00	Q2 2012	1.215	1.215	None	None	None	1.645	0.76
Lot 62	MW12/21	2.86	4/12/2012 0:00	Q4 2012	0.83	0.83	None	None	None	2.03	0.76
Lot 62	MW12/21	2.86	13/03/2013 0:00	Q1 2013	1.281	1.281	None	None	None	1.579	0.76
Lot 62	MW12/21	2.86	17/06/2013 0:00	Q2 2013	1.385	1.385	None	None	None	1.475	0.76
Lot 62	MW12/21	2.86	24/09/2013 0:00	Q3 2013	1.737	1.737	None	None	None	1.123	0.76
Lot 62	MW12/21	2.86	2/12/2013 0:00	Q4 2013	1.471	1.471	None	None	None	1.389	0.76
Lot 62	MW12/21	2.86	28/03/2014 0:00	Q1 2014	1.575	1.575	None	None	None	1.285	0.76
Lot 62	MW12/21	2.86	19/05/2014 0:00	Q2 2014	1.815	1.815	None	None	None	1.045	0.76
Lot 62	MW12/21	2.86	24/09/2014 0:00	Q3 2014	-	-	None	None	None	-	0.76
Lot 62	MW12/21	2.86	9/12/2014 0:00	Q4 2014	1.018	1.018	None	None	None	1.842	0.76
Lot 62	MW12/21	2.86	19/06/2015 0:00	Q2 2015	0.802	0.802	None	None	None	2.058	0.76
Lot 62	MW12/21	2.86	26/11/2015 0:00	Q4 2015	1.37	1.37	None	None	None	1.49	0.76
Lot 62	MW12/21	2.86	15/08/2016 0:00	Q2 2016	1.245	1.245	None	None	None	1.615	0.76
Lot 62	MW12/21	2.86	13/12/2016 0:00	-	2.08	2.08	None	None	None	0.78	0.76
Lot 62	MW12/21	2.86	25/05/2017 0:00	Q2 2017	1.725	1.725	None	None	None	1.135	0.76
Lot 62	MW12/21	2.86	6/12/2017 0:00	Q4 2017	1.931	1.931	None	None	None	0.929	0.76
Lot 62	MW12/21	2.86	21/06/2018 0:00	Q2 2018	1.745	1.745	None	None	None	1.115	0.76
Lot 62	MW12/21	2.86	4/12/2018 0:00	-	0.228	0.228	None	None	None	2.632	0.76
Lot 62	MW12/21	2.86	6/06/2019 0:00	-	1.78	1.78	None	None	None	1.08	0.76
Lot 62	MW12/21	2.86	20/11/2019 0:00	-	1.965	1.965	None	None	None	0.895	0.76
Lot 62	MW12/21	2.86	1/12/2020 0:00	-	1.709	1.709	None	None	None	1.151	0.76
Lot 62	MW12/21	2.86	1/12/2020 0:00	-	-	-	None	None	None	-	0.76
Lot 62	MW12/21	2.86	6/07/2021 0:00	-	1.495	1.495	None	None	None	1.365	0.76
Lot 62	MW18/23	-	3/12/2018 0:00	-	1.143	1.143	None	None	None	1.277	0.76
Lot 62	MW18/23	-	3/06/2019 0:00	-	1.67	1.67	None	None	None	0.75	0.76
Lot 62	MW18/23	-	20/11/2019 0:00	-	0.684	0.684	None	None	None	1.736	0.76
Lot 62	MW18/23	-	1/12/2020 0:00	-	1.498	1.498	None	None	None	0.922	0.76
Lot 62	MW18/23	-	6/07/2021 0:00	-	1.264	1.264	None	None	None	1.156	0.76
Lot 62	MW98/4	4.195	20/02/2008 0:00	Feb 2008	1.295	1.295	None	None	None	3.645	0.76
Lot 62	MW98/4	4.195	10/11/2008 0:00	Nov 2008	1.42	1.42	None	None	None	3.52	0.76
Lot 62	MW98/4	4.195	15/04/2009 0:00	Apr 2009	1.462	1.462	None	None	None	2.733	0.76
Lot 62	MW98/4	4.195	16/11/2009 0:00	Nov 2009	1.645	1.645	None	None	None	1.645	0.76
Lot 62	MW98/4	4.195	21/06/2010 0:00	Q2 2010	1.439	1.439	None	None	None	2.756	0.76
Lot 62	MW98/4	4.195	22/11/2010 0:00	Q4 2010	1.602	1.602	None	None	None	2.593	0.76
Lot 62	MW98/4	4.195	6/06/2011 0:00	Q2 2011	1.034	1.034	None	None	None	3.161	0.76
Lot 62	MW98/4	4.195	4/10/2011 0:00	Q4 2011	1.3	1.3	None	None	None	2.895	0.76
Lot 62	MW98/4	4.195	5/12/2011 0:00	Q4 2011	1.044	1.044	None	None	None	3.151	0.76
Lot 62	MW98/4	4.195	5/06/2012 0:00	Q2 2012	1.964	1.964	None	None	None	2.231	0.76
Lot 62	MW98/4	4.195	4/12/2012 0:00	Q4 2012	1.885	1.885	None	None	None	2.31	0.76
Lot 62	MW98/4	4.195	17/06/2013 0:00	Q2 2013	1.034	1.034	None	None	None	3.161	0.76
Lot 62	MW98/4	4.195	2/12/2013 0:00	Q4 2013	1.028	1.028	None	None	None	3.167	0.76
Lot 62	MW98/4	4.195	19/05/2014 0:00	Q2 2014	1.215	1.215	None	None	None	2.98	0.76
Lot 62	MW98/4	4.195	9/12/2014 0:00	Q4 2014	0.907	0.907	None	None	None	3.288	0.76
Lot 62	MW98/4	4.195	15/08/2016 0:00	Q2 2016	0.98	0.98	None	None	None	3.215	0.76
Lot 62	MW98/4	4.195	17/08/2016 0:00	Q2 2016	0.3	0.3	None	None	None	3.895	0.76
Lot 62	MW98/4	4.195	13/12/2016 0:00	-	0.842	0.842	None	None	None	3.353	0.76
Lot 62	MW98/4	4.195	22/05/2017 0:00	Q2 2017	1.104	1.104	None	None	None	3.091	0.76
Lot 62	MW98/4	4.195	3/12/2018 0:00	-	0.975	0.975	None	None	None	3.22	0.76
Lot 62	MW98/4	4.195	3/06/2019 0:00	-	0.855	0.855	None	None	None	3.34	0.76
Lot 62	MW98/4	4.195	20/11/2019 0:00	-	0.886	0.886	None	None	None	3.309	0.76
Lot 62	MW98/4	4.195	6/07/2021 0:00	-	0.64	0.64	None	None	None	3.555	0.76

Alternative_Name	Well	Sampled_Date_Time	ChemName	Concentration	Output Unit	ChemCode	SampleComments
Road alignment	BH210	5/12/2013 0:00	pH	5.21	pH units	pH	
Road alignment	BH210	5/12/2013 0:00	pH (Field)	5.21	pH units	pH_Field	
Road alignment	BH210	20/07/2020 0:00	pH (Field)	5.19	pH units	pH_Field	
Road alignment	BH210	4/12/2020 8:32	pH	5.08	pH units	pH	Clear, colourless, odourless
Road alignment	BH210	8/07/2021 13:25	pH (Lab)	4.52	pH units	pH_Lab	
Lot 61	MW11/15	19/08/2016 0:00	pH	4.75	pH units	pH	Cloudy orange brown, no odour.
Lot 61	MW11/15	19/08/2016 0:00	pH (Field)	4.75	pH units	pH_Field	Cloudy orange brown, no odour.
Lot 61	MW11/18	28/05/2014 0:00	pH (Field)	4.69	pH units	pH_Field	Cloudy, no odour
Lot 61	MW11/18	11/12/2013 0:00	pH	4.5	pH units	pH	
Lot 61	MW11/18	11/12/2013 0:00	pH (Field)	4.5	pH units	pH_Field	
Lot 63	MW11/19	18/08/2016 0:00	pH	4.47	pH units	pH	Cloudy, orange, no odour.
Lot 63	MW11/19	18/08/2016 0:00	pH (Field)	4.47	pH units	pH_Field	Cloudy, orange, no odour.
Lot 63	MW11/19	22/11/2019 0:00	pH (Field)	5.67	pH units	pH_Field	
Lot 62	MW11/20	18/08/2016 0:00	pH	6.63	pH units	pH	Cloudy, orange, no odour.
Lot 62	MW11/20	18/08/2016 0:00	pH (Field)	6.63	pH units	pH_Field	Cloudy, orange, no odour.
Lot 62	MW11/20	3/12/2020 12:00	pH	6.62	pH units	pH	Clear, colourless, odourless, Road melted over cap
Lot 62	MW11/20	8/07/2021 13:29	pH (Lab)	5.6	pH units	pH_Lab	
Lot 62	MW11/20	8/07/2021 13:31	pH (Lab)	5.68	pH units	pH_Lab	
Lot 63	MW12/03	20/05/2014 0:00	pH (Field)	4.51	pH units	pH_Field	Cloudy, chemical odour
Lot 63	MW12/03	5/12/2013 0:00	pH	4.33	pH units	pH	
Lot 63	MW12/03	5/12/2013 0:00	pH (Field)	4.33	pH units	pH_Field	
Lot 63	MW12/03	5/12/2014 0:00	pH	4.8	pH units	pH	
Lot 63	MW12/03	5/12/2014 0:00	pH (Field)	4.8	pH units	pH_Field	
Lot 63	MW12/03	17/08/2016 0:00	pH	5.21	pH units	pH	Cloudy, orange iron precipitate, no odour.
Lot 63	MW12/03	17/08/2016 0:00	pH (Field)	5.21	pH units	pH_Field	Cloudy, orange iron precipitate, no odour.
Lot 63	MW12/03	14/12/2016 0:00	pH (Field)	5.79	pH units	pH_Field	Clear, no odour.
Lot 63	MW12/03	6/12/2017 0:00	pH (Field)	5.97	pH units	pH_Field	Clear, colourless, no odour
Lot 63	MW12/03	11/06/2019 0:00	pH (Field)	5.16	pH units	pH_Field	Cloudy, chemical odour
Lot 63	MW12/03	22/11/2019 0:00	pH (Field)	5.51	pH units	pH_Field	
Lot 63	MW12/03	4/12/2020 13:15	pH	5.84	pH units	pH	Clear, colourless, potential hydrocarbon Odour
Lot 63	MW12/03	8/07/2021 13:20	pH (Lab)	6.52	pH units	pH_Lab	
Lot 63	MW12/03	8/07/2021 13:14	pH (Lab)	6.23	pH units	pH_Lab	
Lot 64	MW12/20	27/05/2014 0:00	pH (Field)	6.77	pH units	pH_Field	Turbid, brown, no odour
Lot 64	MW12/20	10/12/2013 0:00	pH	6.86	pH units	pH	
Lot 64	MW12/20	10/12/2013 0:00	pH (Field)	6.86	pH units	pH_Field	
Lot 64	MW12/20	10/12/2014 0:00	pH	7.03	pH units	pH	
Lot 64	MW12/20	10/12/2014 0:00	pH (Field)	7.03	pH units	pH_Field	
Lot 64	MW12/20	15/12/2016 0:00	pH (Field)	6.61	pH units	pH_Field	Organic odour, cloudy.
Lot 64	MW12/20	29/05/2017 0:00	pH (Field)	6.39	pH units	pH_Field	Clear, colourless, slight HC odour. Organics and bugs.
Lot 64	MW12/20	7/06/2019 0:00	pH (Field)	6.14	pH units	pH_Field	Black staining on hydrasleeve and colar, stagnant odour, black suspended particles
Lot 62	MW12/21	27/05/2014 0:00	pH (Field)	7.07	pH units	pH_Field	Turbid, black, no odour
Lot 62	MW12/21	10/12/2013 0:00	pH	7.14	pH units	pH	
Lot 62	MW12/21	10/12/2013 0:00	pH (Field)	7.14	pH units	pH_Field	
Lot 62	MW12/21	10/12/2014 0:00	pH	7.57	pH units	pH	
Lot 62	MW12/21	10/12/2014 0:00	pH (Field)	7.57	pH units	pH_Field	
Lot 62	MW12/21	18/08/2016 0:00	pH	7.03	pH units	pH	Yellow, black suspended sediment, hydrogen sulphide odour.
Lot 62	MW12/21	18/08/2016 0:00	pH (Field)	7.03	pH units	pH_Field	Yellow, black suspended sediment, hydrogen sulphide odour.
Lot 62	MW12/21	29/05/2017 0:00	pH (Field)	7.02	pH units	pH_Field	Clear, colourless, no odour. Organics and bugs.
Lot 62	MW12/21	6/06/2019 0:00	pH (Field)	7.15	pH units	pH_Field	Cloudy, suspended black globules
Lot 62	MW12/21	20/11/2019 0:00	pH (Field)	7.5	pH units	pH_Field	
Lot 62	MW12/21	3/12/2020 11:39	pH	8.43	pH units	pH	Mild blue tinge
Lot 62	MW18/23	6/06/2019 0:00	pH (Field)	6.81	pH units	pH_Field	Turbid, yellow/brown, no odour
Lot 62	MW18/23	25/11/2019 0:00	pH (Field)	5.61	pH units	pH_Field	
Lot 62	MW98/4	27/05/2014 0:00	pH (Field)	4.69	pH units	pH_Field	Clear, no odour
Lot 62	MW98/4	14/12/2000 0:00	pH	3.92	pH units	pH	
Lot 62	MW98/4	25/06/2001 0:00	pH	4.15	pH units	pH	
Lot 62	MW98/4	22/12/2003 0:00	pH	4.21	pH units	pH	
Lot 62	MW98/4	15/03/2005 0:00	pH	6.24	pH units	pH	
Lot 62	MW98/4	13/09/2005 0:00	pH	4.08	pH units	pH	
Lot 62	MW98/4	23/03/2006 0:00	pH	4.3	pH units	pH	
Lot 62	MW98/4	27/09/2006 0:00	pH	4.42	pH units	pH	
Lot 62	MW98/4	25/02/2008 0:00	pH	4.63	pH units	pH	Clear, no odour, no sheen
Lot 62	MW98/4	13/11/2008 0:00	pH	4.38	pH units	pH	clear with organic particles suspended, coloured rust particles
Lot 62	MW98/4	21/04/2009 0:00	pH	4.51	pH units	pH	
Lot 62	MW98/4	17/11/2009 0:00	pH	4.46	pH units	pH	
Lot 62	MW98/4	10/12/2013 0:00	pH	4.49	pH units	pH	
Lot 62	MW98/4	10/12/2013 0:00	pH (Field)	4.49	pH units	pH_Field	
Lot 62	MW98/4	10/12/2014 0:00	pH	4.57	pH units	pH	
Lot 62	MW98/4	10/12/2014 0:00	pH (Field)	4.57	pH units	pH_Field	
Lot 62	MW98/4	17/08/2016 0:00	pH	4.85	pH units	pH	Clear, colourless, no odour.
Lot 62	MW98/4	17/08/2016 0:00	pH (Field)	4.85	pH units	pH_Field	Clear, colourless, no odour.
Lot 62	MW98/4	14/12/2016 0:00	pH (Field)	5.13	pH units	pH_Field	Clear, strong yellow tinge, no odour.
Lot 62	MW98/4	7/06/2019 0:00	pH (Field)	3.97	pH units	pH_Field	Cloudy, hydrasleeve stained orange
Lot 62	MW98/4	25/11/2019 0:00	pH (Field)	5.05	pH units	pH_Field	
Lot 62	MW98/4	3/12/2020 13:32	pH	5.26	pH units	pH	Clear, colourless, odourless
Lot 62	MW98/4	8/07/2021 13:36	pH (Lab)	4.77	pH units	pH_Lab	
Lot 62	MW98/4	8/07/2021 13:35	pH (Lab)	4.84	pH units	pH_Lab	

Appendix C-5 Tables from AA3 LTEMP

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500		10000			1000				3500		10,000
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**																															
Lot 61	3	MW11/18	MW11/18_0.3	0.3-0.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 430	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	430	-
Lot 61	3	MW11/18	MW11/18_3.2	3.2-3.2	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 62	3	MW11/20	MW11/20_0.2	0.2-0.2	23/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<5	<10	-	<50	-	-	-	<50 - 1200	-	-	-	-	-	-	-	-	-	-	-	-	350	-	860	-
Lot 62	3	MW11/20	MW11/20_5.0	5-5	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Road alignment	3	SB18/24	MW(SB)18/24_0.3_180209	0.3-0.3	9/02/2018	0.8	3.4	1.3	0.9	6.4	7.3	12.8	3	66	-	160	200	-	<100	360	75	62	190	190	200	390	<100	90	60	90	190	220	130	130	<100	<100
Road alignment	3	SB18/24	MW(SB)18/24_1.2_180209	1.2-1.2	9/02/2018	2.7	<0.5	21.5	1.2	52.8	54	78.2	4	1480	-	300	530	-	<100	830	1530	1450	430	430	300	730	<100	260	210	260	460	430	250	170	<100	<100
Road alignment	3	SB18/24	MW(SB)18/24_3.0_180209	3-3	9/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	16	-	<50	<100	-	<100	<50	17	17	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	-0.45	8/02/2018	<0.2	2.2	0.6	1.1	3.4	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	0.45-0.45	8/02/2018	0.4	22.4	2.9	4.2	14.9	19.1	44.8	<1	3270	-	<50	<100	-	320	320	3420	3380	<50	<50	250	710	460	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 62	3	TP18/20	TP18/20_0.7_20180208	0.7-0.7	8/02/2018	<0.2	3.8	1.4	1.8	6.6	8.4	13.6	<1	816	-	<50	<100	-	<100	<50	851	837	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	-1.2	8/02/2018	<0.2	<0.5	0.8	0.6	2.8	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	0.8	0.6	2.8	3.4	4.2	<1	861	-	<50	<100	-	<100	<50	819	814	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_2.3_20180208	2.3-2.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	19	-	<50	<100	-	<100	<50	20	20	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_0.6	0.5-0.7	24/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_1.5	1.4-1.6	24/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_1.0	0.9-1.1	23/07/2019	<0.2	<0.2	<0.2	<0.2	<0.4	<0.6	-	<1	-	<40	<20	<50	-	<50	<50	<40	<40	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_0.1	0-0.2	23/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	110	-	100	210	<20	<20	<50	<50	180	180	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	MW12/21	MW12/21_0.5	0.5-0.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_1.4	1.4-1.4	7/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	730	2600	4600	2000	5300 - 5330	<20	<20	1200	1200	3700	-	870	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_2.4	2.4-2.4	7/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_3.5	3.5-3.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_0.3_20180208	0.3-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	80	1340	-	360	1780	<10	<10	240	240	1440	1890	210	<50	<50	<50	460	550	460	550	<100	<100
Lot 62	4	SB18/23	MW(SB)18/23_3.0_20180208	3-3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	130	1410	-	400	1940	<10	<10	300	300	1510	2070	260	130	110	130	950	840	710	710	130	<100
Road alignment	4	TP18/26	TP18/26_0.3	-0.3	7/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_0.3	0.3-0.3	7/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	1.2-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.7	1.7-1.7	7/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_1.0	0.9-1.1	19/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	230	-	150	380	<20	<20	<50	<50	300	300	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	TP19/28	D01_190719	0-0.2	19/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	57	2700	-	2300	5057	<20	<20	140	140	4000	5130	990	-	<20	<50	830	-	540	730	290	<100
Lot 62	4	TP19/28	T01_190719	0-0.2	19/07/2019	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	200	1120	-	150	1470	<10	<10	410	410	1030	1440	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_0.1	0-0.2	19/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	42	2100	-	1800	3942	<20	<20	100	100	3200	4120	820	-	<20	<50	600	-	390	530	210	<100
Lot 62	4	TP19/29	TP19/29_1.8	1.7-1.9	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	76	-	110	186	<20	<20	<50	<50	150	150	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	TP19/29	TP19/29_2.2	2.1-2.3	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	85	-	69	154	<20	<20	<50	<50	120	120	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	TP19/30	D01_220719	0.3-0.5	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	T01_220719	0.3-0.5	22/07/2019	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_0.4	0.3-0.5	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_1.2	1.1-1.3	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/16	MW11/16_0.45	0.45-0.45	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	5	MW11/16	MW11/16_3.3	3.3-3.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	5	MW11/17	D_220911_01	1-1	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 2300	-	-	-	-	-	-	-	-	-	-	-	-	1600	-	740	-
Lot 61	5	MW11/17	MW11/17_1.0	1-1	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 1700	-	-	-	-	-	-	-	-	-	-	-	-	1200	-	510	-
Lot 61	5	MW11/17	T-220911-01	1-1	22/09/2011	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	2290	3080	790	3080 - 3105	<10	<10	90	-	2590	3080	400	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	MW11/17_2.5	2.5-2.5	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	5	TP19/39	TP19/39_0.2	0.1-0.3	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/39	TP19/39_0.4	0.3-0.5	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.1	0.1-0.3	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	200	-	200	400	<20	<20	<50	<50	350	350	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.2	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 61	5	TP19/40	TP19/40_0.2	1.9-2.1	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	260	-	56	316	<20	<20	<50	<50	280	280	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	D01_290719	0.1-0.3	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	68	68	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TO1_290719	0.1-0.3	29/07/2019	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	110	110	<10	<10	<50	<50	140	140	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.2	0.1-0.3	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.4	0.3-0.5	29/07/2019	<0.1	0.8	0.2	5.4	10	16	-	4.5 - 6.3	-	<80	290	130	-	130	550	75	59	140	135.5	200	340	<100	-	120	83	350	-	110	180	120	<100
Lot 56	11	BH11/01	BH11|01-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	1200	1480	280	1500 - 1505	<20	<20	160	140	1400	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-0.8	0.8-0.9	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5 - 1	17	-	300	810	860	<100	1100 - 1160	29	29	580	490	510	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	DUP_01	0.8-0.9	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	16	-	87	260	310	<100	350 - 397	29	29	190	160	150	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-1.5	1.5-1.6	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	190	140	140 - 215	<20	<20	<50	<50	150	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-1.4	1.4-1.5	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	480	880	400	880 - 905	<20	<20	<50	<50	860	-	120	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-1.5	1.5-1.6	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000	50	3500	50	10000			1000				3500		10,000
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**																															
Lot 56	11	BH11/04	BH11|04-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	58	530	580	<100	590 - 638	<20	<20	190	160	490	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.7	1.7-1.8	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.0	1-1.1	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	140	950	1000	<100	1100 - 1140	<20	<20	440	390	680	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.5	1.5-1.6	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.0	1-1.1	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	280	680	400	680 - 705	<20	<20	<50	<50	640	-	190	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-1.0	1-1.1	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	D_140312_02	-0.65	14/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	3.6	<10	-	370	980	1030	<100	1400	22	22	630	630	810	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	T-140312-01	-0.65	14/03/2012	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2	<10	-	350	1110	1230	120	1580	25	25	570	-	930	1500	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_0.65	0.65-0.65	14/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5 - 5	<10	-	750	1800	2070	270	2800 - 2820	23	23	1200	1200	1600	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_1.3	1.3-1.3	14/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5 - 1.3	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/02	MW11/02_0.5	0.5-0.5	19/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 530	-	-	-	-	-	-	-	-	-	-	-	-	270	-	260	-
Lot 56	11	MW11/02	MW11/02_2.3	2.3-2.3	19/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 56	11	MW11/04	MW11/04_1.0	1-1	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	4.9	110	-	2100	-	-	-	2100 - 5000	-	-	-	-	-	-	-	-	-	-	-	-	2700	-	210	-
Lot 56	11	MW11/04	MW11/04_2.0	2-2	21/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 56	11	TP18/33	TP18/33_0.3_20180208	0.3-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	-3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	3-3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP19/79	TP19/79_0.3	0.2-0.35	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.5	-	<20	930	1700	-	280	2910	<20	<20	1400	1400	1400	2800	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP19/79	TP19/79_1.2	1.1-1.3	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	11	TP19/80	TP19/80_0.5	0.5-0.6	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.6	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	13	TP19/50	TP19/50_0.1	0-0.2	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	13	TP19/54	TP19/54_0.1	0-0.2	1/08/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	14	TP19/02	TP19/02_0.2	0.1-0.3	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	250	-	290	540	<20	<20	<50	<50	460	600	140	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_0.4	0.3-0.5	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	290	-	280	570	<20	<20	<50	<50	500	500	<100	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_1.6	1.4-1.6	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	D_160312_02	-0.05	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	2.7	<10	-	1200	30,000	42,000	12,000	43,000 - 43,200	<20	<20	7300	7300	35,000	-	4800	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	T-160312-01	-0.05	16/03/2012	<0.2	0.8	<0.5	<0.5	<0.5	<0.5	0.8 - 1.4	2	13	940	16,600	21,080	4480	22,000 - 22,020	22	21	4000	-	16,600	22,700	2120	-	-	-	-	13	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_0.05	0.05-0.05	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	4.9 - 6.1	<10	-	420	3000	4000	1000	4400 - 4420	<20	<20	870	4500	3500	-	340	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_1.4	1.4-1.4	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	D_160312_01	-1	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	120	-	<50	<100	<200	<100	<100	150	150	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.4	1.4-1.4	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.0	1-1	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	59	-	<50	<100	<200	<100	<100	76	76	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_0.25	0.25-0.25	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_1.1	1.1-1.1	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	15	MW11/05	MW11/05_0.3	0.3-0.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 150	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	150	-
Lot 56	15	MW11/05	MW11/05_2.3	2.3-2.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 59	15	MW11/06	MW11/06_0.5	0.5-0.5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Road alignment	15	MW11/07	MW11/07_0.5	0.5-0.5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Road alignment	15	MW11/07	MW11/07_1.0	1-1	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	180	-	-	-	180 - 530	-	-	-	-	-	-	-	-	-	-	-	-	350	-	<100	-
Road alignment	15	MW11/07	MW11/07_5.0	5-5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	MW11/08	MW11/08_0.5	0.5-0.5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 240	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	240	-
Lot 58	15	MW11/08	D_200901_01	3.2-3.2	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	MW11/08	MW11/08_3.2	3.2-3.2	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/10	MW11/10_0.450	0.45-0.45	21/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	3.2	<10	-	56	-	-	-	56 - 2400	-	-	-	-	-	-	-	-	-	-	-	-	1400	-	990	-
Lot 61	15	MW11/10	MW11/10_3.4	3.4-3.4	21/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 180	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	180	-
Lot 58	15	MW11/11	MW11/11_0.4	0.4-0.4	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	100	-	-	-	100 - 1000	-	-	-	-	-	-	-	-	-	-	-	-	780	-	120	-
Lot 58	15	MW11/11	MW11/11_2.2	2.2-2.2	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	MW11/12	MW11/12_0.3	0.3-0.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 320	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	320	-
Lot 58	15	MW11/12	MW11/12_3.0	3-3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 270	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	270	-
Lot 61	15	MW11/13	MW11/13_0.3	0.3-0.3	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/13	MW11/13_3.6	3.6-3.6	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/15	MW11/15_1.3	1.3-1.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/15	MW11/15_3.0	3-3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	0.3-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_2.7_20180208	2.7-2.7	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	QC18_101		6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	270	-	240	510	<10	<10	<50	<50	480	630	150	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 62	15	TP18/21	TP18/21_0.3	0.3-0.3	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	450	-	350	800	<10	<10	<50	<50	700	900	200	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 62	15	TP18/21	TP21_0.6	-0.6	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	360	-	300	660	<10	<10	<50	<50	620	840	220	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	1.2-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_2.37	2.37-2.37	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_0.3	0.3-0.3	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	180	-	220	400	<10	<10	<50	<50	310	480	170	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 58	15	TP18/30	TP18/30_1.2	-1.2	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500		10000			1000				3500		10,000
Alternative_Name	Monitoring_Zone	Location_Code	Field_ID	Sample_Depth_Range	Sampled_Date_Time																															
Lot 58	15	TP18/30	TP18/30_1.2	1.2-1.2	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	-2.4	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	2.4-2.4	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP19/10	TP19/10_0.3	0.2-0.4	1/08/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	410	11,000	-	8500	19,910	<20	<20	960	960	16,000	21,660	4700	-	490	1000	22,690	-	13,000	19,000	9200	4200
Lot 58	15	TP19/13	TP19/13_0.1	0.1-0.3	24/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	97	-	89	186	<20	<20	<50	<50	150	150	<100	-	-	-	-	-	-	-	-	-
Lot 61	54	TP21/30	TP21/30-1.0	1	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	250	-	100	350	<20	<20	<50	<50	270	270	<100	-	<50	<50	220	-	220	270	<100	<100
Lot 61	54	TP21/30	TP21/30-2.1	2.1	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	130	-	61	191	<20	<20	<50	<50	150	150	<100	-	<50	<50	150	-	150	180	<100	<100
Lot 56	56	TP21/55	TP21/55_0.6	0.6	30/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	36	420	-	130	586	<20	<20	68	68	430	498	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 56	56	TP21/55	TP21/55_1.2	1.2	30/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/58	TP21/58_0.5	0.5	30/03/2021	<1	<1	<1	<1	<2	<3	-	<1 - 9.2	-	<200	1100	15,000	-	1100	17,200	<200	<200	3400	3390.8	<100	3850	450	-	640	1500	6810	-	5400	5500	770	350
Lot 56	56	TP21/58	TP21/58_1.2	1.2	30/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TP21/60_1.0	1	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	DUP10-210329	2	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 56	56	TP21/60	TP21/60_2.0	2	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 56	56	TP21/60	TRIP10_210329	2	29/03/2021	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	<10	-	-	-	-	-	<10	<10	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 58	58	TP21/32	TP21/32_1.0	1	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/33	TP21/33_0.5	0.5	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	220	-	230	450	<20	<20	<50	<50	420	420	<100	-	<50	<50	360	-	200	320	160	<100
Lot 58	58	TP21/33	TP21/33_1.4	1.4	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	86	-	71	157	<20	<20	<50	<50	140	140	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/34	TP21/34_0.4	0.4	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	87	-	96	183	<20	<20	<50	<50	150	150	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/34	TP21/34_0.6	0.6	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	50	350	-	220	620	<20	<20	92	92	480	732	160	-	<50	57	310	-	200	270	110	<100
Lot 58	58	TP21/35	TP21/32_0.3	0.3	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	200	930	-	280	1410	<20	<20	430	430	950	1560	180	-	180	360	1110	-	740	650	190	<100
Lot 58	58	TP21/35	TP21/35_0.6	0.6	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	57	57	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/35	DUP03_210310	1	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/35	TP21/35_1.0	1	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/35	TRIP03_210310	1	10/03/2021	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	-	<10	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/63	TP21/63_0.2	0.2	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/63	TP21/63_1.5	1.5	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/29	TP21/29-0.7	0.7	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	35	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	70	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/29	TP21/29-1.7	1.7	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/31	DUP02_210309	0.9	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/31	TP21/31-0.9	0.9	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/31	TRIP02_210309	0.9	9/03/2021	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	-	<10	-	-	-	-	-	<10	<10	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 61	61	TP21/31	TP21/31-2.0	2	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/85	TP21/85_0.4	0.4	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	430	-	250	680	<20	<20	<50	<50	620	740	120	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/85	TP21/85_2.0	2	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/86	TP21/86_0.5	0.5	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/86	TP21/86_1.5	1.5	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/87	TP21/87_1.0	1	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	92	-	<50	92	<20	<20	<50	<50	120	120	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/87	TP21/87_1.5	1.5	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/25	TP21/25_0.1	0.1	11/03/2021	<0.1	0.2	<0.1	0.2	0.4	0.6	-	<0.5	-	<20	<20	450	-	320	770	<20	<20	<50	<50	720	930	210	-	<50	<50	440	-	280	400	160	<100
Lot 62	62	TP21/25	TP21/25_1.0	1	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	390	-	220	610	<20	<20	<50	<50	560	690	130	-	<50	<50	520	-	320	460	200	110
Lot 62	62	TP21/26	DUP04_210311	0.6	11/03/2021	<0.1	0.2	<0.1	0.2	0.8	1	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/26	TP21/26_0.6	0.6	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/26	TRIP04_210311	0.6	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	23	180	-	150	353	<20	<20	<50	<50	310	420	110	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/26	TP21/26_1.1	1.1	11/03/2021	<0.1	<0.1	0.3	<0.1	1	1	-	<0.5	-	38	27	<50	-	<50	<50	74	73	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/27	TP21/27_0.3	0.3	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/27	TP21/27_0.8	0.8	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/28	TP21/28_0.2	0.2	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/28	TP21/28_2.0	2	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/82	TP21/82_0.5	0.5	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	140	-	140	150	<100	<100
Lot 62	62	TP21/82	TP21/82_1.2	1.2	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	42	600	-	260	902	<20	<20	82	82	760	982	140	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/84	TP21/84_0.8	0.8	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	99	5700	-	3600	9399	23	23	230	230	8700	9850	920	-	<50	63	2600	-	1600	2500	1000	200
Lot 62	62	TP21/84	TP21/84_2.0	2	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Road alignment	Road	TP21/94	TP21/94_0.2	0.2	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	110	-	310	420	<20	<20	<50	<50	310	630	320	-	<50	<50	280	-	<100	270	280	270
Road alignment	Road	TP21/94	TP21/94_0.6	0.6	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	14	TP20/26a	TP20/26A_0.7	0.6-0.7	7/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	330	6800	-	2300	9430	<20	<20	640	640	8200	9680	840	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/27	TP20/27_0.45	0.35-0.45	7/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/28	TP20/28_1.55	1.45-1.55	16/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.7	-	470	2400	620	-	130	3150	1700	1700	2300	2300	460	2760	<100	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/31	TP20/31_0.55	0.45-0.55	16/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	240	2400	-	1600	4240	<20	<20	600	600	3300	4820	920	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328_TRIP1	0-0.05	28/03/2022	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328_TRIP2	0-0.05	28/03/2022	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328-DUP1	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328-DUP2	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-1	SSA-1	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-10	SSA-10	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-11	SSA-11	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-12	SSA-12	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-13	SSA-13	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-14	SSA-14	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-15	SSA-15	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-16	SSA-16	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-17	SSA-17	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.7	<20	-	<20	160	-	66	226	<20	<20	<50	<50	200	200	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-18	SSA-18	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	150	-	<50	150	<20	<20	<50	<50	180	180	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-19	SSA-19	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	SSA-2	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	160	860	-	54	1074	<20	<20	250	250	800	1050	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-20	SSA-20	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-21	SSA-21	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-22	SSA-22	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-23	SSA-23	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-24	SSA-24	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-25	SSA-25	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-26	SSA-26	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-27	SSA-27	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	SSA-28	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-29	SSA-29	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-3	SSA-3	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-30	SSA-30	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-31	SSA-31	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-32	SSA-32	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-33	SSA-33	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-34	SSA-34	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-35	SSA-35	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	73	-	<50	73	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-36	SSA-36	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	58	-	<50	58	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-37	SSA-37	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-38	SSA-38	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	100	260	-	80	440	43	43	170	170	270	440	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-39	SSA-39	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-4	SSA-4	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-40	SSA-40	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-5	SSA-5	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	170	-	<50	170	<20	<20	<50	<50	250	250	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-6	SSA-6	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	78	-	<50	78	<20	<20	<50	<50	100	100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-7	SSA-7	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500		10000			1000				3500		10,000
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**																															
Lot 61		SSA-8	SSA-8	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-9	SSA-9	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	51	-	<50	51	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Statistical Summary																																				
Number of Results						232	232	232	232	232	221	99	232	147	127	218	186	76	186	218	188	188	186	183	186	157	186	10	62	62	62	10	94	62	94	62
Number of Detects						3	8	9	10	11	25	22	18	13	46	39	67	60	58	86	20	20	34	31	66	54	30	3	7	10	19	4	26	19	26	5
Minimum Concentration						<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5	<10	<10	<20	<50	190	<50	<50	<10	<10	<50	<50	<100	<50	<100	<50	<20	<50	<50	<50	<50	<100	<50	<100
Minimum Detect						0.4	0.2	0.2	0.2	0.4	0.6	0.8	2	13	38	23	51	190	54	51	17	17	68	68	100	100	110	90	60	57	140	220	110	130	110	110
Maximum Concentration						2.7	22.4	21.5	5.4	52.8	54	78.2	9.2	3270	470	2400	30000	42000	12000	43200	3420	3380	7300	7300	35000	22700	4800	260	640	1500	22690	840	13000	19000	9200	4200
Maximum Detect						2.7	22.4	21.5	5.4	52.8	54	78.2	9.2	3270	470	2400	30000	42000	12000	43200	3420	3380	7300	7300	35000	22700	4800	260	640	1500	22690	840	13000	19000	9200	4200
Average Concentration						0.13	0.29	0.27	0.21	0.67	0.83	2.1	0.48	53	17	83	694	2708	294	924	57	56	182	178	746	767	158	66	50	79	667	219	391	566	227	129
Median Concentration						0.05	0.05	0.05	0.05	0.15	0.15	0.75	0.25	5	10	25	50	145	50	25	10	10	25	25	50	50	50	25	25	25	50	25	50	50	50	50
Standard Deviation						0.2	1.5	1.4	0.47	3.7	4	9.1	0.81	309	51	267	2914	8098	1183	3850	308	304	696	715	3195	2790	527	78	102	227	2989	292	1477	2498	956	528
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	7	0	8	0	0	0	0	2	0	0	0	2	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	7	0	8	0	0	0	0	2	0	0	0	2	0	0

Env Stds Comments

#1:Assumes Total chromium is 17% Hexavalent chromium

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 61	3	MW11/18	MW11/18_0.3	0.3-0.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	3	MW11/18	MW11/18_3.2	3.2-3.2	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	MW11/20	MW11/20_0.2	0.2-0.2	23/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	MW11/20	MW11/20_5.0	5-5	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	3	SB18/24	MW(SB)18/24_0.3_180209	0.3-0.3	9/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	3	SB18/24	MW(SB)18/24_1.2_180209	1.2-1.2	9/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	3	SB18/24	MW(SB)18/24_3.0_180209	3-3	9/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	-0.45	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	0.45-0.45	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.7_20180208	0.7-0.7	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_2.3_20180208	2.3-2.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_0.6	0.5-0.7	24/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_1.5	1.4-1.6	24/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_1.0	0.9-1.1	23/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_0.1	0-0.2	23/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_0.5	0.5-0.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_1.4	1.4-1.4	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_2.4	2.4-2.4	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_3.5	3.5-3.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_0.3_20180208	0.3-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_3.0_20180208	3-3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_0.3	-0.3	7/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_0.3	0.3-0.3	7/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	1.2-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.7	1.7-1.7	7/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_1.0	0.9-1.1	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	D01_190719	0-0.2	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	T01_190719	0-0.2	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_0.1	0-0.2	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/29	TP19/29_1.8	1.7-1.9	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/29	TP19/29_2.2	2.1-2.3	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	D01_220719	0.3-0.5	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	T01_220719	0.3-0.5	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_0.4	0.3-0.5	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_1.2	1.1-1.3	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/16	MW11/16_0.45	0.45-0.45	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/16	MW11/16_3.3	3.3-3.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	D_220911_01	1-1	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	MW11/17_1.0	1-1	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	T-220911-01	1-1	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	MW11/17_2.5	2.5-2.5	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/39	TP19/39_0.2	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/39	TP19/39_0.4	0.3-0.5	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.1	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.2	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.2	1.9-2.1	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	D01_290719	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TO1_290719	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.2	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.4	0.3-0.5	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-0.8	0.8-0.9	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	DUP_01	0.8-0.9	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-1.5	1.5-1.6	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-1.4	1.4-1.5	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-1.5	1.5-1.6	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 56	11	BH11/04	BH11|04-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.7	1.7-1.8	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.0	1-1.1	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.5	1.5-1.6	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.0	1-1.1	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-1.0	1-1.1	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	D_140312_02	-0.65	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	T-140312-01	-0.65	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_0.65	0.65-0.65	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_1.3	1.3-1.3	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/02	MW11/02_0.5	0.5-0.5	19/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/02	MW11/02_2.3	2.3-2.3	19/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/04	MW11/04_1.0	1-1	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/04	MW11/04_2.0	2-2	21/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_0.3_20180208	0.3-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	-3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	3-3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP19/79	TP19/79_0.3	0.2-0.35	26/07/2019	<0.1	<10	<10	44	440	310	500	-	<0.1	<1	27	370	330	590
Lot 56	11	TP19/79	TP19/79_1.2	1.1-1.3	26/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	11	TP19/80	TP19/80_0.5	0.5-0.6	26/07/2019	<0.1	<10	<10	<10	<10	<10	<10	-	<0.1	<1	<10	<10	<10	<10
Lot 62	13	TP19/50	TP19/50_0.1	0-0.2	26/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	13	TP19/54	TP19/54_0.1	0-0.2	1/08/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	14	TP19/02	TP19/02_0.2	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_0.4	0.3-0.5	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_1.6	1.4-1.6	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	D_160312_02	-0.05	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	T-160312-01	-0.05	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_0.05	0.05-0.05	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_1.4	1.4-1.4	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	D_160312_01	-1	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.4	1.4-1.4	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.0	1-1	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_0.25	0.25-0.25	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_1.1	1.1-1.1	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	15	MW11/05	MW11/05_0.3	0.3-0.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	15	MW11/05	MW11/05_2.3	2.3-2.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 59	15	MW11/06	MW11/06_0.5	0.5-0.5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	15	MW11/07	MW11/07_0.5	0.5-0.5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	15	MW11/07	MW11/07_1.0	1-1	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	15	MW11/07	MW11/07_5.0	5-5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/08	MW11/08_0.5	0.5-0.5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/08	D_200901_01	3.2-3.2	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/08	MW11/08_3.2	3.2-3.2	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/10	MW11/10_0.450	0.45-0.45	21/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/10	MW11/10_3.4	3.4-3.4	21/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/11	MW11/11_0.4	0.4-0.4	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/11	MW11/11_2.2	2.2-2.2	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/12	MW11/12_0.3	0.3-0.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/12	MW11/12_3.0	3-3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/13	MW11/13_0.3	0.3-0.3	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/13	MW11/13_3.6	3.6-3.6	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/15	MW11/15_1.3	1.3-1.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/15	MW11/15_3.0	3-3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	0.3-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_2.7_20180208	2.7-2.7	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	QC18_101		6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_0.3	0.3-0.3	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP21_0.6	-0.6	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	1.2-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_2.37	2.37-2.37	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_0.3	0.3-0.3	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_1.2	-1.2	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 58	15	TP18/30	TP18/30_1.2	1.2-1.2	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	-2.4	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	2.4-2.4	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP19/10	TP19/10_0.3	0.2-0.4	1/08/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP19/13	TP19/13_0.1	0.1-0.3	24/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	54	TP21/30	TP21/30-1.0	1	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	54	TP21/30	TP21/30-2.1	2.1	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/55	TP21/55_0.6	0.6	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/55	TP21/55_1.2	1.2	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/58	TP21/58_0.5	0.5	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/58	TP21/58_1.2	1.2	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TP21/60_1.0	1	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	DUP10-210329	2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TP21/60_2.0	2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TRIP10_210329	2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/32	TP21/32_1.0	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/33	TP21/33_0.5	0.5	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/33	TP21/33_1.4	1.4	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/34	TP21/34_0.4	0.4	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/34	TP21/34_0.6	0.6	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TP21/32_0.3	0.3	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TP21/35_0.6	0.6	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	DUP03_210310	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TP21/35_1.0	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TRIP03_210310	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/63	TP21/63_0.2	0.2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/63	TP21/63_1.5	1.5	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/29	TP21/29-0.7	0.7	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/29	TP21/29-1.7	1.7	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	DUP02_210309	0.9	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	TP21/31-0.9	0.9	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	TRIP02_210309	0.9	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	TP21/31-2.0	2	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/85	TP21/85_0.4	0.4	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/85	TP21/85_2.0	2	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/86	TP21/86_0.5	0.5	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/86	TP21/86_1.5	1.5	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/87	TP21/87_1.0	1	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/87	TP21/87_1.5	1.5	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/25	TP21/25_0.1	0.1	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	61	TP21/25	TP21/25_1.0	1	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	DUP04_210311	0.6	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	TP21/26_0.6	0.6	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	TRIP04_210311	0.6	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	TP21/26_1.1	1.1	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/27	TP21/27_0.3	0.3	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/27	TP21/27_0.8	0.8	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/28	TP21/28_0.2	0.2	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/28	TP21/28_2.0	2	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/82	TP21/82_0.5	0.5	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/82	TP21/82_1.2	1.2	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/84	TP21/84_0.8	0.8	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/84	TP21/84_2.0	2	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	Road	TP21/94	TP21/94_0.2	0.2	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	Road	TP21/94	TP21/94_0.6	0.6	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	14	TP20/26a	TP20/26A_0.7	0.6-0.7	7/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/27	TP20/27_0.45	0.35-0.45	7/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/28	TP20/28_1.55	1.45-1.55	16/10/2020	<0.1	<10	91	1800	2100	350	300	-	<0.1	<1	300	610	240	410
Lot 58	14	TP20/31	TP20/31_0.55	0.45-0.55	16/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328_TRIP1	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328_TRIP2	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328-DUP1	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328-DUP2	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-1	SSA-1	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-10	SSA-10	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-11	SSA-11	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-12	SSA-12	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-13	SSA-13	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-14	SSA-14	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-15	SSA-15	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-16	SSA-16	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-17	SSA-17	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-18	SSA-18	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-19	SSA-19	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	SSA-2	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-20	SSA-20	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-21	SSA-21	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-22	SSA-22	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-23	SSA-23	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-24	SSA-24	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-25	SSA-25	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-26	SSA-26	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-27	SSA-27	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	SSA-28	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-29	SSA-29	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-3	SSA-3	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-30	SSA-30	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-31	SSA-31	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-32	SSA-32	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-33	SSA-33	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-34	SSA-34	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-35	SSA-35	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-36	SSA-36	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-37	SSA-37	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-38	SSA-38	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-39	SSA-39	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-4	SSA-4	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-40	SSA-40	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-5	SSA-5	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-6	SSA-6	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-7	SSA-7	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						TRH Aliphatic/Aromatic Split													
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 61		SSA-8	SSA-8	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-9	SSA-9	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																			
Number of Results						3	3	3	3	3	3	3	0	3	3	3	3	3	3
Number of Detects						0	0	1	2	2	2	2	0	0	0	2	2	2	2
Minimum Concentration						<0.1	<10	<10	<10	<10	<10	<10	99999	<0.1	<1	<10	<10	<10	<10
Minimum Detect						ND	ND	91	44	440	310	300	ND	ND	ND	27	370	240	410
Maximum Concentration						<0.1	<10	91	1800	2100	350	500	0	<0.1	<1	300	610	330	590
Maximum Detect						ND	ND	91	1800	2100	350	500	ND	ND	ND	300	610	330	590
Average Concentration						0.05	5	34	616	848	222	268		0.05	0.5	111	328	192	335
Median Concentration						0.05	5	5	44	440	310	300		0.05	0.5	27	370	240	410
Standard Deviation						0	0	50	1025	1106	189	249		0	0	164	305	168	300
Number of Guideline Exceedances						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

Env Stds Comments

#1:Assumes Total chromium is 17% Hexavalent chromium

Appendix D

Data Quality Evaluation

Appendix D - Quality Assurance and Quality Control Review
Client: Viva Energy
Site: Clyde WARP Stage 2 AA3
Report: **AA3 Validation report**

Item	AA3 Validation report
Quality Assurance Program	
Statement of pre-determined DQOs for field and laboratory procedures, including quantitative DQOs	Yes, in Section 4.
DQOs state the problem, identify the goals of the study, identify information inputs, define the boundaries of the study, develop an analytical approach, specify performance or acceptance criteria and outline the plan for obtaining data	Yes, in Section 4.2.
Quality plan designed to achieve DQOs assessing accuracy, precision, comparability, representativeness, and completeness of data	Quality assurance/quality control are discussed in Section 4 and Appendix G.
Procedures for assessing chemical data to determine if DQOs are met, including quantitative DQOs (e.g. standard deviation, % recovery, RPDs)	Yes, in Appendix G.
Procedures that describe the actions if DQOs not met	Decision rule presented in DQOs.
Sampling and Analytical Program	
Site investigation objectives and a brief background provided	Yes, site investigation objectives are presented in Section 1.3. Site background is presented in Section 1.1 and site history in Section 3.1. A summary of the previous investigation is presented in Section 3.6.
Summary of CSM provided	Yes, presented at the conclusion of the assessment of data in Section 8 (CSM pos-remediation)
Data gap analysis provided that reviews existing information	Highlighted in the potential for contamination section – based on existing data
Preparation of a site-specific health and safety plan and other necessary pre-mobilisation tasks	No, but the auditor questions why this is relevant to the audit given the audit is not of health and safety procedures.
Assessment includes all relevant environmental media (e.g. soil, dust, surface water, groundwater, air, sediments, and biota)	Yes, soil, groundwater (during remediation), and ambient air were assessed in accordance with the approved Stage 2 RAP (SAS nº 065-2127799B) and Consent Condition nº 9302.
Sampling is representative of the site, based on the selection of appropriate sampling points stated in the sampling plan. Included are details of analytes to be monitored, sampling pattern/frequency, number of samples, location, and depth of sampling points	Yes, key areas of concern as well as site coverage are incorporated into the sampling design as per the approved Stage 2 RAP (SAS nº 065-2127799B).

Item	AA3 Validation report
Acceptability of sample collection, handling, and transportation in accordance with written procedures	Yes, standard industry methods are used.
Sample analyses use appropriate methodologies in NATA (or equivalent) accredited laboratories for each analyte & matrix	Yes, samples were sent to NATA accredited laboratories for analysis.
Appropriate sampling methods & procedures, field screening methods, and analysis methods are outlined	Yes.
Detection limits for each chemical of potential concern are appropriate for use in the assessment of risk	Yes, detection limits were less than the nominated assessment levels.
For dynamic/reactive sampling, methods for analysing and interpreting field data are outlined	Not applicable.
Field QA/QC	
Use of standardised field sampling forms	Chain of custody forms (Appendix M) and borehole logs (Appendix F) are provided. Field documentation is presented in Appendix D.
Sampling team	Yes, in Appendix G. The field team consisted of ERM consultants (as noted on-field records, provided in Appendix D). All field personnel is considered to be suitably qualified personnel for the validation and sampling tasks undertaken.
Sampling methods include the type of container used, labeling process, order and degree of filling, preservation, labeling, logging, custody	Sampling methods were described along with sample handling and chain of custody protocols.
Decontamination procedures between sampling	Yes, in Appendix G. Decontamination procedures were implemented between sampling locations where disposable consumables were utilised when collecting samples, in accordance with the methodologies outlined in Section 12.3.2 of the RAP. The processes followed were considered suitable for minimising cross-contamination during sampling. As re-usable sampling equipment was not utilised during the collection of samples rinsate blanks were not collected. All samples were collected from the center of an excavator bucket with the use of disposable nitrile gloves replace between each sample location.
Logs for each sample, including time, date, location, sampler, duplicate location & type, chemical analyses to be performed, sample preservation method, site observations & weather	Details are provided on borehole logs in Appendix F. Site observations are presented in Appendix D.
COC for each sample, including a sampler, sample nature, collection date, analyses to be performed, preservation method, dispatch time, condition of samples at dispatch, and courier(s)	Yes, in Appendix M. Samples were collected, handled, and transported following the methodologies outlined in Section 12.3.2 of the RAP. The adopted procedures are considered appropriate to meet the project objectives. Field records describing the site conditions, media sampled, indications of potential contamination (e.g.

Item	AA3 Validation report
	staining, discoloration, odour or sheen), duplicate samples, and sampling locations were completed (refer to Field Data Sheets in Appendix D and Borelogs in Appendix F). Soil samples for chemical analysis were collected into laboratory-supplied sample containers and stored in a chilled cooler on ice. All samples were forwarded to the NATA accredited laboratory under Chain-of-Custody conditions. The methods used to collect the samples, the types of sample containers, preservation techniques, and custody protocols were documented appropriately. Samples were received by the laboratory intact and with cooling media present
Sample duplication/splitting techniques	Not stated.
Quality control samples, including:	-
— background samples	Not applicable.
— field duplicate samples	Yes, in Appendix G.
— split samples	Not applicable.
— rinsate blanks	No.
— field blanks	No.
— trip blanks	Yes, in Appendix G. A total of 14 Laboratory-prepared trip blank samples were stored and transported to the laboratory with the soil samples, as summarised in Table G5 of the Validation report. The concentrations of hydrocarbons, the identified COPCs, were reported in the trip blank samples below the laboratory LOR, indicating a low likelihood of cross-contamination occurring during sampling and transport of samples.
— laboratory prepared trip spike samples	Yes, in Appendix G. A total of 14 laboratory prepared trip spikes were stored and transported to the laboratory with the soil samples, as summarised in Table G6 of the Validation report. The semi-volatile and volatile compounds analysed from the trip spike were reported to be within the acceptable limits, indicating that there is a low likelihood for the loss of volatiles to have occurred during shipping and handling.
Background sample results	Not applicable.
Results of QC samples eg field blanks, background, rinsates, trip blanks	Yes, in Appendix G. During the course of the sampling events through AA2, a total of 124 primary soil samples were collected for chemical analysis of BTEXN, TRH C6-C40, PAH, and TRH Speciation (CWG fractions)(where required). Intra- and inter-laboratory duplicates were collected at a ratio of at least one duplicate to ten primary samples, with 7 intra-laboratory duplicates and 7 inter-laboratory duplicates collected for 124 primary

Item	AA3 Validation report
	samples. The Relative Percentage Differences (RPDs) of duplicate sample pairs were generally within the acceptance limits (30% RPD where one or both values were greater than 10 x limit of reporting (LOR) and 100% RPD where both values were less than 10 x LOR), with the exception of the duplicate pairs highlighted in red shading in Table G4 of the Validation report. The outliers are attributed to sampling heterogeneity of the soil material and indicates a level of un-reproducibility of results. However, concentrations of results were reported within one order of magnitude. The highest value was adopted as a part of the assessment. The primary / duplicate pairs were reported below the adopted assessment criteria in all cases where RPD limits were exceeded.
Laboratory prepared trip spikes for volatile analytes and accompanying results	Yes, in Appendix G.
Field instrument calibrations (when used)	Yes, in Appendix E.
Tabulate field parameter measurements	Yes, in Annex 'Tables'.
Laboratory QA/QC	
Copy of completed COC including acknowledgment of receipt, conditions of samples on receipt and identity of samples included in shipments	Yes, listed on sample receipt acknowledgment and the analytical reports.
Record of holding times and compliance with methods	Yes.
Analytical methods used	
– Laboratory accreditation for methods used	Yes, in Appendix G. The primary laboratory used for the analysis of primary and intra-laboratory soil samples was NATA accredited Eurofins (NATA Registration No. 1261). The secondary laboratory used for the analysis of inter-laboratory soil samples was NATA accredited ALS (NATA Registration No. 825). All laboratory reports were NATA stamped and signed by a NATA signatory. All methodologies were considered appropriate for the identified COPCs.
– Performance in interlaboratory trials for methods used, where available	Not applicable.
Description & % recovery of surrogates & spikes	Yes.
Instrument detection limits and MDLs	Not supplied by analysing laboratory. Absence has no material effect.
Matrix or PQLs and limit of reporting for each analyte in each media	Yes, in Appendix G. The laboratory LOR for each analyte is presented in the laboratory reports (Appendix M of the Validation report) and laboratory analytical result summary tables (Tables 2-7 of the Validation report). All sample results were reported with LORs below the adopted assessment criteria.
Quality control samples:	

Item	AA3 Validation report
– duplicates	Yes, in Appendix G. All laboratory quality control sample results were within the specified acceptable limits, with the exception of the outliers outlined in the laboratory documentation within Appendix M.
– method blanks	Yes, in Appendix G. All laboratory quality control sample results were within the specified acceptable limits, with the exception of the outliers outlined in the laboratory documentation within Appendix M.
– surrogates	Yes, in Appendix G. All laboratory quality control sample results were within the specified acceptable limits, with the exception of the outliers outlined in the laboratory documentation within Appendix M.
– matrix spikes	Yes, in Appendix G. All laboratory quality control sample results were within the specified acceptable limits, with the exception of the outliers outlined in the laboratory documentation within Appendix M.
Laboratory standard charts	Not supplied by analysing laboratory. Absence has no material effect.
◗ **QA/QC Data Evaluation**	
Evaluation of QA/QC with DQOs including: documentation completeness, data completeness, data comparability (see below), data representativeness	Yes.
Precision & accuracy of sampling & analysis for each analyte in each matrix, advising reliability, unreliability or qualitative value of data	Yes.
Data comparability including bias assessment, e.g. different personnel, methodologies, times, spatial and temporal changes etc	No.
Results of intra and interlaboratory QC checks	Yes.
Names of laboratories and details of their accreditation	Yes.
Discussion of appropriateness of non-standard test methods (incl. sample prep; method source and validation)	All analytical methods were standard methods.
PQLs and MDLs for all relevant matrices	Yes.
Acceptance limit(s) for each QC test (e.g. RPDs, recoveries) included	Listed on certificates of analysis.
Acceptance limits for each calibration standard	Details reported by the laboratories.
Results for all data tabulated according to each type of soil, fill, groundwaters, surface water and sediments, with appropriate statistical analysis.	Yes, in Annex 'Tables'
QC results relevant to the sample analyses	Yes.
QA/QC ANALYTICAL METHODS	-
Field Methods	-
Applicability and appropriateness of field screening methods discussed.	Appropriateness of field screening methods mentioned.

Item	AA3 Validation report
Adequacy of calibration of field monitoring equipment and validation of field measurements	Yes, in Appendix E
Laboratory screening methods	
Applicability and limitations of analytical screening techniques appropriately discussed	Not applicable.
Analytical screening method performance expressed and based on the acceptable false negative rate	Not applicable.
Methods specific for contaminants	
Sensitivity of analytical methods appropriate for assessment of risk	Yes.
Precision and accuracy criteria in the quality plan meet the performance of 95% of laboratories in recognised inter-laboratory trials	Not presented and rarely is, unless requested.

Appendix E

AA3 LTEMP

Clyde Western Area Remediation Project

Proposed Lots 56, 58, 61 and 62 – Long Term Environmental Management Plan

27 May 2022

Project No.: 0561882

The business of sustainability

ERM

Document details	
Document title	Clyde Western Area Remediation Project
Document subtitle	Proposed Lots 56, 58, 61 and 62 – Long Term Environmental Management Plan
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Client Name	Viva Energy Australia Pty Ltd

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Version	Revision	Author	Reviewed by	Name	Date	Comments
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Final	02	Joshua Panton	Stephen Mulligan / Peter Lavelle	Michael Gaggin	27.05.2022	Final Incorporating Site Auditor Comments

Signature Page

27 May 2022

Clyde Western Area Remediation Project

Proposed Lots 56, 58, 61 and 62 – Long Term Environmental Management Plan

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Glossary

Glossary Term	Definition
the Site	Viva Energy owned land on the Camellia Peninsula consisting of the following Lots: Lot 398 DP41324, Lots 100 and 101 of DP 1168951, Lot 101 DP809340, Lot 2 DP 224288, and Lot 1 DP 383675. It includes the Clyde Terminal, the Parramatta Terminal, the Wetland, the Western Area and other land that is currently vacant or leased to third parties
the Western Area	A largely vacant area of land, approximately 40 Ha in size, located in the south western part of the Site. The land previously contained a variety of refinery assets that have now been removed.
the Project	The proposal to remediate the contaminated soils in the Western Area to a commercial/industrial standard
the Stage 2 Area	Stage 2 Area is situated within the eastern portion of the former Process West area adjoining the current Clyde Terminal and extends from Devon Street to the North to the Duck River at the southern boundary of the Western Area.
The Management Area	Parts of Lot 100 DP 1168951 being proposed Lots 56, 58, 61, 62 and a portion of proposed road alignment to the west of proposed Lot 62, located within the western portion of the Stage 2 Area, as Approved under SSD 10459. The Management Area is shown on *Figure 1, Appendix A* and in the Site Survey (*Appendix B*). The area of each of the proposed lots is as follows: Proposed Lots under SSD 10459: Lot 56: 21,330 m^2 Lot 58: 21,250 m^2 Lot 61: 15,530 m^2 Lot 62: 30,970 m^2 Proposed Road: 3,752 m^2 Accordingly, the total area of the Management Area is Total: 92,832 m^2 (9.2832 ha).
The Land Custodian	The legal owner(s) of the site identified as proposed Lots 56, 58, 61, 62 and a portion of a proposed road alignment to the west of proposed Lot 62 of the Stage 2 Area, from time to time.
Site Operator	The entity in occupation of (or portions of) the Management Area who is responsible for day to day operations. This will include any contractors carrying out works on the site and tenants of the Management Area from time to time.

EXECUTIVE SUMMARY

Introduction

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by Viva Energy Australia Pty Ltd (Viva Energy) to prepare this Long-Term Environmental Management Plan (LTEMP) to outline required environmental management procedures and controls for the ongoing use of part of Lot 100 DP 1168951 being proposed Lots 56, 58, 61, 62 and a portion of a proposed road alignment to the west of proposed Lot 62, within the 'Stage 2' portion of the Clyde Western Area Remediation Project (WARP). This area is collectively referred to as 'Audit Area 3' (AA3). The parts of AA3 that are subject to the ongoing environmental management requirements contained in this LTEMP are referred to as 'the Management Area'. The Management Area is shown on *Figure 1, Appendix A.*

Background Information

Remediation works have been completed within the Management Area to remove contaminated soils that may have posed a potential risk to human health and / or ecological receptors during the ongoing commercial / industrial use of the land.

Upon completion of remediation and validation works, ERM considers the Management Area to be suitable for slab-on grade commercial / industrial land uses with no basement structures or beneficial re-use of groundwater on site.

Application of this LTEMP

This LTEMP must be complied with before carrying out any works that involve intrusive excavation within the Management Area.

All such works must be undertaken in accordance with relevant requirements outlined within *Sections 2* and *3*.

This LTEMP documents the nature and extent of residual contamination on-site and outlines the mechanisms required for managing potential residual risks into the future.

Residual Contamination Following Remediation Works

Following completion of remediation works within the Management Area, the following residual contamination may remain within the Site:

- Hydrocarbon impacted soils - limited to aesthetic considerations (presence of hydrocarbon staining and / or odours) which may be identified during future intrusive works. The location and extent of residual hydrocarbon impacted soils within the Site is shown on *Figure 2*, *Appendix A*.
- Residual oily water / sludge remaining within decommissioned sections of with former underground drainage infrastructure. The location and extent of potentially impacted drainage infrastructure is shown on *Figure 3, Appendix A.*
- Materials containing bonded asbestos have previously been reported in soil stockpiles SP37 and SP100 (refer to *Figure 4, Appendix A*), with asbestos in soil concentrations below the Management Area's Commercial/Industrial land use criteria.
- Following soil remediation works, asbestos in soil has not been identified above criteria for the proposed land-use. However, given the long history of industrial land use and surrounding industries, the possibility of discovering isolated asbestos in soil as an unexpected find during further intrusive excavations within the Management Area cannot be precluded.

A description of the residual contamination and the associated risks where intrusive excavation works are undertaken is presented within *Sections 4* and *5*.

Required Environmental Management Controls

Based on the nature and extent of residual contamination identified within the site the following management controls are required under various operational scenarios:

- Where works involve no intrusive excavation (i.e. normal site operations) – no management controls are required.
- Where intrusive excavation works are proposed – the environmental management controls detailed in *Sections 6* and *7* of this LTEMP must be implemented.

1. INTRODUCTION AND BACKGROUND

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by Viva Energy Australia Pty Ltd (Viva Energy) to prepare this Long-Term Environmental Management Plan (LTEMP) for a portion of the Clyde Western Area, referred to as 'Audit Area 3' (AA3) to outline required environmental management procedures and controls for future Site Operators.

The portion of AA3 subject to this LTEMP formed part of 'Stage 2' of the Clyde Western Area Remediation Project (WARP) and is referred to as 'the Management Area' in this LTEMP.

The extent of the Management Area subject to this LTEMP is shown on *Figure 1, Appendix A*. This extent is defined by the boundaries of those parts of Lot 100 DP1168951 forming proposed Lots 56, 58, 61, 62 and part of the proposed road alignment west of proposed Lot 62, as authorised for subdivision under State Significant Development Consent 10459.

This LTEMP must be implemented following completion of remediation and validation works.

Prior to the commencement of any workings involving intrusive excavation, all site personnel / contractors are to be inducted into the requirements of this LTEMP.

1.1 Background and Site Identification

The Western Area is an approximately 40 hectare (ha) parcel of land currently owned by Viva Energy within the footprint of the wider Clyde Terminal Site and is bordered to the south by the Duck River, to the east by current Clyde Terminal Operations and to the north and west by other Industrial zoned properties.

A Site Survey showing the extent of the Management Area is provided as *Appendix B*.

The Management Area (as outlined on *Figure 1*, *Appendix A*) contained former tankfarms, office spaces, amenities, sub stations, workshops, laboratory, platformer, boilers and transformers.

Specific site identification details are summarised in *Table 1*, below.

Table 1 – Site Identification

Item	Description
Site Owner	Viva Energy Australia Pty Ltd
Site Occupier	Viva Energy Australia Pty Ltd
Site Address	Devon Street, Rosehill NSW
Current Legal Description	Part Lot 100 in DP 1168951
Local Government Authority	City of Parramatta Council
Current Zoning	IN3 – Heavy Industrial under the Parramatta Council Local Environmental Plan 2011
Current Land Uses	Vacant site
Future Proposed Land Use	■ Commercial/ Industrial (slab on grade commercial/ industrial) ■ Upon completion of remediation and validation works, the site is suitable for commercial / industrial land uses with no basement structures or beneficial re-use of groundwater.

Item	Description
Permissible Land Use(s) [1]	Any permissible use allowed under the sites zoning (with consent), which includes: Agricultural produce industries; Building identification signs; Business identification signs; Depots; Freight transport facilities; General industries; Hardware and building supplies; Hazardous storage establishments; Heavy industries; Horticulture; Kiosks; Medical centres; Offensive storage establishments; Pubs; Roads; Rural supplies; Sawmill or log processing works; Take away food and drink premises; Timber yards; Warehouse or distribution centres; Water storage facilities.
Area [2]	Proposed Lots under SSD 10459: Lot 56: 21,330 m^2 Lot 58: 21,250 m^2 Lot 61: 15,530 m^2 Lot 62: 30,970 m^2 Proposed Road: 3,752 m^2 Management Area Total: 92,832 m^2 (9.28 ha).
Elevation	Between approximately 5 to 6 metres relative to Australian Height Datum (m AHD)

Source:

1. City of Parramatta Council Local Environmental Plan (2011).
2. Plan of Proposed Subdivision of Lot 100 DP1168951, (Landpartners Pty Ltd). Sheet 4 of 44.

1.2 Purpose of the LTEMP

The specific objectives of this LTEMP are to:

- summarise background environmental information, known and likely conditions within the Management Area, to inform the Land Custodian, workers and managers of the potential risks to human health and / or the environment arising from contact with residual contamination;
- outline methods and procedures to avoid and / or mitigate potential adverse effects on human health and / or the environment associated with the residual contaminated soil;
- provide a recommended methodology for the appropriate environmental management of excavation works that may encounter residual contaminated soil;
- provide environmental requirements for the sourcing and placement of backfill material;
- discuss safety measures / considerations for dealing with potentially contaminated soil; and
- outline restrictions to potential future land uses as detailed within *Table 1*.

All work related to excavation, movement, handling, importation and placement of fill and soil materials and / or groundwater within the site should be carried out in accordance with this LTEMP and in compliance with relevant legislation detailed within *Section 2*.

Groundwater is not extracted for use within the Management Area and future beneficial re-uses of groundwater have not been considered as part of this LTEMP. If beneficial re-use of groundwater is proposed, further assessment of the suitability of groundwater must be completed by a suitably qualified environmental specialist with the findings reviewed and endorsed by a New South Wales Environment Protection Authority (NSW EPA) accredited Site Auditor. Other limitations are outlined in *Section 1.3* of this document.

This LTEMP is considered to represent a passive management approach. The primary purpose of the plan is to document the nature and extent of residual contamination on-site and outline mechanisms for managing potential risks into the future.

1.3 Limitations to this LTEMP

This LTEMP is land-use specific and applies to all commercial / industrial uses involving buildings supported by ground-level slabs which do not include any underground basement structures, such as underground car parks.

If, in the future, any land uses differ from the commercial / industrial use described above (including by including a basement structure) reflected in ERM (2020) Human Health and Ecological Risk Assessment (HHERA), this LTEMP will need to be reviewed and updated in accordance with the procedures contained in *Section 2.4*.

1.4 Related Documentation

The following documentation relating to the environmental condition of the Management Area prior to and following the completion of remediation / validation works within the Management Area should be made available to the Site Operator upon request:

- ERM 2021. Clyde Western Area Remediation Project – Stage 2 Drainage Decommissioning Validation Report. Dated 17 June 2021; and
- ERM (2022). Clyde Western Area Remediation Project – Stage 2 – Validation Report (Audit Area 3). May 2022.

2. STATUTORY REQUIREMENTS

2.1 Legal Enforceability and Public Notification of this EMP

Condition B10 of State significant development consent 9302 granted under the *Environmental Planning and Assessment Act 1979* (the 'EP&A Act') provides as follows:

> ***B10. Upon completion of the Site Audit Statement and Site Audit Report, the Applicant must:***
>
> ***(a) Implement the approved LTEMP***
>
> ***(b) Provide evidence to the Planning Secretary that the LTEMP is listed on the relevant planning certificate for the land, issued under section 10.7 of the EP&A Act***

In addition, condition A9 of State significant development consent 10459 provides as follows:

> ***A9. The Applicant must implement the Long Term Environmental Management Plan (LTEMP) approved under condition B8 of SSD 9302 and provide evidence to the Planning Secretary that the LTEMP is listed on the relevant planning certificate(s) issued under section 10.7 of the EP&A Act for each lot created by Stages 1A and B, 2 and 3 as shown in the 'Subdivision Drawings prepared by Land Partners' in Appendix 1***

Accordingly:

- This LTEMP was prepared in accordance with development consent SSD 9302. It is also enforceable under development consent SSD 10459, granted under the EP&A Act.
- As per conditions B10(b) and A9 and relevant NSW EPA requirements, Parramatta Council will be provided with a copy of this LTEMP and requested to add a notation on the planning certificates issued for the Management Area under section 10.7 of the *EP&A Act* confirming that they are subject to this LTEMP.

2.2 Licence and Approval Requirements

The Site Operator is responsible for obtaining all necessary / required environmental, planning safety and occupational hygiene consents, approvals and licences prior to the commencement of any intrusive excavation works in the Management Area.

- All required consents, approvals and licences required for the relevant works must be obtained prior to works commencing;
- All site personnel, contractors, sub-contractors etc. must comply with the terms and conditions of all relevant approvals and licences; and
- Upon commencement of the intrusive works, all processes and procedures outlined in this LTEMP must be implemented immediately.

2.3 Regulatory Framework

All operational personnel carrying out any intrusive works in the Management Area must comply with the applicable environmental regulatory requirements in NSW.

2.4 Document Revision

This LTEMP may be reviewed and updated as necessary from time to time. Therefore, it is the responsibility of the reader of this document to ensure they have the current version of the LTEMP.

Any updates to this LTEMP must be reviewed and endorsed by a NSW EPA Accredited Site Auditor.

The master document, with the up-to-date version of the LTEMP will be available from the Land Custodian.

The current version of this LTEMP is detailed within the table below. Any subsequent revisions of this LTEMP must include a clear date / revision identifier to enable the most recent to be readily identified.

Table 2 – LTEMP Revision

Document Name	Document Revision Number	Date
Clyde Western Area Remediation Project: Stage 2 – Audit Area 3 – Long Term Environmental Management Plan	Draft – Revision 0	6 May 2022

3. APPLICATION AND RESPONSIBILITIES

3.1 Implementation of this LTEMP

No works involving any intrusive excavations are to be undertaken until all relevant site personnel / contractors have been inducted into the requirements of this LTEMP.

The LTEMP should be acknowledged in relevant management plans prepared for any intrusive investigations. For smaller intrusive works this is likely to take the form of a safe work method statement while a Construction Environmental Management Plan (CEMP) is likely to be required for more significant development and construction activities.

3.2 Area to which this LTEMP applies

This LTEMP applies to the entire Management Area. However, specific management is required for areas within a 20 m buffer of areas containing residual hydrocarbon impacted soil as illustrated on *Figure 2, Appendix A*, which are described within *Section 4* of this LTEMP. Specific management is also required for excavation works of the soil stockpiles SP37 and SP100, illustrated on *Figure 4*, *Appendix A* and detailed in the Asbestos Register (*Appendix D*).

3.3 Application of LTEMP

Under regular site conditions (i.e. pre or post intrusive excavation works), none of the controls in this LTEMP are activated.

This LTEMP must be complied with immediately upon the initiation of any works that involve intrusive excavation from the ground surface. This includes the following activities:

- excavation of fill and natural soil materials to facilitate removal, realignment or construction of any subsurface infrastructure;
- maintenance and / or upgrade of site utility services;
- temporary stockpiling of excavated material resulting from on-site intrusive works; and
- off-site disposal of any waste contaminated soil / groundwater (if required).

Additional controls including engagement of an appropriately Qualified Environmental Specialist, environmental monitoring and development of a task specific works plan (detailed within *Section 6.1*) are required for any intrusive excavation works undertaken within 20 m of identified residual contamination as shown in *Figures 2* and *3, Appendix A*, and within soil stockpiles containing asbestos (*Appendix D*).

Due to the historical land uses within the Management Area (i.e. former Refinery), all intrusive excavation works or re-use of existing stockpiled material must be undertaken in consideration of potential unexpected finds of contamination. Where unexpected finds are encountered during works, they are to be managed in accordance with the requirements outlined within *Section 6.1* of this LTEMP.

Where groundwater is proposed for future beneficial re-uses, an assessment of suitability must be undertaken by a suitably qualified environmental professional. The assessment and any recommendations for re-use must be reviewed and endorsed by a NSW EPA accredited Site Auditor.

3.4 Roles and Responsibilities

The following table summarises the requirements to be implemented within the Management Area.

Table 3 – LTEMP Roles and Responsibilities

Position / Company	Responsibility
The Land Custodian and Site Auditor	■ Approve the LTEMP
The Land Custodian	■ Ensure all workers and contractors conducting intrusive works are aware of the requirements of this LTEMP. ■ Maintain records of all works undertaken within the site as required within this LTEMP.
Site Operator (including Contractors and Subcontractors)	■ Implement the LTEMP. ■ Provide adequate training in this LTEMP for all employees and contractors undertaking intrusive excavations during site induction, and as required on an ongoing basis during the works. ■ Require any contractors conducting intrusive works to comply with this LTEMP. ■ Conduct monitoring as required in the LTEMP. ■ Complete all necessary registers, databases and records required in the LTEMP. ■ During excavation works, assess any potentially contaminating unexpected finds in consideration of the site's use. ■ During intrusive excavation works, as required, undertake site inspections and monitoring of the site operations to ensure they are carried out in an environmentally responsible manner and meet the requirements of this LTEMP. ■ Notify the Land Custodian / nominated representative of any environmental issues arising during intrusive excavations. ■ Assess the requirement and (where necessary) engage an environmental specialist / scientist to undertake additional monitoring of excavations / unexpected finds.
Qualified Environmental Specialist	■ Where required, a suitably qualified environmental specialist is to be engaged to manage, monitor and evaluate environmental controls, demonstrate compliance with this LTEMP and assess specific requirements associated with excavation works within areas of known residual contamination and / or unexpected finds.

4. RESIDUAL CONTAMINATION SUMMARY

4.1 Site Geology/ Hydrogeology

A detailed assessment of geology and hydrogeology relevant to the Management Area is provided within the Validation Report (ERM, 2022), A summary of the geology identified within the management area during historical investigations is detailed below:

- **Fill material** - This material is described as poorly compacted mixture of silt, clay and gravel, with localised areas of slag, furnace ash and concrete. The average thickness of fill material within the management area is 0.6 m and thickens to between 1.2- 1.5 m further south in proximity to the Duck River. Localised areas of backfill sand have been identified surrounding subsurface features (pipework) to depths of up to of 2 m Below Ground Level (BGL).
- **Alluvial sediments and residual clay** - high plasticity orange red and grey clay (alluvial sediments) across the management area underlying fill material (up to 20 m thick, including clay with sandy lenses) and residual Ashfield Shale were reported in previous investigations.

The majority of residual hydrocarbon contamination requiring management has been encountered within coarser grained fill materials and/or sandy lenses within residual clay and may appear as visibly stained dark brown, grey or black.

Groundwater is present within fill and anthropogenic structures, such as backfill around drainage features at depths between 0.5 – 2 m BGL and flows towards the Duck River in the south to south-east.

4.2 Residual Contamination Requiring Management

Remediation works completed within the Management Area were undertaken to reduce contaminant concentrations to enable future commercial / industrial land uses and mitigate potential risks to human health / ecological receptors.

Known residual contamination is present at locations illustrated (including X and Y co-ordinates) on *Figures 2* and *3, Appendix A* and described in *Table 4* below.

Table 4 – Residual Contamination

Known Residual Contamination	Descriptions
Hydrocarbon impacted soil	■ Residual Light Non-Aqueous Phase Liquids (LNAPL) or soil contamination exceeding 'TRH Management Limits' are present in a limited number of locations (see *Figure 2, Appendix A*). ■ The Human Health and Ecological Risk Assessment (HHERA) indicates that the presence of residual hydrocarbon impacted soils does not pose a risk to on-site or off-site receptors under normal site operations (i.e., no ground disturbance) and are limited to aesthetic considerations (presence of hydrocarbon staining and/or odours) which may be identified during future intrusive works.
Asbestos	■ Although there are no known asbestos impacts exceeding land use criteria for soils remaining in the Management Area following remedial works, given the long history of industrial land use and surrounding industries, the possibility of discovering isolated asbestos in the subsurface and within existing stockpiled material present on site cannot be discounted. ■ Bonded fragments of fibre cement containing asbestos have been identified in stockpile SP37 and SP100 (Lot 61), which are outlined in the Asbestos Register (*Appendix D*) and *Figure 4, Appendix A*. ■ If asbestos is identified during intrusive works, any finds should be investigated as per the unexpected finds methodology detailed within *Section 6.1* and appropriate health & safety and waste management measures implemented.

Known Residual Contamination	Descriptions
Oily water / sludge associated with former underground drainage infrastructure	■ Due to the former operational history of the site, there are redundant underground pipes / drains throughout the site that may require consideration during future potential intrusive excavation works, which were decommissioned and decontaminated in-situ prior to site remediation works (to the extent practical due to access / structural considerations) (see *Figure 3, Appendix A*). ■ Underground drainage lines were subject to cleaning (to the extent practical), decontamination and were decommissioned in-situ via permanent disconnection from operational portions of Viva Energy's Clyde Terminal drainage network. Pits and junctions were backfilled with stabilised sand. ■ While drainage infrastructure within the Site is not considered to pose a risk to future site operations, residual hydrocarbon impacted sludge and sediment within pipes and pits shown on *Figure 3, Appendix A* should be managed to avoid inadvertent release of LNAPL during future construction works and to manage potential safety risks for workers (via dermal contact / inhalation) during any future excavation works undertaken to remove this infrastructure. ■ Residual conditions are discussed in detail within the Stage 2 Drainage Decommissioning Validation Report[1]. The location of drainage infrastructure requiring management is provided on *Figure 3, Appendix A*.

4.3 Location and Extent of Residual Contamination

As outlined in *Section 3.2*, this LTEMP applies to the whole Management Area but more specifically to areas of the Management Area where residual contaminated materials are present beneath the site surface, as indicated in *Figure 2, Appendix A*. Following completion of remediation works, the following residual sources of contamination are known to exist within the Management Area:

- Residual soil impacts – limited to presence of observed Light Non-Aqueous Phase Liquids (LNAPL) or hydrocarbon impacts exceeding 'TRH Management Limits' at the below locations:
  - **Lot 56 –** BH12/29 (0.65 m), TP19/79 (0.2-0.35 m) and TP21/58 (0.5 m);
  - **Lot 58 –** BH12/34 (0.6-1.3 m), TP18/30 (0-1.0 m), TP19/10 (0.2-0.4 m) and BH12/28 (0.05 m);
  - **Lot 61 –** TP18/31 (0-2.0 m) and TP20/26a (0.6-0.7 m);
  - **Lot 62 –** MW12/20 (2.0 m) and MW12/21 (1.4 m); and
  - **Proposed Roadway (AA3)** – TP20/24 (1.0 m).
- Residual LNAPL within shallow groundwater at MW11/17 (Lot 61), which has been demonstrated to be stable and immobile through previous environmental assessments;
- Bonded asbestos within soil stockpiles SP37 and SP100 (Lot 61), as outlined in *Figure 4, Appendix A* and detailed within the asbestos register (*Appendix D*). Asbestos in soil concentrations are noted to be below the Management Area's Commercial/Industrial land use criteria;
- Residual hydrocarbon sludge remaining within the following decommissioned drainage pipes / pits (as per *Figure 3, Appendix A*):
  - **Lot 58 –** pit 18-P7 to pipe 15D610-1 to pit 15-P37 to pipe 15D610-2 to pit 16-P32 to pipe 16D610-1;

[1] ERM (2021). *Clyde Western Area Remediation Project – Stage 2 Drainage Decommissioning Validation Report*. Final, Revision 3. 17th June 2021.

- **Lot 61 –** pipe 16D610-1 to pit 11-P2 to pipe 11D1070-2 to pit 11-P7 to 11D1070-3 to pit 11-P8 to pipe 11D1370-1, pit 11-P2 to pipe 11D1070-1 to pipe 10-P13 to pipe 10D920-2, pipe 11-P3 to pipe 11D460-3 to pit 11-P10; and
- **Lot 62 –** pit 9-P4 to pipe 9D-610-3.

Due to the historical land uses within the extent of the Management Area, all future ground disturbance works or site redevelopment activity must be undertaken in consideration of potential unexpected finds of contamination (see *Section 6.1*).

It should be noted the presence of stained or odorous material may be identified beneath the site during future intrusive works outside of those locations outlined in this LTEMP; however, these conditions are unlikely to be representative of unacceptable exposure scenarios.

5. POTENTIAL RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

5.1 Risks Where No Intrusive Excavation Works Are Undertaken

There are no identified risks to human health or the environment associated with residual contamination if not disturbed.

5.2 Potential Risks Where Intrusive Excavation Works Are Undertaken

The following table outlines the potential risk to human health and the environment if excavation works are undertaken and the material is disturbed without proper management controls. These risks may result from excavation works, including the installation of services, stockpiling of excavated materials and works that encounter residual contamination identified within *Figures 2* or *3, Appendix A* or additional unexpected finds.

Table 5 – Potential Risks Where Intrusive Excavation Works Are Undertaken

Contaminant	Source	Human Health Risks	Environmental Risks	Exposure Pathways
Total Recoverable Hydrocarbons (C10-C16, C16-C34) and LNAPL	Residual contamination within soils and oily water / sludge	Limited to generation of nuisance odours during subsurface intrusive works resulting from degraded hydrocarbons within open excavations	Risks associated with contamination transported to potentially sensitive receptors (see exposure pathways)	**Human Exposure Pathways:** Limited to aesthetic considerations including potential for generation of odours during subsurface intrusive works **Environmental Exposure Pathways**: Surface water / sediment run-off to adjacent stormwater drains. Uncontrolled release of dust / odours generated during excavation works.
Asbestos	Bonded asbestos containing materials in soil stockpiles	Asbestos fibres can cause asbestosis, lung cancer and mesothelioma if inhaled	Asbestos is inert within the environment and therefore poses no known environmental risk	**Human Exposure Pathways:** Inhalation of liberated asbestos fibres could occur via breakage or disturbance of asbestos containing materials during excavation works. **Environmental Exposure Pathways:** Nil

6. ENVIRONMENTAL MANAGEMENT

As outlined above the objectives of this LTEMP are to facilitate the management of the site so that:

- the assessed risks to human health and the environment arising from contact with residual contamination is understood by all site workers and managers;
- prior to the commencement of any intrusive excavation works, appropriate systems and controls are put in place to mitigate the potential risks posed by residual contamination; and
- all ongoing operational, monitoring and maintenance requirements are adhered to by the Site Operator.

6.1 Environmental Management Requirements

Prior to the commencement of any works, it is the responsibility of the Site Operator to identify whether works within the Management Area will require intrusive excavation. Where any intrusive excavation works are undertaken within the Site the following controls must be implemented:

Table 6 – Site Environmental Management Requirements for Intrusive Excavation Works

Item	Requirements
All Intrusive Excavation Works Undertaken within the Management Area	
Training and Competence	The Site Operator is to establish that all site workers are suitably qualified to undertake required works and inducted into all relevant requirements stipulated within this LTEMP. ■ The induction will include outlining all requirements within this LTEMP and other relevant documentation, the location of known residual contamination (as per *Figures 2* and *3, Appendix A*) and the identification of unexpected finds of contamination (via visual and olfactory means).
Health and Safety Plan	The Site Operator or contactor carrying out the works is to prepare a task specific health and safety plan that includes suitable protection measures for working with residual hydrocarbon and asbestos contamination including but not limited to: ■ training requirements; ■ air / dust / odour monitoring procedures; ■ respiratory protection; ■ minimum Personnel Protective Equipment (PPE) requirements; ■ site signage requirements; ■ site security; ■ exposure mitigation measures (dust suppression etc.); ■ vehicle / machinery / plant safety; and ■ general site safety.
Excavation works and temporary stockpiling	To reduce and / or prevent the exposure of human receptors at the site to potential contamination within on-site soils, the following will be undertaken during any intrusive excavation works: ■ To reduce the area of disturbed material, the number of areas subject to excavation works at any one time can be minimised. ■ During excavation works, measures to reduce dust emissions such as spraying with water, addition of soil binding agents etc. should be undertaken. ■ During excavation and materials handling, sufficient odour control such as covers, tarps, odour control sprays etc., are to be implemented during works to minimise any disturbance to neighbouring premises. ■ Where material requires off-site disposal, excavated material should be placed directly into a tipper truck and, where possible, material should not be placed into temporary stockpiles awaiting off-site disposal.

Item	Requirements
	■ Where material requires stockpiling prior to off-site disposal, appropriate dust and sediment controls must be in place. Smaller volumes can be contained within an enclosed or covered skip. ■ All materials movement within the site must be recorded within an appropriate Materials Tracking Register.
Excavation of stockpiles containing asbestos	To reduce and / or prevent the exposure of human receptors at the site to asbestos within on-site stockpiles, the following will be undertaken during any intrusive excavation works of stockpiles: ■ To reduce the area of disturbed material, the number of areas subject to excavation works at any one time can be minimised. ■ During excavation works, measures to reduce dust emissions such as spraying with water, addition of soil binding agents etc. should be undertaken. ■ Asbestos controls are to be applied as per an Asbestos Management Plan or similar document outlining asbestos controls to limit exposure to human receptors and cross contamination of other site materials/areas. Examples include dust suppression (as above), exclusion zone around excavation area and relocation area, with appropriate personal protective equipment implemented (i.e. P2 respirator, coveralls, boot covers and gloves). ■ Updated locations of stockpiles are to be incorporated within the Asbestos Register (*Appendix D*), with the soil surface of the stockpile's former footprint to be visually cleared of asbestos containing materials by a qualified environmental specialist. ■ If asbestos stockpiles are relocated below ground level, the upper 100 mm and soil surface is to be visually cleared of asbestos containing materials by a qualified environmental specialist. ■ Where material requires off-site disposal, excavated material should be placed directly into a tipper truck and, where possible, material should not be placed into temporary stockpiles awaiting off-site disposal.
Materials handling and disposal	■ **Soil** - Excavated materials are to be either re-instated within the same location and depth (in accordance with relevant planning / DA conditions) or disposed off-site to a suitably licenced landfill / receiving facility in accordance with relevant NSW EPA waste disposal guidance at the time of works. ■ **Groundwater** - Any groundwater extracted from excavation works is to be managed or disposed in accordance with relevant NSW EPA made or endorsed waste disposal guidance at the time of works.
Sediment and Stormwater Run-off Controls	During works, sediment and surface water run-off controls will be implemented to minimise generation and transport of potentially contaminated sediments and surface water within and off the Site. Controls will be developed based on a specific management plan (which may be a safe work method statement or Construction Environmental Management Plan [CEMP] depending on the nature of the works) specific to the location / nature of works to be undertaken, controls may include (but not be limited to): ■ sediment control; ■ clean water diversions; ■ stormwater drain protection; and ■ Environmental Management Controls as per *Managing Urban Stormwater – Soils and Construction (Landcom 2004),* or its most recent update.
Imported Fill Material	If imported fill is required at the site, only construction materials or certified Excavated Natural Material (ENM) or 'Virgin Excavated Natural Material' (VENM) materials are to be imported for use. If ENM / VENM is imported to the site accompanied by an ENM / VENM certificate, sampling will not be required. The ENM / VENM certificate should at a minimum: ■ state that the material has been classified as ENM / VENM (in accordance with relevant NSW EPA guidance) and is suitable for re-use within the site; and ■ include a summary of the site history of the source site, the findings of any environmental site investigations undertaken at that site and the results of any soil analysis undertaken.

Item	Requirements
	If the ENM / VENM certificate does not meet these requirements, it must be approved in writing from the NSW EPA (e.g. via a Resource Recovery Exemption). All ENM / VENM / imported material classification reports are to be provided to the Land Custodian or their nominated representative and included within compliance reporting upon completion of works (*Section 6.2*).
Unexpected Finds Management	During excavation works there is the potential of encountering additional in-ground finds. Unexpected finds may include (but not be limited to): ■ asbestos containing materials; ■ additional LNAPL / hydrocarbon impact; ■ buried building rubble; ■ unusual soil staining and discoloration; and ■ odours emanating from the ground during earthworks. Where unexpected finds are uncovered: ■ works are to cease immediately in the vicinity of the excavation; ■ the Land Custodian or their nominated representative is to be informed immediately; ■ the area surrounding the unexpected find is to be barricaded to ensure the area is not further disturbed; and ■ a 'qualified environmental specialist' is to visit the site, assess the discovery and undertake assessment / provide recommendations. The qualified environmental specialist is to advise on the required course of action for the find. This may include: ■ sample collection and analysis; ■ a detailed assessment (if required); and ■ preparation of an assessment report and remediation plan (if required). All reports are to be prepared in accordance with relevant NSW EPA guidance and provided to the Land Custodian for record keeping requirements. Should finds of asbestos containing materials be reported, the asbestos register (*Appendix D*) should be updated accordingly.
Excavation Re-instatement	Upon completion of excavation works, the area must be re-instated with excavated material in the order in which it was excavated or with other approved imported fill materials.
Intrusive Excavation Works Within 20 m of Identified Residual Contamination (*Figure 2, Appendix A*)	
Engagement of Environmental Specialist	Where excavation works are undertaken within 20 m of identified residual contamination (*Figure 2, Appendix A*) prior to the commencement of any intrusive works, the Site Operator or nominated representative is to engage a suitably qualified environmental specialist to undertake a review of health and safety management procedures, manage, monitor and evaluate environmental controls and demonstrate compliance with this LTEMP. Where unexpected finds of contamination are identified within other areas of the Site during excavation works, a suitably qualified environmental specialist should be engaged to manage, monitor and evaluate environmental controls, demonstrate compliance with this LTEMP and assess specific requirements for unexpected finds detailed above.

Item	Requirements
Environmental Monitoring	Environmental monitoring is to be undertaken for odour management purposes during all excavation and construction works within 20 m of identified residual hydrocarbon contamination to evaluate the effectiveness of control measures (*Figure 2, Appendix A*). ■ The specific monitoring methodology / regime should be developed by the qualified environmental specialist and based on the specific tasks / construction methodology. ■ Action levels (odour, dust) are to be developed to incorporate thresholds where intrusive works are to cease and control measures are to be re-assessed / implemented. ■ These action levels are to be based on relevant regulatory guidance at the time of works and are to be incorporated into Health and Safety Planning documentation when undertaking works.
Task Specific Works Plan	Where intrusive excavation works are undertaken within 20 m of identified residual contamination illustrated on *Figure 2*, *Appendix A* prior to undertaking works, the contractor is to ensure that a Task Specific Works Plan is prepared by a suitably qualified environmental professional to ensure all environmental risks are appropriately managed. ■ The Works Plan should be prepared for the specific works to be undertaken. ■ The Works Plan should be prepared in accordance with good industry practice standards at the time of works and must comply with all relevant NSW EPA regulatory guideline criteria relating to contaminated sites. The plans should include (but not be limited to) the following details: ■ Risks to human health and the environment – potential risks associated with the work should be highlighted. ■ General site management – Details of required inductions of employees or contractors. ■ Procedures and methodologies to be used for undertaking the works. ■ Specific details of ways to limit disturbance of impacted soils / groundwater / redundant site drainage infrastructure etc. (e.g. soil boring as opposed to open trenching). ■ Mitigation measures. ■ Air / dust monitoring action levels, around areas of residual hydrocarbon impacts; ■ Personal protective equipment. ■ Other protection measures (cabin ventilation, etc.). ■ Roles and responsibilities for implementing the mitigation measures. ■ Soil and groundwater management controls - As a minimum the following requirements should be detailed: - Any groundwater extracted during intrusive works is to be disposed in accordance with all legal requirements. - Excavated soils should be placed within a bunded area to minimise potential run off. - Soil / concrete material should be kept moist to limit dust. - Excavated materials, where possible, be replaced in the same location. Where this is not practicable, material must be disposed of in accordance with all legal requirements. ■ Reinstatement of the site surface. ■ Waste management including waste disposal. ■ Record Keeping, audit and review.
Biodiversity Management Measures - Green and Golden Bell Frog (GGBF)	
Green and Golden Bell Frog (GGBF)	Pursuant to a Biodiversity Development Assessment Report dated 3 Dec 2018 prepared by Biosis (see appendix I of the Environmental Impact Statement [EIS] for SSD 9302) there is no residual GGBF habitat within the Management Area. In addition, the further earthworks authorised under development consent SSD 10459, when completed, will permanently remove the potential for the ponding of water that might provide habitat for the GGBF.

6.2 Reporting and LTEMP Review

The table below outlines the reporting, and review requirements related to this LTEMP.

Table 7 – LTEMP Reporting

Report	Requirement
Material Classification Reports	■ All reports relating to unexpected finds, off-site disposal of fill materials and importation of any materials used for construction / backfilling purposes are to be provided to the Land Custodian upon completion of works. ■ Reports are to include details of laboratory analysis and subsequent classification information and materials tracking information detailing the total volume and final placement / disposal location.
Non-Conformance Reporting	■ Any non-conformances with this LTEMP will be recorded in a Non-Conformance and Corrective Action Report. Details of the non-conformance, including any immediate corrective actions undertaken, are to be recorded by the Site Operator. ■ It is the responsibility of the Site Operator to immediately initiate corrective actions, if required. Once completed, the Site Operator will provide details of the actions undertaken on the Non-Conformance Report and sign, date and file the report.
LTEMP Review	This LTEMP should be reviewed by the Land Custodian or their nominated representative upon completion of all intrusive excavation activities and / or after incidents or reported findings, to ensure that: ■ information and environmental management strategies remain current; ■ any opportunities for improvement are identified; and ■ changes to legislation, environmental standards licence and approval conditions are identified and complied with. Information obtained during intrusive works including (but not limited to) the following sources may be utilised to review the LTEMP: ■ Details of the works undertaken including relevant photographs. ■ Details of any unexpected finds (nature, location, extent and results of testing / analysis undertaken, photographs). ■ Any pertinent additional safety controls that were required to be implemented during intrusive works. The assessment should take into account all changes such as (but not limited to): ■ changes to site conditions; ■ work requirements; ■ legislation; and ■ environmental condition. If during the review process described above, areas for improvement are identified, or it be determined that the LTEMP requires revision, any changes to the document will require agreement by at least the following stakeholders: ■ Land Custodian (or nominated representative); ■ a qualified environmental specialist; and ■ a NSW EPA accredited Site Auditor.
Record Keeping	All records related to implementation of the LTEMP should be maintained by the Land Custodian or their nominated representative in a consolidated and easily accessible location.

7. CONTINGENCY ACTIONS

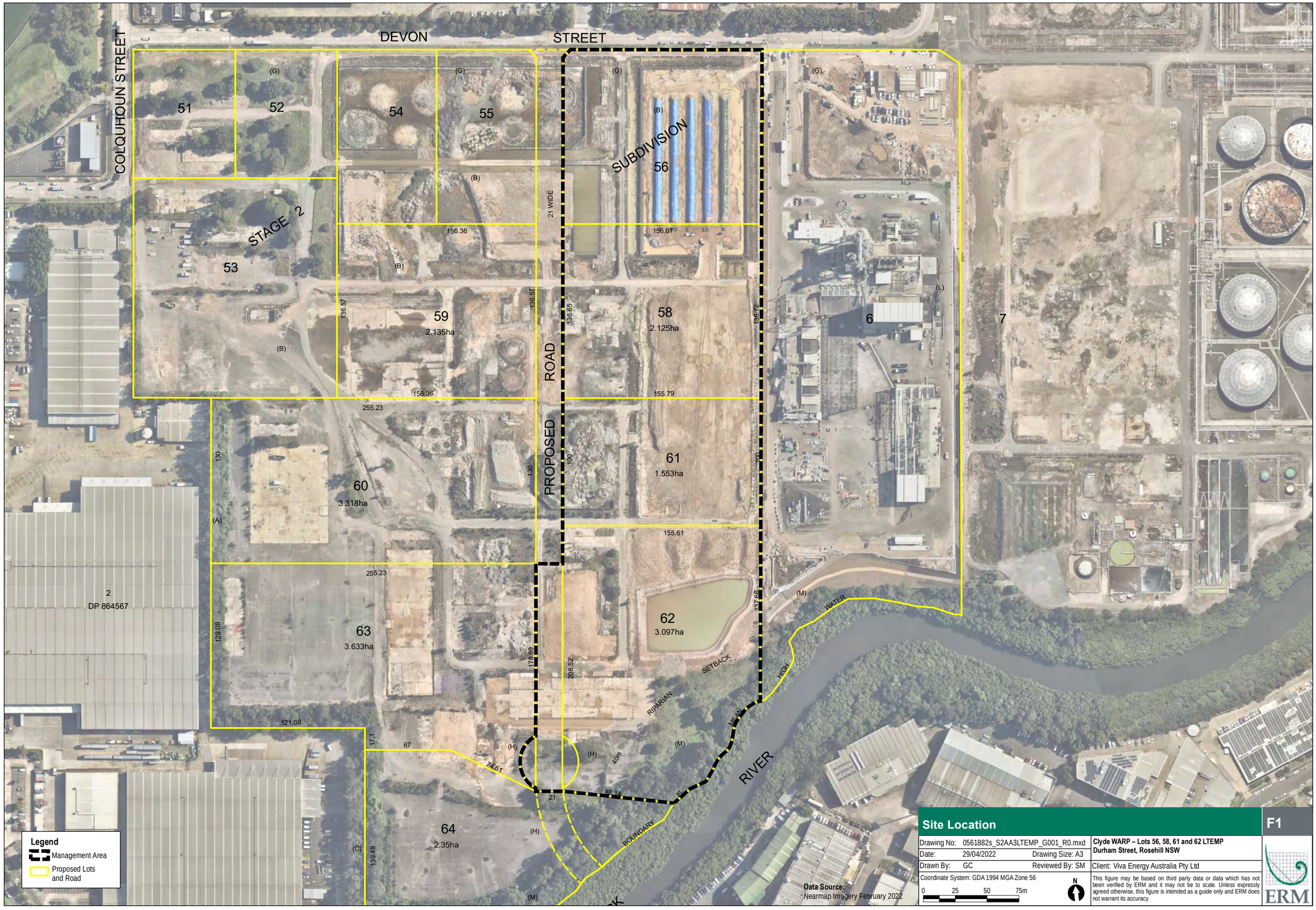
The purpose of the contingency plan is to identify unexpected situations that could occur, and specify procedures that can be implemented to manage such situations and prevent or minimise adverse impacts to the environment and human health.

Details of the procedures are defined in the table below:

Table 8 – Contingency Actions

Item	Contingency Action
Asbestos in soils	■ While the risk of significant and / or widespread asbestos contamination within the Management Area is unlikely based on existing environmental assessments, where asbestos contaminated soil is identified during development works, any finds should be investigated as per the unexpected finds methodology detailed within *Section 6.1*. ■ Identified asbestos remaining on site should be included on an updated version of the Asbestos Register (provided as *Appendix D*).
Additional / unexpected LNAPL / Hydrocarbon Contamination resulting in Potential Vapour Risk	■ While the likelihood of vapour risk from additional / unexpected finds of LNAPL / hydrocarbon impacted soil and / or groundwater is unlikely, during future development works, where potential indicators of vapour risk are identified, the Land Custodian should engage a qualified environmental specialist to undertake further assessment. ■ The location of LNAPL or residual hydrocarbons in soil within the Management Area, which is known and has been assessed as not presenting a risk to future workers, is identified on *Figure 2*, *Appendix A*.

APPENDIX A FIGURES



Site Location

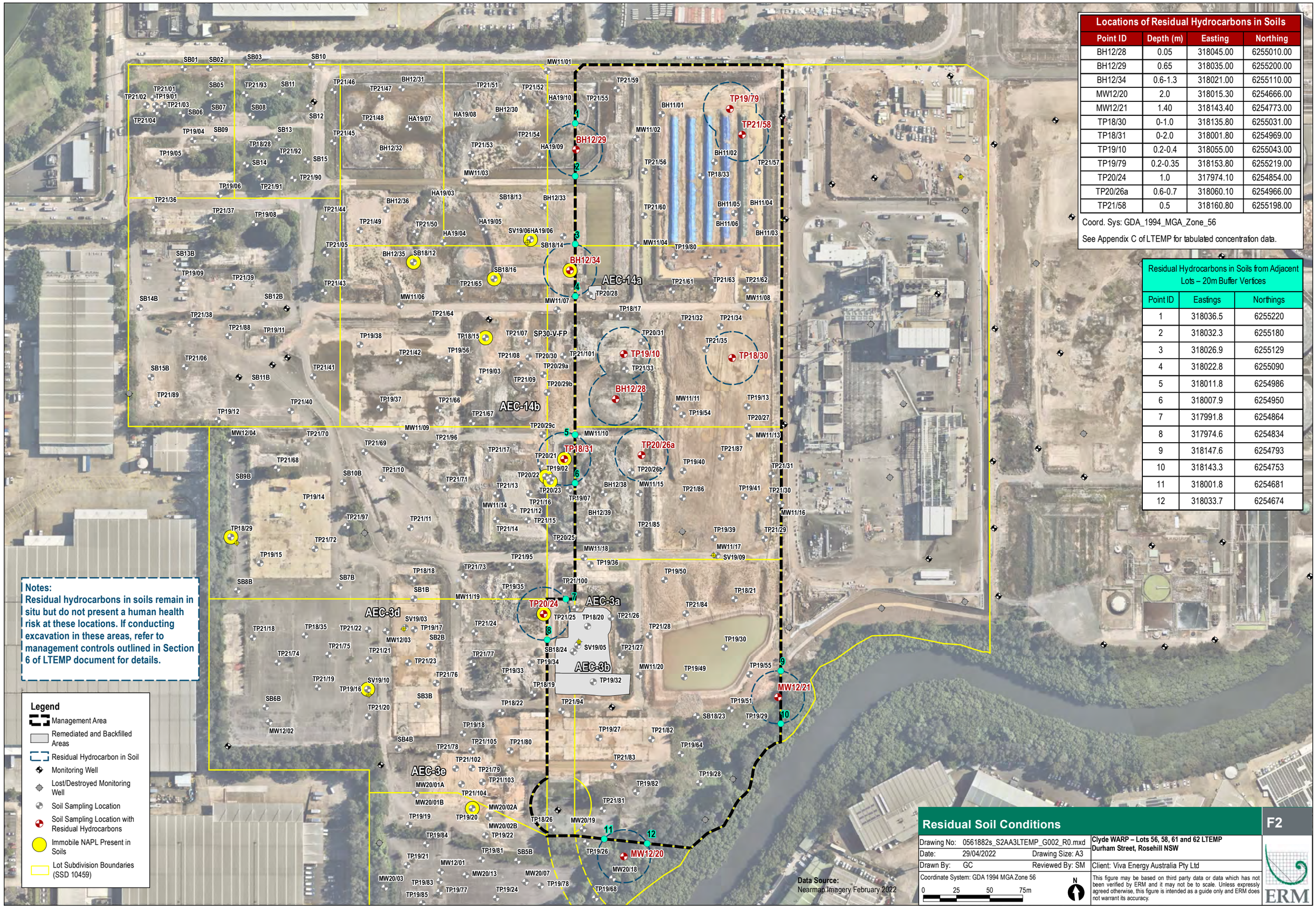
F1

Drawing No: 0561882s_S2AA3LTEMP_G001_R0.mxd		Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date: 29/04/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 25 50 75m

N

ERM



Notes:
Residual hydrocarbons in soils remain in situ but do not present a human health risk at these locations. If conducting excavation in these areas, refer to management controls outlined in Section 6 of LTEMP document for details.

Locations of Residual Hydrocarbons in Soils

Point ID	Depth (m)	Easting	Northing
BH12/28	0.05	318045.00	6255010.00
BH12/29	0.65	318035.00	6255200.00
BH12/34	0.6-1.3	318021.00	6255110.00
MW12/20	2.0	318015.30	6254666.00
MW12/21	1.40	318143.40	6254773.00
TP18/30	0-1.0	318135.80	6255031.00
TP18/31	0-2.0	318001.80	6254969.00
TP19/10	0.2-0.4	318055.00	6255043.00
TP19/79	0.2-0.35	318153.80	6255219.00
TP20/24	1.0	317974.10	6254854.00
TP20/26a	0.6-0.7	318060.10	6254966.00
TP21/58	0.5	318160.80	6255198.00

Coord. Sys: GDA_1994_MGA_Zone_56

See Appendix C of LTEMP for tabulated concentration data.

Residual Hydrocarbons in Soils from Adjacent Lots – 20m Buffer Vertices

Point ID	Eastings	Northings
1	318036.5	6255220
2	318032.3	6255180
3	318026.9	6255129
4	318022.8	6255090
5	318011.8	6254986
6	318007.9	6254950
7	317991.8	6254864
8	317974.6	6254834
9	318147.6	6254793
10	318143.3	6254753
11	318001.8	6254681
12	318033.7	6254674

Residual Soil Conditions

F2

Drawing No:	0561882s_S2AA3LTEMP_G002_R0.mxd		Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date:	29/04/2022	Drawing Size: A3	
Drawn By:	GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

0 25 50 75m

N

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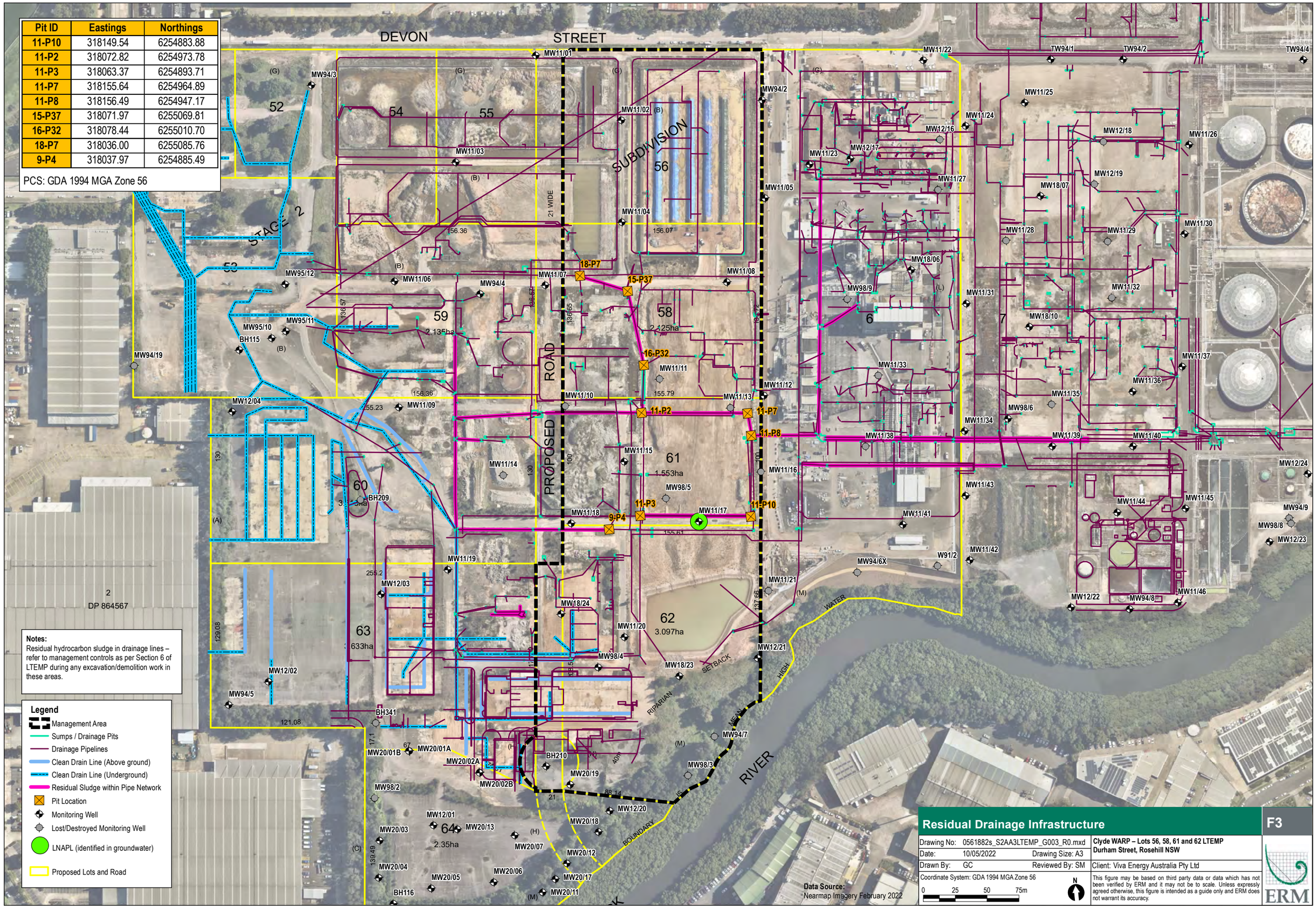
ERM

Pit ID	Eastings	Northings
11-P10	318149.54	6254883.88
11-P2	318072.82	6254973.78
11-P3	318063.37	6254893.71
11-P7	318155.64	6254964.89
11-P8	318156.49	6254947.17
15-P37	318071.97	6255069.81
16-P32	318078.44	6255010.70
18-P7	318036.00	6255085.76
9-P4	318037.97	6254885.49

PCS: GDA 1994 MGA Zone 56



Notes:
Residual hydrocarbon sludge in drainage lines – refer to management controls as per Section 6 of LTEMP during any excavation/demolition work in these areas.

Legend
- Management Area
- Sumps / Drainage Pits
- Drainage Pipelines
- Clean Drain Line (Above ground)
- Clean Drain Line (Underground)
- Residual Sludge within Pipe Network
- Pit Location
- Monitoring Well
- Lost/Destroyed Monitoring Well
- LNAPL (identified in groundwater)
- Proposed Lots and Road

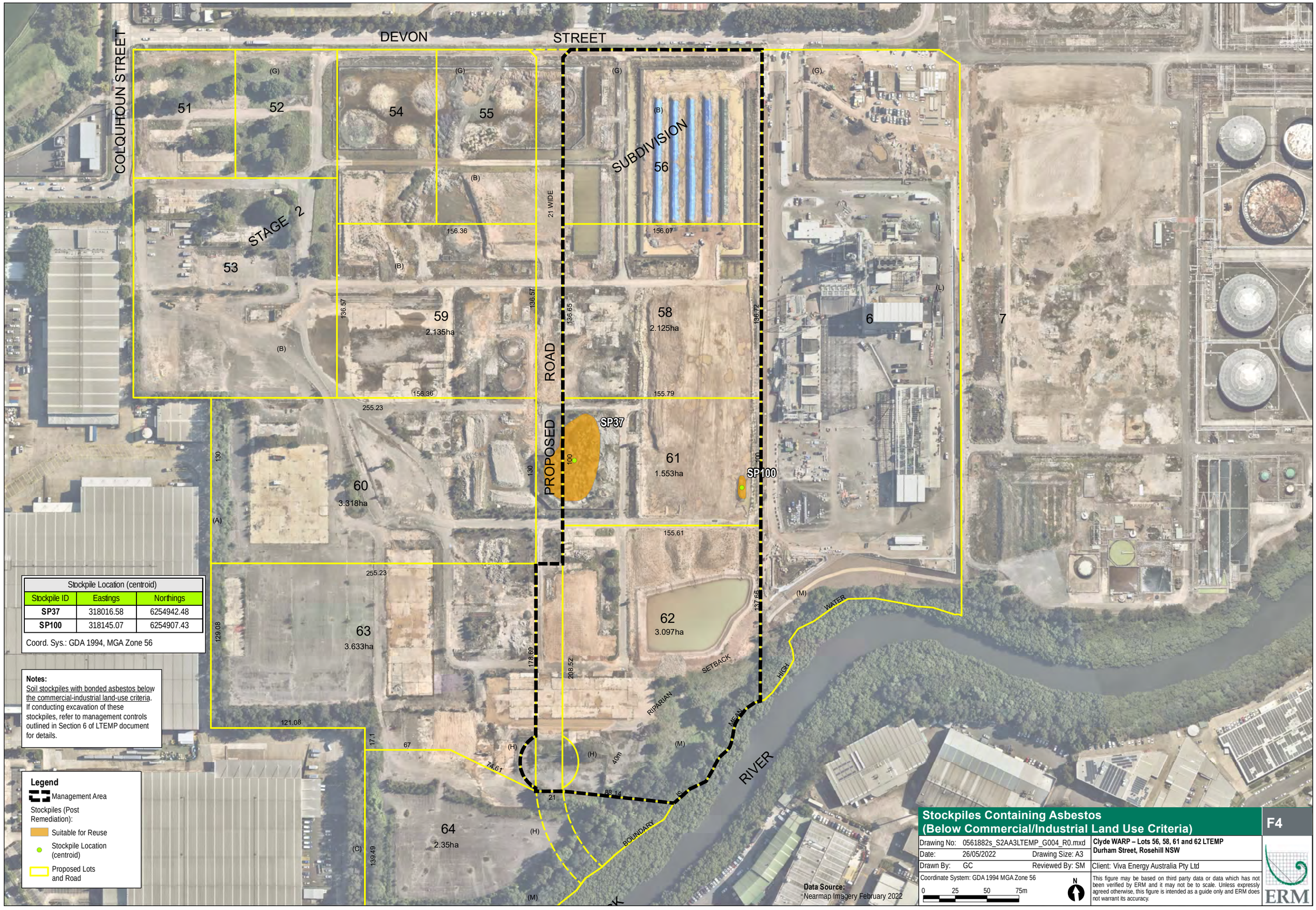
Data Source:
Nearmap Imagery February 2022

Residual Drainage Infrastructure

F3

Drawing No: 0561882s_S2AA3LTEMP_G003_R0.mxd	Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date: 10/05/2022 Drawing Size: A3	
Drawn By: GC Reviewed By: SM	Client: Viva Energy Australia Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56 0 25 50 75m N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



Stockpile Location (centroid)		
Stockpile ID	Eastings	Northings
SP37	318016.58	6254942.48
SP100	318145.07	6254907.43

Coord. Sys.: GDA 1994, MGA Zone 56

Notes:
Soil stockpiles with bonded asbestos below the commercial-industrial land-use criteria. If conducting excavation of these stockpiles, refer to management controls outlined in Section 6 of LTEMP document for details.

Legend
- Management Area
- Stockpiles (Post Remediation):
  - Suitable for Reuse
  - Stockpile Location (centroid)
  - Proposed Lots and Road

Stockpiles Containing Asbestos (Below Commercial/Industrial Land Use Criteria)

F4

Drawing No: 0561882s_S2AA3LTEMP_G004_R0.mxd		Clyde WARP – Lots 56, 58, 61 and 62 LTEMP Durham Street, Rosehill NSW
Date: 26/05/2022	Drawing Size: A3	
Drawn By: GC	Reviewed By: SM	Client: Viva Energy Australia Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

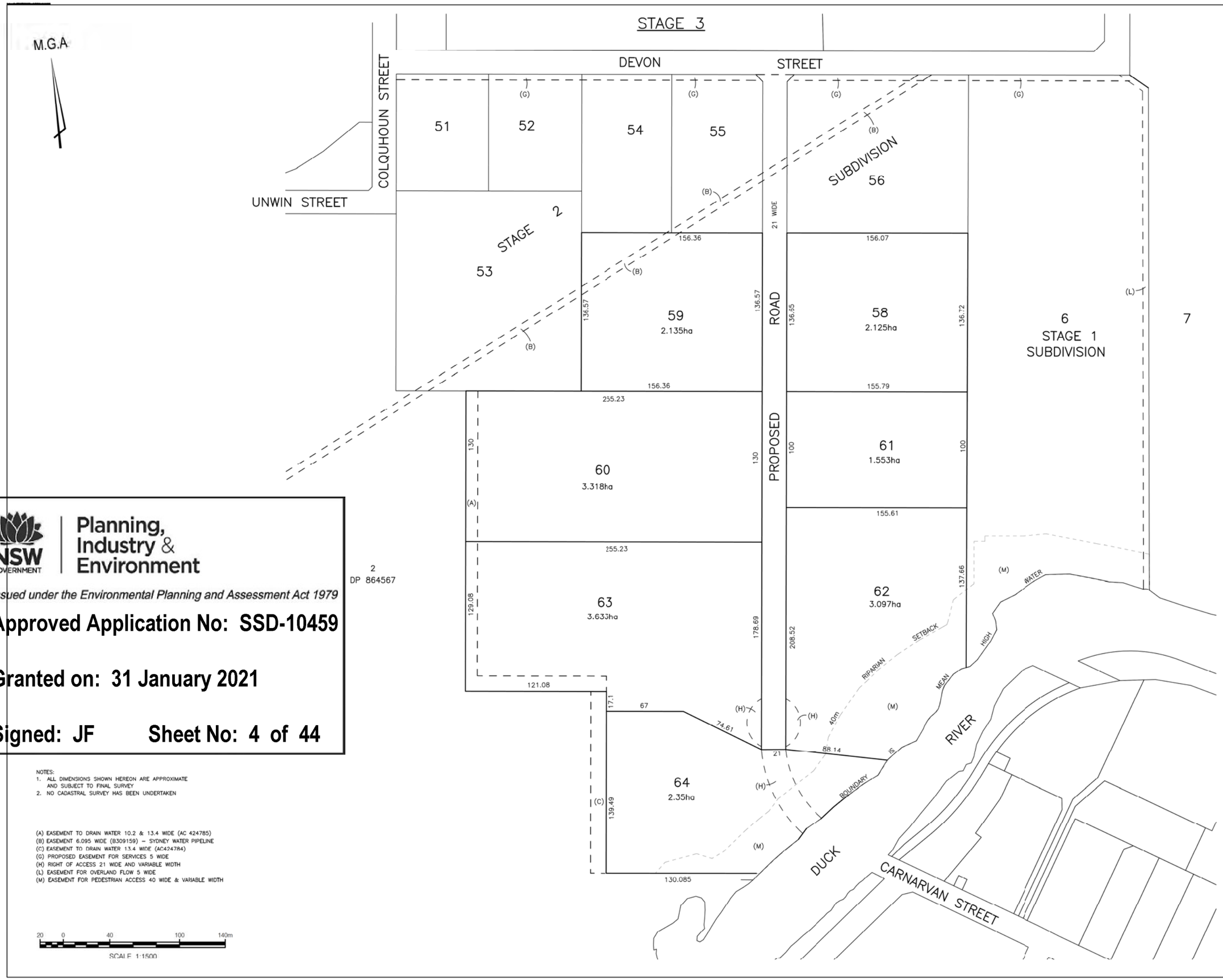
0 25 50 75m

N

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

APPENDIX B SITE SURVEY



Planning, Industry & Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No: SSD-10459

Granted on: 31 January 2021

Signed: JF Sheet No: 4 of 44

NOTES:
1. ALL DIMENSIONS SHOWN HEREON ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY
2. NO CADASTRAL SURVEY HAS BEEN UNDERTAKEN

(A) EASEMENT TO DRAIN WATER 10.2 & 13.4 WIDE (AC 424785)
(B) EASEMENT 6.095 WIDE (B309159) – SYDNEY WATER PIPELINE
(C) EASEMENT TO DRAIN WATER 13.4 WIDE (AC424784)
(G) PROPOSED EASEMENT FOR SERVICES 5 WIDE
(H) RIGHT OF ACCESS 21 WIDE AND VARIABLE WIDTH
(L) EASEMENT FOR OVERLAND FLOW 5 WIDE
(M) EASEMENT FOR PEDESTRIAN ACCESS 40 WIDE & VARIABLE WIDTH

20 0 40 100 140m
SCALE 1:1500

CLIENT
VE PROPERTY PTY LTD

PROJECT
PLAN OF PROPOSED SUBDIVISION OF LOT 57 OF STAGE 2 OF SUBDIVISON OF LOT 100 IN DP1168951 STAGE 3

NOTES
The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.

Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.

Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

8	GKO	23/11/2020	LOT 61 & 62 AMENDED
7	GKO	11/11/2020	AMEND RIPARIAN SETBACK & (H)
6	GKO	02/11/2020	LANDSCAPE SETBACK REMOVED
5	GKO	29/10/2020	PLAN AMENDED
4	GKO	20/10/2020	LOT BOUNDARIES AMENDED
3	GKO	24/07/2020	EASEMENTS DETAIL ADDED
2	GKO	17/07/2020	EASEMENT AMENDED
1	GKO	22/06/2020	INITIAL ISSUE

SYM	CODE	DESCRIPTION
	BIN	BIN
	BM	BENCH MARK
	BO	BOLLARD
	DJM	DRAINAGE MANHOLE
	EFP	ELEC FUSE BOX
	ELP	ELEC GARDEN LIGHT
	EL	ELEC GREEN PILLAR
	LP	ELEC LIGHT POLE
	EP	ELECT SINGLE PIT
	SPL	ELEC STAY POLE
	PP	ELEC POWER POLE
	ELP	ELEC POLE/LIGHT
	TRANS	ELE POLE/TRANSFORM
	FD	FUEL DIP
	GM	GAS MAIN
	GMR	GAS METER
	GAS	GAS VALVE
	AG	GATE
	GUL	GULLY PIT
	HYD	HYDRANT
	BOR	BOREHOLE

SYM	CODE	DESCRIPTION
	OFM	OPTICAL FIBRE MARKER
	OFP	OPTICAL FIBRE PIT
	TM	PALM TREE
	SE	SEAT
	TS	SHRUB
	TCA	TELSTRA PIT
	SLH	SEWER LAMP HOLE
	SMH	SEWER MANHOLE
	SVP	SEWER VENT PIPE
	SI	SIGN
	BUS	BUS STOP SIGN
	T	TREE
	SGL	TRAFFIC LIGHT
	SCL	TRAFFIC CONTROLLER
	SJX	TRAFFIC JUNCTION BOX
	US	UNKNOWN SERVICE
	WAV	WATER AIR VALVE
	WMR	WATER METER
	WEP	WATER PUMP
	WSV	WATER STOP VALVE
	WTP	WATER TAP

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

DRAINAGE PIPE U/G
DRAIN
ELECT. CABLE A/G
ELEC. CABLE U/G
GAS PIPE
FENCE LINE
SEWERAGE PIPE
TELSTRA CABLE
WATER PIPE

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HEIGHT DATUM: AHD	LOCAL AUTHORITY: CITY OF PARRAMATTA
HEIGHT ORIGIN: N/A	SCALE: 1:1500 (A1)
MERIDIAN: 56	CONTOUR INTERVAL: N/A
CO-ORD SYSTEM: MGA	SURVEYOR: N/A — DATE OF SURVEY: -
CCAD FILE: 74707 ver 9 final subdivision	DRAWN: SF/CLP — DATE: 23/11/2020
AUTOCAD FILE: SY074707.000.13.8	CHECKED: GKO — DATE: 23/11/2020
ARCHIVE FILE: SY074707.000.13.6	APPROVED: GKO — DATE: 23/11/2020
PLAN NUMBER: SY074707.000.13.8	SHEET 1 OF 1

APPENDIX C RESIDUAL HYDROCARBON SUMMARY

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500		10000			1000				3500		10,000
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**																															
Lot 61	3	MW11/18	MW11/18_0.3	0.3-0.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 430	-	-	-	-	-	-	-	-	-	-	-	<100	-	430	-
Lot 61	3	MW11/18	MW11/18_3.2	3.2-3.2	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 62	3	MW11/20	MW11/20_0.2	0.2-0.2	23/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<5	<10	-	<50	-	-	-	<50 - 1200	-	-	-	-	-	-	-	-	-	-	-	350	-	860	-
Lot 62	3	MW11/20	MW11/20_5.0	5-5	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Road alignment	3	SB18/24	MW(SB)18/24_0.3_180209	0.3-0.3	9/02/2018	0.8	3.4	1.3	0.9	6.4	7.3	12.8	3	66	-	160	200	-	<100	360	75	62	190	190	200	390	<100	90	60	90	190	220	130	130	<100	<100
Road alignment	3	SB18/24	MW(SB)18/24_1.2_180209	1.2-1.2	9/02/2018	2.7	<0.5	21.5	1.2	52.8	54	78.2	4	1480	-	300	530	-	<100	830	1530	1450	430	430	300	730	<100	260	210	260	460	430	250	170	<100	<100
Road alignment	3	SB18/24	MW(SB)18/24_3.0_180209	3-3	9/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	16	-	<50	<100	-	<100	<50	17	17	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	-0.45	8/02/2018	<0.2	2.2	0.6	1.1	3.4	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	0.45-0.45	8/02/2018	0.4	22.4	2.9	4.2	14.9	19.1	44.8	<1	3270	-	<50	<100	-	320	320	3420	3380	<50	<50	250	710	460	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 62	3	TP18/20	TP18/20_0.7_20180208	0.7-0.7	8/02/2018	<0.2	3.8	1.4	1.8	6.6	8.4	13.6	<1	816	-	<50	<100	-	<100	<50	851	837	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	-1.2	8/02/2018	<0.2	<0.5	0.8	0.6	2.8	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	0.8	0.6	2.8	3.4	4.2	<1	861	-	<50	<100	-	<100	<50	819	814	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_2.3_20180208	2.3-2.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	19	-	<50	<100	-	<100	<50	20	20	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_0.6	0.5-0.7	24/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_1.5	1.4-1.6	24/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_1.0	0.9-1.1	23/07/2019	<0.2	<0.2	<0.2	<0.2	<0.4	<0.6	-	<1	-	<40	<20	<50	-	<50	<50	<40	<40	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_0.1	0-0.2	23/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	110	-	100	210	<20	<20	<50	<50	180	180	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	MW12/21	MW12/21_0.5	0.5-0.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_1.4	1.4-1.4	7/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	730	2600	4600	2000	5300 - 5330	<20	<20	1200	1200	3700	-	870	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_2.4	2.4-2.4	7/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_3.5	3.5-3.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_0.3_20180208	0.3-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	80	1340	-	360	1780	<10	<10	240	240	1440	1890	210	<50	<50	<50	460	550	460	550	<100	<100
Lot 62	4	SB18/23	MW(SB)18/23_3.0_20180208	3-3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	130	1410	-	400	1940	<10	<10	300	300	1510	2070	260	130	110	130	950	840	710	710	130	<100
Road alignment	4	TP18/26	TP18/26_0.3	-0.3	7/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_0.3	0.3-0.3	7/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	1.2-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.7	1.7-1.7	7/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_1.0	0.9-1.1	19/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	230	-	150	380	<20	<20	<50	<50	300	300	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	TP19/28	D01_190719	0-0.2	19/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	57	2700	-	2300	5057	<20	<20	140	140	4000	5130	990	-	<20	<50	830	-	540	730	290	<100
Lot 62	4	TP19/28	T01_190719	0-0.2	19/07/2019	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	200	1120	-	150	1470	<10	<10	410	410	1030	1440	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_0.1	0-0.2	19/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	42	2100	-	1800	3942	<20	<20	100	100	3200	4120	820	-	<20	<50	600	-	390	530	210	<100
Lot 62	4	TP19/29	TP19/29_1.8	1.7-1.9	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	76	-	110	186	<20	<20	<50	<50	150	150	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	TP19/29	TP19/29_2.2	2.1-2.3	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	85	-	69	154	<20	<20	<50	<50	120	120	<100	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 62	4	TP19/30	D01_220719	0.3-0.5	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	T01_220719	0.3-0.5	22/07/2019	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_0.4	0.3-0.5	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_1.2	1.1-1.3	22/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/16	MW11/16_0.45	0.45-0.45	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	5	MW11/16	MW11/16_3.3	3.3-3.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	5	MW11/17	D_220911_01	1-1	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 2300	-	-	-	-	-	-	-	-	-	-	-	1600	-	740	-
Lot 61	5	MW11/17	MW11/17_1.0	1-1	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 1700	-	-	-	-	-	-	-	-	-	-	-	1200	-	510	-
Lot 61	5	MW11/17	T-220911-01	1-1	22/09/2011	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	2290	3080	790	3080 - 3105	<10	<10	90	-	2590	3080	400	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	MW11/17_2.5	2.5-2.5	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	5	TP19/39	TP19/39_0.2	0.1-0.3	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/39	TP19/39_0.4	0.3-0.5	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.1	0.1-0.3	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	200	-	200	400	<20	<20	<50	<50	350	350	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.2	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<20	<50	<50	-	<50	<100	<50	<100
Lot 61	5	TP19/40	TP19/40_0.2	1.9-2.1	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	260	-	56	316	<20	<20	<50	<50	280	280	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	D01_290719	0.1-0.3	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	68	68	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	T01_290719	0.1-0.3	29/07/2019	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	110	110	<10	<10	<50	<50	140	140	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.2	0.1-0.3	29/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.4	0.3-0.5	29/07/2019	<0.1	0.8	0.2	5.4	10	16	-	4.5 - 6.3	-	<80	290	130	-	130	550	75	59	140	135.5	200	340	<100	-	120	83	350	-	110	180	120	<100
Lot 56	11	BH11/01	BH11|01-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	1200	1480	280	1500 - 1505	<20	<20	160	140	1400	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-0.8	0.8-0.9	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5 - 1	17	-	300	810	860	<100	1100 - 1160	29	29	580	490	510	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	DUP_01	0.8-0.9	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	16	-	87	260	310	<100	350 - 397	29	29	190	160	150	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-1.5	1.5-1.6	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	190	140	140 - 215	<20	<20	<50	<50	150	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-1.4	1.4-1.5	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	480	880	400	880 - 905	<20	<20	<50	<50	860	-	120	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-1.5	1.5-1.6	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500	50	10000			1000				3500		10,000
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**																															
Lot 56	11	BH11/04	BH11|04-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	58	530	580	<100	590 - 638	<20	<20	190	160	490	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.7	1.7-1.8	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.0	1-1.1	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	140	950	1000	<100	1100 - 1140	<20	<20	440	390	680	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.5	1.5-1.6	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.0	1-1.1	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-0.1	0.1-0.2	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	280	680	400	680 - 705	<20	<20	<50	<50	640	-	190	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-1.0	1-1.1	15/12/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5 - 0.75	<1.5 - 1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	D_140312_02	-0.65	14/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	3.6	<10	-	370	980	1030	<100	1400	22	22	630	630	810	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	T-140312-01	-0.65	14/03/2012	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2	<10	-	350	1110	1230	120	1580	25	25	570		930	1500	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_0.65	0.65-0.65	14/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5 - 5	<10	-	750	1800	2070	270	2800 - 2820	23	23	1200	1200	1600	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_1.3	1.3-1.3	14/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5 - 1.3	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/02	MW11/02_0.5	0.5-0.5	19/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 530	-	-	-	-	-	-	-	-	-	-	-	-	270	-	260	-
Lot 56	11	MW11/02	MW11/02_2.3	2.3-2.3	19/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 56	11	MW11/04	MW11/04_1.0	1-1	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	4.9	110	-	2100	-	-	-	2100 - 5000	-	-	-	-	-	-	-	-	-	-	-	-	2700	-	210	-
Lot 56	11	MW11/04	MW11/04_2.0	2-2	21/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 56	11	TP18/33	TP18/33_0.3_20180208	0.3-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	-3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	3-3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP19/79	TP19/79_0.3	0.2-0.35	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.5	-	<20	930	1700	-	280	2910	<20	<20	1400	1400	1400	2800	<100	-	-	-	-	-	-	-	-	-
Lot 56	11	TP19/79	TP19/79_1.2	1.1-1.3	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	11	TP19/80	TP19/80_0.5	0.5-0.6	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.6	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	13	TP19/50	TP19/50_0.1	0-0.2	26/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	13	TP19/54	TP19/54_0.1	0-0.2	1/08/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	14	TP19/02	TP19/02_0.2	0.1-0.3	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	250	-	290	540	<20	<20	<50	<50	460	600	140	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_0.4	0.3-0.5	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	290	-	280	570	<20	<20	<50	<50	500	500	<100	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_1.6	1.4-1.6	30/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	D_160312_02	-0.05	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	2.7	<10	-	1200	30,000	42,000	12,000	43,000 - 43,200	<20	<20	7300	7300	35,000	-	4800	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	T-160312-01	-0.05	16/03/2012	<0.2	0.8	<0.5	<0.5	<0.5	<0.5	0.8 - 1.4	2	13	-	940	16,600	21,080	4480	22,000 - 22,020	22	21	4000	-	16,600	22,700	2120	-	-	-	-	13	-	-	-	-
Lot 58	15	BH12/28	BH12/28_0.05	0.05-0.05	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	4.9 - 6.1	<10	-	420	3000	4000	1000	4400 - 4420	<20	<20	870	4500	3500	-	340	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_1.4	1.4-1.4	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	D_160312_01	-1	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	120	-	<50	<100	<200	<100	<100	150	150	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.4	1.4-1.4	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.0	1-1	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	59	-	<50	<100	<200	<100	<100	76	76	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_0.25	0.25-0.25	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_1.1	1.1-1.1	16/03/2012	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	<100	<200	<100	<100	<20	<20	<50	<50	<100	-	<100	-	-	-	-	-	-	-	-	-
Lot 56	15	MW11/05	MW11/05_0.3	0.3-0.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 150	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	150	-
Lot 56	15	MW11/05	MW11/05_2.3	2.3-2.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 59	15	MW11/06	MW11/06_0.5	0.5-0.5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Road alignment	15	MW11/07	MW11/07_0.5	0.5-0.5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Road alignment	15	MW11/07	MW11/07_1.0	1-1	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	180	-	-	-	180 - 530	-	-	-	-	-	-	-	-	-	-	-	-	350	-	<100	-
Road alignment	15	MW11/07	MW11/07_5.0	5-5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	MW11/08	MW11/08_0.5	0.5-0.5	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 240	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	240	-
Lot 58	15	MW11/08	D_200901_01	3.2-3.2	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	MW11/08	MW11/08_3.2	3.2-3.2	20/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/10	MW11/10_0.450	0.45-0.45	21/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	3.2	<10	-	56	-	-	-	56 - 2400	-	-	-	-	-	-	-	-	-	-	-	-	1400	-	990	-
Lot 61	15	MW11/10	MW11/10_3.4	3.4-3.4	21/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 180	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	180	-
Lot 58	15	MW11/11	MW11/11_0.4	0.4-0.4	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	100	-	-	-	100 - 1000	-	-	-	-	-	-	-	-	-	-	-	-	780	-	120	-
Lot 58	15	MW11/11	MW11/11_2.2	2.2-2.2	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	MW11/12	MW11/12_0.3	0.3-0.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 320	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	320	-
Lot 58	15	MW11/12	MW11/12_3.0	3-3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50 - 270	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	270	-
Lot 61	15	MW11/13	MW11/13_0.3	0.3-0.3	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/13	MW11/13_3.6	3.6-3.6	26/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/15	MW11/15_1.3	1.3-1.3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 61	15	MW11/15	MW11/15_3.0	3-3	22/09/2011	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<1.5	<0.5	<10	-	<50	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	<100	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	0.3-0.3	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	1.2-1.2	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_2.7_20180208	2.7-2.7	8/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	QC18_101		6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	270	-	240	510	<10	<10	<50	<50	480	630	150	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 62	15	TP18/21	TP18/21_0.3	0.3-0.3	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	450	-	350	800	<10	<10	<50	<50	700	900	200	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 62	15	TP18/21	TP21_0.6	-0.6	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	360	-	300	660	<10	<10	<50	<50	620	840	220	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	1.2-1.2	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_2.37	2.37-2.37	6/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_0.3	0.3-0.3	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	180	-	220	400	<10	<10	<50	<50	310	480	170	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 58	15	TP18/30	TP18/30_1.2	-1.2	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500		10000			1000				3500		10,000
Alternative_Name	Monitoring_Zone	Location_Code	Field_ID	Sample_Depth_Range	Sampled_Date_Time																															
Lot 58	15	TP18/30	TP18/30_1.2	1.2-1.2	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	-2.4	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	2.4-2.4	5/02/2018	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	15	TP19/10	TP19/10_0.3	0.2-0.4	1/08/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	410	11,000	-	8500	19,910	<20	<20	960	960	16,000	21,660	4700	-	490	1000	22,690	-	13,000	19,000	9200	4200
Lot 58	15	TP19/13	TP19/13_0.1	0.1-0.3	24/07/2019	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	97	-	89	186	<20	<20	<50	<50	150	150	<100	-	-	-	-	-	-	-	-	-
Lot 61	54	TP21/30	TP21/30-1.0	1	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	250	-	100	350	<20	<20	<50	<50	270	270	<100	-	<50	<50	220	-	220	270	<100	<100
Lot 61	54	TP21/30	TP21/30-2.1	2.1	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	130	-	61	191	<20	<20	<50	<50	150	150	<100	-	<50	<50	150	-	150	180	<100	<100
Lot 56	56	TP21/55	TP21/55_0.6	0.6	30/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	36	420	-	130	586	<20	<20	68	68	430	498	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 56	56	TP21/55	TP21/55_1.2	1.2	30/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/58	TP21/58_0.5	0.5	30/03/2021	<1	<1	<1	<1	<2	<3	-	<1 - 9.2	-	<200	1100	15,000	-	1100	17,200	<200	<200	3400	3390.8	<100	3850	450	-	640	1500	6810	-	5400	5500	770	350
Lot 56	56	TP21/58	TP21/58_1.2	1.2	30/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TP21/60_1.0	1	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	DUP10-210329	2	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 56	56	TP21/60	TP21/60_2.0	2	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 56	56	TP21/60	TRIP10_210329	2	29/03/2021	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	-	<10	-	-	-	-	-	<10	<10	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 58	58	TP21/32	TP21/32_1.0	1	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/33	TP21/33_0.5	0.5	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	220	-	230	450	<20	<20	<50	<50	420	420	<100	-	<50	<50	360	-	200	320	160	<100
Lot 58	58	TP21/33	TP21/33_1.4	1.4	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	86	-	71	157	<20	<20	<50	<50	140	140	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/34	TP21/34_0.4	0.4	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	87	-	96	183	<20	<20	<50	<50	150	150	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/34	TP21/34_0.6	0.6	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	50	350	-	220	620	<20	<20	92	92	480	732	160	-	<50	57	310	-	200	270	110	<100
Lot 58	58	TP21/35	TP21/32_0.3	0.3	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	200	930	-	280	1410	<20	<20	430	430	950	1560	180	-	180	360	1110	-	740	650	190	<100
Lot 58	58	TP21/35	TP21/35_0.6	0.6	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	57	57	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/35	DUP03_210310	1	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/35	TP21/35_1.0	1	10/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/35	TRIP03_210310	1	10/03/2021	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	-	<10	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/63	TP21/63_0.2	0.2	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 58	58	TP21/63	TP21/63_1.5	1.5	29/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/29	TP21/29-0.7	0.7	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	35	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	70	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/29	TP21/29-1.7	1.7	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/31	DUP02_210309	0.9	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/31	TP21/31-0.9	0.9	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/31	TRIP02_210309	0.9	9/03/2021	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	-	<10	-	-	-	-	-	<10	<10	-	-	-	-	-	<50	<50	<50	<50	<50	<100	<100	<100	<100
Lot 61	61	TP21/31	TP21/31-2.0	2	9/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/85	TP21/85_0.4	0.4	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	430	-	250	680	<20	<20	<50	<50	620	740	120	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/85	TP21/85_2.0	2	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/86	TP21/86_0.5	0.5	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/86	TP21/86_1.5	1.5	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/87	TP21/87_1.0	1	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	92	-	<50	92	<20	<20	<50	<50	120	120	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	61	TP21/87	TP21/87_1.5	1.5	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/25	TP21/25_0.1	0.1	11/03/2021	<0.1	0.2	<0.1	0.2	0.4	0.6	-	<0.5	-	<20	<20	450	-	320	770	<20	<20	<50	<50	720	930	210	-	<50	<50	440	-	280	400	160	<100
Lot 62	62	TP21/25	TP21/25_1.0	1	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	390	-	220	610	<20	<20	<50	<50	560	690	130	-	<50	<50	520	-	320	460	200	110
Lot 62	62	TP21/26	DUP04_210311	0.6	11/03/2021	<0.1	0.2	<0.1	0.2	0.8	1	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/26	TP21/26_0.6	0.6	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/26	TRIP04_210311	0.6	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	23	180	-	150	353	<20	<20	<50	<50	310	420	110	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/26	TP21/26_1.1	1.1	11/03/2021	<0.1	<0.1	0.3	<0.1	1	1	-	<0.5	-	38	27	<50	-	<50	<50	74	73	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/27	TP21/27_0.3	0.3	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/27	TP21/27_0.8	0.8	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/28	TP21/28_0.2	0.2	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/28	TP21/28_2.0	2	11/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/82	TP21/82_0.5	0.5	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	140	-	140	150	<100	<100
Lot 62	62	TP21/82	TP21/82_1.2	1.2	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	42	600	-	260	902	<20	<20	82	82	760	982	140	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 62	62	TP21/84	TP21/84_0.8	0.8	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	99	5700	-	3600	9399	23	23	230	230	8700	9850	920	-	<50	63	2600	-	1600	2500	1000	200
Lot 62	62	TP21/84	TP21/84_2.0	2	18/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Road alignment	Road	TP21/94	TP21/94_0.2	0.2	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	110	-	310	420	<20	<20	<50	<50	310	630	320	-	<50	<50	280	-	<100	270	280	270
Road alignment	Road	TP21/94	TP21/94_0.6	0.6	17/03/2021	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<50	<50	<100	-	<100	<100	<100	<100
Lot 61	14	TP20/26a	TP20/26A_0.7	0.6-0.7	7/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	330	6800	-	2300	9430	<20	<20	640	640	8200	9680	840	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/27	TP20/27_0.45	0.35-0.45	7/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/28	TP20/28_1.55	1.45-1.55	16/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.7	-	470	2400	620	-	130	3150	1700	1700	2300	2300	460	2760	<100	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/31	TP20/31_0.55	0.45-0.55	16/10/2020	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	-	<20	240	2400	-	1600	4240	<20	<20	600	600	3300	4820	920	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328_TRIP1	0-0.05	28/03/2022	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328_TRIP2	0-0.05	28/03/2022	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	-	<50	<100	-	<100	<50	<10	<10	<50	<50	<100	<50	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328-DUP1	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328-DUP2	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-1	SSA-1	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-10	SSA-10	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-11	SSA-11	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-12	SSA-12	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-13	SSA-13	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-14	SSA-14	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-15	SSA-15	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-16	SSA-16	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-17	SSA-17	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5 - 1.7	<20	-	<20	160	-	66	226	<20	<20	<50	<50	200	200	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-18	SSA-18	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	150	-	<50	150	<20	<20	<50	<50	180	180	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-19	SSA-19	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	SSA-2	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	160	860	-	54	1074	<20	<20	250	250	800	1050	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-20	SSA-20	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-21	SSA-21	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-22	SSA-22	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-23	SSA-23	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-24	SSA-24	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-25	SSA-25	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-26	SSA-26	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-27	SSA-27	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	SSA-28	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-29	SSA-29	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-3	SSA-3	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-30	SSA-30	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-31	SSA-31	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-32	SSA-32	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-33	SSA-33	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-34	SSA-34	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-35	SSA-35	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	73	-	<50	73	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-36	SSA-36	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	58	-	<50	58	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-37	SSA-37	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-38	SSA-38	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	100	260	-	80	440	43	43	170	170	270	440	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-39	SSA-39	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-4	SSA-4	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-40	SSA-40	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-5	SSA-5	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	170	-	<50	170	<20	<20	<50	<50	250	250	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-6	SSA-6	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	78	-	<50	78	<20	<20	<50	<50	100	100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-7	SSA-7	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-

						BTEX							Naphthalene	TRH NEPM (1999)							TRH NEPM (2013)							TRH Silica Gel Cleanup								
						Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX	Naphthalene	TRH C6-C9 Fraction	TRH >C6-C9 Fraction	TRH >C10-C14 Fraction	TRH >C15-C28 Fraction	TRH >C15-C36 Fraction	TRH >C29-C36 Fraction	TRH >C10-C36 Fraction	TRH C6-C10 Fraction	TRH C6-C10 less BTEX	TRH >C10-C16 Fraction	TRH >C10-C16 Fraction less N	TRH >C16-C34 Fraction	TRH >C10-C40 Fraction	TRH >C34-C40 Fraction	TRH >C10-C16 Fraction SG less Naphthalene	TRH >C10-C14 Silica Gel Cleanup	TRH >C10-C16 Silica Gel Cleanup	TRH >C10-C36 Silica Gel Cleanup	TRH >C10-C40 Silica Gel Cleanup	TRH >C15-C28 Silica Gel Cleanup	TRH >C16-C34 Silica Gel Cleanup	TRH >C29-C36	TRH >C34-C40 Silica Gel Cleanup
						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						0.05	0.05	0.05	0.1	0.2	0.05	0.2	0.1	10	20	20	50		50	50	10	10	50	50	100	50	100	50	20	50	50	50	50	100	50	100
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																					700		1000		3500		10000			1000				3500		10,000
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**																															
Lot 61		SSA-8	SSA-8	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-9	SSA-9	0-0.05	28/03/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	51	-	<50	51	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-44	D06_20220503	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-41	SSA-41	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	91	400	-	270	761	22	22	150	150	550	700	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-42	SSA-42	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 58		SSA-43	SSA-43	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-44	SSA-44	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	65	-	<50	65	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-45	SSA-45	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	190	-	140	330	<20	<20	<50	<50	290	290	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-46	SSA-46	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	89	-	56	145	<20	<20	<50	<50	130	130	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-47	SSA-47	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	86	-	51	137	<20	<20	<50	<50	110	110	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-48	SSA-48	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	180	-	100	280	<20	<20	<50	<50	240	240	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-49	SSA-49	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-50	SSA-50	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Lot 61		SSA-44	T04_20220503	0-0.05	3/05/2022	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	-	<20	<50	-	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	-	-	-	-	-	-	-	-
Statistical Summary																																				
Number of Results						244	244	244	244	244	233	99	244	159	139	230	198	88	198	230	200	200	198	195	198	169	198	11	63	63	63	11	95	63	95	63
Number of Detects						3	8	9	10	11	25	22	18	13	58	40	73	72	63	92	21	21	35	32	71	59	30	4	8	11	20	5	27	20	27	6
Minimum Concentration						<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5	<10	<10	<20	<50	190	<50	<50	<10	<10	<50	<50	<100	<50	<100	<50	<20	<50	<50	<50	<50	<100	<50	<100
Minimum Detect						0.4	0.2	0.2	0.2	0.4	0.6	0.8	2	13	38	23	51	190	51	51	17	17	68	68	100	100	110	90	60	57	140	220	110	130	110	110
Maximum Concentration						2.7	22.4	21.5	5.4	52.8	54	78.2	9.2	3270	470	2400	30000	42000	12000	43200	3420	3380	7300	7300	35000	22700	4800	260	640	1500	22690	840	13000	19000	9200	4200
Maximum Detect						2.7	22.4	21.5	5.4	52.8	54	78.2	9.2	3270	470	2400	30000	42000	12000	43200	3420	3380	7300	7300	35000	22700	4800	260	640	1500	22690	840	13000	19000	9200	4200
Average Concentration						0.13	0.27	0.26	0.2	0.64	0.8	2.1	0.47	50	17	80	658	2708	281	884	54	53	173	169	709	723	152	66	50	79	667	219	391	566	227	129
Median Concentration						0.05	0.05	0.05	0.05	0.1	0.15	0.75	0.25	5	10	25	50	145	50	25	10	10	25	25	50	50	50	25	25	25	50	25	50	50	50	50
Standard Deviation						0.19	1.5	1.4	0.46	3.6	3.9	9.1	0.79	297	51	261	2828	8098	1148	3752	299	295	676	693	3100	2694	512	78	102	227	2989	292	1477	2498	956	528
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	7	0	8	0	0	0	0	2	0	0	0	2	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	7	0	8	0	0	0	0	2	0	0	0	2	0	0

Env Stds Comments

#1:Assumes Total chromium is 17% Hexavalent chromium

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 61	3	MW11/18	MW11/18_0.3	0.3-0.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	3	MW11/18	MW11/18_3.2	3.2-3.2	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	MW11/20	MW11/20_0.2	0.2-0.2	23/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	MW11/20	MW11/20_5.0	5-5	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	3	SB18/24	MW(SB)18/24_0.3_180209	0.3-0.3	9/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	3	SB18/24	MW(SB)18/24_1.2_180209	1.2-1.2	9/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	3	SB18/24	MW(SB)18/24_3.0_180209	3-3	9/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	-0.45	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.45_20180208	0.45-0.45	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_0.7_20180208	0.7-0.7	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP18/20	TP18/20_2.3_20180208	2.3-2.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_0.6	0.5-0.7	24/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/27	TP19/27_1.5	1.4-1.6	24/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_1.0	0.9-1.1	23/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	3	TP19/32	TP19/32_0.1	0-0.2	23/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_0.5	0.5-0.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_1.4	1.4-1.4	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_2.4	2.4-2.4	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	MW12/21	MW12/21_3.5	3.5-3.5	7/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_0.3_20180208	0.3-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	SB18/23	MW(SB)18/23_3.0_20180208	3-3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_0.3	-0.3	7/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_0.3	0.3-0.3	7/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.2	1.2-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	4	TP18/26	TP18/26_1.7	1.7-1.7	7/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_1.0	0.9-1.1	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	D01_190719	0-0.2	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	T01_190719	0-0.2	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/28	TP19/28_0.1	0-0.2	19/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/29	TP19/29_1.8	1.7-1.9	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/29	TP19/29_2.2	2.1-2.3	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	D01_220719	0.3-0.5	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	T01_220719	0.3-0.5	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_0.4	0.3-0.5	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	4	TP19/30	TP19/30_1.2	1.1-1.3	22/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/16	MW11/16_0.45	0.45-0.45	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/16	MW11/16_3.3	3.3-3.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	D_220911_01	1-1	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	MW11/17_1.0	1-1	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	T-220911-01	1-1	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	MW11/17	MW11/17_2.5	2.5-2.5	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/39	TP19/39_0.2	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/39	TP19/39_0.4	0.3-0.5	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.1	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.2	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/40	TP19/40_0.2	1.9-2.1	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	D01_290719	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TO1_290719	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.2	0.1-0.3	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	5	TP19/41	TP19/41_0.4	0.3-0.5	29/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-0.8	0.8-0.9	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	DUP_01	0.8-0.9	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/01	BH11|01-1.5	1.5-1.6	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/02	BH11|02-1.4	1.4-1.5	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/03	BH11|03-1.5	1.5-1.6	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 56	11	BH11/04	BH11|04-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.7	1.7-1.8	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/04	BH11|04-1.0	1-1.1	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.5	1.5-1.6	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/05	BH11|05-1.0	1-1.1	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-0.1	0.1-0.2	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH11/06	BH11|06-1.0	1-1.1	15/12/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	D_140312_02	-0.65	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	T-140312-01	-0.65	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_0.65	0.65-0.65	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	BH12/29	BH12/29_1.3	1.3-1.3	14/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/02	MW11/02_0.5	0.5-0.5	19/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/02	MW11/02_2.3	2.3-2.3	19/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/04	MW11/04_1.0	1-1	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	MW11/04	MW11/04_2.0	2-2	21/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_0.3_20180208	0.3-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	-3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP18/33	TP18/33_3.0_20180208	3-3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	11	TP19/79	TP19/79_0.3	0.2-0.35	26/07/2019	<0.1	<10	<10	44	440	310	500	-	<0.1	<1	27	370	330	590
Lot 56	11	TP19/79	TP19/79_1.2	1.1-1.3	26/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	11	TP19/80	TP19/80_0.5	0.5-0.6	26/07/2019	<0.1	<10	<10	<10	<10	<10	<10	-	<0.1	<1	<10	<10	<10	<10
Lot 62	13	TP19/50	TP19/50_0.1	0-0.2	26/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	13	TP19/54	TP19/54_0.1	0-0.2	1/08/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	14	TP19/02	TP19/02_0.2	0.1-0.3	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_0.4	0.3-0.5	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	14	TP19/36	TP19/36_1.6	1.4-1.6	30/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	D_160312_02	-0.05	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	T-160312-01	-0.05	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_0.05	0.05-0.05	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	BH12/28	BH12/28_1.4	1.4-1.4	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	D_160312_01	-1	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.4	1.4-1.4	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/38	BH12/38_1.0	1-1	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_0.25	0.25-0.25	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	BH12/39	BH12/39_1.1	1.1-1.1	16/03/2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	15	MW11/05	MW11/05_0.3	0.3-0.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	15	MW11/05	MW11/05_2.3	2.3-2.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 59	15	MW11/06	MW11/06_0.5	0.5-0.5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	15	MW11/07	MW11/07_0.5	0.5-0.5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	15	MW11/07	MW11/07_1.0	1-1	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	15	MW11/07	MW11/07_5.0	5-5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/08	MW11/08_0.5	0.5-0.5	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/08	D_200901_01	3.2-3.2	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/08	MW11/08_3.2	3.2-3.2	20/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/10	MW11/10_0.450	0.45-0.45	21/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/10	MW11/10_3.4	3.4-3.4	21/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/11	MW11/11_0.4	0.4-0.4	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/11	MW11/11_2.2	2.2-2.2	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/12	MW11/12_0.3	0.3-0.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	MW11/12	MW11/12_3.0	3-3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/13	MW11/13_0.3	0.3-0.3	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/13	MW11/13_3.6	3.6-3.6	26/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/15	MW11/15_1.3	1.3-1.3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	15	MW11/15	MW11/15_3.0	3-3	22/09/2011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_0.3_20180208	0.3-0.3	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_1.2_20180208	1.2-1.2	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/17	TP18/17_2.7_20180208	2.7-2.7	8/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	QC18_101		6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_0.3	0.3-0.3	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP21_0.6	-0.6	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_1.2	1.2-1.2	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	15	TP18/21	TP18/21_2.37	2.37-2.37	6/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_0.3	0.3-0.3	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_1.2	-1.2	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 58	15	TP18/30	TP18/30_1.2	1.2-1.2	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	-2.4	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP18/30	TP18/30_2.4	2.4-2.4	5/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP19/10	TP19/10_0.3	0.2-0.4	1/08/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	15	TP19/13	TP19/13_0.1	0.1-0.3	24/07/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	54	TP21/30	TP21/30-1.0	1	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	54	TP21/30	TP21/30-2.1	2.1	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/55	TP21/55_0.6	0.6	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/55	TP21/55_1.2	1.2	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/58	TP21/58_0.5	0.5	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/58	TP21/58_1.2	1.2	30/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TP21/60_1.0	1	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	DUP10-210329	2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TP21/60_2.0	2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 56	56	TP21/60	TRIP10_210329	2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/32	TP21/32_1.0	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/33	TP21/33_0.5	0.5	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/33	TP21/33_1.4	1.4	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/34	TP21/34_0.4	0.4	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/34	TP21/34_0.6	0.6	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TP21/32_0.3	0.3	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TP21/35_0.6	0.6	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	DUP03_210310	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TP21/35_1.0	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/35	TRIP03_210310	1	10/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/63	TP21/63_0.2	0.2	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	58	TP21/63	TP21/63_1.5	1.5	29/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/29	TP21/29-0.7	0.7	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/29	TP21/29-1.7	1.7	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	DUP02_210309	0.9	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	TP21/31-0.9	0.9	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	TRIP02_210309	0.9	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/31	TP21/31-2.0	2	9/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/85	TP21/85_0.4	0.4	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/85	TP21/85_2.0	2	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/86	TP21/86_0.5	0.5	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/86	TP21/86_1.5	1.5	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/87	TP21/87_1.0	1	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	61	TP21/87	TP21/87_1.5	1.5	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/25	TP21/25_0.1	0.1	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/25	TP21/25_1.0	1	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	DUP04_210311	0.6	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	TP21/26_0.6	0.6	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	TRIP04_210311	0.6	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/26	TP21/26_1.1	1.1	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/27	TP21/27_0.3	0.3	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/27	TP21/27_0.8	0.8	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/28	TP21/28_0.2	0.2	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/28	TP21/28_2.0	2	11/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/82	TP21/82_0.5	0.5	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/82	TP21/82_1.2	1.2	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/84	TP21/84_0.8	0.8	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 62	62	TP21/84	TP21/84_2.0	2	18/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	Road	TP21/94	TP21/94_0.2	0.2	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road alignment	Road	TP21/94	TP21/94_0.6	0.6	17/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61	14	TP20/26a	TP20/26A_0.7	0.6-0.7	7/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/27	TP20/27_0.45	0.35-0.45	7/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58	14	TP20/28	TP20/28_1.55	1.45-1.55	16/10/2020	<0.1	<10	91	1800	2100	350	300	-	<0.1	<1	300	610	240	410
Lot 58	14	TP20/31	TP20/31_0.55	0.45-0.55	16/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328_TRIP1	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328_TRIP2	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	20220328-DUP1	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	20220328-DUP2	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-1	SSA-1	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-10	SSA-10	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-11	SSA-11	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-12	SSA-12	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-13	SSA-13	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-14	SSA-14	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-15	SSA-15	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-16	SSA-16	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-17	SSA-17	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-18	SSA-18	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-19	SSA-19	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-2	SSA-2	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-20	SSA-20	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-21	SSA-21	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-22	SSA-22	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-23	SSA-23	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-24	SSA-24	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-25	SSA-25	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-26	SSA-26	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-27	SSA-27	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-28	SSA-28	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-29	SSA-29	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-3	SSA-3	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-30	SSA-30	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-31	SSA-31	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-32	SSA-32	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-33	SSA-33	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-34	SSA-34	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-35	SSA-35	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-36	SSA-36	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-37	SSA-37	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-38	SSA-38	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-39	SSA-39	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-4	SSA-4	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-40	SSA-40	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-5	SSA-5	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-6	SSA-6	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-7	SSA-7	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						TRH Aliphatic/Aromatic Split														
						TRH >C5-C7 (Benzene) Aromatic	TRH >C6-C8 Aliphatic	TRH >C8-C10 Aliphatic	TRH >C10-C12 Aliphatic	TRH >C12-C16 Aliphatic	TRH >C16-C21 Aliphatic	TRH >C21-C35 Aliphatic	TRH >C5-C7 Aromatic	TRH >C7-C8 Aromatic	TRH >C8-C10 Aromatic	TRH >C10-C12 Aromatic	TRH >C12-C16 Aromatic	TRH >C16-C21 Aromatic	TRH >C21-C35 Aromatic
						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	10	10	10	10	10	10	0.1	0.1	1	10	10	10	10
NEPM (1999) Management Limits - Commercial/Industrial (coarse)																			
Alternative_Name	**Monitoring_Zone**	**Location_Code**	**Field_ID**	**Sample_Depth_Range**	**Sampled_Date_Time**														
Lot 61		SSA-8	SSA-8	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-9	SSA-9	0-0.05	28/03/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-44	D06_20220503	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-41	SSA-41	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-42	SSA-42	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 58		SSA-43	SSA-43	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-44	SSA-44	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-45	SSA-45	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-46	SSA-46	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-47	SSA-47	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-48	SSA-48	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-49	SSA-49	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-50	SSA-50	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lot 61		SSA-44	T04_20220503	0-0.05	3/05/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																			
Number of Results						4	4	4	4	4	4	4	1	4	4	4	4	4	4
Number of Detects						1	1	2	3	3	3	3	1	1	1	3	3	3	3
Minimum Concentration						<0.1	<10	<10	<10	<10	<10	<10	99999	<0.1	<1	<10	<10	<10	<10
Minimum Detect						ND	ND	91	44	440	310	300	ND	ND	ND	27	370	240	410
Maximum Concentration						<0.1	<10	91	1800	2100	350	500	0	<0.1	<1	300	610	330	590
Maximum Detect						ND	ND	91	1800	2100	350	500	ND	ND	ND	300	610	330	590
Average Concentration						0.05	5	34	616	848	222	268		0.05	0.5	111	328	192	335
Median Concentration						0.05	5	5	44	440	310	300		0.05	0.5	27	370	240	410
Standard Deviation						0	0	50	1025	1106	189	249		0	0	164	305	168	300
Number of Guideline Exceedances						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

Env Stds Comments

#1:Assumes Total chromium is 17% Hexavalent chromium

APPENDIX D ASBESTOS REGISTER

Asbestos Register

As outlined within *Section 4*, bonded asbestos containing materials have previously been detected within soil stockpile SP37 and SP100 (Lot 61). ERM notes that while asbestos concentrations in soil were reported below the commercial/industrial criteria, asbestos management controls outlined within *Section 6* are to be implemented.

Date identified	ID	Approximate Eastings	Approximate Northings	Approximate Depth (m BGL)	Description	Friable or non-friable	Observed condition	Accessibility
20 November 2020	SP37	318016.58	6254942.48	Stockpile	■ Fibre cement fragments containing asbestos – in soil	Non-friable	■ Good – bonded and intact materials	Inaccessible under normal site conditions – only accessed via excavation
26 October 2021	SP100	318145.07	6254907.43	Stockpile	■ Fibre cement fragments containing asbestos – in soil	Non-friable	■ Good – bonded and intact materials	Inaccessible under normal site conditions – only accessed via excavation

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Appendix F

NSW EPA and Council Correspondence

Daniela Balbachevsky

From: Andrew Kohlrusch
Sent: Friday, 10 June 2022 5:11 PM
To: Ulli Manuel
Cc: Daniela Balbachevsky
Subject: Stage 2 Audit Area 3 - Western Area Remediation Project (WARP)

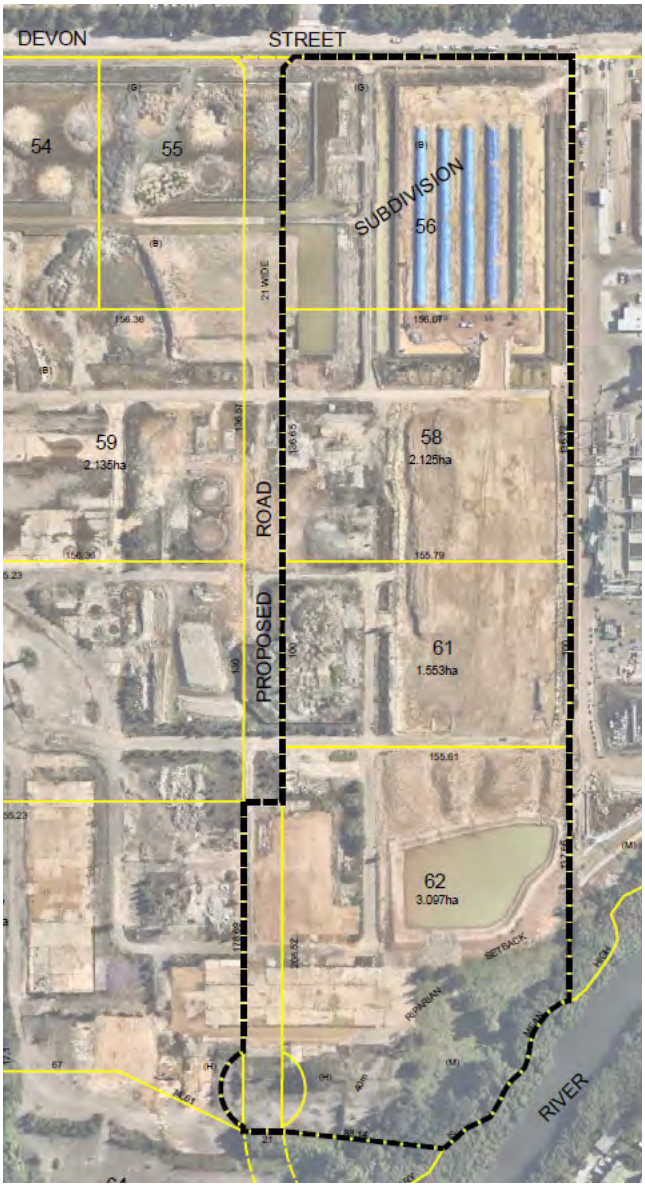
CompleteRepository: 2127799
Description: Viva Clyde Audit
JobNo: 27799
OperatingCentre: 21
RepoEmail: 2127799@ghd.com
RepoType: Job

Good afternoon Ulli,

The remediation of the second portion of Stage 2 of the WARP (Audit Area 3) has recently been completed.

Similar to Audit Areas 1 and 2, a long term management plan (LTEMP) has been prepared owing to the identified presence of stained soils and some soils with TRH concentrations that exceed management limits.
The presence of asbestos, while not identified in the previous assessments and validated excavations cannot be discounted and has been noted in the LTEMP

Audit Area 3 is shown as follows (within the black dashed line) – it comprises Lot 56, Lot 58, Lot 61, Lot 62 and a portion of a future public road that form part of Lot 100 in Deposited Plan.



There has been little if any impact to groundwater quality in this portion of the WARP and the assessment by ERM of groundwater data has demonstrated there to be stable or decreasing trend of CoPCs.

The LTEMP is passive and shows the locations of the affected soils that are to be managed (if the site is to be disturbed), the protocols for managing them and the associated responsibility.
Council has been contacted to notify the LTEMP on the Section 10.7 certificate.
No groundwater management (apart from a restriction on beneficial use) is proposed for the LTEMP.

We are in the final stages of completing the audit. If you have any questions about the LTEMP, please let me know.

Regards
andrew

Andrew Kohlrusch | A GHD PRINCIPAL
Senior Technical Director – Contamination and Remediation
NSW EPA and WA DWER accredited site auditor

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Daniela Balbachevsky

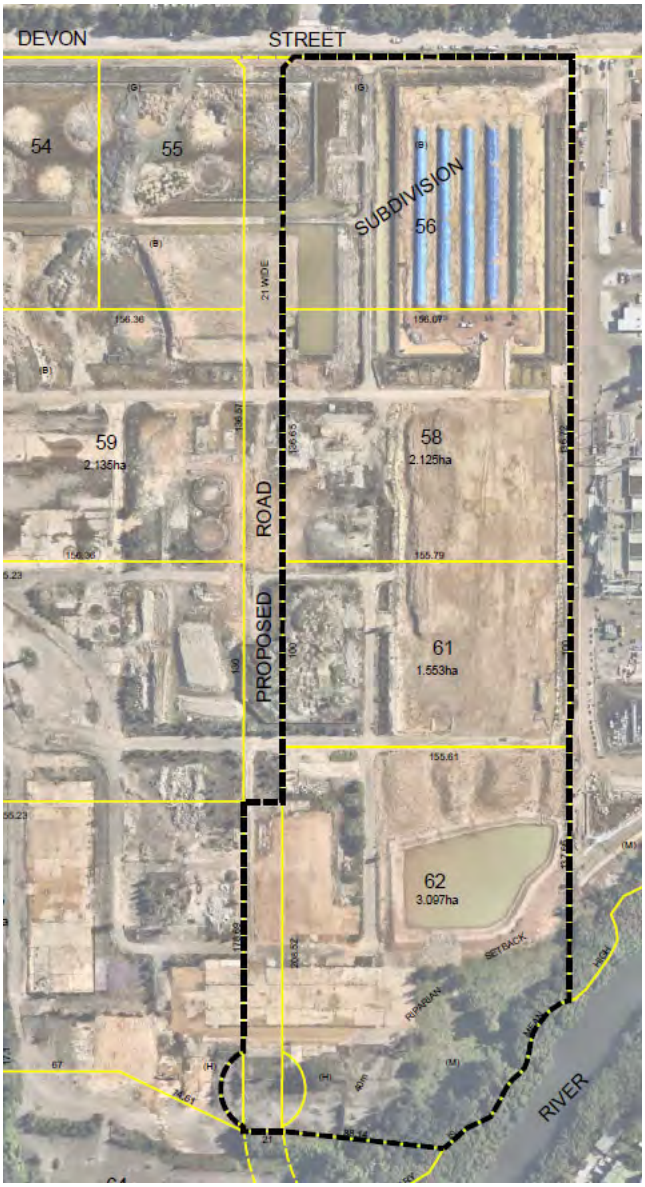
From: Andrew Kohlrusch
Sent: Friday, 10 June 2022 5:19 PM
To: Stuart Pike
Cc: Daniela Balbachevsky
Subject: RE: Site audit statement - Stage 2 of Clyde remediation project. Audit area 2

CompleteRepository: 2127799
Description: Viva Clyde Audit
JobNo: 27799
OperatingCentre: 21
RepoEmail: 2127799@ghd.com
RepoType: Job

Hi Stuart,

We are in the process of completing the site audit for Audit Area 3 within Stage 2 of the WARP.
Similar to Audit Areas 1 and 2, a long term management plan (LTEMP) has been prepared owing to the identified presence of stained soils and some soils with TRH concentrations that exceed management limits.
The presence of asbestos, while not identified in the previous assessments and validated excavations cannot be discounted and has been noted in the LTEMP

Audit Area 3 is shown as follows (within the black dashed line) – it comprises Lot 56, Lot 58, Lot 61, Lot 62 and a portion of a future public road that currently form part of Lot 100 in Deposited Plan.



Audit Area 3 will also be subject to a long term management plan (LTEMP).
Until sub division of Lot 100 is granted, there will need to be notification on the Section 10.7 certificate that there are four EMPs.
Once sub division is granted, I envisage that a consolidated EMP will be issued for the three road sections which are currently attached to the audit areas that have been remediated.

Audit Area 4 (proposed Lot 64) will be subject to remediation late this year, early next – and there will be a long term management plan.

If you have any questions, please let me know

Regards

Andrew Kohlrusch | A GHD PRINCIPAL
Senior Technical Director – Contamination and Remediation
NSW EPA and WA DWER accredited site auditor

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Appendix G

Geotechnical Report

Material Test Report

alliance
geotechnical & environmental solutions
Alliance Geotechnical Pty Ltd
10 Welder Road Seven Hills NSW 2147
PO Box 275, Seven Hills NSW 1730
Phone: 1800 288 188
Email: testing@allgeo.com.au

Report Number: **P201733-5**
Issue Number: 1
Date Issued: 12/11/2021
Client: Enviropacific Services Pty Ltd
16/390 Eastern Valley Way, Roseville NSW 2069
Contact: Liam Eyre - 0400 717 763
Project Number: P201733
Project Name: Clyde Refinery
Project Location: Cnr Unwin St/Colquhoun St, Rosehill
Work Request: 16285
Date Sampled: 02/11/2021
Dates Tested: 02/11/2021 - 09/11/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: AS Standard 98%

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shane Power
Project Manager
NATA Accredited Laboratory Number: 15100

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	21-16285A	21-16285B	21-16285C	21-16285D	21-16285E	21-16285F
Test Number	10	11	12	13	14	15
Date Tested	02/11/2021	02/11/2021	02/11/2021	02/11/2021	02/11/2021	02/11/2021
Time Tested	11:27	11:37	11:40	11:42	11:44	11:48
Test Request #/Location	Refer to plan	Refer to plan	Refer to plan	Refer to plan	Refer to plan	Refer to plan
Layer / Reduced Level	middle	top	middle	middle	top	top
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	Gravelly CLAY	Gravelly CLAY	Sandy GRAVEL (sandstone)	Sandy GRAVEL (sandstone)	Sandy GRAVEL (sandstone)	Sandy GRAVEL (sandstone)
Test Depth (mm)	200	200	200	200	200	200
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	6	7	6
Oversize (dry basis) %	**	**	**	6	7	6
Curing Hours	2.8	122.4	**	140.8	141.8	143.1
Method used to Determine Plasticity	Tactile	Tactile	**	**	**	**
Field Wet Density t/m^3	2.12	2.16	2.12	2.13	2.12	2.14
Field Moisture Content %	15.0	14.7	11.7	10.0	9.4	9.4
Field Dry Density t/m^3	1.85	1.88	1.90	1.94	1.94	1.95
Maximum Dry Density t/m^3	1.74	1.80	2.12	**	**	**
Adjusted Maximum Dry Density t/m^3	**	**	**	1.90	1.91	1.91
Optimum Moisture Content (OMC) %	18.5	18.5	12.5	**	**	**
Adjusted Optimum Moisture Content (OMC) %	**	**	**	12.0	11.5	11.0
Moisture Variation %	3.5	3.5	1.0	2.0	2.5	1.5
Moisture Ratio %	81.5	80.0	93.5	82.5	80.5	85.0
Density Ratio %	**106.0**	**104.5**	**89.5**	**102.0**	**101.5**	**102.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

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Material Test Report

alliance
geotechnical & environmental solutions
Alliance Geotechnical Pty Ltd
10 Welder Road Seven Hills NSW 2147
PO Box 275, Seven Hills NSW 1730
Phone: 1800 288 188
Email: testing@allgeo.com.au

Report Number: **P201733-5**
Issue Number: 1
Date Issued: 12/11/2021
Client: Enviropacific Services Pty Ltd
16/390 Eastern Valley Way, Roseville NSW 2069
Contact: Liam Eyre - 0400 717 763
Project Number: P201733
Project Name: Clyde Refinery
Project Location: Cnr Unwin St/Colquhoun St, Rosehill
Work Request: 16285
Date Sampled: 02/11/2021
Dates Tested: 02/11/2021 - 09/11/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: AS Standard 98%

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shane Power
Project Manager
NATA Accredited Laboratory Number: 15100

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	21-16285G	21-16285H	21-16285I	21-16285J	21-16285K	21-16285L
Test Number	16	17	18	19	20	21
Date Tested	02/11/2021	02/11/2021	02/11/2021	02/11/2021	02/11/2021	02/11/2021
Time Tested	11:54	11:59	12:04	12:08	12:10	12:13
Test Request #/Location	Refer to plan	Refer to plan	Refer to plan	Refer to plan	Refer to plan	Refer to plan
Layer / Reduced Level	middle	middle	middle	top	foundation	foundation
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	CLAY	CLAY	CLAY	CLAY	CLAY	CLAY
Test Depth (mm)	200	200	200	200	200	200
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**	**	**
Oversize (dry basis) %	**	**	**	**	**	**
Curing Hours	**	99.1	144.2	141.7	48.0	143.8
Method used to Determine Plasticity	**	**	Visual	Tactile	**	Tactile
Field Wet Density t/m^3	2.14	2.14	2.14	2.13	2.17	2.17
Field Moisture Content %	16.7	16.7	15.7	16.2	15.8	15.0
Field Dry Density t/m^3	1.83	1.84	1.85	1.84	1.88	1.88
Maximum Dry Density t/m^3	1.85	1.85	1.87	1.89	1.84	1.87
Adjusted Maximum Dry Density t/m^3	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	14.5	14.0	14.0	14.0	14.5	14.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	-2.0	-3.0	-1.5	-2.0	-1.0	-1.0
Moisture Ratio %	115.0	121.5	111.5	116.0	108.5	106.5
Density Ratio %	**99.0**	**99.5**	**99.0**	**97.5**	**102.0**	**100.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

Moisture Variation Note:

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Specification: AS Standard 98%

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shane Power
Project Manager
NATA Accredited Laboratory Number: 15100

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	21-16285M					
Test Number	22					
Date Tested	02/11/2021					
Time Tested	12:16					
Test Request #/Location	Refer to plan					
Layer / Reduced Level	foundation					
Thickness of Layer (mm)	200					
Soil Description	CLAY					
Test Depth (mm)	200					
Fraction Tested (mm)	19.0					
Oversize (wet basis) %	**					
Oversize (dry basis) %	**					
Curing Hours	0.6					
Method used to Determine Plasticity	Tactile					
Field Wet Density t/m^3	2.16					
Field Moisture Content %	13.9					
Field Dry Density t/m^3	1.89					
Maximum Dry Density t/m^3	1.88					
Adjusted Maximum Dry Density t/m^3	**					
Optimum Moisture Content (OMC) %	14.0					
Adjusted Optimum Moisture Content (OMC) %	**					
Moisture Variation %	0.5					
Moisture Ratio %	98.0					
Density Ratio %	**100.5**					
Compaction Method	**Standard**					

Moisture Variation Note:

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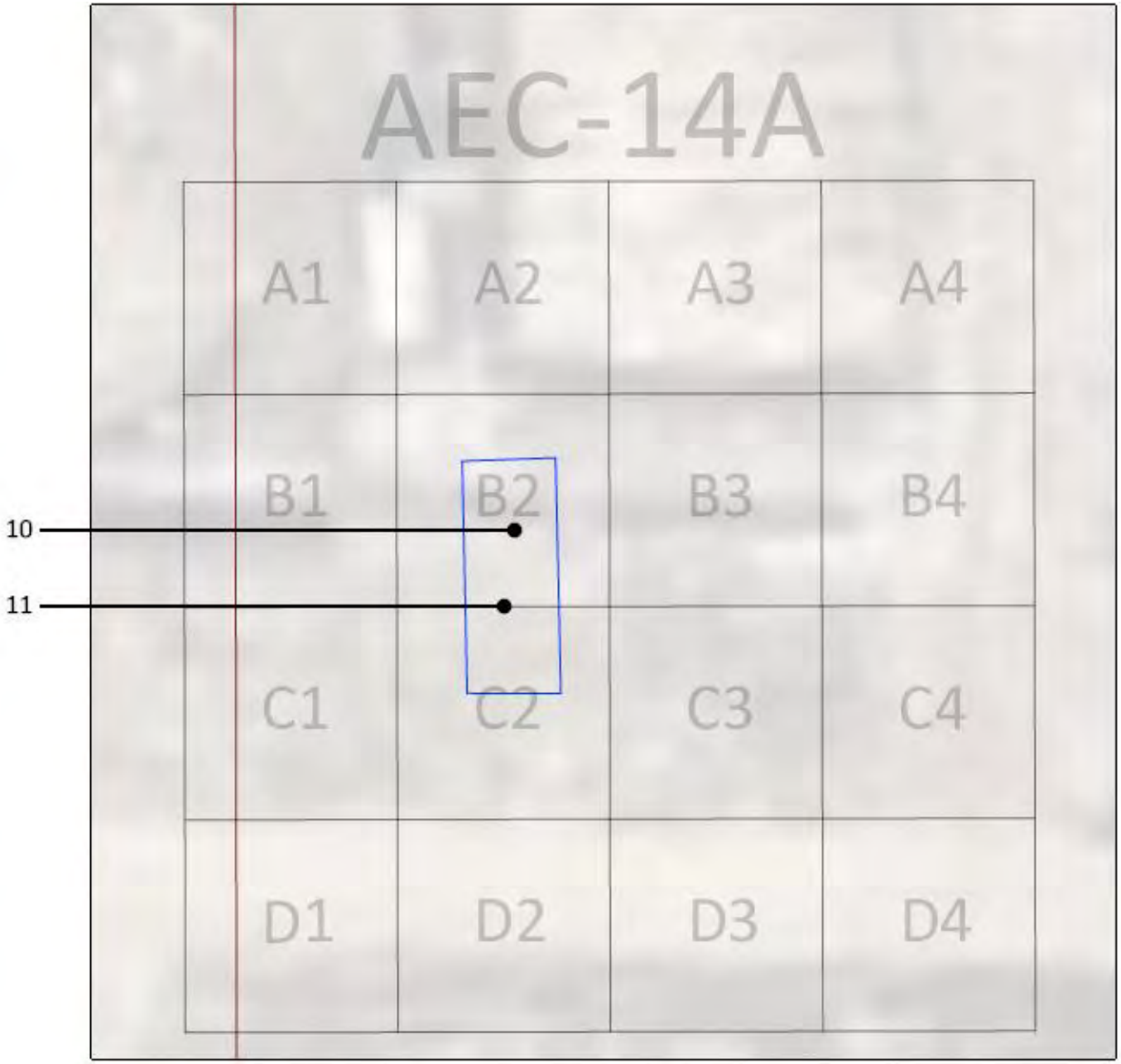

Figure/Drawing Title

alliance	Client Name:	Enviropacific Services Pty Ltd	Figure / Drawing Number:	P201733-5a
	Project Name:	Clyde Refinery WARP Stage 2	Figure / Drawing Date:	15/11/2021
	Project Location:	Cnr Unwin St/Coloquhoun St, Rosehill	Report Number:	P201733-5

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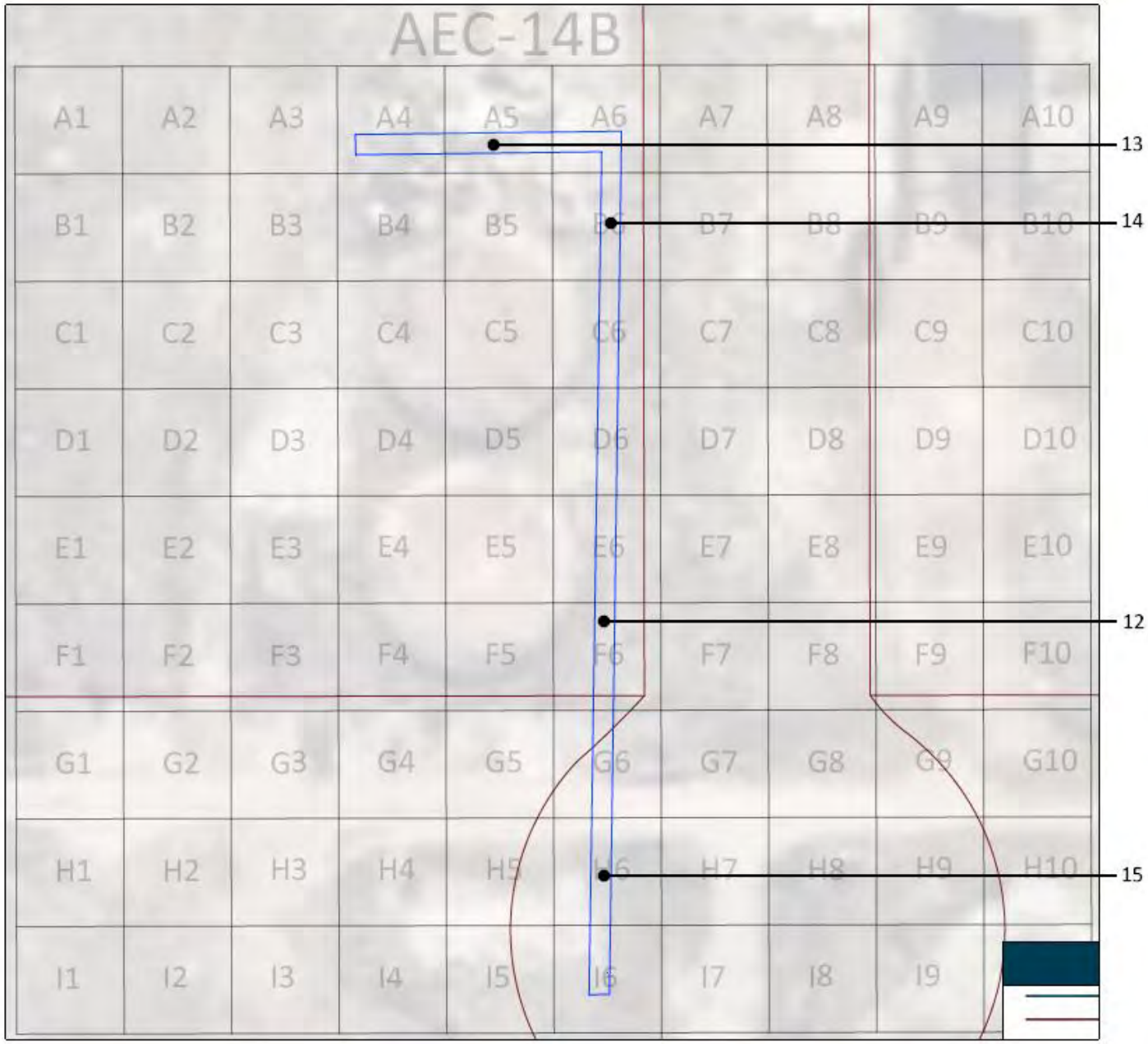

Figure/Drawing Title

alliance	Client Name:	Enviropacific Services Pty Ltd	Figure / Drawing Number:	P201733-5b
	Project Name:	Clyde Refinery WARP Stage 2	Figure / Drawing Date:	15/11/2021
	Project Location:	Cnr Unwin St/Coloquhoun St, Rosehill	Report Number:	P201733-5

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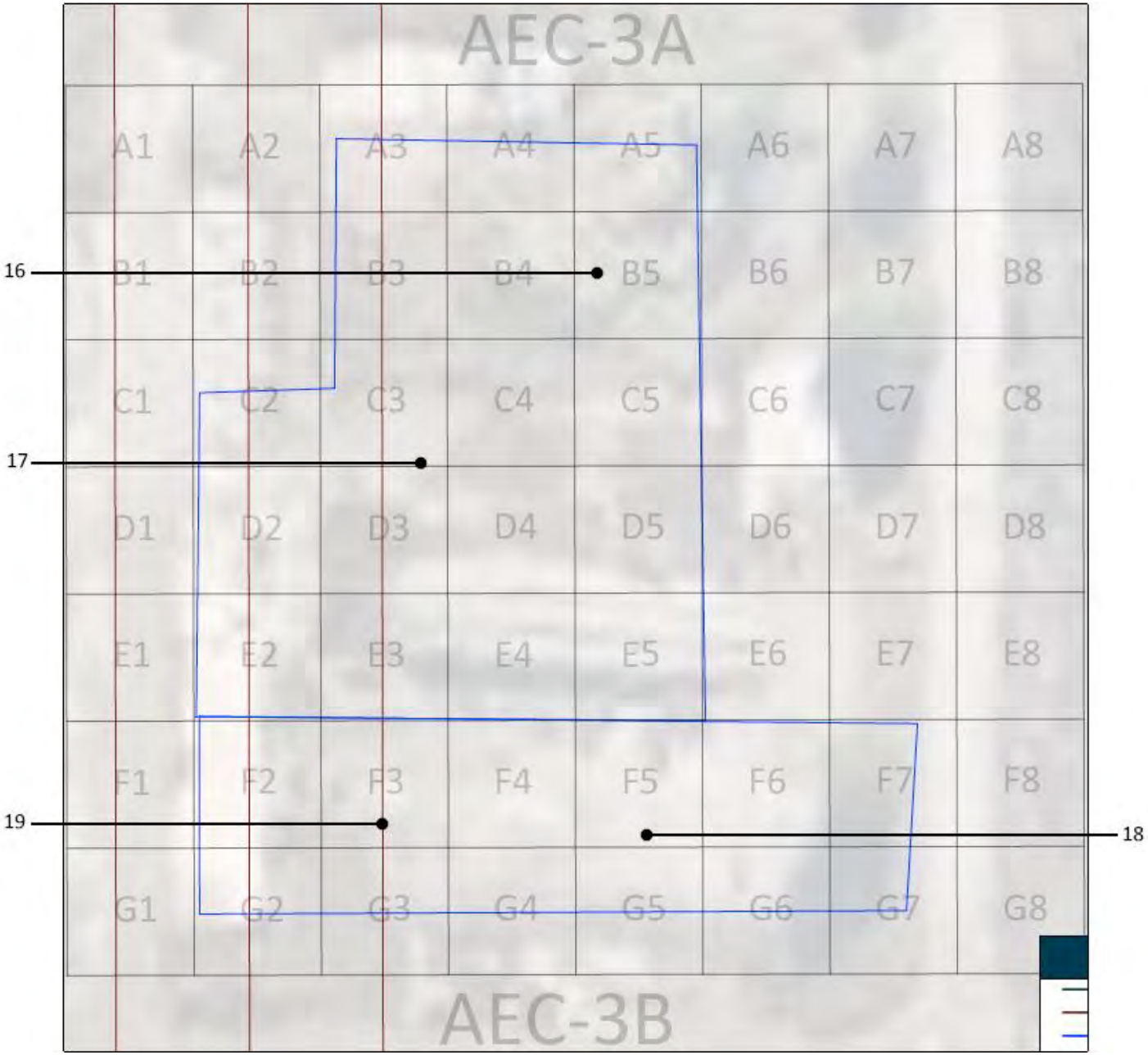

Figure/Drawing Title

alliance	Client Name:	Enviropacific Services Pty Ltd	Figure / Drawing Number:	P201733-5c
	Project Name:	Clyde Refinery WARP Stage 2	Figure / Drawing Date:	15/11/2021
	Project Location:	Cnr Unwin St/Coloquhoun St, Rosehill	Report Number:	P201733-5

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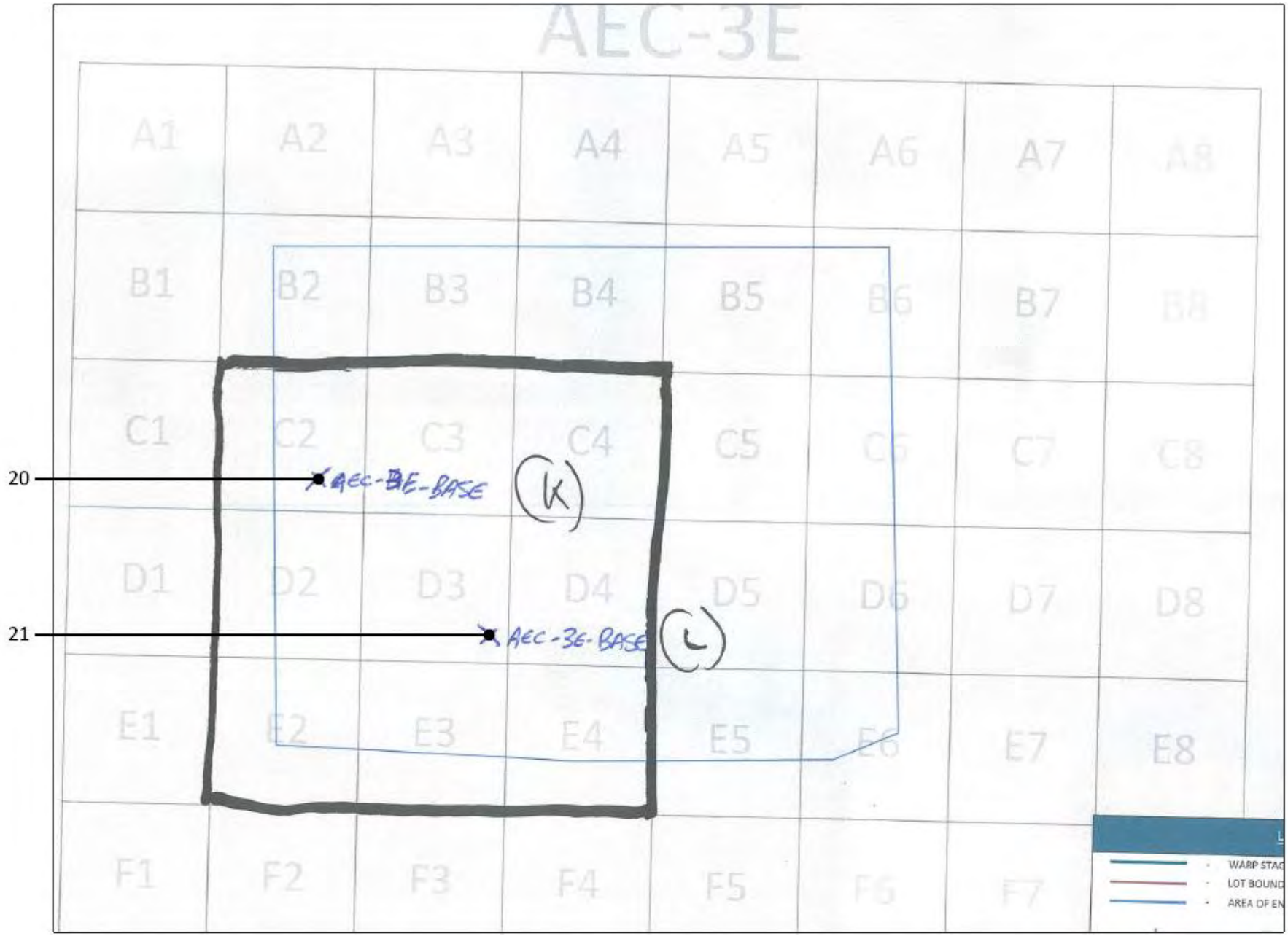

Figure/Drawing Title

alliance	Client Name:	Enviropacific Services Pty Ltd	Figure / Drawing Number:	P201733-5d
	Project Name:	Clyde Refinery WARP Stage 2	Figure / Drawing Date:	15/11/2021
	Project Location:	Cnr Unwin St/Coloquhoun St, Rosehill	Report Number:	P201733-5

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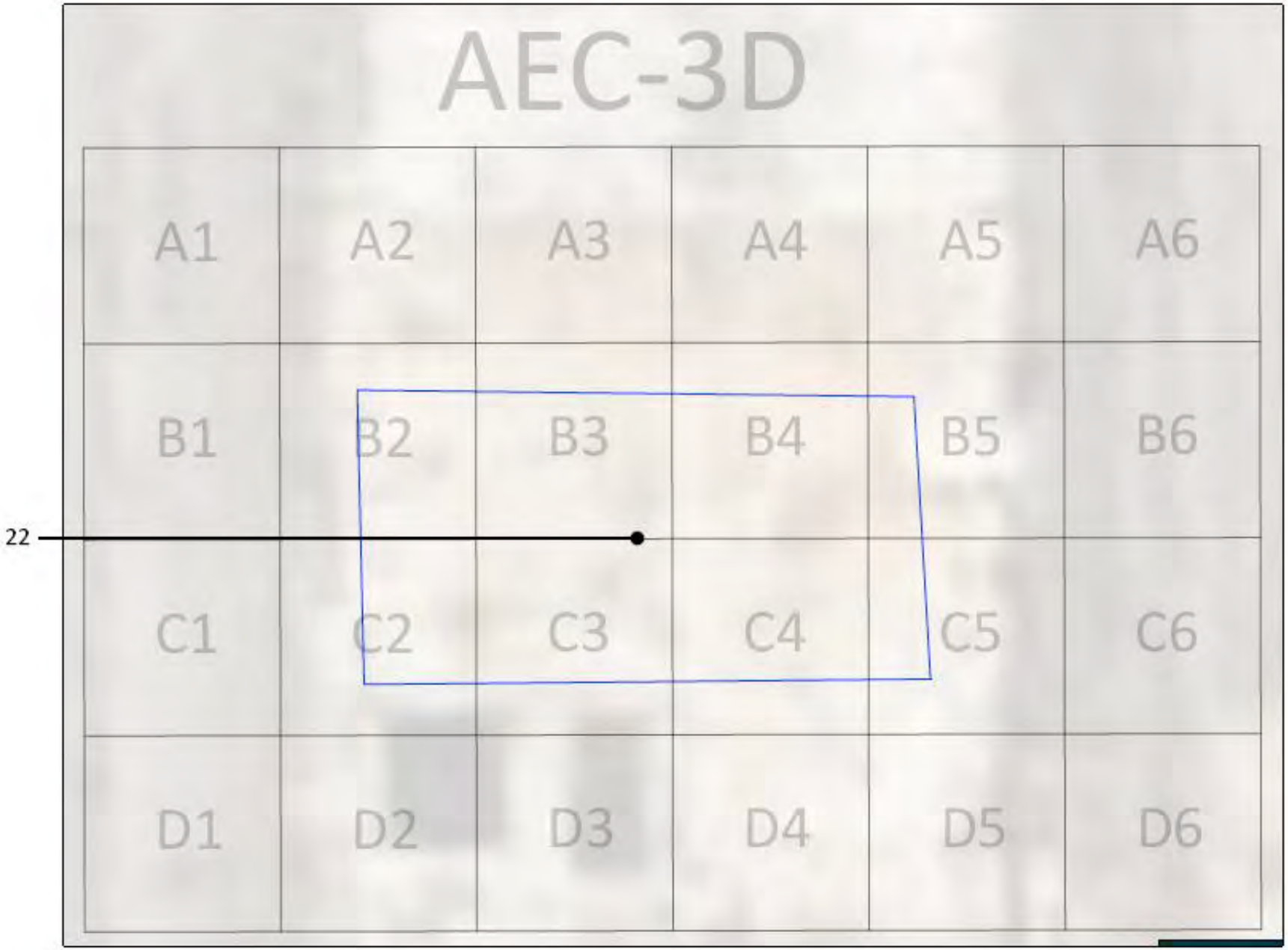

Figure/Drawing Title

alliance	Client Name:	Enviropacific Services Pty Ltd	Figure / Drawing Number:	P201733-5e
	Project Name:	Clyde Refinery WARP Stage 2	Figure / Drawing Date:	15/11/2021
	Project Location:	Cnr Unwin St/Coloquhoun St, Rosehill	Report Number:	P201733-5

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