



Appendix I

Environmental Site Investigation

KENTBRUCK GREEN POWER HUB

Environmental Site Investigation

Kentbruck Green Power Hub Project EES Technical Report

04-Jul-2024
Kentbruck Green Power Hub Project

Environmental Site Investigation

Kentbruck Green Power Hub Project EES Technical Report

Client: Neoen Australia Pty Ltd

ABN: 31 117 519 570

Prepared by

AECOM Australia Pty Ltd

Wurundjeri and Bunurong Country, Tower 2, Level 10, 727 Collins Street, Melbourne VIC 3008, Australia

T +61 1800 868 654 www.aecom.com

ABN 20 093 846 925

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Executive Summary

The purpose of this report is to present to Neoen Australia Pty Ltd (Neoen) the results of an assessment of potential land contamination and acid sulfate soil (ASS) impacts associated with the Kentbruck Green Power Hub ('the Project') to inform the preparation of an Environment Effects Statement (EES) required for the Project.

The Project is proposed to be comprised of wind turbines, associated infrastructure, transmission lines, quarry and groundwater supply. This report details the contaminated soils, groundwater and ASS field investigations undertaken for the Project. The site location and study area are presented in **Figure F1** and **Figure F2 (Appendix A)**, respectively.

Objectives

The purpose of this report is to support the EES by providing information relating to existing conditions within the study area, likely to be encountered during construction, operation and decommissioning of the Project.

The key objectives are:

- To assess soil types and geomorphology in the study area and identify potential locations of contamination and ASS;
- To assess the potential for groundwater contamination in the study area; and
- To assess potential effects of the Project on human health and the environment associated with exposure and disposal of contaminated materials or hazardous soils (e.g. ASS).

Scope and methodology

The assessment methodology includes:

- Undertaking a Preliminary Site Investigation (PSI) including the following:
 - A preliminary assessment of the potential for ASS in general accordance with the '*Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils*' (Department of Sustainability and Environment, October 2010).
 - The preliminary assessment included a desktop review of publicly available information, including the Australian Soil Resource Information System (ASRIS), geological maps, the Victorian Coastal Acid Sulfate Soils Strategy (DSE, 2009) and information provided by land owners; and
 - A site walkover to assess visible signs of ASS, including jarositic material, water-logged areas, rotten egg gas, swampy vegetation, and scalded land.
 - A preliminary assessment of the potential for contamination of land including:
 - A desktop review of current and recent land use, by review of historical aerial photographs (approximately one photo per 10-15 years, 1960s to present);
 - Phone or site interviews with land owners / land managers (where possible) to discuss historic and current usage, including chemical (herbicide and pesticide) storage and application, landfilling, etc; and
 - A site walkover to identify potential sources of contamination and potential contaminants, such as herbicide or pesticide use, sheep dips, and waste burial.
- Undertaking a Detailed Site Investigation (DSI) comprising a field investigation program with the following components:
 - Excavation of 13 test pits across the study area and collection of samples from the test pit locations. Test pits were extended to 5 m depth (or practicable refusal) in tower areas and 2 m depth in the underground transmission line area and extended to 1 m below the estimated extent of excavation where practicable to collect representative samples for ASS assessment;

- Analysis of one soil sample from every 0.5 m for field pH (pH_f) and field peroxide pH (pH_{fox}) and 23 samples for Chromium Reducible Sulfur (CRS) analysis, selected based on the outcome of the initial assessment of soil pH and oxidation potential;
 - Analysis of 19 soil samples for potential contaminants of potential concern (CoPC) including metals, fertilisers, herbicides and pesticides. Four samples were analysed in accordance with the EPA Publication 1828.2 waste categorisation screen to assess for a broader range of potential contaminants. Samples were selected for analysis based on site observations and historical data; and
 - Sampling and analysis of seven groundwater monitoring wells for potential CoPCs including total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN), metals, herbicides and pesticides.
- Data validation;
 - Review and summarise data (test pit logs, soil quality data and ASS data) relating to Cobboboonee National Park as provided by Neoen; and
 - Preparation of this report.

An assessment of the potential groundwater impacts (following dewatering and drawdown, upon groundwater dependent ecosystems etc) associated with the Project was carried out by AECOM (2021a). The details of that investigation are presented in the Groundwater Impact Assessment Report (AECOM, 2021a).

Summary of PSI Findings

Information obtained from the desktop review of aerial photographs, current and historical site uses, site walkover and interviews, suggests the study area has historically been used as agricultural land for grazing of sheep and cattle and silviculture.

The potential CoPC were identified as metals, fertilisers, herbicides and pesticides.

The coastal ASS (CASS) risk area, identified in the ASRIS maps, is primarily present towards the coast and throughout the eastern portion of the transmission alignment. The Victorian CASS mapping indicates that the entire study area intersects CASS risk area and is mapped as Prospective Land (areas with a high probability of occurrence of ASS).

Summary of DSI Findings and Conclusion

Contaminated soils

Soil analytical results for all samples were either below the laboratory limits of reporting (LOR) or below the adopted conservative environmental values guidelines, with the exception of total recoverable hydrocarbon (TRH) >C₁₆-C₃₄ fraction (at test pit TP09) and pH (across the study area). However, it was concluded that:

- Based on the absence of petroleum hydrocarbons post Silica Gel Clean-up, and the residual polar metabolite concentration well below the criteria adjusted to account for the lower toxicity of polar metabolites, TRH >C₁₆-C₃₄ was not considered likely to present a risk to the ecology of the area (TP09). Based on the agricultural land use, it is considered most likely to relate to natural organic compounds and not petroleum hydrocarbon impact.
- The low pH values in soils are considered to relate directly to ASS and as such are not considered to indicate contamination. However, management measures such as the requirement for construction workers to wear appropriate personal protective equipment (PPE) must be implemented and captured in the Project management plan(s) to manage human health risk via direct contact with acidic soils and / or groundwater / trench water.

Based on a combination of the findings of the PSI and DSI, it was concluded that, soil contamination is unlikely to be present / limited in extent and that contamination was not identified in samples collected from test pits.

Soil categorisation in accordance with the EPA Victoria Publication 1828.2 indicates that soil samples were generally classified as Fill Material. The exceptions are at test pits TP03, TP14 and TP15, where

concentrations of arsenic exceeded the upper limit for Fill Material, and at TP05 where the pH values exceeded the acceptable range for Fill Material, which would classify the locations as prescribed waste (PW) Category C material (for offsite disposal). Noting that elevated arsenic and low pH are considered to be naturally occurring and would not therefore affect classification, however further testing and an EPA Designation application may be needed to support this and management of ASS. The concentration of nickel in soils sampled from the Cobboboonee National Park also exceeded Fill Material upper limits, but were below Category C upper limits (noting that no broad screen or leachate testing has been completed). On the basis that nickel is considered to be naturally elevated an EPA designation request may facilitate disposal as Fill Material.

It is noted that sampling density does not comply with EPA Victoria Publication IWRG702: *Soil Sampling* as this site investigation was intended to provide an indication of the potential for soil contamination within the study area only, and not for the purpose of offsite soil reuse, treatment or disposal. The sampling density is based on the potential for contamination in the largely rural area. Localised impacts may be present at other locations and may be encountered during Project construction works. Any soils to be disposed of offsite would need to be classified in accordance with EPA guidelines.

Acid sulfate soils

Approximately 43% of the samples exceeded the adopted action criteria for ASS management. However, based on the data collected during this investigation, the presence and absence of ASS within the study area has been observed to align with mapped geology. The ASS outcomes based on geology are presented on **Figure F6a-b (Appendix A)** and are discussed further below:

- The 'Western Wind Farm' area where the geology is mapped as Pleistocene aged aeolian calcarenite deposits, encompassing the western extent of the study area (and the majority of turbine locations) (**Figure F3a**). Four test pits (TP01 to TP04) reported results below the limit of reporting indicating absence of ASS material in this area.
- The 'Central Wind Farm' area where the geology is mapped as Holocene aged coastal and inland dunes with dune sand and some swamp deposits. Five test pits (TP05 to TP09) in this area reported results indicating presence of ASS soils and the need for management if disturbed. Further investigations may be undertaken to refine and delineate these locations.
- The main geological unit mapped within the Heywood transmission line route under Boiler Swamp Road through the Cobboboonee National and State Park was 'Newer volcanic basalt' with minor scoria and ash. ASS field tests undertaken on selected samples at three locations within the Cobboboonee National and State Park did not indicate the likely presence of ASS. This is consistent with the understanding that Newer Volcanics soils, which are common throughout western Victoria, are not considered to represent an ASS risk. No further assessment of these soils is recommended for ASS.
- The remainder of the Heywood transmission line route was mapped within Quaternary aged swamp and lake deposits with silt, clay and peat. Of the four test pits (TP13 through to TP16) completed in this area, potential ASS (PASS) was reported only in TP13 at depths >2m. Actual ASS (AASS) was also reported in TP13 at the surface, hence soil in this area will require management (if disturbed) and/or further investigation. The eastern most section of the transmission line (TP14, TP15 and TP16) reported absence of ASS at these locations.

The ASS investigation across the study area identified net acidity in 10 of 23 soil samples exceeding the action criteria' of 0.03 %S for soil disturbance exceeding 1,000 tonnes (CASS BPMG, 2010). The Project must therefore, be managed in accordance with EPA Victoria Publication IWRG655.1: *Acid Sulfate Soil and Rock*. Based on the field investigation results, it is concluded that:

- ASS soil was not identified within the 'Western Wind Farm' area (TP01 to TP04). Management of soils is not required in this area;
- AASS was identified within soils in the 'Central Wind Farm' area (TP05 to TP09). Soils within this area will require management if disturbed. Further investigations may be undertaken to refine and delineate these locations; and

- PASS was reported only in TP13 at depths >2m. AASS was also reported in TP13 at the surface, hence soil in this area will require management (if disturbed) and/or further investigation. The eastern most section of the transmission line (TP14, TP15 and TP16) reported absence of ASS at these locations and management of soils will not be required.

An Acid Sulfate Soils Management Plan (ASSMP) should be implemented for areas requiring ASS management. Further testing will be required to calculate liming rates for inclusion into the ASSMP.

Although only limited field testing was undertaken within the majority of the Heywood transmission line, within the Cobboonee National Park the basaltic soils of the Newer Volcanics formation are not considered to present an ASS risk and further assessment of these soils is not recommended.

Groundwater

Groundwater analytical results for all samples were either below the LOR or below the adopted conservative environmental values guidelines, with the exception of:

- Metals including zinc, nickel, chromium and arsenic. These are considered to be naturally sourced / background and not representative of contamination; and
- Trace concentrations of organochlorine pesticides; aldrin and g-BHC (Lindane) were detected in groundwater from MW04 (western windfarm area), although only Lindane exceeded an adopted screening level (water dependent ecosystems and species – freshwater). It is noted that the criteria applies only at the point of discharge to a surface water body.

Based on the results of groundwater sampling and analysis, it is considered that groundwater in former pine plantation areas may be contaminated by organochlorine pesticides associated with historical land use, although concentrations encountered do not indicate a likely risk to the environment.

Conservatively, all groundwater abstracted from properties associated with pine plantations should be sampled and characterised in accordance with EPA guidelines prior to disposal.

Overall, this investigation concluded that the risk to receptors including human health and the environment from the Project can be minimised with appropriate management measures in accordance with applicable regulations, guidelines and standards.

Abbreviations

Abbreviation	Definition
AASS	Actual acid sulfate soils
AAASS	Atlas of Australian Acid Sulfate Soils
ABC	Ambient background concentration
ACL	Added Contaminant Limits
ACM	Asbestos containing material
AECOM	AECOM Australia Pty Ltd
AGT	Australian Geotechnical Testing
AHD	Australian Height Datum
ANC	Acid Neutralising Capacity
ANZECC	Australian and New Zealand Environment and Conservation Council
ASC	Assessment of Site Contamination
ASRIS	Australian Soil Resource Information System
ASS	Acid sulfate soils
ASSMP	Acid Sulfate Soils Management Plan
AST	Above ground Storage Tank
BPMG CASS	Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils
BTEXN	Benzene, toluene, ethylbenzene, xylene and naphthalene
CASS	Coastal acid sulfate soils
CEC	Cation Exchange Capacity
COC	Chain of custody
CoPC	Contaminants of Potential Concern
CRS	Chromium reducible sulfur
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAP	Di-Ammonium Phosphate
DELWP	Department of Environment, Land, Water and Planning
Downer	Downer EDI Limited
DQI	Data Quality Indicators
EES	Environment Effects Statement

Abbreviation	Definition
EILs	Ecological Investigation Levels
ERS	Environment Reference Standard
ESLs	Ecological Screening Levels
G.R. Carr	G.R. Carr Pty. Ltd.
HILs	Health Investigation Levels
IWRG	Industrial Waste Resource Guidelines
km	Kilometres
LOR	Limit of reporting
MAP	Mono-Ammonium Phosphate
m	Metre
mAHD	Metres relative to Australian Height Datum
mbgl	Metres below ground level
MCPA	2-methyl-4-chlorophenoxyacetic acid
meq/100g	milliequivalents per 100 gram
mg/kg	Milligrams per kilogram
mg/L	Milligrams per litre
NA	Net Acidity
NAPL	Non-aqueous phase liquid
NATA	National Association of Testing Authorities
Neoen	Neoen Australia Pty Ltd
NEPM	National Environmental Protection Measure
NHMRC	National Health and Medical Research Council
PAH	Polycyclic aromatic hydrocarbons
PASS	Potential acid sulfate soils
pH _r	Field pH
pH _{fox}	Field peroxide pH
PID	Photo-Ionisation Detector
PIW	Prescribed Industrial Wastes
ppm	Parts per million
QA	Quality assurance
QC	Quality control

Abbreviation	Definition
RIS	Reducible inorganic sulfide
RPD	Relative Percent Difference
SEPP	State Environment Protection Policy
SPOCAS	Suspension Peroxide Oxidation – Combined Acidity and Sulfate
SPOS	Potential acidity
TAA	Titrateable Actual Acidity
TDS	Total dissolved solids
TPH	Total petroleum hydrocarbons
TRH	Total recoverable hydrocarbons
VCASS	Victorian Coastal Acid Sulfate Soil Maps
2,4-D	2,4-Dichlorophenoxyacetic acid

1.0 Introduction

1.1 Purpose

The purpose of this report is to present to Neoen Australia Pty Ltd (Neoen) the results of an assessment of potential soil and groundwater contamination and acid sulfate soil (ASS) impacts associated with the Kentbruck Green Power Hub (**'the Project'**) to inform the preparation of an Environment Effects Statement (EES) required for the Project.

On 25 August 2019, the Minister issued a decision confirming that an EES is required for the Project due to the potential for significant environmental effects.

The Project was also referred to the Commonwealth Government, on 7 November 2019, and declared a 'controlled action', requiring assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Project is proposed to be comprised of wind turbines, associated infrastructure, transmission lines, quarry and groundwater supply. This report details the contaminated soils, groundwater and ASS field investigations undertaken for the Project. The site location and study area are presented in **Figure F1** and **Figure F2 (Appendix A)**, respectively.

1.2 EES Scoping Requirements

The scoping requirements for the Project were issued by the Victorian Minister for Planning in February 2020 (dated January 2020). These set out the specific matters to be investigated and documented in the EES, in accordance with the Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978.

This assessment considered the following relevant scoping requirements - 4.3 Catchment values and hydrology:

- Key issues:
 - Potential for disturbance of contaminated or acid sulphate soils.
- Existing environment:
 - Characterise soil types and structures in the study area and identify the potential location and disturbance of acid sulphate soils.
- Likely effects:
 - Identify and assess potential effects of the project on soil stability, erosion and the exposure and disposal of contaminants or hazardous soils (e.g. acid sulphate soils). [Soil stability and erosion not addressed as part of this report]
- Mitigation measures:
 - Identify proposed measures to mitigate any potential effects, including any relevant design features or preventative techniques to be employed during construction and operation.
- Performance objectives:
 - Describe contingency measures for responding to unexpected but foreseeable impacts such as disturbance of acid sulphate soils.

1.3 Objectives

The purpose of this report is to support the EES by providing information relating to existing conditions within the study area, likely to be encountered during construction, operation and decommissioning of the Project.

The key objectives are:

- To assess soil types and geomorphology in the study area and identify potential locations of contamination and ASS;
- To assess the potential for groundwater contamination in the study area; and
- To assess potential effects of the Project on human health and the environment associated with exposure and disposal of contaminated materials or hazardous soils (e.g. ASS).

1.4 Project Overview

The Project is located in southwest Victoria and is proposed to comprise a wind farm and associated electrical and operational ancillary facilities, underground electrical infrastructure within the site, and a transmission line connection to the existing electricity grid. The proposed Project area has a footprint of up to 8,370 hectares (ha), including 8,325 ha for the wind farm site and 45 ha for the transmission line corridor. The Project area extends from approximately three kilometres (km) east of Nelson to the north of Portland. Most of the Project area footprint is located within an active commercial forestry operation, with the remaining footprint on agricultural land.

The proposed wind farm will consist of up to 105 wind turbines. Each turbine is expected to have an indicative maximum hub height of 174 meters (m) and indicative rotor diameter of 190 m with maximum blade tip height of 270 m above ground level and minimum blade tip height of 60 m above ground level. Depending on final turbine selection, each turbine will produce from 4 megawatt (MW) to 8 MW peak power output, to yield a forecast total capacity of approximately 600 MW and annual production of approximately 2,300 gigawatt hour (GWh). The Project includes an onsite electrical substation with capacity of up to 1,000 MW hours of storage. The operational life of the Project is anticipated to be between 25 and 30 years.

Aside from turbines, the Project will include the upgrade and construction of onsite tracks and access to main roads, up to eight lattice tower wind monitoring masts (anemometers) and up to three power collection stations in addition to an operations building. Temporary infrastructure associated with construction of the Project would include a construction compound (with office facilities, parking and toilet facilities), laydown areas, concrete batching plants and an onsite quarry. It is noted that the quarry will be maintained throughout the operational life of the project for road maintenance.

The Project will require up to 26.6 km of new underground transmission lines and overhead) to connect to the existing Heywood-Portland 275/500 kilovolt (kV) powerline, via the Heywood Terminal Station as presented in **Figure F2 (Appendix A)**.

Project elements that are expected to cause ground disturbance include turbine foundations (4 m depth), onsite powerlines (1.2 m depth) and transmission lines (1.25 m depth).

The alignment outlined above is referred to as Option 1B. Alignment option 1A follows the exact same route but includes an overhead line between the Cobboboonee State Forest and the Heywood Terminal Station. For the purposes of this technical assessment, alignment options 1A and 1B have not been differentiated herein.

1.5 Study Area

The study area encompasses the wind farm site and the Heywood transmission line corridor as described below:

- Wind farm site boundary plus 100 metre buffer zone; and
- Underground transmission line towards Heywood plus 100 metre buffer zone.

The buffer zones around each component of the Project are considered adequate to capture existing conditions that may affect and be affected by the proposed Project activities and infrastructure.

The study area buffer zones are included in **Figure F2 (Appendix A)**.

1.6 Scope of Works

The scope of works included a desktop based Preliminary Site Investigation (PSI) and a field based Detailed Site Investigation (DSI), completed as part of the assessment for the presence of contaminated soils, ASS conditions and contaminated groundwater within the study area. This assessment is considered sufficient to inform robust assessment of potential impacts to human health and the environment, and therefore sufficient to address the EES scoping requirements. Where there are data gaps, requirement for further assessment have been included as part of the management measures for the Project.

The scope of works completed as part of the PSI and DSI are summarised below.

1.6.1 Preliminary Site Investigation (PSI) – ASS and Land Contamination

The scope of the PSI included:

- A preliminary assessment of the potential for ASS in general accordance with the '*Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils*' (Department of Sustainability and Environment, October 2010).
 - The preliminary assessment included a desktop review of publicly available information, including the Australian Soil Resource Information System (ASRIS), geological maps, the Victorian Coastal Acid Sulfate Soils Strategy (DSE, 2009) and information provided by land owners; and
 - A site walkover to assess visible signs of ASS, including jarositic material, water-logged areas, rotten egg gas, swampy vegetation, and scalded land.
- A preliminary assessment of the potential for soil contamination including:
 - A desktop review of current and recent land use, by review of historical aerial photographs (approximately one photo per 10-15 years, 1960s to present);
 - Phone or site interviews with land owners / land managers (where possible) to discuss historic and current usage, including chemical (herbicide and pesticide) storage and application, and landfilling; and
 - A site walkover to identify potential sources of contamination and potential contaminants. The site walkover extended across the alignment including the central and western windfarm and the transmission line. The site walkover did not include every turbine location within the pine plantation (most of which are not accessible by vehicle), but did cover the internal roads to allow an assessment of different landforms and conditions. The site observations included:
 - Observations of site features potentially relating to sources of contamination, including collection and review of study area photographs; and
 - Observations of potential sources of contamination, such as herbicide or pesticide use, sheep dips, and waste burial.

The results of the site observations and interviews were used to refine the soil sampling program (outlined below) and identify the requirement for groundwater sampling.

1.6.1.1 Alternative transmission alignments

A separate preliminary assessment of alternative transmission alignments 2A and 2B for potential ASS and land contamination is presented in **Appendix J**. The alternative transmission alignments considered were:

- A 35 km combined overhead (alignment 2A) and underground (alignment 2B) transmission line towards the Heywood-Portland transmission line.

1.6.2 Detailed Site Investigation (DSI)– ASS and Land Contamination

The scope of the ASS and land contamination DSI included:

- Excavation of 13 test pits across the study area and collection of samples from the test pit locations (**Figure F2**). Test pits were extended to 5 m depth (or practicable refusal) in tower areas

and 2 m (depth) in the underground transmission line area. The excavations were extended to 1 m below the estimated extent of excavation where practicable to collect representative samples for ASS assessment. Soil samples were collected from the surface and at 0.5 m intervals throughout each test pit;

- Analysis of one soil sample from every 0.5 m for field pH (pH_f) and field peroxide pH (pH_{fox}) and 23 samples for Chromium Reducible Sulfur (CRS) analysis, selected based on the outcome of the initial assessment of soil pH and oxidation potential;
- Selection of at least two samples from every test pit for laboratory analysis. One sample from each test pit was analysed for contaminants of potential concern (CoPC) including metals and organochlorine pesticides (OCPs) (potential contaminants based on the outcome of the PSI). Four samples were analysed for the EPA Publication 1828.2 waste categorisation screen to assess for a broader range of potential contaminants. Samples were selected for analysis based on site observations and historical data.

1.6.3 DSI - Groundwater

The scope of the groundwater contamination DSI included:

- Gauging and low flow sampling of seven existing groundwater monitoring wells (MW02, MW04, MW06, MW08, MW10-MW12);
- Analysis of groundwater samples for total recoverable hydrocarbons (TRH), total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN), OCPs, organophosphorus pesticides (OPPs), metals, total dissolved solids (TDS) and ions; and
- Submission of all groundwater and QA/QC samples to ALS and Eurofins, both NATA accredited laboratories, for analysis of CoPC.

Groundwater monitoring well locations are presented in **Figure F2 (Appendix A)**.

1.6.4 Review of Third Party Reports

1.6.4.1 AGT (2022)

Further to the above-mentioned soil investigations undertaken by AECOM (refer **Section 1.6.2**), Neoen engaged G.R. Carr Pty. Ltd. (G.R. Carr), to undertake additional ASS and land contamination assessment along the underground transmission line, in portions of the Cobboboonee National Park that were previously inaccessible. The assessment was undertaken by Australian Geotechnical Testing (AGT) on behalf of G.R. Carr, for Neoen and included the excavation of three test pits (TP10, TP11 and TP12) to depths of up to 2 m and collection of soil samples for analysis. The outcomes of the AGT (2022) report, attached as **Appendix H**, were reviewed and considered by AECOM in the ASS and land contamination assessment with regard to the existing conditions and potential impacts within the study area.

1.6.4.2 Downer (2022)

Neoen engaged Downer EDI Limited (Downer) to provide engineering services and inputs with regards to the preliminary design, construction methodology, construction footprint and operation and management requirements of the overhead and underground sections of the HV transmission line, which are detailed in *Kentbruck Energy Park Transmission Line, Basis of Design Report* (Downer, 2022). The Downer (2022) design report is attached as **Appendix I**. A review of the Downer (2022) report for environmental considerations was undertaken by AECOM with regard to Project, and recommended spoil management measures. No review of the design or engineering methodology and standards proposed in the report have been conducted by AECOM as part of this assessment.

2.0 Methodology

This section describes the methodology that was used to undertake the soil and groundwater investigations undertaken by AECOM for the Project.

The methodology adopted by AGT (2022) for soil investigations is presented in **Appendix H** and has not been detailed herein.

2.1 Soil Investigation Program

Details of the soil investigations are summarised in **Table 1**. The locations of the test pits are shown in **Figure F2 (Appendix A)** and borelogs are provided in **Appendix B**.

Table 1 Soil field methodology

Activity	Details
Date of field activities	Site walkover: 26-27 April 2021 Soil sampling: 10–14 May 2021
Site walkover	A site visit was undertaken by AECOM staff on 26-27 April 2021 to assist in identifying suitable locations for the soil test pits and to complete a review of land use and site conditions to inform the PSI. Photographs taken during the site walkover are presented in Appendix C .
Soil test pitting	<p>Advancement and logging of 13 test pits between 10 May 2021 and 14 May 2021.</p> <p>Test pits were advanced to a maximum depth of 5.0 metres below ground level (mbgl) or refusal in turbine locations (using a 30 tonne excavator) and a maximum depth of 2.0 mbgl along the transmission line (using a backhoe).</p> <p>Soil sampling consisted of grid and targeted sampling as outlined below:</p> <ul style="list-style-type: none"> Collection of samples on a grid basis from 13 test pits (TP01-TP09, TP13-TP16) across the turbine area and along the transmission line alignment at a density of approximately one test pit per 2-6 km of alignment. The sampling density was adopted to assess the potential for widespread/regional contamination of soil, based on the largely rural setting. Assessment of ASS was also completed at a density of one test pit per 10 km. This approach is considered sufficient to assess the potential for the presence or absence of soil contamination and ASS within the study area, focussing on varying geological soil types. Collection of samples from two test pits (TP05 and TP14), targeting areas that had been identified during desktop review to have a higher potential for contamination, e.g. near former sheep dips. <p>Photographs taken during the test pitting works are presented in Appendix C.</p>
Soil sampling	Samples were generally collected at the surface and 0.5 m intervals to the depth of test pit termination. Note that rock samples were collected for ASS analysis at three locations (TP01, TP03 and TP06).
Sample collection	<p>Soil samples were collected in glass jars for contamination analysis and plastic zip-lock bags for ASS analysis.</p> <p>Inspection of soils in the field for general signs of contamination such as staining and odour, and presence of asbestos containing material (ACM) was conducted and noted on field logs (presented in Appendix B).</p> <p>No potential ACM was observed and therefore no samples were collected / submitted for ACM analysis.</p>

Activity	Details
ASS sample collection	<p>At each location soil samples were collected at 0.5 m intervals from ground surface to maximum depth of the test pit, in accordance with the National Acid Sulfate Soils Guidance: <i>National acid sulfate soils sampling and identification methods manual</i> (Sullivan et al., 2018).</p> <p>Samples of approximately 100 to 200 grams were placed in laboratory supplied zip-lock plastic bags.</p> <p>During soil logging, any indicators of ASS such as the presence of yellow-brown mottling (jarosite), shells, or rotten egg odours were noted.</p> <p>Soil profiles were logged in accordance with the Unified Soil Classification System (USCS). Soil borelogs are provided in Appendix B.</p>
Soil screening	<p>Each soil sample was assessed for head space vapour concentrations using a Photo-Ionisation Detector (PID). PID measurements are provided on the borelogs in Appendix B.</p>
Sample preservation and handling	<p>Samples for analysis of potential contaminants were stored on ice in an esky whilst onsite and in transit to the laboratory for analysis to ensure holding time compliance. ASS bags were frozen within 24 hours of collection by field staff to ensure holding time compliance. ASS samples were delivered frozen to the laboratory at the end of the sampling week by AECOM environmental staff.</p> <p>All soil samples as well as Quality Control (QC) and Quality Assurance (QA) samples were submitted under standard AECOM chain of custody (COC) procedures to ALS (primary laboratory) and Eurofins (secondary laboratory). Both laboratories are National Association of Testing Authorities (NATA) accredited for the analysis selected as part of this investigation.</p> <p>The COC and laboratory sample receipt notification documentation is presented in Appendix F.</p>
Laboratory analysis	<p>Soil samples were analysed for a combination of:</p> <ul style="list-style-type: none"> • EPA Publication 1828.2 waste categorisation suite of analytes, as well as metals, phenoxyacetic acids (herbicides) and organochlorine and organophosphate pesticides to assess for contamination. • pH_f and pH_{fox} to guide the selection of the samples for more detailed laboratory analysis. • CRS suite for selected samples following the receipt of pH_f and pH_{fox} results. <p>The COC and laboratory sample receipt notification documentation is presented in Appendix F.</p>
QA/QC sampling	<p>The following QC samples were collected to assess the data quality:</p> <ul style="list-style-type: none"> • Duplicate and triplicate samples at a rate not less than 1 in 20, submitted to ALS (duplicates) and Eurofins (triplicates). • Equipment rinsate at a rate one per day of sampling submitted to ALS. • Trip blanks at a rate of one per esky of volatile compounds submitted to ALS. • Suspension Peroxide Oxidation Combined Acidity and Sulfate (SPOCAS) suite for QA/QC purposes (10% of the samples analysed for CRS suite), in accordance with Vic EPA IWRG655.1: <i>Acid Sulfate Soil and Rock</i>. <p>Validation of field and laboratory data quality and procedures is presented in Appendix G.</p>

Activity	Details
Disposal of Soil Cuttings	Soil cuttings were returned to the test pits and backfilled. The test pits were excavated and reinstated by Mibus Bros (Aust) Pty Ltd under the supervision of qualified AECOM environmental staff.
Decontamination procedures	Sample collection was taken from material which had not come into contact with the excavation equipment. Disposable nitrile gloves were changed between samples.
Equipment calibration	Sampling equipment calibration certificates from the supplier are provided in Appendix D .

2.2 Groundwater Investigation Program

Details of the groundwater investigation are summarised in **Table 2** below. The monitoring well locations are presented on **Figure F2 (Appendix A)**. The details of the monitoring wells are presented in the Groundwater Technical Report (AECOM, 2021b).

Table 2 Groundwater Investigation Methodology

Activity / Item	Details
Date of Field Activities	28-30 April 2021
Well Gauging	All accessible monitoring wells were gauged using an oil-water interface meter for depth to light non-aqueous phase liquid (LNAPL), groundwater, and total depth. Well gauging data is provided in Table T1 (Appendix E) .
Sampling Methodology	Groundwater samples were collected from all wells using low flow sampling technique. Ex-situ measurements of groundwater pH, dissolved oxygen (DO), reduction potential (redox), electrical conductivity (EC) and temperature were collected during sampling. Field parameters are provided in Table T2 (Appendix E) .
Sample Preservation and Analysis	All samples were collected into the appropriately preserved bottles, as provided by the laboratory. Samples were stored on ice in a cooler box whilst onsite and in transit to the laboratory for analysis. All groundwater samples were submitted to Australian Laboratory Services Pty Ltd (ALS) for: <ul style="list-style-type: none"> • Major ions, alkalinity and TDS; • TRH/TPH, BTEXN, phenols; • Polychlorinated Biphenyls; • Nutrients; • Organochloride pesticides, organophosphorus pesticides, pesticides, fungicides, herbicides, phenoxyacetic acid herbicides; and • Dissolved Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn).

Activity / Item	Details
Quality Control	<p>The following samples were submitted to ALS for analysis for quality control purposes:</p> <ul style="list-style-type: none"> • Intra-laboratory duplicate sample (1 in 20 primary samples); • Equipment rinsate (one per day); • Field blank (one per day); and • Trip blank (one per esky). <p>The field blank was placed on hold pending review of the rinsate sample.</p> <p>One inter-laboratory sample (field triplicate) was also submitted to Eurofins-MGT.</p> <p>Laboratory reports are presented in Appendix F.</p> <p>Groundwater analytical quality assurance and quality control (QA/QC) results are provided in Appendix G.</p>
Decontamination Procedure	<p>All sampling equipment including low flow kit and water level meter was decontaminated between sampling points. Equipment was washed with Decon 90 solution and rinsed with potable water and deionised water between wells. Tubing and bladders were dedicated for each well and decontamination was not required.</p>
Disposal of Purged Groundwater	<p>Purged groundwater collected during sampling was discharged to ground given the minor volumes purged during sampling.</p>

2.3 Quality Assurance and Quality Control Methodology

QA/QC were incorporated into the sampling and analysis work so that the data quality objectives could be achieved and to demonstrate accuracy, precision, comparability, representativeness and completeness with regard to the data generated. The data validation reports are presented in **Appendix G**.

2.3.1 Data Quality Indicators

The data quality indicators (DQIs) adopted are based upon data validation guidance documents published by Standards Australia (SA) and National Environment Protection Council (NEPC). These include *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil (AS 4482.1-2005)*, *Schedule B2 Site Characterisation (NEPC 1999, amended 2013)* and *Schedule B3 Laboratory Analysis of Potentially Contaminated Soils (NEPC 1999, amended 2013)*.

The process involves the checking of analytical procedure compliance and an assessment of the accuracy and precision of analytical data from a range of quality control measurements, generated from both the field sampling and analytical programs.

Specific elements that have been checked and assessed for this project include:

- Preservation and storage of samples upon collection and during transport to the laboratory;
- Sample holding times;
- Use of appropriate analytical and field sampling procedures;
- Required laboratory limits of reporting (LOR);
- Frequency of conducting quality control measurements;
- Rinsate, field and trip blank results;
- Laboratory blank results;

- Field duplicate and triplicate results;
- Laboratory duplicate results;
- Matrix spike (MS) results;
- Surrogates spike results;
- Review of chromatograms; and
- The occurrence of apparently unusual or anomalous results, e.g., laboratory results that appear to be inconsistent with field observations or measurements

2.4 Assumptions and Limitations

Assumptions and limitations relating to the field investigations for the Project are provided below:

- The desktop assessment was limited to readily available public information, site observations and information obtained from current land owners / managers where available to be contacted; and is based on conditions that existed at the time the assessment was completed. Its findings and conclusions may be affected by the passage of time, by man-made events (e.g. construction on or adjacent to the Project Area boundary and by new releases of hazardous substances into the environment).
- Historic land use information presented herein is limited to information obtained from a series of aerial photographs taken between 1967 and 2021 (generally one aerial photograph every 10-15 years), sourced from a service provider. Based on the primarily agricultural and forestry land use this approach is considered satisfactory. Short term land use or contamination events (e.g. waste burial) may not necessarily be captured by this assessment.
- As noted by CSIRO, the classification of ASS via the Atlas of Australian Acid Sulfate Soils (AAASS) map is provisional for areas where analytical data was not available when the map was prepared. As such, further assessment of ASS conditions may be required.
- Properties that appeared to be used for residential purposes were generally assumed to have a low potential for contamination of soil.
- Work exclusion zones, as specified by the current land owner, are referenced on **Figure F2 (Appendix A)**. Assessment of these areas was not undertaken as part of the PSI and DSI.
- Soil sampling density for the field investigation does not comply with EPA Victoria Publication IWRG702: *Soil Sampling* as this site investigation was intended to provide an indication of the potential for soil contamination within the study area only, and not for the purpose of offsite soil reuse, treatment or disposal. If soils are to be moved offsite for reuse, treatment or disposal, soil sampling must be undertaken in accordance with the IWRG702: *Soil Sampling* to be undertaken to ensure the appropriate hazard categorisation is applied.
- A assessment of groundwater contamination was undertaken and restricted to areas where groundwater is likely to be encountered during construction. Only existing groundwater monitoring wells (MW02, MW04, MW06, MW08, MW10-MW12) were sampled. This is considered satisfactory for the purposes of this assessment based on the land use and the outcome of soil investigations.
- Information contained in this report should only be used as a guide. The assessment was undertaken to inform contamination (soils and groundwater) and ASS impact assessment for the EES and to develop management measures for potential impacts. Further detailed investigation may be necessary for selected areas (e.g. sampling density does not comply with waste disposal guidelines).
- Interpretation of subsurface conditions and the nature and extent of contamination is based on field observations and laboratory analytical data from a limited number of widely spaced sample locations (both grid and targeted). It is possible that contamination of soil and/or groundwater may be present but has not been detected as part of this assessment.

- AECOM has tested only for those chemicals specifically referred to in this report. AECOM makes no statement or representation as to the existence (or otherwise) of any other chemicals.
- Properties that appeared to be used for residential purposes were generally assumed to have a low potential for contamination of soil and groundwater.
- Where this report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the report. AECOM assumes no liability for any inaccuracies in or omissions to that information. Additional soil data collected by AGT (2022) along the transmission line in portions of the Cobboboonee National Park has been reviewed by AECOM. The data collected by AGT (2022) has been incorporated in this assessment where it was considered suitable to do so, noting that some data quality information was not presented in the AGT report and was unable to be verified.
- Except as otherwise specifically stated in this report, AECOM makes no warranty or representation as to the presence or otherwise of asbestos and/or ACM within the study area. If fill has been imported on to the study area at any time, or if any buildings constructed prior to 1970 have been demolished within the study area or materials from such buildings disposed of within the study area, the study area may contain asbestos or ACM. At each sampling location visual inspection was made for the presence of ACM.
- No investigations have been undertaken on any adjoining sites, which may be impacted by potential contamination originating from the Project area; and no investigation have been undertaken on adjoining sites that may be impacting the Project area.
- The conclusions presented are based solely on the information and findings contained in this report.

3.0 Legislation, policy, guidelines and adopted screening criteria

3.1 Introduction

Numerous legislative, policy and guidance documents were found to be relevant to the contamination and ASS impact assessment and are discussed further in this report. The key legislation, policy and guidelines that apply to the contamination and ASS impact assessment for the Project are summarised in **Table 3**. Further detail is provided in **Sections 3.2 to 3.4** below.

Table 3 Key legislation and policy

Legislation / policy	Relevance to this impact assessment
Commonwealth Legislation	
<i>National Environment Protection Council Act 1994</i>	Site contamination assessment for the Project must be in accordance with the Amended ASC NEPM 2013, as adopted by the <i>Environment Reference Standard</i> (ERS, VIC EPA, 2021).
State Legislation	
<i>Environment Protection Act 2017</i> (EP Act)	The Project is subject to the requirements of the ERS. Any discharge to land, waterway or groundwater; and disposal of waste (including contaminated soil, groundwater and ASS) must be in accordance with the requirements of the EP Act and ERS.

3.2 Legislation

3.2.1 Commonwealth legislation

National Environment Protection Council Act 1994

The National Environment Protection Council Act 1994 and complementary State and Territory legislation allow the National Environment Protection Council (NEPC) to make National Environment Protection Measures (NEPMs).

The *National Environment Protection (Assessment of Site Contamination) Measure, 1999* (the ASC NEPM), as amended in 2013, provides a nationally consistent approach to the assessment of potentially contaminated sites, to ensure sound environmental management practices by the community which includes regulators, site assessors, environmental auditors, land owners, developers and industry.

In Victoria, the ASC NEPM is mainly implemented through the State policies such as the State Environment Protection Policies (SEPPs) and guidelines described below.

3.2.2 State legislation

***Environment Protection Act 2017* (EP Act)**

The *Environment Protection Act 2017* provides a legal framework to protect the environment in Victoria, including the protection of air, land and water from pollution. The EP Act also makes provisions with respect to the powers, duties, and functions of the EPA Victoria.

The EP Act:

- Provides the basis for the Environment Reference Standard (ERS). The ERS define the uses and environmental values to be protected in Victoria and the environmental quality objectives needed to protect these environmental values.
- Presents the requirements to manage land and risks to human health and the environment under the General Environmental Duty (GED – section 39 of the Act)

- Requires notification of contamination, that meets the definition of notifiable contamination, to EPA (s40 of the Act).
- Regulates waste discharge activities, industrial waste, noise and pollution through development licence, operating licence, permits, registrations and statutory duties.

3.3 Guidelines

3.3.1 Commonwealth guidelines

Commonwealth guidelines relevant to contaminated soil and groundwater and ASS impact assessment include:

- National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM), as amended in 2013;
- Australian Standard (AS) 4482.1 – 2005: Guide to the investigation and sampling of sites with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds;
- AS 4482.2 – 1999: Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances;
- National acid sulfate soil sampling and identification methods manual, 2018; and
- National acid sulfate soil identification and laboratory methods manual, 2018.

3.3.2 State guidelines

The assessment and management of contaminated land in Victoria is directed by EPA Victoria and guidelines issued by that authority. Guidelines relevant to contamination and ASS impact assessment include:

- Publication 1828.2 Waste disposal categories – characteristics and thresholds (March 2021)
- Publication 1977.1 Guide to the duty to manage contaminated land (October 2022)
- Publication 2010 Potentially contaminated land – a guide for business (July 2021)
- Publication 2008.2 Guide to the duty to notify of contaminated land (October 2022)
- Publication 1834 Civil construction, building and demolition guide (November 2020)
- Publication 2001 Guidance for the cleanup and management of contaminated groundwater (July 2021)
- Documents utilised and referred to as the ‘State of Knowledge’ in accordance with EPA Publication 1994 include:
 - IWRG655.1: *Acid Sulfate Soil and Rock* (July 2009);
 - IWRG701: *Sampling and Analysis of Waters, Wastewaters, Soils and Wastes* (June 2009);
- Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil (October 2010).

3.4 Contamination and Acid Sulfate Soils Criteria

Criteria adopted in assessing the existing conditions and potential impacts from the construction and operation of the Project are summarised below.

3.4.1 Land contamination – Environmental Values

The criteria adopted to assess risk to protected environmental values of land, for the study area, are summarised in **Table 4**. Criteria presented in **Table 4** were derived from the Amended ASC NEPM 2013, based on the environmental values to be protected for the study area, as defined in the ERS (Dec, 2020).

Table 4 Protected environmental values of land and the adopted investigation levels

Environmental Values	Adopted criteria
Maintenance of ecosystems	The Amended ASC NEPM 2013 Ecological Investigation Levels (EILs) for Urban residential/Public open space land use The Amended ASC NEPM 2013 Ecological Screening Levels (ESLs) for Urban residential/Public open space land use The Amended ASC NEPM 2013 Management Levels for Residential, parkland and public open space
Human Health	The Amended ASC NEPM 2013 Health Investigation Levels (HILs) for Recreational C (public open space such as parks) The Amended ASC NEPM 2013 Health Screening Levels (HSLs) for HSL C (Recreational/Open space land use)
Aesthetics	Field observation of soil odours and staining
Production of food, flora and fibre	As per the environmental value 'maintenance of ecosystems'

It is noted that the assessment of risks to buildings and structures is not applicable in a rural setting distant from infrastructure other than the proposed windfarm and electricity transmission equipment, which will be designed and managed in accordance with site conditions. On this basis this environmental value has not been considered further.

The ERS provides a statutory framework for protecting people and the environment from the effects of contamination. The ERS standards for land are based on the current environmental values, land use categories, indicators and Table 4.2 of the ERS (reproduced below as **Table 5**) outlines the environmental values to be protected by land use.

Table 5 Environmental Values that apply to the land use categories (ERS, 2021)

Environmental Values	Land Use						
	Parks & Reserves	Agricultural	Sensitive Use		Recreation/ Open Space	Commercial	Industrial
			High Density	Other (lower density)			
Maintenance of ecosystems							
<i>Natural Ecosystems</i>	✓						
<i>Modified Ecosystems</i>	✓	✓		✓	✓		
<i>Highly Modified Ecosystems</i>		✓	✓	✓	✓	✓	✓
Human Health	✓	✓	✓	✓	✓	✓	✓
Buildings and Structures	✓	✓	✓	✓	✓	✓	✓
Aesthetics	✓		✓	✓	✓	✓	
Production of food, flora and fibre	✓	✓		✓			

The existing land uses within the study area, include all those listed in **Table 5**, except high density residential, commercial and industrial. Therefore, all environmental values, for land uses listed in **Table 5** were considered in assessing the potential impacts from the Project activities. The key receptors of interest for the study area includes:

- People residing, working and utilising the land within the study area, reserves and recreational areas;
- Project construction workers undertaking ground intrusive works; and
- Ecosystems that exist along the study area, including Glenelg Estuary and Discovery Bay Ramsar site (listed as Wetlands of International Importance), located along the southern boundary and on the north western boundary of the study area.

Soil indicators and objectives for the environmental values of land are outlined in Table 4.3 of the ERS.

The adopted investigation levels (ILs) for comparison of the soil analytical results with those identified as potential environmental values relevant for the Project, are discussed below.

Maintenance of Ecosystems – Natural and modified ecosystems

For the assessment of Maintenance of Ecosystems, the following screening criteria have been adopted:

- The Amended *National Environment Protection (Assessment of Site Contamination) Measure* (ASC NEPM) 2013 EILs

It is noted that the EILs do not generally apply to agricultural land but have been adopted here for initial screening purposes.

The EILs apply to zinc (Zn), copper (Cu), chromium III (Cr(III)), nickel (Ni), lead (Pb), arsenic (As), naphthalene and dichlorodiphenyltrichloroethane (DDT). As per ASC NEPM (2013) the EILs are applicable to samples from the top 2 m of soil (as this generally corresponds to the plant root zone and habitation zone of many species).

The derivation of EILs considers the physicochemical properties of soil and contaminants and the capacity of the soil to accommodate increases in contaminant levels above naturally occurring background level, while maintaining ecosystem protection for identified land uses. Site specific EILs are derived by summing the Added Contaminant Limits (ACLs) and Ambient Background Concentration (ABC). The ACLs, however, are only applicable to Zn, Cu, Cr(III) and Ni for site-specific EIL determination, and the EILs for As, DDT and naphthalene are generic to all soils and are presented as a total soil contaminant concentration.

The methodology used to derive the adopted EILs was:

- In the absence of background Cation Exchange Capacity (CEC) data a conservative CEC of 5 was adopted for all soils (lowest presented in Table 1B(1) to Table 1B(3) in the NEPM (1993) to identify an appropriate ACL.
- To identify the ABC the average of data collected from throughout the alignment, excluding anomalously high results was calculated (refer to **Table 6** below).
- The EIL was then calculated using the ACL and the ABC.
- The ACLs for Ni and Zn were determined using lowest CEC presented in the NEPM of 5 for relevant compounds calculated soil CEC. Measured CEC values were determined by analysing surface samples representative of background conditions in undisturbed, natural soil conditions.
- The lithology encountered within the study area was observed to be predominantly sand at the surface with clay beneath.
- The average pH (field investigation data by pH_f laboratory method) was 6.5, although the more conservative minimum value of 4.0 has been used.

The results were initially screened against the conservative screening criteria (Urban Residential / Public Open Space).

The adopted EILs are presented in below in **Table 6**.

Table 6 Ecological Investigation Levels (EILs) adopted screening criteria

Chemical	Added Contaminant Limit (mg/kg)	Ambient Background Concentration (mg/kg)	Screening Criteria (mg/kg) Urban Residential/Public Open Space ⁺
Zinc	70	9	79
Copper*	60	10	70
Chromium (III) [^]	320	32	355
Nickel	30	7	37
Lead	1,100	8	1,108
Arsenic	100	14	114
DDT	180	0	180
Naphthalene	170	0	170

Note:
⁺: Average CEC values derived from Victorian Background Soil Database [V 1.0.0]
^{*}: Copper concentration measured from pH (field method) using the lowest conservative value
[^]: Chromium ACL determined with conservative 5% clay content, due to variable clay and silt content encountered across study area.

- The Amended ASC NEPM 2013 Ecological Screening Levels (ESLs)

The ESLs apply to selected petroleum hydrocarbon compounds and total petroleum hydrocarbon (TPH) fractions and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse and fine grained soils and various land uses by ecological direct contact with affected soils. These ESLs are generally applicable to the top two metres of soil. It is noted that the ESLs were developed for the standard service station site and their broader use needs to consider a range of limitations (as outlined in the ASC NEPM). ESLs were compared against the screening criteria relevant to the existing land use such as Agricultural, for which Urban Residential/Public Open Space land use criteria are relevant.

- The Amended ASC NEPM 2013 Management Levels (MLs)

The MLs relate to various land uses and soil for TPH fractions F1-F4 to assess the potential risk associated with petroleum compounds, fire/explosion and damage to underground utilities. MLs are applicable after consideration of relevant ESLs and HSLs.

The MLs criteria for Residential, Parkland and Public Open Space were conservatively adopted for screening purposes.

3.4.2 Soil hazard categorisation – Offsite Disposal

In Victoria, the discharge or emission of waste to water, land or air, and controls on the disposal and transportation of waste is regulated under the *Environment Protection Act 2017*, administered by the EPA Victoria. EPA Victoria regulates the storage, transport and disposal of waste in Victoria. Wastes taken offsite for treatment and disposal must be classified in order to determine EPA Victoria requirements and to choose an appropriate management option.

In addition to the assessment of risk to protected environmental values of land, this technical report also includes the classification of soils within the study area for the purpose of soil reuse, treatment or disposal in accordance with EPA Victoria guidelines. The following EPA Victoria publications provide guidance in relation to the sampling and categorisation of contaminated soil:

- Publication 1828.2: *Waste disposal categories – characteristics and thresholds*
- IWRG702: *Soil Sampling (2009)*.

Soils collected during this site investigation were assessed in accordance with the EPA Victoria Publication 1828.2 *Waste disposal categories – characteristics and thresholds* (effective from 1 July 2021). However, it is noted that the sampling density does not comply with the EPA Victoria Publication IWRG702: *Soil Sampling*, as this site investigation was intended to provide an indication of the potential for soil contamination within the study area only, and not for the purpose of offsite soil reuse, treatment or disposal.

Under the *Environment Protection Regulations 2020*, contaminated soils must be categorised as either Category A, B, C, D, The soil hazard categories in accordance with EPA Victoria Publication 1828.2 *Waste disposal categories – characteristics and thresholds* are summarised in **Table 7**.

Table 7 Waste Disposal Categories - Characteristics and Thresholds Soil

Soil hazard category	Description
Fill	Considered as <i>industrial waste</i> with contamination levels below the minimum Category D thresholds specified in EPA Victoria guidance; and would be subject to the Declaration of Use tool.
Soil containing asbestos only	Considered as <i>reportable priority</i> waste where the only contaminant is asbestos.
Category D	Considered as <i>reportable priority</i> waste with lower levels of contamination than Category C which can be safely contained at the same project site where the soil was unearthed. Containment of the Category D soils on the unearthing site will be subject to a 5-year permit and site management orders. Alternatively, Category D soil may go to lower grade landfills, subject to standing statutory planning requirements.
Category C – Priority Waste	Contaminated soil with concentrations exceeding the limits for ‘Fill Material and Category D’ but not exceeding the upper limits for ‘Category C’. This is the lower level of contaminated soil classification for disposal and is accepted at a number of licensed landfills in Victoria, once the landfill has reviewed analytical results and agreed to accept the soil. Category C waste soils must be transported by an appropriately licensed EPA Victoria vehicle (unless exception issued) and be tracked using EPA systems.
Category B – Priority Waste	Contaminated soil with concentrations exceeding the limits set out for ‘Category C’ but not exceeding the limits for ‘Category B’. This is the highest level of contaminated soil classification for disposal, and is accepted at only one licensed landfill and a limited number of treatment facilities in Victoria. Category B waste soils are regulated by EPA Victoria and are subject to the same transport and certificate requirements as Category C waste soils.
Category A – Priority Waste	Contaminated soil with concentrations exceeding the limits set out for ‘Category B’. Category A waste soils are regulated by EPA Victoria are subject to the same transport regulations as Category B or C waste soils, however soils with this higher level of contamination cannot be disposed of to landfill. These soils must be treated either onsite or offsite, or stored pending availability of an appropriate treatment technology. Once treated (or partially treated) the soils may be reclassified and, if appropriate, retained onsite or disposed of to a licensed facility.

3.4.3 Acid sulfate soil

The EP Act (2017) and the 2021 Environment Protection Regulations (2021) set out the requirements for managing waste duties and waste soil in Victoria. While the *Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999* no longer has formal legal status it has been applied as a contribution to the state of knowledge and to inform EPA’s likely expectations (EPA Publication 1994).

The *Industrial Waste Management Policy (Waste Acid Sulfate Soils) 1999* defines ASS as “any soil, sediment unconsolidated geological material or disturbed consolidated rock mass containing metal sulfides which exceeds criteria for acid sulfate soils specified in Publication 655 entitled ‘Acid Sulfate Soil and Rock’”. The requirement for management of ASS is a general environmental duty.

Criteria adopted for ASS classification as extracted from the EPA Victoria Publication 655.1: *Acid Sulfate Soil and Rock* are provided in **Table 8**. The criteria are based upon three broad soil textures (coarse, medium and fine), the amount of ASS disturbed, and the sum of existing and potential acidity (not net acidity). The highest laboratory result is used to assess if the relevant action criterion level has been met or exceeded (Sullivan et al., 2018).

Table 8 Texture-based action criteria for classification of acid sulfate soil (EPA Victoria Publication 655.1)

Type of Material		Sum of Existing and Potential Acidity			
Soil or sediment texture	Approx. clay content (%)	1–1000 tonnes material disturbed		>1000 tonnes material disturbed	
		%S-equiv. (oven-dried basis)	Mol H ⁺ /t (oven-dried basis)	%S-equiv. (oven-dried basis)	Mol H ⁺ /t (oven-dried basis)
Coarse: Sands to loamy sands	<5	0.03	18	0.03	18
Medium: Sandy loams to light clays	5–40	0.06	36		
Fine: Medium to heavy clays and silty clays	>40	0.1	62		

Note: Soils with existing plus potential acidity below the action criteria may still be ASS, but may not require management.

The action criteria are based on the sum of existing plus potential acidity. This is usually calculated in units of per cent-sulfur equivalents (e.g. s-TAA + s-SNAS + SCR in % S units) or equivalent acidity (e.g. TAA + a-SRAS + a-SPOS in mol H⁺/tonne units). The highest laboratory result(s) should always be used to decide if the relevant action criterion level has been met or exceeded; using the average or mean of a set of results is not appropriate or acceptable. The action criteria are based on the existing plus potential acidity and does not consider neutralising capacity.

The total amount of disturbed soils is expected to exceed 1,000 tonnes during the construction phase of the Project. As such, the applicable ASS action criterion for all soil textures is 0.03 %S and/or 18 Mol H⁺/t total acidity.

Soils that meet or exceed the action criteria are deemed to be soils that require treatment and management, in accordance with the general environmental duty. Further risk identification and assessment in accordance with the Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils (CASS BPMG, 2010) should be undertaken to identify appropriate management options.

The CASS BPMG (2010) risk identification process is designed to guide any person through a decision-making process for any development or activity proposed on land that has been identified as having the potential to contain CASS. The following are four stages of risk identification and assessment as recommended by the CASS BPMG (2010):

- Stage A: Preliminary CASS hazard assessment

- Stage B: Detailed site soil sampling program and assessment
- Stage C: Surface/groundwater sampling program and assessment
- Stage D: CASS hazard assessment.

After the risk identification and assessment process, an ASS Management Plan (ASSMP) may need to be developed for the ongoing management and monitoring of impacts from ASS. This covers construction, operational and decommissioning phases of an activity or project.

3.5 Groundwater Criteria

As outlined in Publication 1752: Guide to the proposed Environment Reference Standard (EPA, 2019), the purpose of an ERS is to set out the environmental values (i.e. uses, attributes and functions of the environment that Victorians value) that are sought to be achieved or maintained in Victoria. These are not mandatory compliance requirements but provide a benchmark for assessing actual and potential risks to environmental value.

The ERS, as with the former SEPP Waters (2018), identifies the potential environmental values (formerly beneficial uses) of groundwater based on the background TDS concentrations in groundwater. Table 5.3 of the ERS (reproduced below as **Table 9**) outlines the environmental values for groundwater.

Table 9 Environmental Values for groundwater (ERS, 2021)

Environmental Values	Segment (TDS mg/L)						
	A1 (1-600)	A2 (601-1,200)	B (1,201-3,100)	C (3,101-5,400)	D (5,401-7,100)	E (7,101-10,000)	F (>10,001)
Water dependent ecosystems and species	✓	✓	✓	✓	✓	✓	✓
Potable water supply (desirable)	✓						
Potable water supply (acceptable)		✓					
Potable mineral water supply	✓	✓	✓	✓			
Agriculture and irrigation (irrigation)	✓	✓	✓				
Agriculture and irrigation (stock watering)	✓	✓	✓	✓	✓	✓	
Industrial and commercial	✓	✓	✓	✓	✓		
Water-based recreation (primary contact recreation)	✓	✓	✓	✓	✓	✓	✓
Traditional Owner cultural values	✓	✓	✓	✓	✓	✓	✓
Cultural spiritual values	✓	✓	✓	✓	✓	✓	✓
Buildings and structures	✓	✓	✓	✓	✓	✓	✓
Geothermal properties.	✓	✓	✓	✓	✓	✓	✓

Laboratory derived TDS concentration in the groundwater from the April 2021 sampling event ranged between 658 mg/L (MW02) and 1,540 mg/L (MW12). Based on the TDS range, groundwater in the vicinity of the site is classified as being within Segment A2 (601 – 1,200 mg/L) in accordance with ERS 2021, Part 5 Division 2 – Groundwater (Table 5.2).

Environmental Values that are protected under Segment A2 are:

- Water dependent ecosystems and species;
- Potable water supply (acceptable);
- Potable mineral water supply;
- Agriculture and irrigation (irrigation);
- Agriculture and irrigation (stock watering);
- Industrial and commercial;
- Water-based primary recreation (primary contact recreation);
- Traditional Owner cultural values; and
- Geothermal properties.

The applicable assessment criteria for the protection of these environmental values are summarised in **Table 10** below.

Table 10 Groundwater Assessment Criteria

Protected Environmental Values / Receptor	Relevant Guideline
Water dependent ecosystems and species	Australian and New Zealand Guidelines for Freshwater 95% species protection and Marine Water Quality 99% species protection (ANZG, 2018).
Potable water supply (acceptable)	National Health and Medical Research Council (NHMRC) 2011 (updated March 2021) – Australian Drinking Water Guidelines
Potable mineral water supply	Table 5.1 of the ERS 2021 defines ‘potable mineral water’ as potable groundwater which in its natural state contains carbon dioxide and other soluble matter in sufficient concentration to cause effervescence. No visual observations of effervescent groundwater have been reported at the site, and the site is not in an area designated to be a mineral water production zone. The use of the underlying aquifer for potable water is unlikely, and as such this Environmental Value is not considered to apply.
Agriculture and irrigation (irrigation)	ANZG 2018 – Irrigation Long Term Values (LTV).
Agriculture and irrigation (stock watering)	ANZG 2018 – Livestock Watering
Industrial and commercial	In accordance with ANZECC2000 it is not considered possible to derive criteria to apply for this environmental value, for which ‘other coincidental environmental values’ ‘tend to drive management of the resource’.
Water-based recreation (primary contact recreation)	NHMRC 2008 – Guidelines for Managing Risks in Recreational Waters

Protected Environmental Values / Receptor	Relevant Guideline
Traditional Owner cultural values	The ERS (2021) provides no specific environmental quality indicators for the environmental value of Traditional Owner cultural values, but these values are considered to be protected under the environmental quality objectives for water dependent ecosystems and species and water-based recreation.
Geothermal properties	<p>The environmental value for the geothermal properties of groundwater considers the natural thermal capacity of the groundwater. The ERS (2021) states that no activity must affect the geothermal properties of the groundwater and that specific indicators of geothermal groundwater include temperatures between 30 and 70 degrees Celsius.</p> <p>During the July 2021 GME, groundwater temperature measured in the field was recorded between 11.4°C and 13.7°C, hence the geothermal properties of the groundwater has not been considered as an applicable environmental value onsite.</p>

4.0 Preliminary Site Investigation Results

4.1 Site location and topography

The study area is within Glenelg Shire, located approximately 30 km northwest of Portland and 5 km east of Nelson in southwest Victoria.

The ground elevation generally ranges from around 20 to 60 metres relative to Australian Height Datum (mAHD) for much of the wind farm, as the site is located on higher ground between the coastline, Ramsar wetlands to the south (at around 5 mAHD) and the Glenelg River to the north. The topography of eastern portions of the wind farm site rises to elevations of around 130 mAHD.

Further east and southeast the elevations are typically between 80 and 100 mAHD within the transmission line development envelopes towards Heywood.

4.2 Local geology

Surface geology in the study area predominantly consists of various Quaternary age sediments and extrusive basalts and minor scoria (**Figure F3, Appendix A**).

At the wind farm site, the geology comprises predominantly aeolian, calcareous dunes and dune limestone (the Bridgewater Formation) overlying upper mid-Tertiary limestone. Some coastal dunes and minor swamp deposits are present directly to the south of the wind farm site. A generalised cross section is provided in **Plate 1** below.

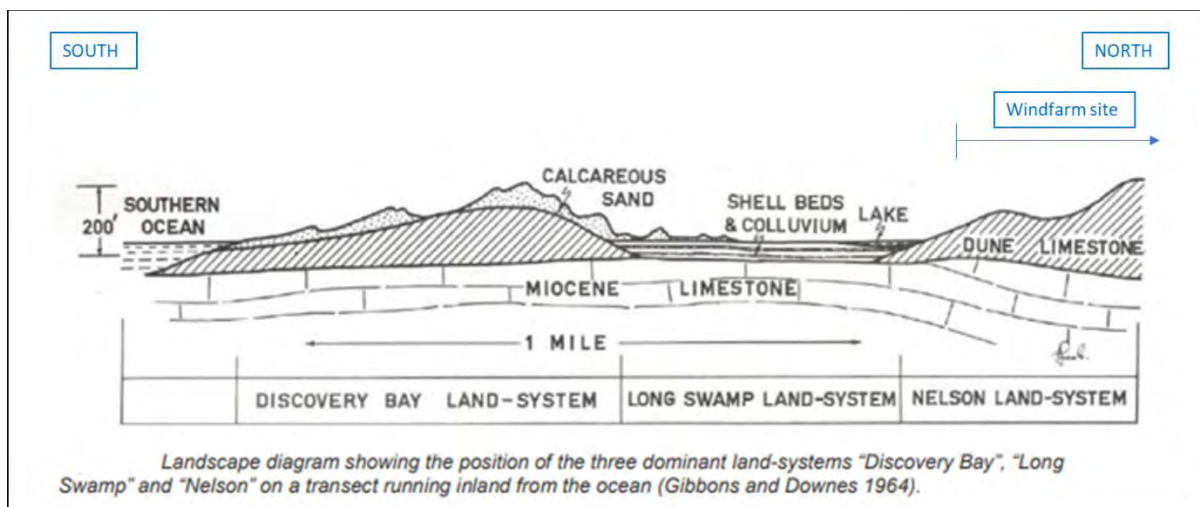


Plate 1 Generalised landform cross section [Source: Adapted from Figure 24 of DELWP (2017a)]

East of the of the wind farm site, the surface geology consists mostly of extrusive basalts of the Quaternary (Holocene) Newer Volcanics, and some inland dunal sands and swamp deposit further east.

Southeast of the wind farm site the Bridgewater Formation continues parallel with the coast, while inland dunal sands and minor swamp deposits are present further inland and to the east.

A summary of surface geology in the study area is provided in **Table 11** and shown in **Figure F3, (Appendix A)**.

Table 11 Surface geology of the study area

Study Area Zone	Geological unit	Lithology
Wind farm site	Bridgewater Formation (Qxr) [predominant]	Calcareous limestone (<i>calcareous dunes and dune limestone</i>)
	Coastal dune deposits (Qdl1) [very minor]	Silt, sands and clay (<i>beach ridge strandplain</i>)
	Swamp and lake deposits (Qm1) [very minor]	Silt, clay and peat (<i>still water – swamp marsh deposition</i>)
	Molineax Sand (Qxm) [very minor]	Sand and fine sand (<i>sand deposition – dunefield</i>)
Heywood transmission line option	Newer Volcanic basalt (Neo) [predominant]	Basalt, tuff and scoria (<i>extrusive lava flow</i>)
	Swamp and lake deposits (Qm1) [very minor]	Silt, clay and peat (<i>still water – swamp marsh deposition</i>)

4.3 Soil Characterisation and Structure

Soil types within the project area vary depending upon geology, landform, stream activity, vegetation, climate and age (i.e. degree of weathering) (Victorian Resources Online, 2024).

Within the project area the following soil types / structures are identified on the Agriculture Victoria - Victorian Resources Online map ([VicSoilMap.pdf \(agriculture.vic.gov.au\)](#)) running from west to east (refer to **Figure F8**):

- Weakly developed stony soils
- Sandy soils - (tenosols and rudosols) and texture contrast soils with deep sandy surface horizons (excluding podosols)
- Sandy soils - podsols and texture contrast soils with deep sandy surface horizons
- Chromosols – not sodic or strongly acid

The assessment of soil health and structure relates primarily to agronomy and is not required for the assessment of contamination or ASS. As such, these elements are not considered further in this assessment.

4.4 Existing land use

Review of publicly available information and aerial photographs indicated that existing land uses within the study area include:

- Agriculture (grazing);
- Plantation and commercial forestry (silviculture); and
- National Park.

Surrounding land uses in the area include commercial forestry, agriculture (primarily grazing), Discovery Bay Coastal Park to the south, the Lower Glenelg National Park to the north, and Cobboboonee National Park to the east and northeast.

The predominant existing land uses are considered to have a relatively low potential for soil contamination.

4.5 Historic land use

Representative aerial photographs for each decade between 1967 and 2019 covering the entire study area were obtained and reviewed to identify historic land uses. Copies of the aerial photographs maps are provided in **Figure F5a-I (Appendix A)**, and findings are summarised in **Table 12** below. For the purposes of this review and presentation of the data, we have separated the study area into seven sections.

It is noted that image resolution of aerial photographs can vary significantly and as a result, there are uncertainties in interpretation.

Table 12 Areas of significant changes to historical land uses

Section of Site	Change in historical land uses
Western site boundary to TP02 ~6.5km (‘Western Wind Farm’)	1967: Land divided for plantations. Section around TP02 appears undisturbed. 1972: No significant change from 1967 aerial. 1981, 1985, 1992: No significant change from 1972 aerial, some rotation in utilised plantations. 2002, 2005, 2009, 2011, 2013, 2017, 2018: Land around TP02 converted to plantation. No significant change from the 1992 aerial photograph.
TP02 to TP03 ~6.5km (‘Western Wind Farm’)	1967: Land divided for plantations. 1972: No significant change from 1967 aerial, northern section included in plantation. Cleared patch north of TP03 on North Livingston Rd. 1981, 1985, 1992: No significant change from 1972 aerial, some rotation in utilised plantations. 2002, 2005, 2009: No significant change from the 1992 aerial photograph. 2011, 2014, 2016, 2018: Cleared patch appears to be a quarry used by the plantation.
TP03 to TP04 ~7.5km (‘Western Wind Farm’)	1967: Land cleared, no apparent use. Section north of TP04 on north side of Portland-Nelson Rd appears cleared for farming, evidence of silos or water tanks. 1972: Cleared land used as plantation. 1981, 1985, 1992: No significant change from 1972 aerial, some rotation in utilised plantations. 2002, 2005, 2009: No significant change from the 1992 aerial photograph. 2011, 2014, 2016, 2018: No significant change from the 2009 aerial photograph.
TP04 to TP05 ~5.0km (‘Central Wind Farm’)	1967: Section south of Portland-Nelson Rd, north of Sandy Hill Rd appears undisturbed. Between Sandy Hill Rd and unnamed track to the south, land appears cleared for plantation. Between the unnamed track and the coastal dunes land appears cleared with no apparent purpose. North of Portland-Nelson Rd land cleared for farmland. Farmhouse apparent in northwest section. 1972: No change, apart from appearance of surface water on farmland areas. Cleared sections in the south undisturbed further. 1981: More farm buildings on farmland, no other significant change. 1985, 2006: No significant change from 1981 aerial. 2012: Removal of one farm building. 2014, 2017, 2018: No significant change from the 2012 aerial photograph.

Section of Site	Change in historical land uses
TP05 to TP09 ~8.0km ('Central Wind Farm')	1967: Land area appears cleared for farming. Surface water evident in central area between TP05 and TP06. Some houses evident along Portland-Nelson Rd. National park between TP07 and TP09. 1972: No significant change from the 1967 aerial photograph. 1981: More farmhouses, less surface water. No significant changes from the 1972 aerial photograph. 1992: More farmhouses, more dams on farms. No significant changes from the 1981 aerial photograph. 2006-2018: No significant changes from the 1992 aerial photograph.
Cobboboonee National Park ~10.5km ('Transmission line' – National Park)	1967: Land area appears undisturbed national park. 1972: Small section cleared on Boiler Swamp Rd. No significant changes from the 1967 aerial photograph. 1981, 1992, 2012, 2018: No significant changes from the 1972 aerial photograph.
Cobboboonee National Park to Eastern site boundary ~10.5km ('Transmission line')	1967: Land area appears cleared for farming. Some houses evident on farmlands. Undisturbed national park 1972: More farmhouses, slight clearing in area to become Heywood Terminal station. No significant change from the 1967 aerial photograph. 1981: More farmhouses, clearing grows in area to become Heywood Terminal station. No significant changes from the 1972 aerial photograph. 1992: More farmhouses, Heywood Terminal Station built, large transmission lines running west-north west from the station. 2004-2018: More farmhouses. No significant changes from the 1992 aerial photograph.

4.6 Site Observations and Interview

A summary of the findings of the site walkover and interviews (phone and on site) are provided in **Table 13**.

Table 13 Summary of Site Observations and Interviews with land owners/managers

Area & Interviewee	Contamination Potential Details	AECOM Site Observations
Willmill Road, Nelson VIC 3292 TP01-TP04 (Turbine area) Site Manager	<ul style="list-style-type: none"> • These lands have been forestry plantation for 60-70 years; • Some sections are into third or fourth rotation use, rotations last 30-35 years; • Aerial spraying of herbicides before planting; • Glyphosate, Hexazinone, Clopyralid, Sulfometuron methyl and Metsulfuron herbicides used; • Prior to 1990's Amitrol and Atrazine herbicides used; • Point spraying for weeds in 1st year of growth; • Fertiliser used mono-ammonium phosphate (MAP) and di-ammonium phosphate (DAP) frequency not specified; • Storage and stockpiling of trees and branches throughout the forestry areas; and • Fuel for machinery carried in pods on operator's utes, no above or below ground storage tanks (ASTs) or mini tankers used. 	<ul style="list-style-type: none"> • Land is currently used for forestry; • No machinery stored onsite; • No buildings or infrastructure present onsite; • A quarry is located north of TP03 which is used for road maintenance; and • No ACM noted (existing structures excluded from observation).
Johnson Road, Nelson VIC 3292 (Turbine area) Farmer/Property owner	<ul style="list-style-type: none"> • The lands have been used for sheep farming; • No history of sheep dips within the alignment, the only sheep dip was used 30+ years ago located 5-10 km north west of the alignment; • They use a MAP fertiliser and a combined herbicide / fertiliser 4 in 1 (iron sulfate, super phosphate, 2-methyl-4-chlorophenoxyacetic acid (MCPA), mecoprop (selective broadleaf herbicides); • Before replanting an annual crop, they may spray the crop with MCPA (phenoxy herbicide) / Roundup / Wipeout (glyphosate herbicides); • No waste burial or storage onsite; • No fuel usage or storage onsite; and • No pesticides used on the farm. 	Property not attended by AECOM, phone interview only.

Area & Interviewee	Contamination Potential Details	AECOM Site Observations
Richmond Park, Mount Richmond, VIC 3305 TP05-TP08 (Turbine area) Farmer/Property owner	<ul style="list-style-type: none"> • The land was cleared in the 1950's for use as sheep pasture; • Current owner has been on the land 35 years; • An old sheep dip is located under what is now the shearing shed with a second sheep treatment area in a north west paddock, near TP05 / location of turbine 167. The sheep treatment area comprised of a small round enclosure (approximately 5 m in diameter) with a concrete base, an overhead spray to discharge the treatment chemicals and a concrete sump alongside to collect runoff; • No sheep dipping / treatment has occurred in the last 30 years; • Central part of the property described as 'acidic peat flats' becoming 'sandy heath' country to the west; • Groundwater at 1.5-2.0 mbgl and as shallow as surface in winter in low lying sections of the property; • Fertiliser usually used phosphorus / potassium / sulfur, this year DAP used; • Previous property owner buried old fencing and scrap metal on the property (east of TP05). Exact location unknown; and • Pesticides used limited to a pour on back spray for lice, most likely a macrocyclic lactones, avermectin derived product as industry standard; and • Limited herbicides used as direct spray, glyphosate, 2,4-dichlorophenoxyacetic acid (2,4-D), MCPA. 	<ul style="list-style-type: none"> • Land is currently used as a sheep farm; • Some farm machinery including tractors, excavator and grader are stored onsite; • Shearing shed and tool store onsite; • No storage of chemicals observed during site visit however evidence of recently spread fertiliser was noted adjacent roadway; and • No ACM noted (existing structures excluded from observation).
Corner of Blacks Road and Kent Bruck Settlement Road, Mount Richmond, VIC 3305 TP09 (Turbine area) Forestry Officer	<ul style="list-style-type: none"> • Lands used for forestry for 20+ years; • Used on a 10-12 year rotation; • Previously the land had been used for unspecified farmland; • Herbicide used in the first 2 years after planting, sulfometuron (sulfonylurea class), phenoxy herbicides both auxins (MCPA / 2,4-D) and ACCase inhibitors ('fops' selective for grasses), glyphosate, sprayed by boom, not aerial; • Pesticides used in years 1-4 after planting, Shield (clothianidin) and Alpha (cypermethrin); • Fertiliser used in the first 1-2 years and at year 6, DAP and copper and zinc used; • Some burning of waste (branches, stumps) but mostly just heaped, allowed to break down and respread; • No fuel usage or storage onsite; and • Large amount of surface water and swamp land across the site. 	<ul style="list-style-type: none"> • Land is currently used for forestry; • Temporary machinery storage shed located onsite; • No chemical storage noted; and • No ACM noted (existing structures excluded from observation).

Area & Interviewee	Contamination Potential Details	AECOM Site Observations
305 Coffeys Lane, Heathmere VIC 3305 (Transmission area) Farmer/Property owner	<ul style="list-style-type: none"> • Land used for sheep and cattle grazing; • Current owner has been on the land for 35+ years; • No sheep dips have been used on the property during the current owners; • Fertilisers used every year, NPKS variety; • Herbicide use MCPA or 2,4-D every 5-10 years by boom spraying; • Uses pour-on drench pesticide for lice control every six months, most likely a macrocyclic lactones, avermectin derived product in accordance with current industry standard; • No waste burial or storage onsite; and • No fuel usage or storage onsite. 	Property not attended by AECOM, phone interview only.
Coffeys Lane, Heathmere VIC 3305 TP13 (Transmission area) Farm owner	<ul style="list-style-type: none"> • Land used as 'out pasture' for young dairy stock and for silage; • The previous owner used the land for dairy as 'day paddock' in a more intensive fashion than current use; • No known history of pesticide or herbicide use; • Autumn and spring fertiliser application; • No waste burial or storage onsite; • No fuel usage or storage onsite; and • Shallow groundwater close to the river <1 mbgl. 	<ul style="list-style-type: none"> • Land is currently used as a cattle/dairy farm; • Shearing shed and tool store onsite; • No storage of chemicals observed during site visit; and • No ACM noted (existing structures excluded from observation).
1235 Princes Highway, Heathmere VIC 3305 TP14 (Transmission area) Farmer/Property owner	<ul style="list-style-type: none"> • Land used for beef cattle for the last 30+ years; • Previously the land was sheep pasture and native vegetation; • There is a disused sheep dip on the property close to TP14 (approximately 20 m north west of TP14); • Fertilisers used MAP (~100 kg), super phosphate and urea (~60 kg) per year; • No herbicides or pesticides usually used; • No waste burial or storage onsite; • No fuel usage or storage onsite; and • Shallow groundwater on site ~1.0-1.5 mbgl, particularly close to the river. 	<ul style="list-style-type: none"> • Land is currently used as cattle grazing land; • Machinery and sheds were not noted during DSI; and • No ACM noted in proximity to TP14 (existing structures excluded from observation).

Area & Interviewee	Contamination Potential Details	AECOM Site Observations
69 Browns Lane, Heywood VIC 3304 TP16 (Transmission area) Farmer/Property owner	<ul style="list-style-type: none"> • Land used for beef cattle, previously used for dairy cattle and sheep pasture; • Current owner has been on the land 65+ years; • Shallow groundwater at ~2.5 mbgl; • No waste burial or storage onsite; • No fuel usage or storage onsite; • No known sheep dips located on the property; and • Very low fertiliser / pesticide / herbicide input. 	<ul style="list-style-type: none"> • Land is currently used as a cattle farm; • Significant quantities of old car bodies, scrap metal and old outbuildings (sheds) surrounding the house in the north of the property (outside of transmission alignment); • No storage of chemicals observed during site visit; and • No ACM noted (existing structures excluded from observation)

4.7 Acid sulfate soils

4.7.1 Stage A – Preliminary CASS hazard assessment

Desktop Review

A review of the Victorian Coastal Acid Sulfate Soil (VCASS) maps for Nelson and Portland (CASS Map 1 Far South-West Coast) was undertaken. The VCASS maps indicates the study area has the potential to contain CASS. Refer to **Plate 2** below (site extending east of Nelson towards Cape Bridgewater).



Plate 2 Map 1 Far South-West Coast – Prospective Land: land that has the potential to contain CASS (Adapted from Department of Primary Industries, 2006)

A review of the ASRIS AAASS mapping indicates the potential for ASS occurrence is extremely low probability (with very low confidence) across most of the study area. There are also small areas of low probability (with very low confidence) within the southern portion of the wind farm study area (and adjacent to the study area boundary) and along the eastern portion of the transmission alignment. A map of the study area overlaying the ASRIS ASS classification is presented in **Figure F4 (Appendix A)**.

Table 14 lists ASS classification for the study as defined in ASRIS. A map of the Project area overlaid over the AAASS classification is presented **Figure F4, (Appendix A)**.

Table 14 Atlas of Australian Acid Sulfate Soils Mapping Classification

Code	Classification	Description
Cq(p4)	Extremely Low Probability of Occurrence	Area with extremely low probability of ASS occurrence (<1 % chance) in Kandosols, Tenosols, Podosols, Kurosols and Rudosols (generally within upper one metre in wet/riparian areas), with potential ASS (PASS). The PASS classification is noted to be provisional, as analytical data was not available when the map was prepared, and the classifier has little knowledge or experience with ASS.

Code	Classification	Description
Bn(p4)	Low Probability of Occurrence	Area with low probability of ASS occurrence in Sodosols, Chromosols and Dermosols (generally within upper one metre in wet and riparian areas), with PASS. The PASS classification is noted to be provisional, as analytical data was not available when the map was prepared, and the classifier has little knowledge or experience with ASS.
Bg(p4)	Low Probability of Occurrence	Area with low probability of ASS occurrence in floodplains >4 m AHD (generally below 3 m from surface in forests, plains and levees areas), with PASS. The PASS classification is noted to be provisional, as analytical data was not available when the map was prepared, and the classifier has little knowledge or experience with ASS.

Site observations

A site walkover was completed with the aim of identifying signs of Actual ASS (AASS) or PASS, such as swamps, low lying areas, scalded land, damage to concrete or in situ infrastructure, jarositic material, clear or milky blue water, water-logged soils, etc. The results of the site walkover are summarised in **Table 15** below. Not all farm properties were accessible to AECOM, however, observations were made from public access ways where no access was granted during the site visit.

Table 15 ASS Site Observations

Site Area	AASS / PASS Observation
Land incorporated within 'Western Wind Farm' area	Land covered with dense layer vegetation (pine plantation), no signs of plant die back or poor health. Quarry in central area of the site extended to at least 20 m depth, no visible groundwater or jarositic material.
'Central Wind Farm' area	Land noted to be swampy with very shallow groundwater table. Drains installed within paddocks to lower water table. No swampy vegetation or scalded areas.
Cobboboonee Forest to Jennings Road – Transmission line	Eucalyptus forest generally healthy. No signs of jarositic material in existing bushfire water pits present along adjacent to access roads within the forest, nor were there extensive signs of iron staining. Pits were observed to fill with water approximately 2-3 m below the site surface. Basalt soil and weathered basaltic rock evident. Swamp area observed towards the eastern end of the forest, both to the north and south of the proposed alignment.
Land incorporated within Coffeys Lane and Princes Highway Heathmere (TP13 to TP14) (Jennings Road to Princes Highway) -Transmission line	Land observed to be low lying particularly in close proximity to the Surrey River. Drains evident to lower water table through paddocks. Dark brown to black soil observed at the surface in Thompson Farm.
Princes Highway to Heywood Terminal – Transmission line	Land beginning to rise, less evidence of shallow water as move away from the Surrey River. Soil in Princes Highway Farm still dark brown to black at surface.

4.8 PSI Summary

4.8.1 Contamination

Information obtained from the desktop review of aerial photographs, current and historical site uses, site walkover and interviews, suggests the study area has historically been used as agricultural land for grazing of sheep and cattle and silviculture. The potential sources of contamination and CoPC are presented in **Table 16**.

Table 16 Potential sources of contamination and CoPC

Test Pit ID	Potential source of contamination	Contaminant of potential concern
TP01 – TP04	Activities arising from forestry land use	Metals, fertilisers, herbicides and pesticides
TP05 – TP08	Activities arising from farming land use	Metals, fertilisers, herbicides and pesticides
TP09	Activities arising from forestry land use	Metals, fertilisers, herbicides and pesticides
TP13 – TP16	Activities arising from farming land use	Metals, fertilisers, herbicides and pesticides

Agricultural land uses (grazing or forestry) are generally considered to represent a low risk of contamination but may include point sources such as burial of wastes and sheep dips or broad acre contamination sources such as fertiliser, herbicide or pesticide usage. Discussions with land owners have identified that waste burial and sheep dips are unlikely to represent a risk to the Project, except for the former sheep dip on the farm located at Richmond Park, Mount Richmond (Central Wind Farm Area – TP05). That area is addressed further in the DSI discussed below. Similarly, a burial site was identified on the farm located at Richmond Park, Mount Richmond but that was only small in extent (less than 10 m diameter) and was used for fencing / construction debris only and is unlikely to present a risk to the Project. Any wastes encountered during the Project would need to be managed in accordance with local waste disposal regulations.

Broad acre application of fertilisers, pesticides or herbicides, may result in contamination of soil and groundwater, although in general, the potential impact to the environment associated with the Project is considered to be low, given that the compounds would already be present within surface soil and be available to leach. This has been addressed further in the DSI below.

The overall potential for contamination within the study area is considered to be limited however further analysis of soil and groundwater is required to confirm presence or absence of contamination resulting from existing and/or historical land use.

4.8.2 ASS

The CASS risk area, identified in the ASRIS maps, is primarily present towards the coast and throughout the eastern portion of the transmission alignment. VCASS mapping indicates that the entire study area intersects CASS risk area and is mapped as Prospective Land (areas where there is a potential or prospect of encountering sulfidic material or sulfuric material).

The geology within this area is described as Holocene, coastal and inland dunes with dune sand and some swamp deposits. The proposed wind turbines however are located within an area logged as consisting of aeolian calcarenite deposits and not within the low lying swamp deposits located closer to the coast. Calcarenite deposits are not considered to represent a risk of ASS given their capacity for neutralising any acid generation. It is also considered likely that any aeolian deposits will have been oxidised during placement. Site observations supported the limited potential for ASS based on geological plans.

The residual basaltic soils, generated from weathering of the Newer Volcanics basalt encountered primarily within the Cobboboonee National Park, are neither a CASS or are considered to be high in pyrite or other sulfides. It is noted that this conclusion is supported by limited field testing undertaken in

the Cobboboonee National Park by AGT (2022), although as discussed in **Section 6.5**, no supporting deterministic laboratory tests were undertaken. On this basis, the absence of detailed sampling and analysis from that section of the transmission pipeline is not a data gap.

The organic alluvial soils located within the low lying areas within the farm located at Richmond Park, Mount Richmond and east of the Cobboboonee National Park (within close proximity to the Surrey River) are considered to represent a higher risk of ASS, although no direct evidence of ASS were observed during the site walkover.

Stage B sampling was undertaken based on the desktop review outlined above to address the data gaps and the potential for ASS identified.

5.0 Detailed Site Investigation Results – Contaminated Soils

The soil sampling program was completed between 10 and 14 May 2021. Collection of soil samples for the purpose of assessing potential contamination was undertaken in general accordance with the following guidelines and protocols:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (ASC NEPM), as amended in 2013
- Standards Australia, 2005. Australian Standard, *Guide to the investigation and sampling of sites with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds*. AS 4482.1 – 2005
- Standards Australia, 1999. Australian Standard, *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*. AS 4482.2 – 1999.

The locations of the soil sample points are shown in **Figure F2 (Appendix A)**. A summary of the field investigation results is presented below.

5.1 Field observations

The borelogs provided in **Appendix B**, provide details of the stratigraphy encountered, observations of filling materials or potential contaminants (e.g. staining and/or odour), PID readings and sample depths. The soils encountered in test pits were consistent with the local geology identified as part of the PSI, described in **Section 4.2**.

Field observations made during excavation of test pits are summarised in **Table 17**. Visual, olfactory, or PID-related indicators of contamination were not found to be present within the study area.

Table 17 Summary of field observations

Field observation	PID Readings	Observation in Fill Soils	Observation in Natural Soils
PID measurement	LOW (0.0-5.0 parts per million (ppm))	All fill samples	All natural samples
	MEDIUM (5.0-20.0 ppm)	Not observed in any samples	
	HIGH (>20.0 ppm)	Not observed in any samples	
Staining	-	Not observed in any samples	
Olfactory evidence (sulfur odour)	-	Not observed in any samples	
Ironstone band	-	Not observed in any samples	
Natural materials (shells)	-	Not observed in any samples	
NAPL (non-aqueous phase liquid)	-	Not observed in any samples	
Sheen	-	Not observed in any samples	
Solid inert materials	-	Not observed in any samples	
ACM		Not observed in any samples	

5.2 Soil analytical data - Contamination

5.2.1 Results

Soil analytical results are presented in **Table T3**, **Table T4** and **Table T5 (Appendix E)** and NATA certified laboratory reports are included with COC documentation in **Appendix F**. In accordance with the NEPM, the results were compared to adopted ILs described in **Section 3.4.1** to assess risk to protected environmental values of land, for the proposed windfarm and transmission line.

Soil analytical results for all samples were either below the laboratory limits of reporting (LOR) or below the adopted conservative guideline values, with exceptions presented in **Table 18**.

The soil analytical results are provided in **Appendix E**. The results of the analysis can be summarised as follows.

Table 18 Summary of soil screening criteria exceedances

Analyte	Screening Criteria	Adopted Criteria (mg/kg)	Conc. (mg/kg)	Sample ID	Location
TRH >C ₁₆ -C ₃₄ fraction	NEPM 2013 Table 1B(6) ESLs for Urban Residential- Coarse (0 - 2 mbgl)	300	330	TP09_0.0	TP09
pH	ANZECC & NHMRC 1992	6 – 8 pH units	3.4	TP05_0.0	TP05
			4.8	TP14_0.0	TP14

Sample TP09_0.0 was collected from the site surface, within a forestry area. The test pit was positioned on a grid basis and there were no point sources of contamination including TRH identified in proximity to the bore. To further understand the potential risk associated with the TRH the sample was submitted to ALS for Silica Gel Cleanup. The concentration of TRH was below LOR following Silica Gel Cleanup (**Table T3, Appendix E**) indicating that the sample comprised of polar metabolites, which may be either weathered fuels or naturally occurring organic matter. Based on the lower risk profile associated with these materials and in accordance with the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report No.40 Weathered Petroleum Hydrocarbons (Silica Gel Clean-up), the IL was adjusted by a factor of 2. The concentration was well below the applicable criteria and is therefore not considered likely to present a risk to the ecology of the area.

It is unclear what the source of TRH is in these samples however based on the silvicultural land use, and the process of ploughing in organic matter from the previous crop, it is considered most likely to relate to natural organic compounds and not contamination / petroleum hydrocarbon impact. The absence of petroleum hydrocarbons post Silica Gel Clean-up supports this model.

The pH of soil samples from across the study area (assessed using the field pH) averaged pH 7 in sandy lithologies and pH 6 in clay lithologies, both within the adopted ANZECC 1992 Background investigation level (6 – 8 pH units). The pH did vary within selected samples, however this was considered to relate to ASS or naturally occurring background conditions and as such is not considered contamination. The assessment of pH and ASS is discussed in more detail in **Section 6.0**.

Soil hazard classification- offsite disposal

A total of four samples were analysed for the EPA Publication 1828.2 waste categorisation suite of analytes. Soil analytical results are presented in **Table T4 (Appendix E)**. Exceedances of the EPA Victoria Publication 1828.2 Fill Material criteria are summarised in **Table 19**.

Table 19 Summary of EPA Victoria Publication 1828.2 exceedances

Analyte	Category Upper Limit (mg/kg) – Total Concentration			Result (mg/kg)	Sample ID	Location
	Fill Material	Cat. C & Cat D.	Cat. B			
Arsenic	20	500	2,000	24	TP03_0.5	TP03
				80	TP14_0.5	TP14
				21	TP15_0.5	TP15
pH	A pH value of 4 or less or a pH value of 9 or more are considered to be reportable priority waste. pH value of 2 or less or a pH value of 12.5 or more are classified as Category A reportable priority waste.			3.4	TP05_0.0	TP05

The concentration of contaminants in samples collected do not exceed EPA Victoria Publication 1828.2 upper limit for Fill Material, with the exception of three samples for arsenic and one sample for pH, refer to **Table T4 (Appendix E)**. Arsenic was encountered in samples from three test pits above the LOR, but within the same order of magnitude as the IL. The pH of overlying shallow samples were all below the IL and do not support the presence of contamination. The three samples were located on different parcels of land, including one managed for silviculture and two others for grazing. It is considered unlikely that the arsenic would relate to herbicide or pesticides which are used on a limited basis only (and were not reported by plantation manager to be arsenic based). The arsenic is considered likely to be naturally occurring. However, further testing may be required to support this, in accordance with Victorian EPA sampling guidelines should soils be proposed to be disposed of offsite. Analysis of arsenic leachability may also be required.

The pH of one sample in TP05 was reported at value of 3.4. This is outside of the adopted range (<4 or >9) of acceptable pH values for EPA Victoria Publication 1828.2: *Waste Disposal Categories-characteristics and thresholds (March 2021)* and therefore could be classified as Priority Waste (PW) Category C material (for offsite disposal). However, these pH values are considered to be naturally occurring in soils. Therefore, the low pH values are not considered to alter the disposal category, although their disposal must be in accordance with ASS guidelines.

5.2.2 Data Quality Indicators (DQI) for QA/QC data validation

Data validation against the DQI adopted was undertaken in accordance with the QA/QC methodology described in **Section 2.3**.

No QA/QC issues were identified in the field or laboratory soil datasets that could have a material implication to decision-making on the Project. The data validation report is presented in **Appendix G** and QA/QC sample data is presented in **Tables 3-5 (Appendix G)**. On the basis of the data validation, the overall quality of the analytical results is considered to be acceptable and suitable for assessment of the soil conditions of the study area.

It is noted that an assessment of data quality was not undertaken by AECOM for the data presented in AGT (2022) due to the limited details provided in AGT (2022).

5.3 AGT (2022) Contamination Data

Further to the investigations undertaken by AECOM, AGT (2022) undertook additional land contamination assessment along the underground transmission line, in portions of the Cobboboonee National Park that were previously inaccessible on behalf of G.R. Carr, for Neoen (refer **Appendix H**).

The field program undertaken was undertaken on 20 October 2021 and included excavation of three test pits and collection of soil samples. AGT (2022) stated that the assessment was completed in accordance with relevant guidelines, including IWRG621, IWRG702 and AS 4482.1 – 2005.

The test pits were excavated to depths of 2 mbgl and a total of 15 primary soil samples were collected, including five samples from each test pit, at depths of approximately 0.1 m, 0.5 m, and further incremental depths of 0.5 m until a depth of 2.0 m bgl. The locations of the test pits and associated borelogs are presented in **Appendix H**. The laboratory analytical results for the soil samples collected by AGT (2022) is summarised in **Table T7a (Appendix E)**. Due to the format of the data provided (third-party), assessment against the adopted contamination and ASS screening criteria (presented in Section 3.4) has only been undertaken for analytes where detectable concentrations were reported by the laboratory. Where data was reported below the laboratory LORs, screening is not presented. Accordingly, **Table T7b (Appendix E)** presents screening against human health and ecological criteria, and **Table T7c (Appendix E)** presents screening against waste categorisation criteria.

A summary of the outcomes of the AGT (2022) land contamination assessment as reviewed by AECOM is presented below:

- The geology encountered during the test pitting works as presented in the borelogs (**Appendix H**) comprised of fill soil (in some locations), underlain predominantly by silty clay with some sand and gravel. The geology described is consistent with the local geology described in **Section 4.2**.
- Field observations reported by AGT (2022) did not indicate visual or olfactory indicators of contamination in the test pits investigated.
- Concentrations of the majority of analytes, including cadmium, mercury, ammonia, nitrate, nitrite, OCP and OPP were reported below the laboratory LORs. Detectable concentrations, i.e. above the LOR, were reported for the following analytes:
 - Heavy metals, including arsenic, chromium, copper, lead, nickel and zinc
- Of the 15 primary samples analysed, the following exceedances were noted:
 - Concentrations of nickel and total chromium exceeded the EILs for Urban residential/Public open space land use (37 mg/kg and 355 mg/kg, respectively) in 14 and 11 samples, respectively.
 - Concentrations of nickel exceeded the 'EPA VIC 1828.2 March 2021 Fill Material Upper Limit' (60 mg/kg) in 9 samples. It is noted that hexavalent chromium concentrations were not assessed, however it is not considered a contaminant of concern.

The maximum reported concentrations for nickel and total chromium were 180 mg/kg and 470 mg/kg, respectively (AGT, 2022). Nickel and chromium are naturally present in soils generated from the Newer Volcanics Formation and often exceed the Fill Material criteria.

The analytical data collected by AGT demonstrates that nickel and chromium were present at all test pit locations, in both surficial and natural undisturbed soil, including soil logged as being weathered basalt rock. There are no known potential contamination sources of metals within the park. It is considered that the concentrations of nickel and chromium are naturally occurring. As such, the native ecosystems in the area are unlikely to be impacted by the metals' concentrations observed. In accordance with the NEPM it would be appropriate to calculate an area-specific EIL incorporating the increased added background concentration from the Newer Volcanic soil.

The concentration of nickel exceeds the upper Fill Material criteria and may be classified as Category C for offsite disposal. However, it is noted that leachate testing would still be required should this option be considered. Alternatively, it is considered that soils should be able to be reclassified by EPA as Fill Material, given the natural background nature of the nickel. This would require a designation application to be made to EPA.

6.0 Detailed Site Investigation Results – Acid Sulfate Soil

6.1 Stage B – Detailed site soil sampling program and assessment

The results of the ASS sampling and analytical program are presented in **Table T5, Appendix E**. The NATA certified laboratory reports are included with the COC documentation **Appendix F**.

6.1.1 Sampling Frequency

Samples were collected for ASS analysis from within the wind turbine and transmission line areas. Samples were collected targeting major geological units including Quaternary aged dunes, alluvium, aeolian and swamp deposits, considered to have the potential for generation of acid leachate. Samples were also collected within test pits completed to assess the potential for contamination.

A total of 13 locations were sampled at 0.5 metre intervals from surface to 5.0 mbgl (one metre below the maximum proposed depth of excavations) within the turbine area and to 2.0 mbgl (one metre below the maximum proposed depth of excavations) within transmission line area.

Samples were collected below the frequency recommended in Victorian EPA Publication 655, based on both linear structures and areal extent. However as the purpose of this ASS investigation was to identify whether ASS is likely to be encountered within the study area and if management is required, this reduced frequency was considered sufficient for preliminary ASS investigations and to provide guidance regarding risk to the environment and management measures. Further assessment will be required to inform neutralisation requirements.

6.1.2 Field Screening

ASS field screening tests involve shaking the soil samples with either deionised water (pH_f) or peroxide (pH_{fox}) and noting the resultant pH of each sample. The pH_{fox} test simulates oxidation of pyrite present in the soil sample, however, the oxidation of additional materials such as organic material may also affect the sample pH. As such, the pH_{fox} result may not be entirely attributable to pyrite oxidation.

The key decision criteria for further analysis are as follows:

- Typically, a field pH_f less than 4 indicates actual acidity, and pH_{fox} less than 3.0 indicates PASS.
- A pH_{fox} value of at least one unit below pH_f may indicate acid generating material requiring further testing. The larger the difference (delta pH) between the two values the more likely the material is potentially acidic. Also, lower the pH_{fox} value, the material is more likely to have higher net acidity value.
- If the pH_{fox} is less than 3, and the above condition applies, then it strongly indicates a PASS. The more the pH_{fox} drops below 3, the greater the likelihood that sulfides are present.
- For pH_{fox} of 3 – 4, the test is less positive and laboratory analysis is required to confirm if sulfides are present
- For pH_{fox} 4 – 5, the test is inconclusive and further testing is required. Sulfides may be present either in small quantities and poorly reactive or the sample may contain self-neutralising carbonate
- pH_{fox} greater than 5 and little or no drop in pH from the field value indicates little net acidification
- In addition, multiple samples within each bore was analysed for varying soil profile (i.e. sand/silt v clay).

6.1.3 Field Screening Results

The results of the indicative screening testing (pH_f and pH_{fox}) and the samples selected for further analysis are presented in **Table T5, Appendix E**. NATA certified laboratory reports are included with COC documentation in **Appendix F**.

A summary of general statistics for screening on a total of 96 samples (including two duplicate samples) is provided in **Table 20**.

Table 20 Statistical summary of pH_f and pH_{fox}

Statistical Summary	pH _f	pH _{fox}	Delta pH	Reaction Rate
Numbers of results	96	96	96	96
Minimum values	4.0	1.5	0.5	1
Maximum values	9.5	8.1	5.2	4

*Note: *pH_f of ≤ 4 is indicative of actual acid sulfate soils and pH_{fox} of ≤ 3 is indicative of potential acid sulfate soils*

The key findings are summarised below:

- The pH_f values ranged between 4.0 pH units and 9.5 pH units. One sample collected at TP07 at depth of 0.5 mbgl (4.0 pH units) reported a pH_f of 4.0, indicating strong presence of existing acidity.
- The pH_{fox} varied across horizons and ranged between 1.5 and 8.1 pH units. Approximately 19% of the samples reported pH_{fox} less than 3.0 indicating strong presence of potential PASS at these locations and depths.
- The delta pH (difference between pH_f and pH_{fox}) ranged between 0.5 pH units and 5.2 pH units. Approximately 60% of the samples had a delta pH of greater than 2, indicating strong oxidation potential for these samples.

Based on a review of the field pH_f and pH_{fox} tests, all tested samples were classified into four categories: being borderline AASS presence, PASS presence, Limited net acidifying ability, and Uncertain/Unlikely ASS. The samples where the outcome is uncertain are not clearly an ASS based on the laboratory results but contain some indicators of ASS. The review of pH_f and pH_{fox} results is summarised below in **Table 21**.

Table 21 Review of pH_f and pH_{fox} results

	pH Screening Tests	AASS	PASS	Limited net acidifying ability	Uncertain
Numbers of samples	96	33	23	13	27
Percentage	-	34%	24%	14%	28%
Numbers of samples selected for lab analysis	23	12	8	1	2

6.1.4 Chromium reducible sulfur results

The indicative field pH tests do not provide a quantitative measure of the amount of acid that has been or could be produced through oxidation. As such, detailed laboratory testing was conducted on selected samples to verify the existence and nature of ASS.

The process for selecting samples for additional testing was undertaken as per the National ASS Guidance (Sullivan et al., 2018) and the criteria given in **Section 3.4.3**. Samples were selected based on the individual pH_f, pH_{fox}, delta pH and observed lithologies in the field. A total of 23 primary samples were selected for further CRS suite analysis across 10 sampling locations. The two duplicate samples were selected for SPOCAS and the results are discussed in the Data validation report (**Appendix G**).

The results of the CRS analysis are presented in **Table T5 (Appendix E)** and summarised in **Table 22** below.

Table 22 Summary of Chromium suite laboratory results

Analyte	No. of samples	Number of detections	Min conc.	Max conc.	No of samples exceeding 0.03%S
Actual acidity (%S)	23	11	0.022	0.3	9
Potential acidity (%S)	23	22	0.007	1.22	4
Retained Acidity (%S)	23	5	<0.02	0.066	1
Acid Neutralising Capacity	23	4	0.13	3.52	
Sum of existing acidity (actual + retained) and potential acidity (%S)	23	16	0.03	1.54	14*
Liming rate (kg CaCO ₃ / tonne)	23	7	1	72	

**Note- 14 samples reported Net Acidity exceeding the action criteria ($\geq 0.03\%S$) for ASS management*

Table 22 indicates that 48% of the soil samples contained detectable actual acidity ranging between 0.022 %S and 0.3 %S. A total of nine of the 11 samples reported Titratable Actual Acidity (TAA) concentrations greater than 0.03 %S, indicating the presence of notable readily soluble existing acidity at these locations. Approximately 67% of the samples had associated reducible inorganic sulfide (RIS) concentrations greater than 0.01%S, indicating that the acidity may be related to the oxidation of sulfides. The remaining 33% of the samples reported TAA with low RIS concentrations (less than 0.01 %S), suggesting the acidity may be related to other sources.

63% of the samples with existing acidity were reported in shallow natural soils (classified as loose, moist sands or moist clayey sands) at depths ranging between surface and 1.0 mbgl across the sampling horizon.

Retained acidity (ranged between less than 0.02 %S and 0.06 %S) was noted in five samples with pH_{KCl} less than 4.5 within natural sands. This indicates potential presence of transient insoluble sulfur compounds like jarosite, or other iron and aluminium sulfate minerals.

Potential acidity (indicated by presence of RIS) was reported in 22 of 23 samples ranging from 0.007 to 1.22%. Of these, 73% of the samples reported RIS concentrations greater than or equal to 0.01 %S and 17% of the samples reported RIS greater than or equal to 0.03 %S. This indicates presence of unoxidised inorganic sulfides which can produce acidity if oxidised.

Approximately 17% of the samples (four of 23 samples contained acid neutralising capacities (ANC) ranging between 0.13 and 3.52 %S. These occurred at two locations (TP01 and TP02) across the depth horizon from surface to 1.0 mbgl. ANC (generally related to the presence of naturally occurring calcium carbonate in the form of crushed shells, skeletons, coral and foraminifera), was likely due to presence of shallow limestone reported in field at these locations and depths. All four samples reported net acidity concentrations (excluding ANC) below the action criteria. Laboratory calculated ANC values have not been considered during acid base accounting as it is generally an overestimation of the actual available ANC in field (Sullivan et al., 2018).

Net Acidity (sum of existing, retained and potential acidity) values for the 23 samples ranged between <0.02 %S and 1.54 %S. The results are summarised below:

- A total of 7 samples reported net acidity below LOR (<0.02 %S).
- Two samples reported net acidity equal to LOR (0.02 %S).

- A total of 14 samples across nine locations (of the total 13 locations sampled for ASS), including TP05 –TP09 and TP13 – TP16, reported net acidity concentrations above the action criteria for ASS management (greater or equal to 0.03 %S). A brief interpretation for the type of acidity is given below:
 - Of the 14 samples where the net acidity exceeds criteria , four samples are classified as PASS, where the measured potential acidity (residual inorganic sulfides) is noted greater than the existing acidity.
 - Of the 14 samples where the net acidity exceeds criteria, six are classified as AASS as existing acidity (potentially due to ASS processes) is greater than measured potential acidity.
 - The remaining four surface samples where the net acidity exceeds criteria (TP05, TP14, TP15 and TP16) are classified as 'acidic soils' and the noted acidity is unlikely to be sulfidic in nature (pH_r > than 4 and <4.95 and RIS% less than 0.01 %S). The source of this acidity is unclear with no visual evidence of reportable jarosite and very low levels of reportable retained or potential acidity. As such, these materials should not be treated as if they were ASS materials. To do so may result in the liming of naturally acidic ecosystems. This could lead to unnaturally alkaline environments resulting in severe ecological damage to the acidophilic organisms that relied on the acidic nature of these ecosystems (Sullivan et al., 2018).

As such, ASS management is needed for 10 of the 14 samples collected from TP05 through to TP09 and TP13, located in the central area overlying quaternary Holocene aeolian sand deposits which reported net acidity concentrations exceeding the ASS management criteria. Based on the Net Acidity concentrations, the associated liming rates for treatment of these soils ranged between 2 kg CaCO₃/tonne and 72 kg CaCO₃/tonne.

6.2 Stage C ASS assessment - groundwater analytical results

Stage C ASS assessment includes consideration of the hydrogeologic and hydrological conditions within the study area. **Table 23** below presents the pH, electrical conductivity and TDS field parameter data measured during the groundwater field investigation undertaken by AECOM (2021a). Further details on groundwater levels, flow direction, and quality parameters are presented separately in the Groundwater Impact Assessment Report (AECOM, 2021a). The groundwater monitoring well locations are presented on **Figure F2** and **Figure F6 (Appendix A)**.

Table 23 Groundwater Sampling Stabilised Field Parameters (AECOM, 2021a)

Bore ID	pH	Electrical Conductivity (µS/cm) ¹	Total Dissolved Solids (TDS) ²
MW01	6.23	1,130	768
MW02	6.33	1,142	777
MW03	5.96	1,047	712
MW04	7.32	1,352	919
MW05	6.23	1,118	760
MW06	6.11	1,889	1,285
MW07	6.2	2,586	1,758
MW08	6.41	1,490	1,013
MW09	7.19	1,196	813
MW10	4.95	464	315
MW11	4.23	452	307
MW12	4.67	817	556

Note: 1. µS/cm = microsiemens per centimetre; 2. TDS approximated as Electrical Conductivity x 0.68.

The groundwater data indicates that pH of groundwater in the area relating to MW01 to MW09, is slightly acidic to neutral and there are no signs of impact associated with ASS (consistent with the calcarenite lithology in the area). Whereas groundwater from MW10 to MW12, has a lower pH (pH 4-5) that may be representative of impacts associated with ASS. It is noted that groundwater from MW10 to MW12, has low TDS compared to MW01 to MW09 and likely reflects the shallow depth to groundwater and rainwater infiltration source in that area.

The total alkalinity concentrations at MW01 to MW09 ranged from 239 to 661 mg/L. This indicates that there is generally adequate buffering capacity to maintain circumneutral pH under current conditions. For MW10 to MW12, total alkalinity was noted to range from 13 to 172 mg/L, indicating low buffering capacity in the groundwater underneath these locations.

6.3 Stage D - ASS Hazard Assessment

It can be inferred from the preliminary ASS investigation that the majority of the sampling locations within the study area are likely to be ASS (mainly classified as AASS). Approximately 43% of the samples exceeded the adopted action criteria for ASS management. However, based on the data collected during this investigation, the presence and absence of ASS within the study area has been observed to align with mapped geology. The ASS outcomes based on geology are presented on **Figure F6a-6b (Appendix A)** and are discussed further below:

- The 'Western Wind Farm' area where the geology is mapped as Pleistocene aged aeolian calcarenite deposits, encompassing the western extent of the study area (and the majority of turbine locations) (**Figure F3a**). Four test pits (TP01 to TP04) reported results below the limit of reporting indicating absence of ASS material in this area.
- The 'Central Wind Farm' area where the geology is mapped as Holocene aged coastal and inland dunes with dune sand and some swamp deposits. Five test pits (TP05 to TP09) in this area reported results indicating presence of ASS soils and the need for management if disturbed (High Hazard as per BPMG). Further investigations may be undertaken to refine and delineate these locations.
- The main geological unit mapped within the Heywood transmission line under Boiler Swamp Road through the Cobboonee National and State Parks was 'Newer volcanic basalt' with minor scoria and ash. Sampling was not initially undertaken in this area due to access issues, however the Newer Volcanics are common throughout western Victoria and are not considered to represent an ASS risk. Additional assessment data is discussed in **Section 6.5**. No further assessment of these soils is recommended for ASS.
- The remainder of the Heywood transmission line was mapped within Quaternary aged swamp and lake deposits with silt, clay and peat. Of the four test pits (TP13 through to TP16) completed in this area, PASS was reported only in TP13 at depths greater than 2mbgs. AASS was also reported in TP13 at the surface, hence soil in this area will require management (if disturbed) and/or further investigation (High Hazard as per BPMG). The eastern most section of the transmission line (TP14, TP15 and TP16) reported absence of ASS at these locations.

In summary, AASS were identified within soils in the 'Central Wind Farm' area (TP05 to TP09) and in TP13, hence soils in these areas will require ASS management if disturbed, as indicated in **Figure F6a-6b (Appendix A)**. No ASS was identified within the 'Western Wind Farm' area (TP01 to TP04) and the eastern most section of the transmission line (TP14, TP15 and TP16).

Note, CASS hazards were conservatively estimated as the volumes of CASS to be disturbed are not understood at this time.

6.4 Data Quality Indicators (DQI) for QA/QC data validation

The DQI adopted is based upon EPA Victoria Publication IWRG655.1 which recommended that a minimum of 10% of samples are analysed using the alternative analysis method. A total of 23 primary samples were analysed for CRS. In addition to this, two primary samples (TP05_2.5 and TP07_0.0), were selected for SPOCAS analysis for QC of laboratory results. The reduced frequency of QC sampling is considered adequate for this investigation.

RPD values were calculated for the values above LOR to understand the variability in the field and calculations were undertaken for field screening data, actual acidity and net acidity (excluding ANC) parameters only. The potential acidity parameters were excluded as organic material in form of brown to dark brown colour of the sands, roots, shells etc was noted in the field for these samples. As per Sullivan et al. (2018), the potential acidity measurement with SPOCAS is affected by interferences from organic sulfur and may lead to overestimation of sulfides as compared to CRS suite which only measures the inorganic sulfides (which pose a significant environmental acidity hazard). Conservatively, the net acidity values from CRS suite for primary samples was used for data analysis.

All the calculated RPDs were below the adopted 30% variability criteria. The data is deemed acceptable for purpose of this investigation.

QA/QC sample data is presented in **Appendix G**. On the basis of the data validation, the overall quality of the analytical results is considered to be acceptable and suitable for assessment of the soil conditions of the study area.

6.5 AGT (2022) ASS Data

AGT (2022) collected samples for ASS analysis from three test pits excavated in the national park area. Of the 15 primary soil samples collected (i.e. five samples from each test pit), field screening of pH, i.e. pH_f and pH_{fox} , was undertaken for one sample from each test pit (at depths of either 0.5 mbgl or 1.0 mbgl). The reported pH_f ranged between 6 and 6.5 pH units, and pH_{fox} ranged between 4.1 and 5.1 pH units. Typically, a field pH_f less than 4 indicates actual acidity, and pH_{fox} less than 3.0 indicates PASS. Although supporting deterministic laboratory tests to assess ASS potential were not undertaken, the limited field testing data indicates that the soils are unlikely to be AASS or PASS. These results are considered to support AECOM's position (**Section 6.1**) that the basaltic sourced soils are not ASS and that no further assessment is required.

7.0 Detailed Site Investigation Results – Groundwater

A summary of the site specific hydrogeology and results of the groundwater monitoring event are presented in **Table 24** below.

Details of the investigation are presented in the Groundwater Impact Assessment Report (AECOM, 2021a). Further assessment of the potential groundwater impacts associated with the Project was carried out by AECOM (2021a).

Table 24 Hydrogeological and Groundwater Results

Aspect	Result
Depth to Groundwater	<p>Within the western windfarm area, depth to groundwater ranged between 1.48 metres below top of casing (mbTOC) (MW04) to 5.11 mbTOC (MW02).</p> <p>Within the central windfarm area, depth to groundwater ranged between 1.49 mbTOC (MW10) and 2.76 mbTOC (MW11).</p> <p>Groundwater gauging data is presented in Table T1 (Appendix E).</p>
Groundwater Inferred Flow Direction	<p>Based upon the wide geographic spread of groundwater gauging data at the site it is not possible to meaningfully interpret regional groundwater flow direction. Groundwater flow is likely to be influenced locally by topography, waterbodies, and drainage systems.</p> <p>Groundwater elevation contours were not generated for the gauging round given the significant distance between locations the study area and the variable topography.</p> <p>Detailed information on groundwater flow direction is presented in the Groundwater Impact Assessment Report (AECOM, 2021a).</p>
Groundwater Field Parameters and Observations	<p>Groundwater field parameters are tabulated in Table T2 (Appendix E).</p> <p>No observations of detectable contamination such as odour or sheen were noted during any sampling.</p>
LNAPL Presence	<p>No LNAPL was detected at any groundwater monitoring well.</p>
Groundwater Analytical Results	<p>Groundwater analytical results were below the LOR for TRH, BTEXN, lead and OPPs at all groundwater wells.</p> <p>The concentration of zinc was above LOR and above adopted marine and freshwater toxicant screening levels in all groundwater wells (including duplicate and triplicate samples). Similar levels of zinc were encountered across the study area. The distribution of zinc across the study area and the absence of any likely source, would indicate that it is naturally present / elevated regionally within the aquifer and does not represent contamination.</p> <p>The concentration of nickel was above LOR in all groundwater wells. The concentration was above adopted marine and freshwater toxicant screening levels in MW06, MW08 and MW12. Concentrations in MW08 also exceeded drinking water health criteria. The distribution of nickel across the study area would indicate that it is naturally present / elevated within the aquifer and does not represent contamination.</p> <p>Concentrations of arsenic exceeded LOR in MW02, MW08, MW10 and MW12. Concentrations were below all adopted screening criteria in all wells except MW12, which exceeded drinking water health criteria. Arsenic is naturally present in many sediments and would appear to be marginally more likely in the Quaternary aged swamp sediments in the central windfarm area, compared to the Quaternary calcarenite deposits outcropping in the western windfarm area. It is not considered to represent contamination.</p> <p>Concentrations of chromium exceeded LOR in MW04, MW08, MW10 and MW12 but did not exceed any adopted criteria.</p>

Aspect	Result
	<p>In general, metals concentrations are considered to be representative of background, based on the absence of identified sources and soil contamination and prevalence in regional geology.</p> <p>Trace concentrations of organochlorine pesticides; aldrin and g-BHC (Lindane) were detected in groundwater well MW04. The concentration of lindane was above adopted freshwater toxicant screening levels however it is noted to be orders of magnitude below drinking water criteria. As such, it is considered unlikely to present a risk to human health or the environment, unless discharged directly to a waterway.</p> <p>Concentrations of aldrin and lindane were below detect for all other wells. It is noted that lindane was analysed in six samples with lower LOR used. Potential discharge of abstracted groundwater to land is not likely to result in an unacceptable ecological impact based on the low concentrations present in groundwater.</p> <p>Groundwater analytical results are presented in Table T6 (Appendix E) and Figure F7 (Appendix A).</p>

7.1 Data Quality Indicators - QA/QC data validation

Data quality analysis was undertaken in general accordance with the ASC NEPM 2013 and EPA Victoria Publication 669. A detailed summary of the validation of groundwater analytical data is presented in **Appendix G**. In summary, no QA/QC issues were identified in the field or laboratory datasets that could have a material implication to decision-making on the Project.

QA/QC data for duplicates and triplicates is included in analytical results **Table T6 (Appendix E)**, while RPDs, field blanks, rinsates and trip blanks tables are presented in **Appendix G**. On the basis of the data validation, the overall quality of the analytical results is considered to be acceptable and suitable for assessment of the conditions of groundwater.

8.0 Impact Assessment / Management Measures

This impact assessment followed a systematic approach to identifying and assessing potential environmental effects. The assessment of impacts considers all protected environmental values, in particular public human health and the environment. Potential impacts and management measures are discussed below.

8.1 Contaminated soils

Due to existing and historical land uses within the Project area, there is a low potential for contaminated soil to be encountered during the construction works. The field investigation, concluded that, based on broadly spaced intrusive investigations, soil contaminants were not found above laboratory limits of reporting or relevant guidelines. The assessment of soil did not identify any impact exceeding investigation levels adopted to be protective of public human health or the environment, in accordance with the ASC NEPM (amended 2013)).

Soil sampling density for the field investigation does not comply with EPA Victoria Publication IWRG702: *Soil Sampling* as this site investigation was intended to provide an indication of the potential for soil contamination within the study area only, and not for the purpose of offsite soil reuse, treatment or disposal. If soils are to be moved offsite for reuse, treatment or disposal, soil sampling must be undertaken in accordance with the IWRG702: *Soil Sampling* to be undertaken to ensure the appropriate hazard categorisation is applied.

8.1.1 Unknown contamination

Encountering unknown contamination (including asbestos) during any construction project is possible. However, based on the site history and field investigation results, it is considered unlikely that the Project construction would encounter unknown contamination that will result in a long-term and irreversible impacts to human health and the environment.

Indicators of unexpected or unknown contamination may include (but not be limited to) the presence of:

- ACM
- Elevated PID measurements
- Staining of soils
- Odours (e.g. sulfur odour, rotten egg odour, hydrocarbon odour)
- Soils with ironstone band or jarositic material (yellow-brown mottling), indicative of potential for ASS
- Natural shell material, water-logged areas, swampy vegetation, and scalded land, indicative of potential for ASS.
- Hydrocarbon sheen
- NAPL (non-aqueous phase liquid)
- Solid inert materials or debris
- Redundant or abandoned underground services

In the event that unknown contamination is uncovered during Project construction, the following measures should be undertaken in accordance with the construction environmental management plan (CEMP) for the Project:

- Cessation of ground disturbance at the unknown contamination location and within the immediate vicinity, and isolation of the area (if required).
- Assessment of the unknown material by an experienced environmental or health and safety practitioner (depending on the nature of the material) and appropriate disposal or treatment of the material

- Assessment of the site contamination in accordance with EPA guidelines and determination and implementation of appropriate remedial action (if required).
- Where potentially impacted waste soils are encountered they must be sampled and categorised in accordance with EPA Publications IWRG702 and 1828.2 and managed in accordance with regulations.

Therefore, the potential impacts to human health and the environment are generally considered to be minor as pathways to receptors, including surface water bodies, can be readily managed under the Project CEMP. The CEMP should be prepared addressing the Duty to Manage (EP Act 2017), as detailed in EPA Publication 1977 (Guide to the duty to manage contaminated land).

8.2 Acid sulfate soils

Primarily, impacts due to the disturbance of ASS will be dependent on the nature, extent and magnitude of construction activities and their interaction with the natural environment. Potential impacts attributable to construction might include:

- Excavation of significant volumes (greater than 1,000 cubic metres) of ASS where they are prone to ready leaching, releasing metals and acidity into the surrounding environment.
- Exposing AASS during excavation or drilling causing acid to leach into the surrounding environment.
- Exposing PASS during excavation allowing oxidation to create AASS.
- Surface runoff entering areas of exposed ASS, causing acid release into the surrounding environment.
- Acid leachate at ASS treatment sites released to the surrounding environment.
- Long-term open excavations and stockpiling of the ASS without any treatment where it is exposed to rainfall, causing acidic run-off to leach into the surrounding environment.

In situations where acid sulfate soils may be disturbed during Project construction, operation or decommissioning (such as excavation, dewatering or placement of fill), the site should be managed to avoid and control adverse environmental impacts.

8.2.1 Acid Sulfate Soil Management Plan

To reduce the potential impacts to environment surrounding the proposed Project area, a detailed ASS Management Plan (ASSMP) will need to be developed, to manage the ASS and any associated waters (perched, seepage, stormwater etc) during construction in the 'Central Wind Farm' area and in the vicinity of TP13, towards the eastern extent of the Heywood Transmission line. **Figure F6a-6b (Appendix A)** indicates the areas where AASS were identified and the ASSMP should apply. The ASSMP should be prepared in accordance with Vic EPA Publication 655, the CASS BPMG (DSE, 2010) and the National ASS guidelines (2018) and be approved by the authority. As displayed on **Figure F6a-6b (Appendix A)** the ASSMP ceases at the geological boundary with the Quaternary aged Newer Volcanic basaltic soils. The ASSMP must apply to until the Newer Volcanic basaltic soils are encountered, noting that the boundary has not been accurately mapped.

It is also noted that small areas of Quaternary aged alluvial soils may be encountered in low lying / swampy alluvial soils within the Cobboboonee National Park. Where any such alluvial soils are encountered they must also be managed in accordance with the ASSMP.

It is noted that further assessment will be required to permit calculation of liming rates for inclusion into the ASSMP.

Based on guidance provided in the CASS BPMG (2010), the ASSMP may include (but may not be limited to) the following components:

- Project overview, including overview of proposed disturbance works
- Description of the site and environmental setting, including topography, hydrology and geology, groundwater characteristics, land use and presence of sensitive receptors.

- Summary of the ASS investigations and assessment undertaken associated with the Project area, including spatial distribution and expected occurrence of ASS associated with the Project, and potential impacts.
- Timing of planned Project works and environmental management activities
- Description of the ASS management strategies that will be used to minimise impacts from the Project works, including strategies for:
 - avoiding or minimising disturbance of ASS, and preventing oxidation of metal sulfides
 - planned treatment or neutralisation of ASS and any runoff or acidic leachate that might be generated, and potential reuse of treated ASS or disposal of ASS
 - water management, including onsite and offsite water-table management before, during and post disturbance, and containment of runoff or acidic leachates
 - treatment for reduction or neutralisation of acidity, spoil management including offsite reuse or disposal, water management, monitoring, record-keeping, reporting and EPA consultations and approvals
- Soil and water monitoring requirements, and treatment validation
- Reporting requirements and record-keeping relating to excavation/backfill locations and volumes, treatment methods and volumes, monitoring, laboratory analysis monitoring and incidents.
- Contingency procedures to manage potential impacts/incidents, including trigger levels, and remedial and restorative actions.
- Consultation with relevant stakeholders and authorities and approval process associated with the ASSMP

The ASSMP is expected to be developed and implemented in conjunction with the Project CEMP.

8.3 Groundwater

Based on the findings of the groundwater contamination assessment, it is considered that, for the majority of the Project area, groundwater contamination is not expected to be present.

Concentrations of metals were low and are considered likely to represent naturally occurring background levels. On the basis that the shallow groundwater encountered is likely to be interacting with / discharging to an adjacent surface water body, it is not considered that any specific management measures are required to manage the release of groundwater containing trace metals, however due to background metals concentrations the groundwater may not be suitable for sensitive uses (such as domestic use) and should not be abstracted and allocated to this use without further assessment.

In the vicinity of test pit TP05, there is the potential that treatment chemicals associated with former operation of a sheep dip, may be present in groundwater. If groundwater is abstracted from this area during construction activities it should be tested prior to discharge to determine whether it must be remediated or sent offsite for disposal or can be discharged to land. Assessment must be completed in accordance with the Duty to Manage (EP Act 2017), the ASC NEPM (amended 2013) and associated guidance documents. Alternatively, it may be possible to avoid groundwater abstraction from this area.

It is considered that groundwater in former pine plantation areas groundwater may be contaminated by organochlorine pesticides associated with historical land use, although it is noted that concentrations of pesticides were only observed above laboratory detection limits in groundwater from one of the four wells installed in pine plantation land.

Inappropriate management and disposal of contaminated groundwater has the potential to impact soil and/or surface water resulting in changes to soil and surface water quality, which could preclude protected environmental values. As such, the approach outlined below should be adopted to conservatively eliminate the pathway between potentially contaminated groundwater and aquatic ecological receptors:

- If groundwater is encountered in current or former pine plantations groundwater must be sampled and characterised prior to disposal in accordance with the GED and regulatory approvals.
- If there are any observations of odour, discolouration, sheen or other signs of potential contamination the abstraction of groundwater should cease and only recommence following sampling and testing to confirm whether additional management measures and remediation are required.

To facilitate compliance with applicable regulatory requirements and guidelines, it is recommended that the management measures be included in the Project CEMP.

8.4 Spoil Management

With regard to the Downer (2022) design report for the construction of the underground transmission line (refer **Appendix I**), a key design objective of the report is to minimise the amount of spoil created and removed, and re-use spoil where possible. The majority of the excavated material is proposed to be re-used as backfill during the cable installation process, with minor amounts of excess spoil to be spread and rolled back into the track surface where appropriate to do so, noting any excess material that would need to be removed would be taken offsite (Downer, 2022). The spoil management approach is generally consistent with project objectives to minimise the generation of waste and offsite disposal. However, AECOM recommends that spoil management and control measures be included in the Project CEMP, in order to manage duties and obligations associated with waste/spoils under the EP Act to minimise risk of harm (including ASS requirements).

Potential management control measures relating to handling and stockpiling of spoil, movement and transport of spoil, as well as reuse or disposal of spoil materials are described below, noting the controls listed are not exhaustive, and additional project-specific controls may be implemented as part of the Project CEMP:

- Implementation of dust control measures during excavation and land disturbance activities. These may involve minimising excavation and movement of soils in windy conditions, minimising movement of vehicles on exposed areas, and dampening down stockpiles soils and vehicle tracks.
- Managing surface run-off during or after rain events and preventing potentially contaminated stormwater or runoff from entering waterways through construction of silt fences and other measures. If generation of water is expected as part of the control measures implemented, e.g. runoff or dewatering of excavations, a water management strategy must be implemented as part of the CEMP.
- Management of unknown or unexpected contaminated wastes that may be uncovered during excavation works (refer to **Section 8.1.1**) which may be contaminated.
- The stockpiling area for placement of excavated material should be in a stable area, as far as possible from waterways or areas subject to water-logging or ponding. Stockpiles should be appropriately managed to prevent dust generation (via wind erosion) or stormwater runoff. This may involve:
 - Covering (if necessary) or spraying the stockpiles to keep the soil damp to mitigate wind erosion (dust generation).
 - Construction of silt fences and other measures to capture and prevent runoff from the area.
 - Establishment of exclusion zones or barriers to prevent access and contact with soil by unauthorised people.
- Stockpiling of excavated materials in designated areas until the material is reinstated to the excavation as backfill (if appropriate to do so).
- Stockpiling for an extended period of time should be avoided in order to mitigate potential environmental impacts such as dust and odour generation, and stormwater and sediment run off. The timing and methodology of backfill must be carefully considered. Subsequent compaction of backfill must reinstate a finished trafficable surface.

- Contaminated or potentially contaminated soil and excavated materials should be stockpiled separately to non-odorous and visibly 'clean' soils, on hardstand or high-density polyethylene (HDPE) sheeting, and considered as contaminated until the contamination status is assessed by sampling and analysis of the stockpiled material for offsite disposal. Contamination assessment must be undertaken by a suitably experienced environmental practitioner. Exposure to contaminated spoils should be minimised as described above (e.g. covering, exclusion zones, and silt fences)
- In the event that offsite disposal of excavated spoils is planned (e.g. spoils are not considered appropriate for reuse, or surplus spoils remain):
 - Stockpiles must be sampled and analysed for waste characterisation and categorisation purposes in accordance with EPA Victoria IWRG prior to removal from site.
 - Contaminated spoil must be collected and transported by an authorised/licenced waste contractor utilising the waste transport certificate scheme.
 - Vehicles transporting waste material offsite should operate in a manner to prevent loss of materials during loading, transport and unloading activities. Odorous waste must be covered while transporting.
 - Records of excavated soil and stockpile movements, including (but limited to) the location of materials excavated, quantities, descriptions of materials encountered, laboratory test certificates, waste assessment and categorisation reports, disposal location, and waste receipt dockets (from the waste transporter), should be maintained by the site owner and operator.

Management of spoil and other impacts should be completed in accordance with the Duty to Manage (EP Act 2017) and Vic EPA Publication 1828, where applicable and EPA Victoria Publication 1834, Civil construction, building and demolition guide (2020)

9.0 Conclusions

Contaminated soils

Based on a combination of the findings of the PSI and DSI, it was concluded that, soil contamination is unlikely to be present / limited in extent and that contamination was not identified in samples collected from test pits.

The concentration of CoPC were below the adopted investigation levels, with the exception of TRH >C₁₆-C₃₄ fraction (at test pit TP09) and pH (across the study area). However, it was concluded that:

- Based on the absence of petroleum hydrocarbons post Silica Gel Clean-up, and the residual polar metabolite concentration well below the criteria adjusted to account for the lower toxicity of polar metabolites, TRH >C₁₆-C₃₄ was not considered likely to present a risk to the ecology of the area (TP09). Based on the agricultural land use, it is considered most likely to relate to natural organic compounds and not petroleum hydrocarbon impact.
- The low pH values in soils are considered to relate directly to ASS and as such are not considered contamination. However, management measures such as the requirement for construction workers to wear appropriate PPE must be implemented and captured in the Project management plan(s) to manage human health risk via direct contact with acidic soils and / or groundwater / trench water.

Soil categorisation in accordance with the EPA Victoria Publication 1828.2 indicates that soil samples were generally classified as Fill Material. The exceptions are at TP03, TP14 and TP15, where concentrations of arsenic exceeded the upper limit for Fill Material, and at TP05 where the pH values exceeded the acceptable range for Fill Material, which would classify the locations as PW Category C material (for offsite disposal). However, elevated arsenic and low pH are considered to be naturally occurring and should not therefore affect classification, but further testing and an EPA designation may be needed to support this and management of ASS. The concentration of nickel in soils sampled from the Cobboonee National Park also exceeded Fill Material upper limits, but were below Category C upper limits (noting that no broad screen or ASLP testing has been completed). On the basis that nickel is considered to be naturally elevated an EPA designation request may facilitate disposal as Fill Material.

It is noted that sampling density does not comply with EPA Victoria Publication IWRG702: *Soil Sampling* and is based on the potential for contamination in the largely rural area. Localised impacts may be present at other locations and may be encountered during Project construction works.

Acid sulfate soils (ASS)

The ASS investigation across the study area identified net acidity in 10 of 23 soil samples exceeding the action criteria of 0.03 %S for soil disturbance exceeding 1,000 tonnes (CASS BPMG, 2010). The Project must therefore, be managed in accordance with EPA Victoria Publication IWRG655.1: *Acid Sulfate Soil and Rock*. Based on the field investigation results, it is concluded that:

- ASS soil was not identified within the 'Western Wind Farm' area (TP01 to TP04). Management of soils for ASS is not required in this area;
- AASS was identified within soils in the 'Central Wind Farm' area (TP05 to TP09). Soils within this area will require ASS management if disturbed. Further investigations may be undertaken to refine and delineate these locations; and
- PASS was reported only in TP13 at depths greater than 2mbgs. AASS was also reported in TP13 at the surface, hence soil in this area will require management (if disturbed) and/or further investigation. The eastern most section of the transmission line (TP14, TP15 and TP16) reported absence of ASS at these locations and management of soils will not be required.

An ASSMP should be implemented for areas requiring ASS management. Further testing will be required to calculate liming rates for inclusion into the ASSMP.

Although sampling was not undertaken within the majority of the Heywood transmission line, within the Cobboonee National Park, the basaltic soils of the Newer Volcanics formation are not considered to present an ASS risk and further assessment of these soils is not recommended.

Groundwater

Based on the findings of the groundwater contamination assessment, it is considered that, for the majority of the Project area, groundwater contamination is not expected to be present. Trace concentrations of metals were encountered, however they are considered to represent natural background conditions and should not restrict proposed activities.

Further assessment of groundwater is required in the area surrounding TP05 should groundwater be abstracted during construction to confirm whether impact is present due to historical activities and any management is required.

It is considered that groundwater in the former pine plantation areas may be contaminated by organochlorine pesticides associated with historical land use. All groundwater abstracted from properties associated with the pine plantations should be sampled and characterised such that it can be managed in accordance with the GED and regulatory approvals.

Overall, this investigation concluded that the risk to receptors including human health and the environment from the Project can be minimised with appropriate management measures in accordance with applicable regulations, guidelines and standards.

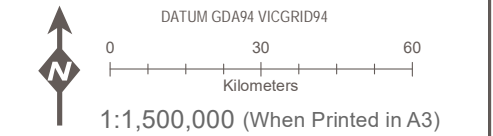
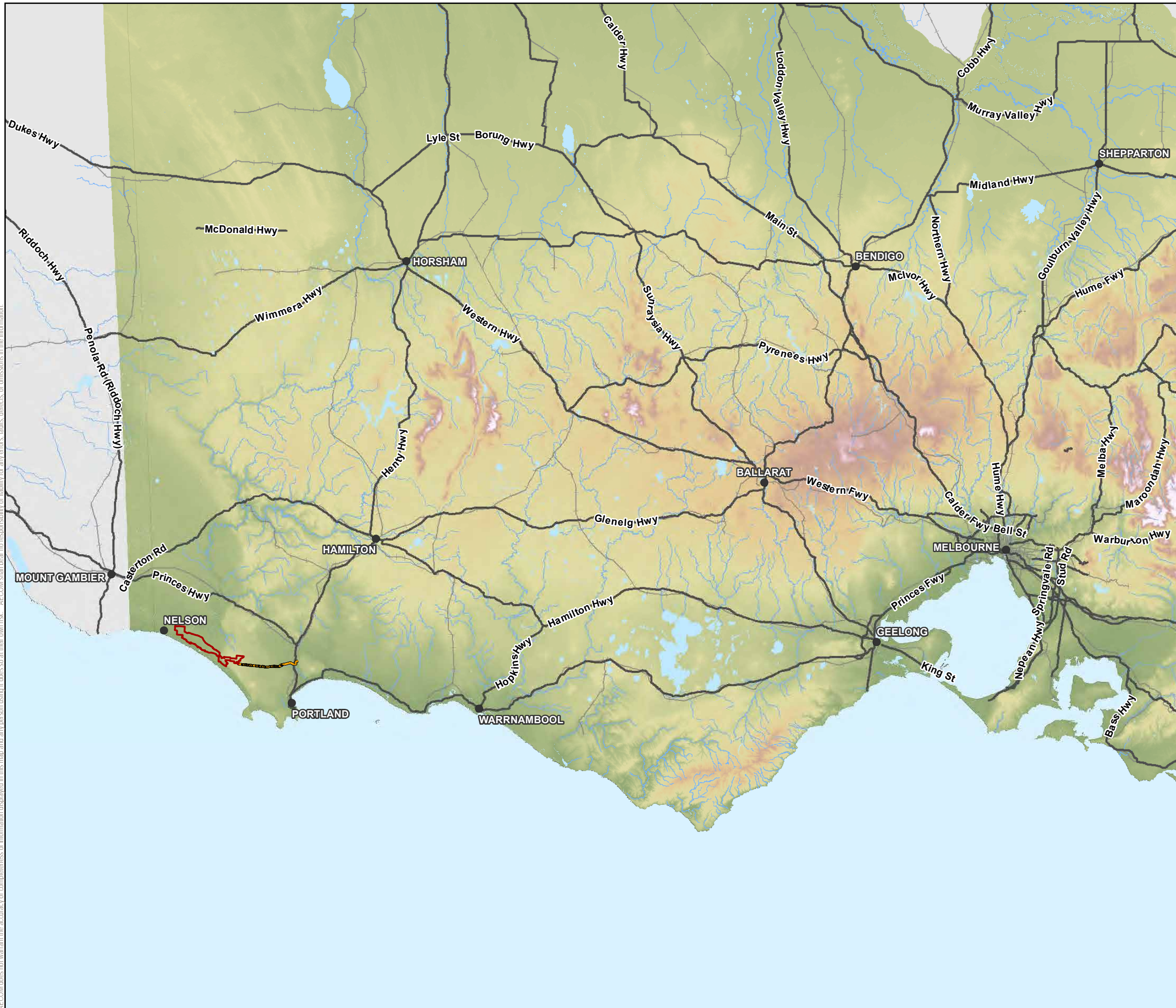
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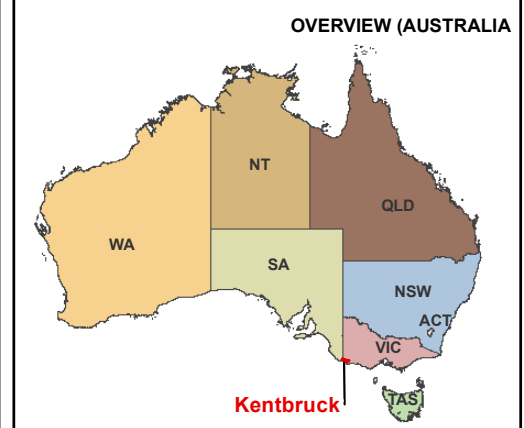
Appendix A

Figures

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- Legend**
- Wind Farm Site Boundary
 - Transmission Line
 - Town
 - Freeways/Highways
 - Railways
 - Watercourses
 - Waterbodies



Data Sources:

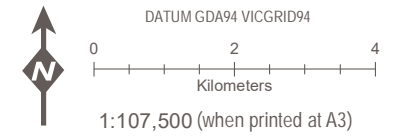
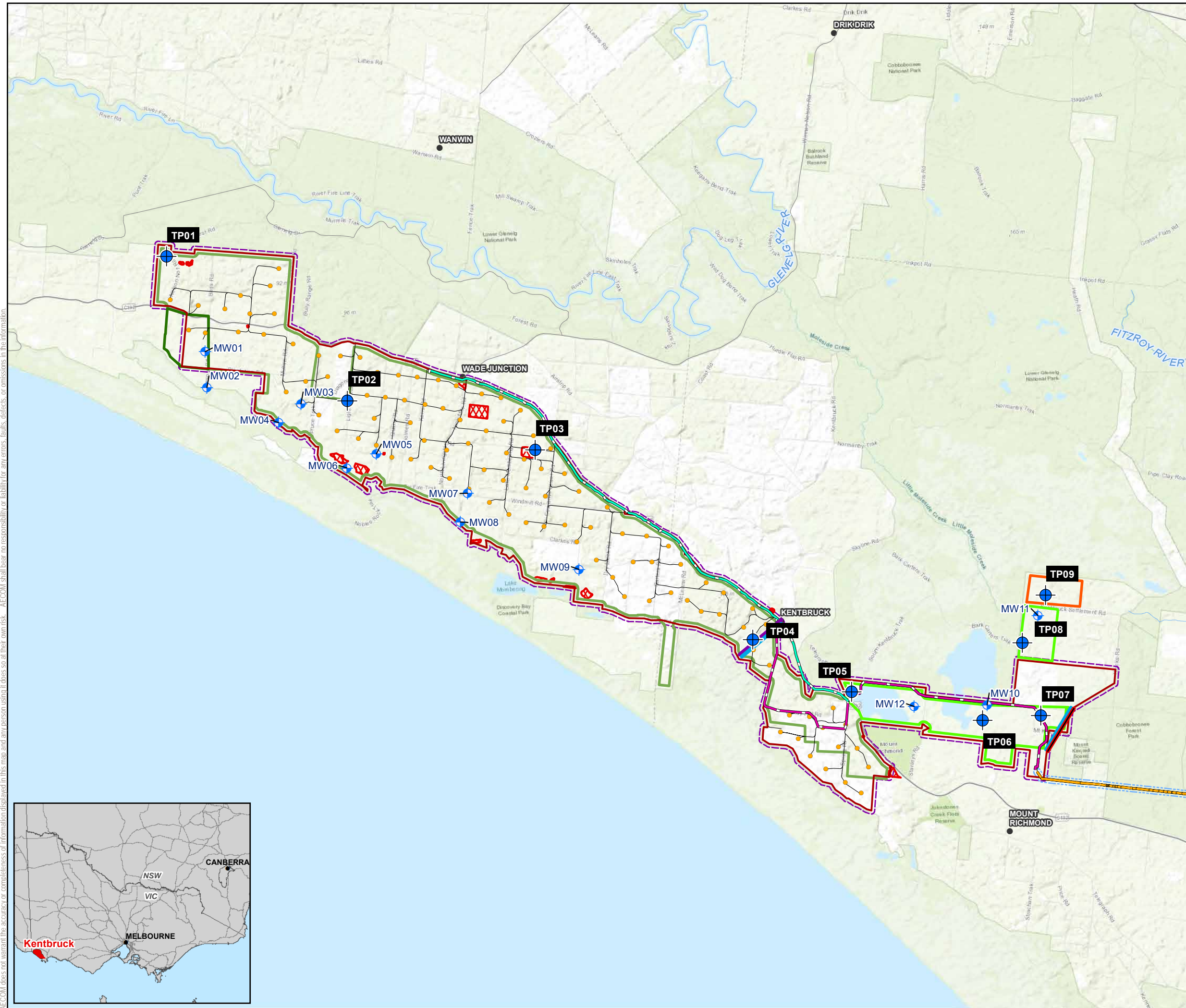
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**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

LOCATION PLAN	
PROJECT #: 60591699	Figure F1
CREATED BY: JB	
LAST MODIFIED: mcmahonj5: 26/10/2023	
VERSION: 1	



- Legend**
- Monitoring Well
 - Test Pit
 - Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Turbine location
 - Transmission Line (Underground)
 - 100m Alignment Buffer
 - 275 kV Powerline - Overhead
 - 275 kV Powerline - Underground
 - Internal access roads
 - Roads
 - Watercourses
 - Work Exclusion Area
 - Farm Boundaries**
 - Kentbruck, Willmill Road, Nelson VIC 3292
 - Richmond Park, Mount Richmond VIC 3305
 - Johnson Road, Nelson, VIC 3292
 - Corner of Blacks road and Kent Bruck Settlement road, Mount Richmond, VIC 3305
 - Central Wind Farm
 - Western Wind Farm
 - Transmission Line

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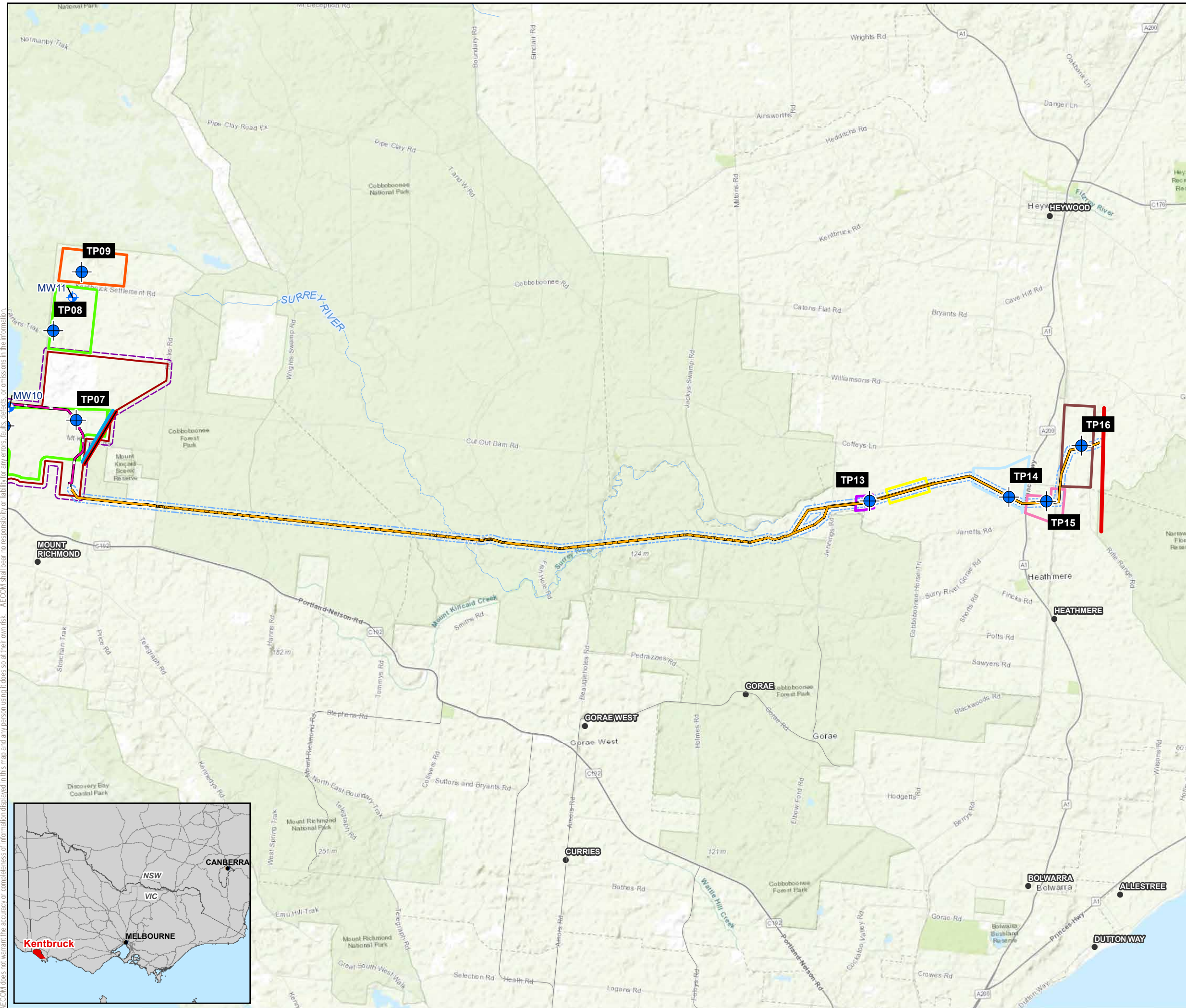


**Acid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES**

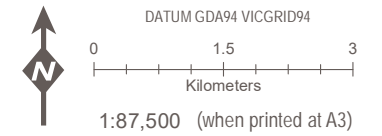
ASSESSMENT LOCATIONS	
PROJECT #:	60591699
CREATED BY:	JB
LAST MODIFIED:	mcmahonj5: 26/10/2023
VERSION:	1

Figure F2a

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- Legend**
- Monitoring Well
 - Test Pit
 - Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Transmission Line (Underground)
 - 100m Alignment Buffer
 - 275 kV Powerline - Underground
 - Internal access roads
 - Roads
 - Watercourses
- Farm Boundaries**
- 59 Browns Lane Heywood, VIC 3304
 - Richmond Park, Mount Richmond VIC 3305
 - 305 Coffeys Lane Heathmere, VIC 3305
 - Corner of Blacks road and Kent Bruck Settlement road, Mount Richmond, VIC 3305
 - Meaghers Road Heathmere, VIC 3305
 - Coffeys Lane Heathmere, VIC 3305
 - 1235 Princes Highway Heathmere, VIC 3305
 - Central Wind Farm
 - Transmission Line



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**Acid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES**

ASSESSMENT LOCATIONS	
PROJECT #:	60591699
CREATED BY:	JB
LAST MODIFIED:	mcmahonj5: 26/10/2023
VERSION:	1

Figure F2b



- Legend**
- Monitoring Well
 - Test Pits
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Wind Farm Site Boundary
 - Wind Farm Site Boundary 100m Buffer
 - Work Exclusion Area
 - Internal access roads
 - Roads
 - Watercourses

- Geology**
- Nh:** Neogene (Miocene): Marine calcarenite, marl, silt
 - Nxa:** Quaternary (Pleistocene) Coastal: sandy limestone, calcarenite, shell beds, marl
 - Qa1:** Quaternary (Holocene) Fluvial: alluvium, gravel, sand, silt
 - Qdl1:** Quaternary (Holocene), Aeolian: coastal and inland dunes: dune sand, some swamp deposits
 - Qm1:** Quaternary (Holocene), Aeolian and littoral: coastal and inland dunes: dune sand, some swamp deposits, beach sand
 - Qn:** Neogene (Pliocene), Paudal: lagoon and swamp deposits: silt, clay
 - Qn:** Quaternary (Holocene), Extrusive: tholeiitic to alkaline basalts, minor scoria and ash
 - Qns:** Quaternary (Holocene), Extrusive: scoria
 - Qxr:** Quaternary (Pleistocene), Aeolian, dune deposits: calcarenite

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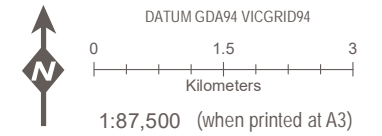
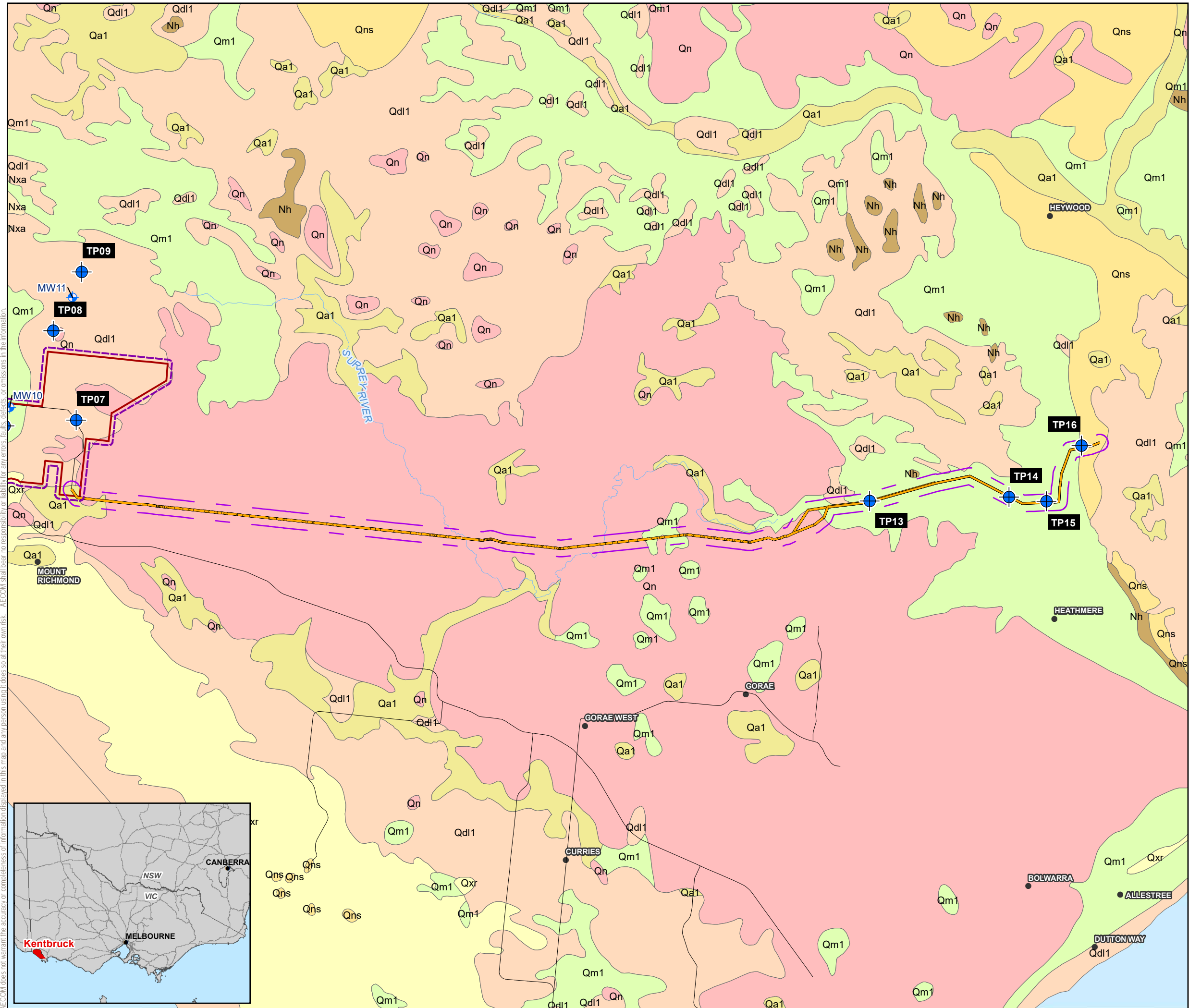
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**Acid Sulfate Soil and Contamination Assessment
 Kentbruck Green Power Hub EES**

GEOLOGY	
PROJECT #:	60591699
CREATED BY:	JB
LAST MODIFIED:	mcmahonj5: 30/10/2023
VERSION:	1

Figure F3a

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Legend

- Monitoring Well
- Test Pits
- Transmission Line (Underground)
- 200m Alignment Buffer
- Wind Farm Site Boundary
- Wind Farm Site Boundary 100m Buffer
- Internal access roads
- Roads
- Watercourses

Geology

- Nh: Neogene (Miocene): Marine calcarenite, marl, silt
- Nxa: Quaternary (Pleistocene) Coastal: sandy limestone, calcarenite, shell beds, marl
- Qa1: Quaternary (Holocene) Fluvial: alluvium, gravel, sand, silt
- Qdl1: Quaternary (Holocene), Aeolian: coastal and inland dunes: dune sand, some swamp deposits
- Qm1: Quaternary (Holocene), Aeolian and littoral: coastal and inland dunes: dune sand, some swamp deposits, beach sand
- Qn: Quaternary (Holocene), Extrusive: tholeiitic to alkaline basalts, minor scoria and ash
- Qns: Quaternary (Holocene), Extrusive: scoria
- Qxr: Quaternary (Pleistocene), Aeolian, dune deposits: calcarenite

Data Sources:
 1. Locality, Railway, Drainage Line, Streets, Features © StreetPro 2014
 2. State Controlled Roads © (VICMAP) 2018
 3. Essential Habitat © (VICMAP) 2018
 4. Conservation Areas © (VICMAP) 2018
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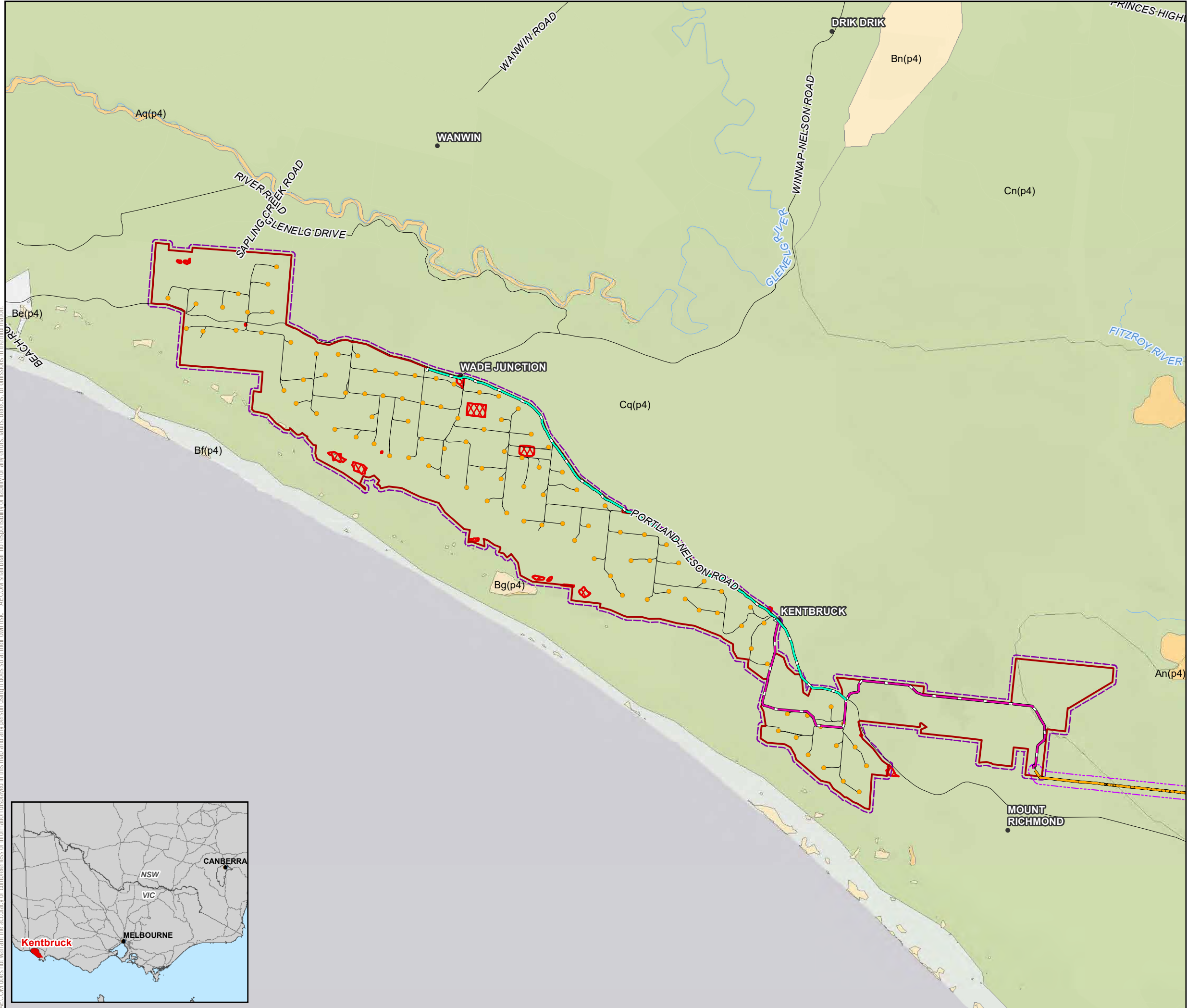
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**Acid Sulfate Soil and Contamination Assessment
 Kentbruck Green Power Hub EES**

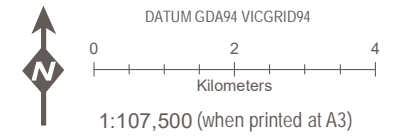
GEOLOGY

PROJECT #:	60591699	Figure F3b
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Legend

- Wind Farm Site Boundary
 - Wind Farm Boundary 100m-Buffer
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Turbine location
 - 275 kV Powerline - Overhead
 - 275 kV Powerline - Underground
 - Internal access roads
 - Roads
 - Watercourses
 - Work Exclusion Area
- National Acid Sulfate Soils Atlas**
- High Probability/ Very Low Confidence
 - Low Probability/ Very Low Confidence
 - Extremely Low Probability/ Very Low Confidence

Data Sources:

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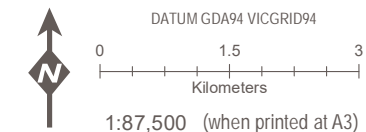
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**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

ACID SULFATE SOILS ATLAS

PROJECT #:	60591699
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LAST MODIFIED:	mcmahonj5: 31/10/2023
VERSION:	1

Figure F4a



Legend

- Wind Farm Site Boundary
- Wind Farm Boundary 100m-Buffer
- Transmission Line (Underground)
- 200m Alignment Buffer
- 275 kV Powerline - Underground
- Internal access roads
- Roads
- Watercourses

National Acid Sulfate Soils Atlas

- High Probability/ Very Low Confidence
- Low Probability/ Very Low Confidence
- Extremely Low Probability/ Very Low Confidence

Data Sources:
 1. Locality, Railway, Drainage Line, Street, Features © StreetPro 2014
 2. State Controlled Roads © (VICMAP) 2018
 3. Essential Habitat © (VICMAP) 2018
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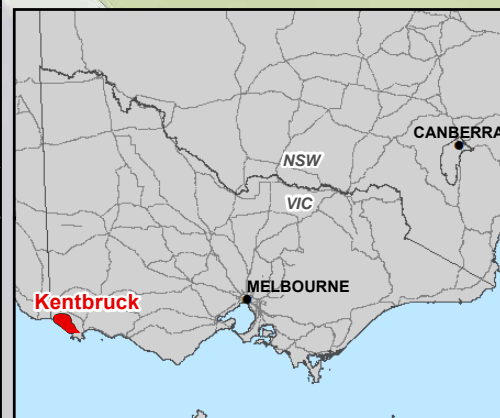
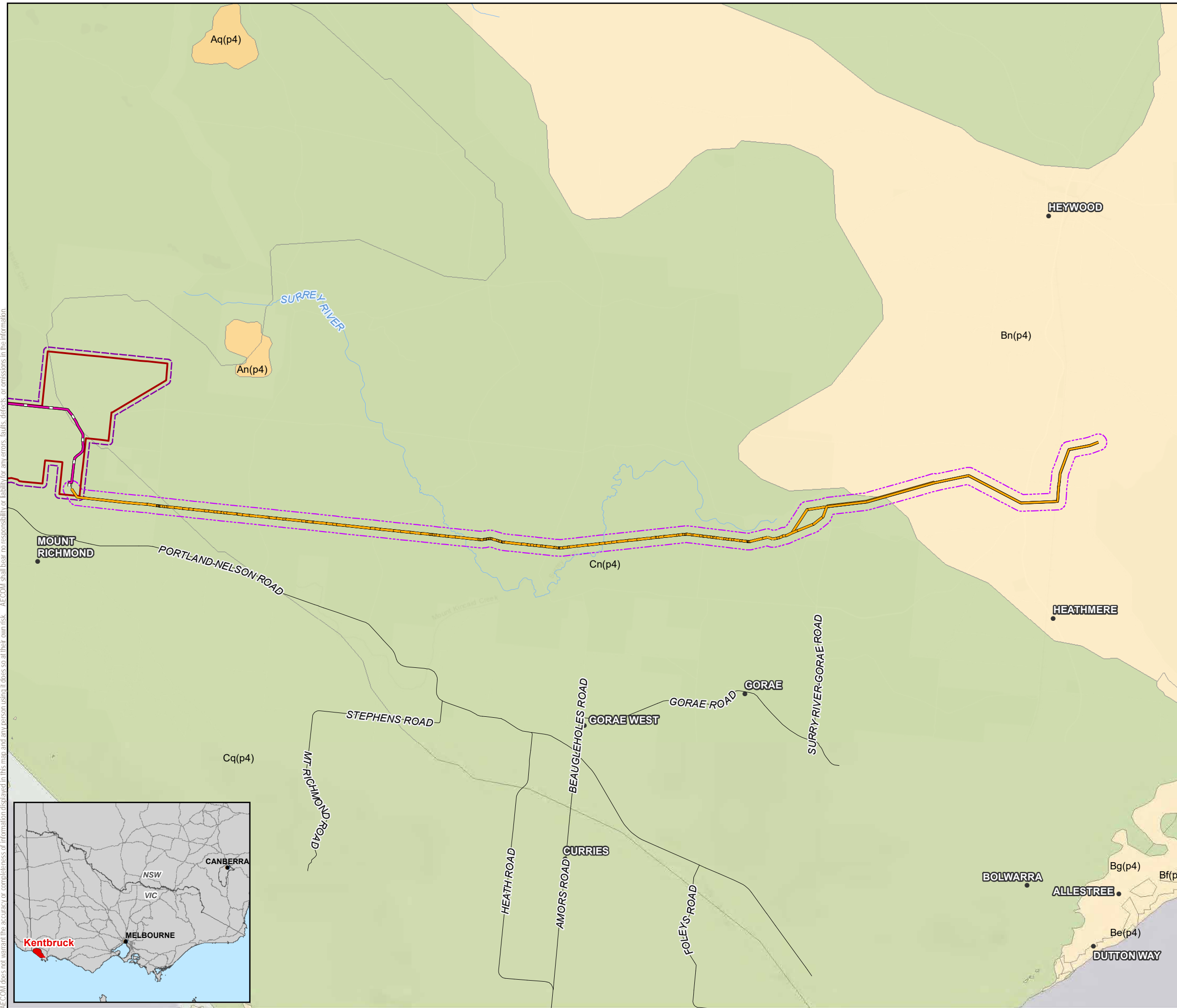
**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

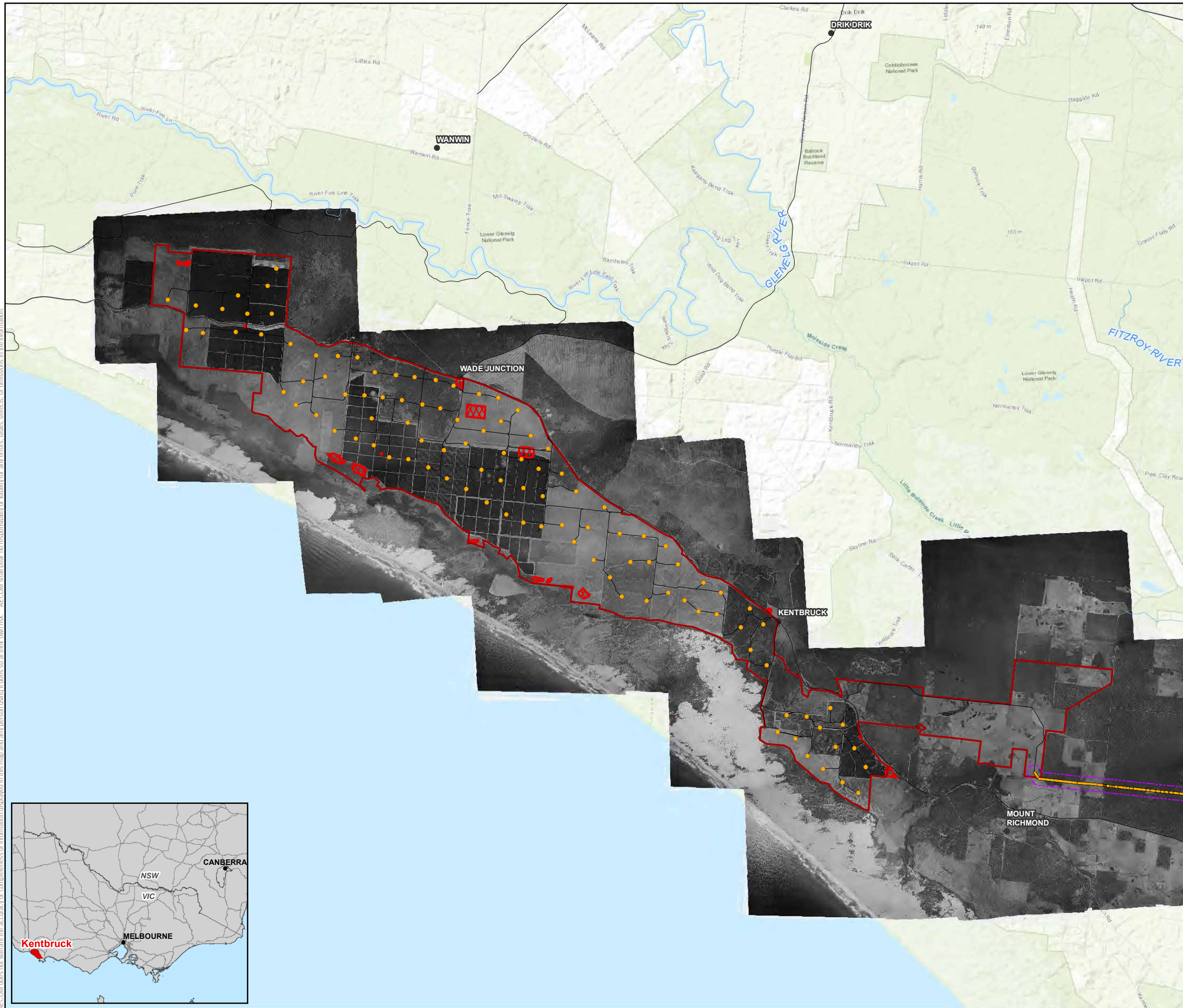
ACID SULFATE SOILS ATLAS

PROJECT #: 60591699
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 LAST MODIFIED: mcmahonj5: 31/10/2023
 VERSION: 1

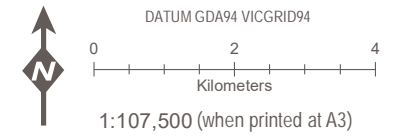
**Figure
F4b**

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- Legend**
- Wind Farm Site Boundary
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Internal access roads
 - Roads
 - Watercourses
 - Work Exclusion Area



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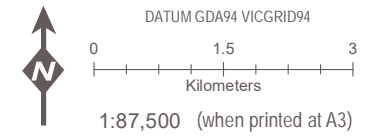
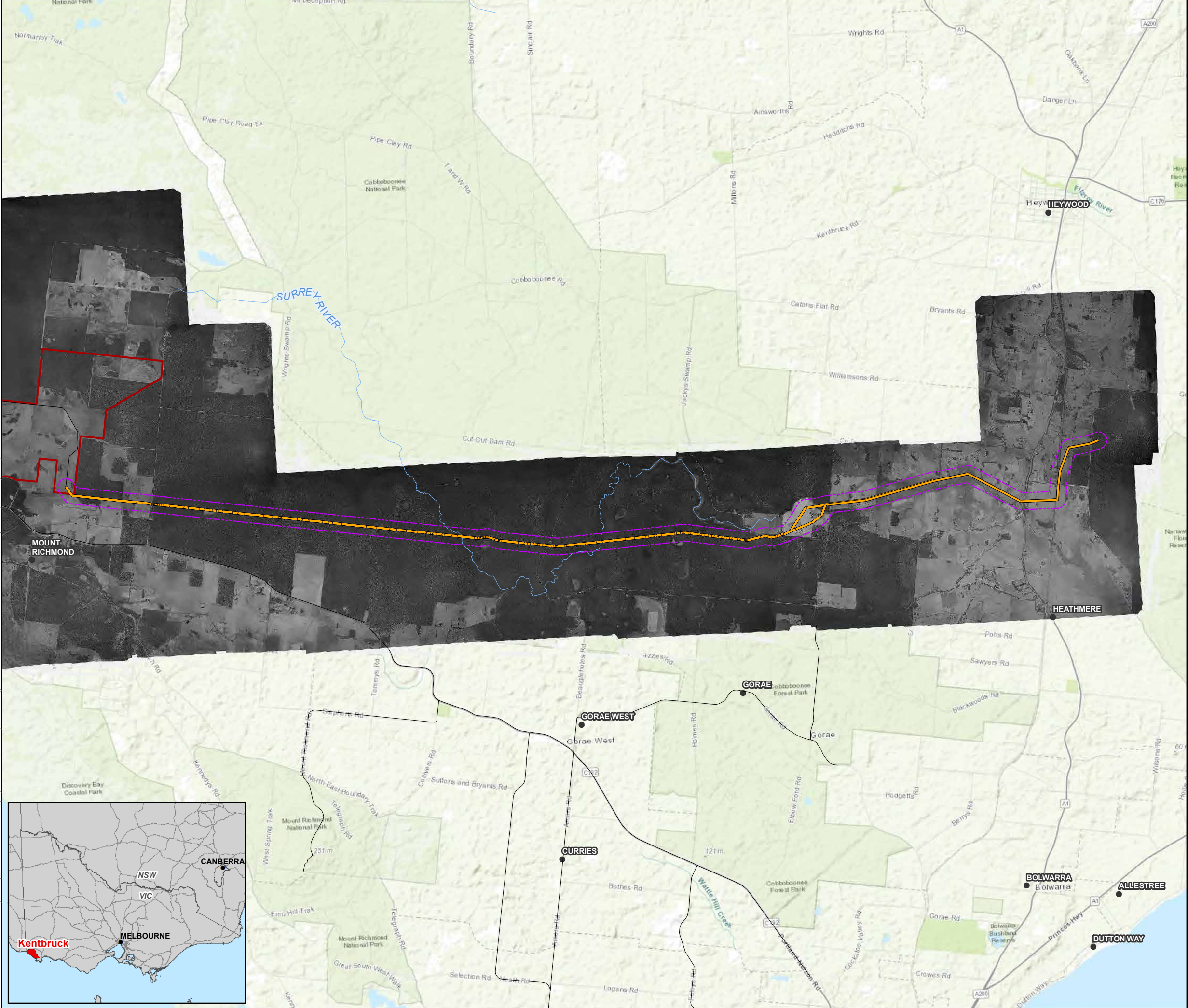
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**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 1967

PROJECT #:	60591699	Figure F5a
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LAST MODIFIED:	mcmahonj5: 31/10/2023	
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- Legend**
- Wind Farm Site Boundary
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Internal access roads
 - Roads
 - Watercourses

Data Sources:

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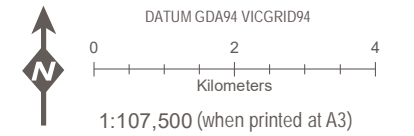
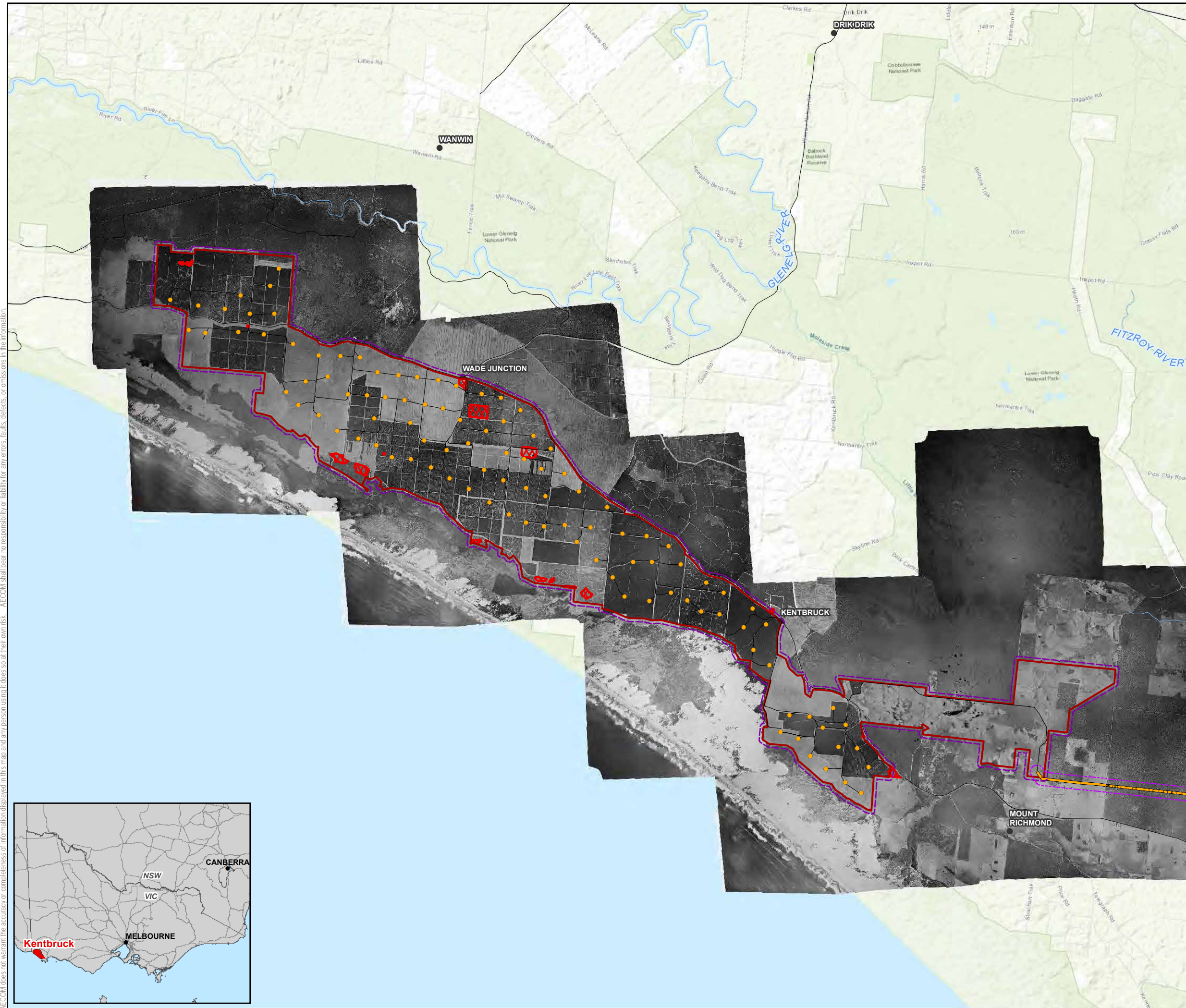
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**Acid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 1967

PROJECT #: 60591699	Figure F5b
CREATED BY: JB	
LAST MODIFIED: mcmahonj5: 31/10/2023	
VERSION: 1	



- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Work Exclusion Area
 - Internal access roads
 - Roads
 - Watercourses

Data Sources:

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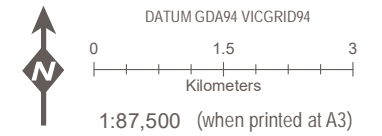
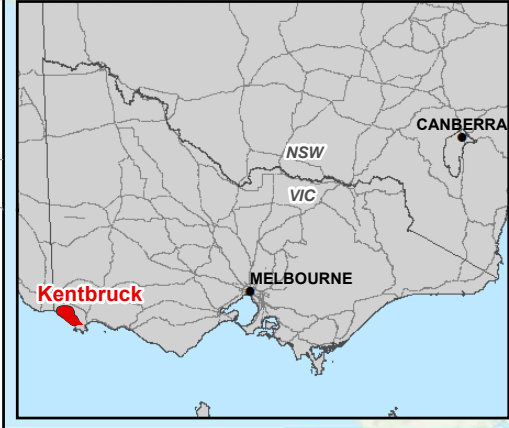
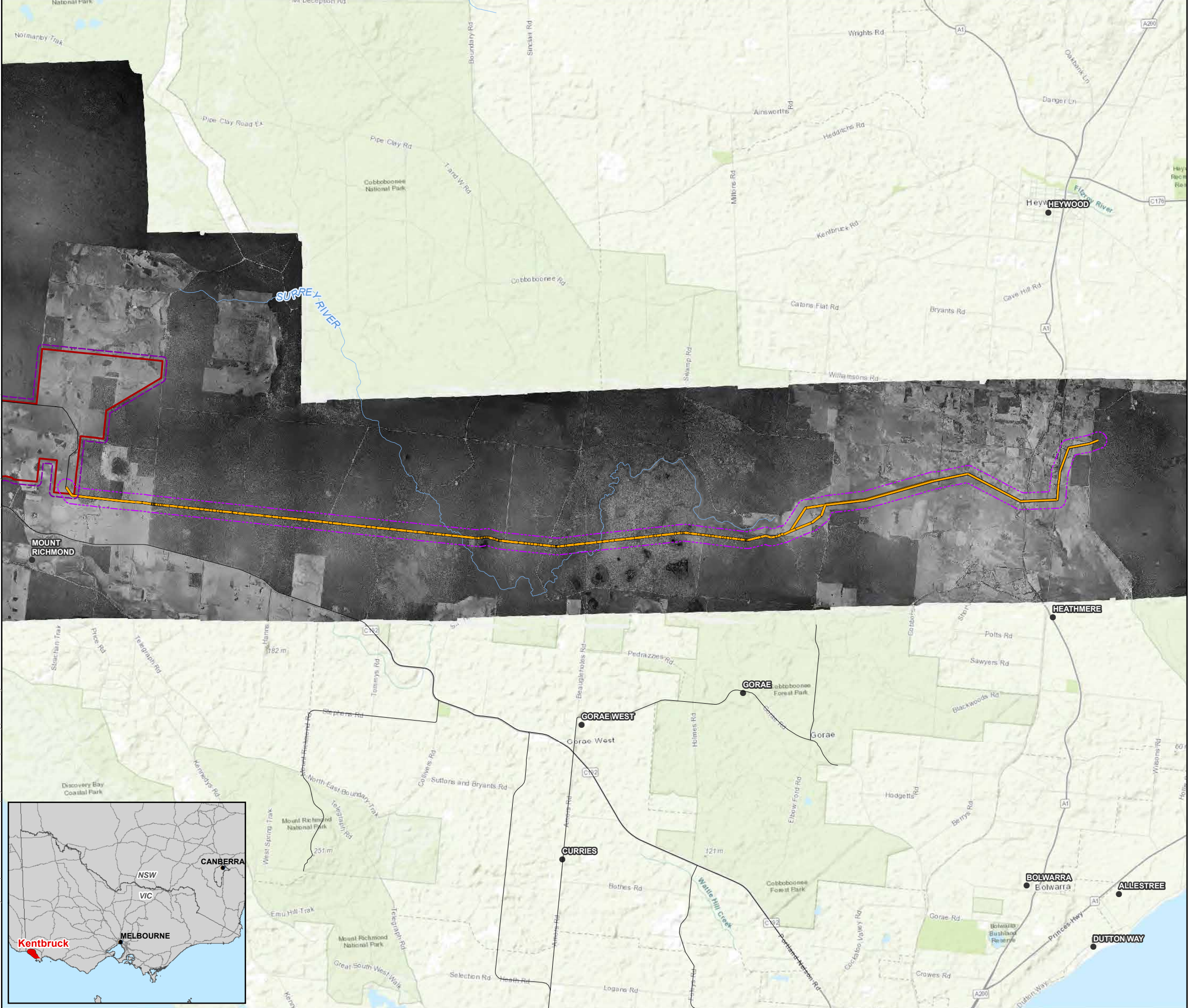
**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 1972

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- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Internal access roads
 - Roads
 - Watercourses

Data Sources:

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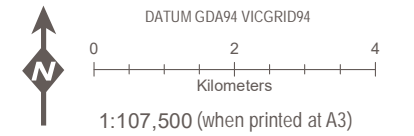
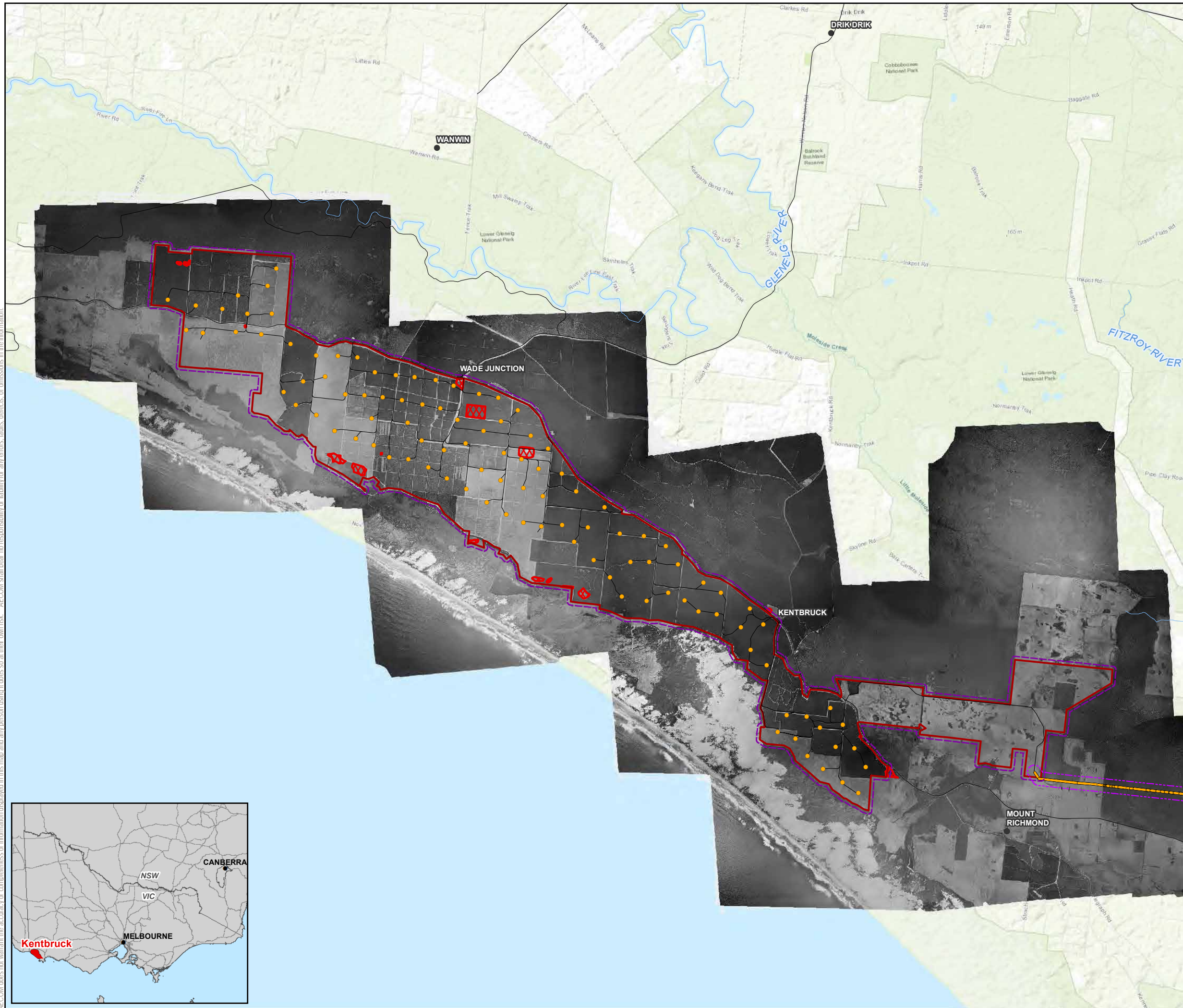
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HISTORICAL IMAGERY 1972

PROJECT #:	60591699
CREATED BY:	JB
LAST MODIFIED:	mcmahonj5: 31/10/2023
VERSION:	1

Figure F5d



- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Work Exclusion Area
 - Internal access roads
 - Roads
 - Watercourses

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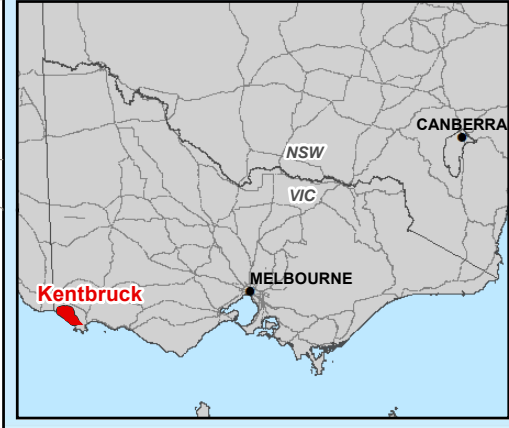
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Kentbruck Green Power Hub EES**

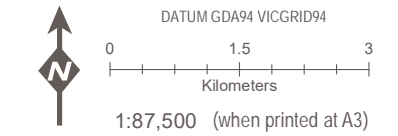
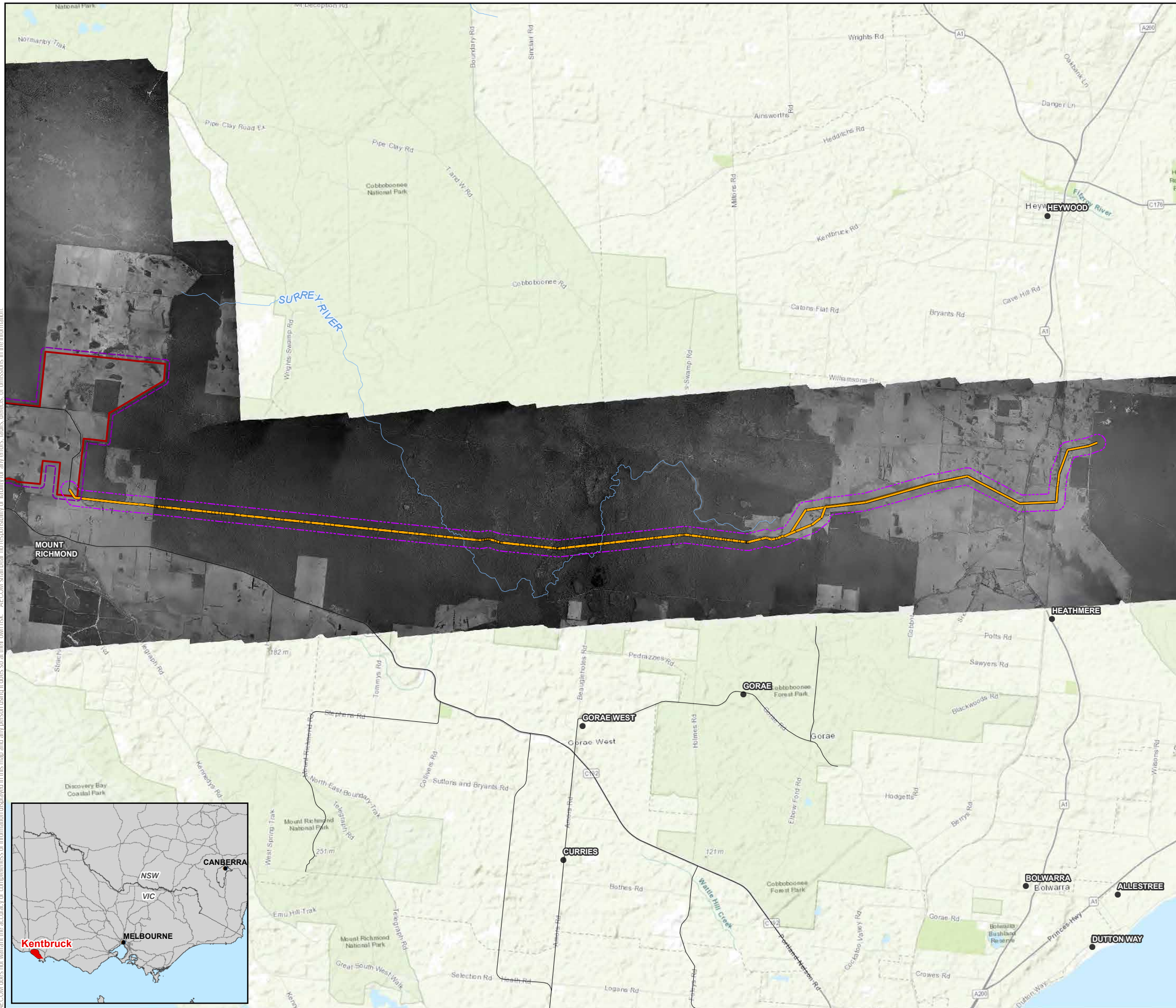
HISTORICAL IMAGERY 1981

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- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Internal access roads
 - Roads
 - Watercourses

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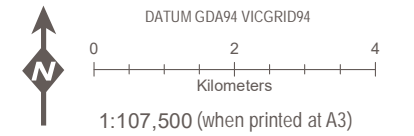
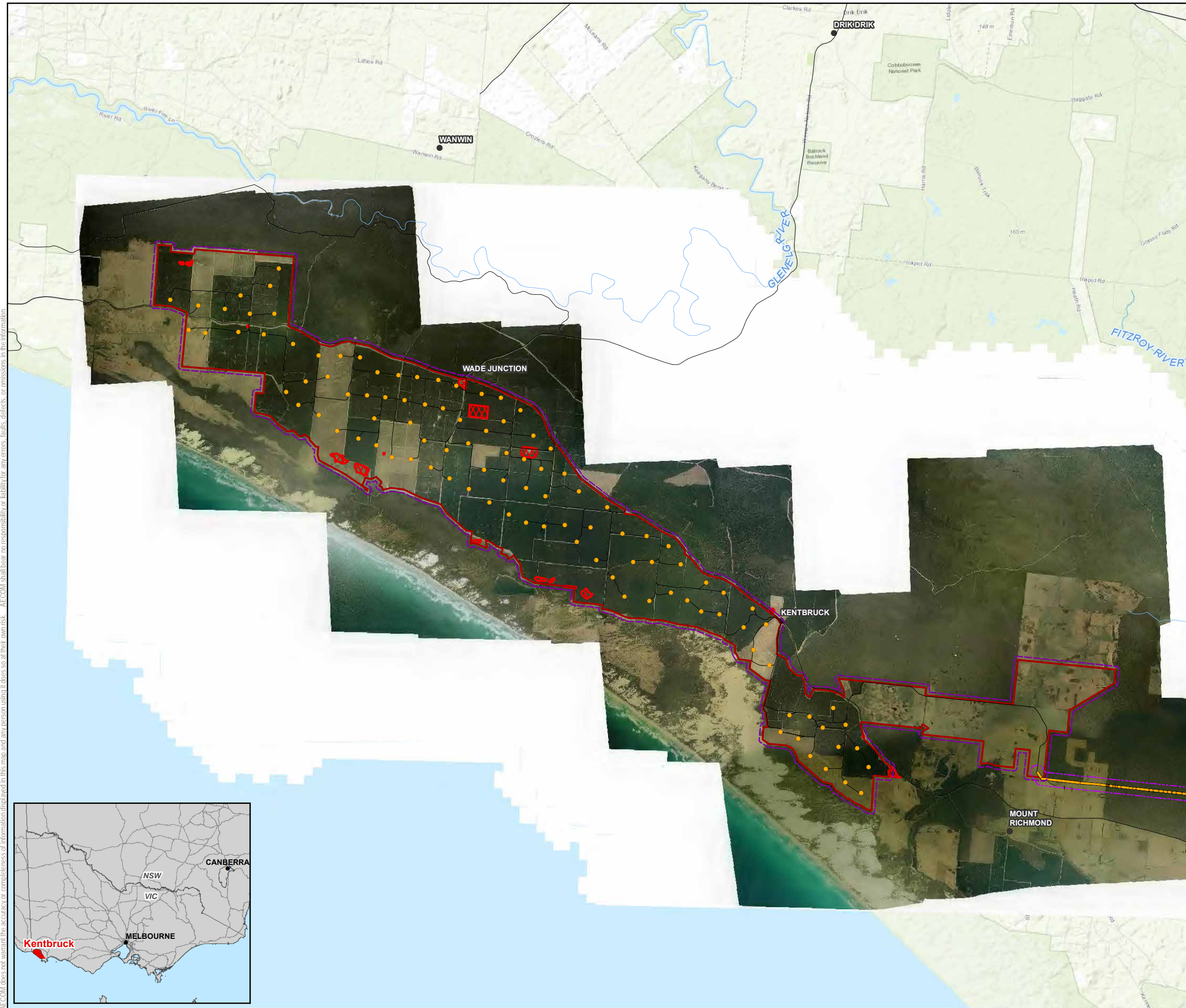
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HISTORICAL IMAGERY 1981

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VERSION:	1

Figure F5f



- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Work Exclusion Area
 - Internal access roads
 - Roads
 - Watercourses

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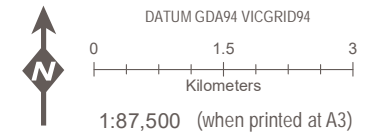
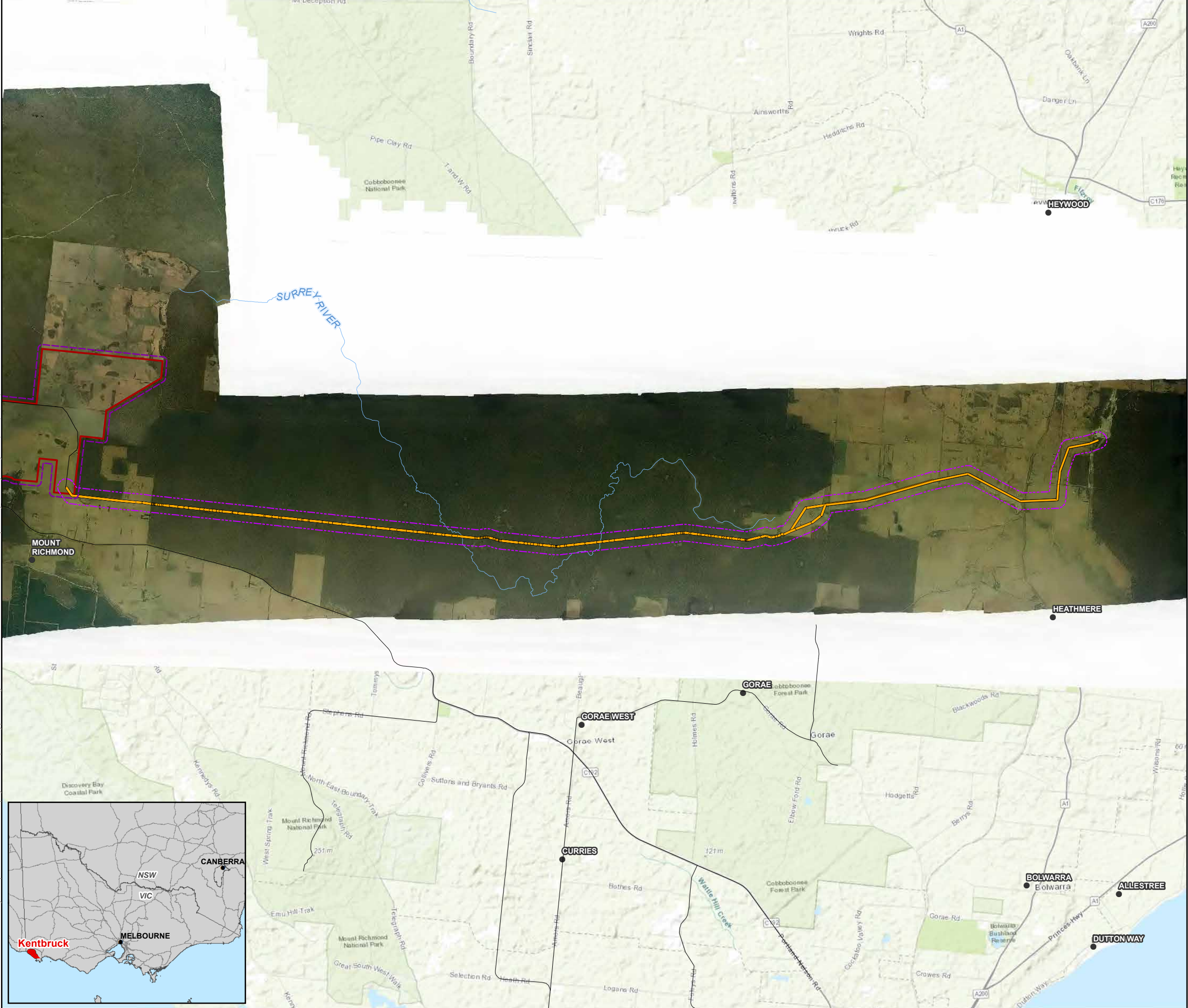
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**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 1992-1993

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- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Internal access roads
 - Roads
 - Watercourses



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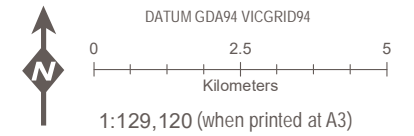
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**Acid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 1992-1993

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- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Work Exclusion Area
 - Internal access roads
 - Roads
 - Watercourses

Data Sources:

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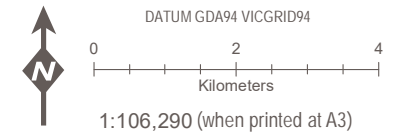
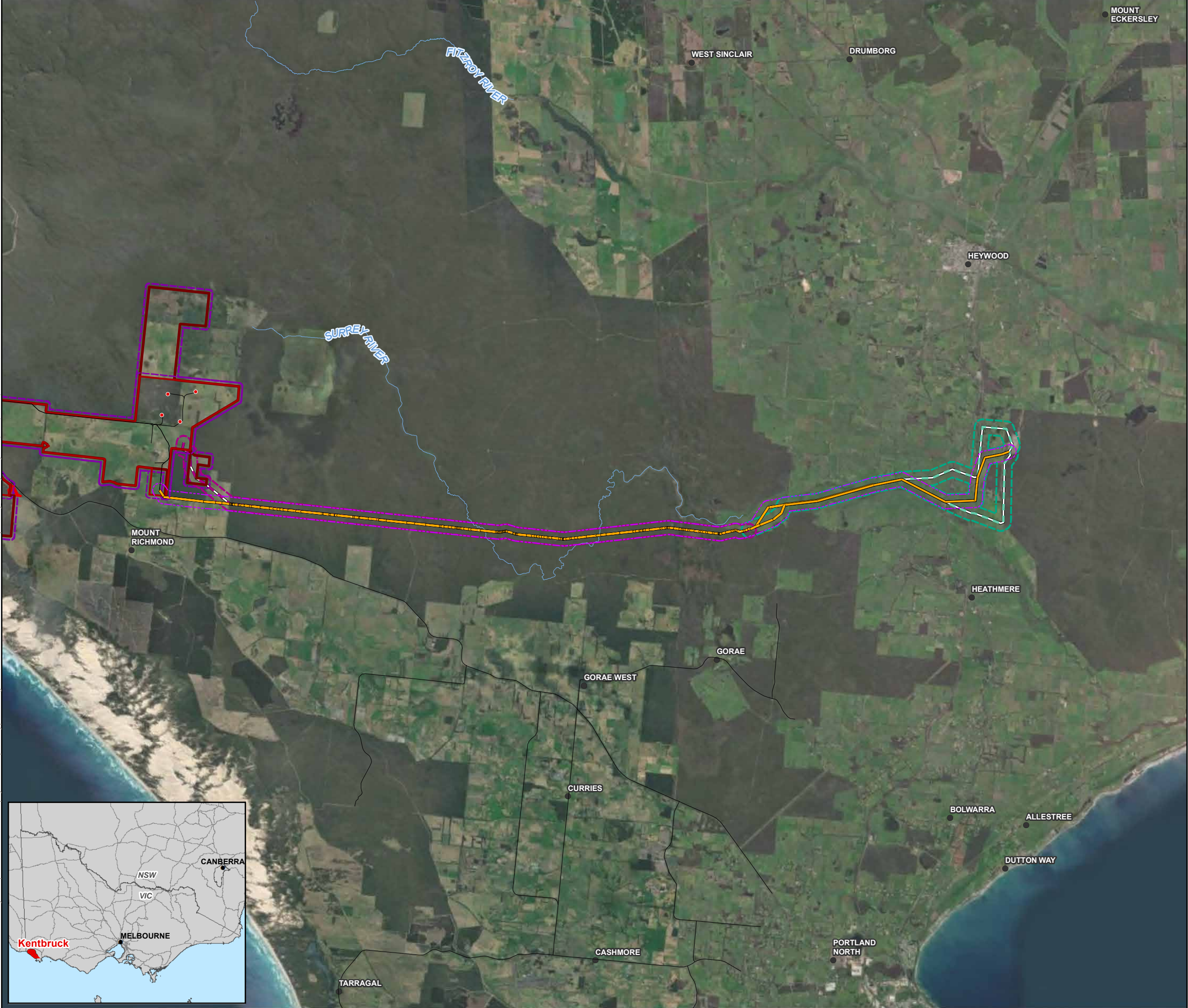
**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 2018

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VERSION:	1

**Figure
F5k**

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- Legend**
- Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m Buffer
 - Transmission Line (Underground)
 - 200m Alignment Buffer
 - Work Exclusion Area
 - Internal access roads
 - Roads
 - Watercourses

Data Sources:

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2. State Controlled Roads © (VICMAP) 2018
3. Essential Habitat © (VICMAP) 2018
4. Conservation Areas © (VICMAP) 2018
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8. Waterway Barrier Works © (VICMAP) 2018
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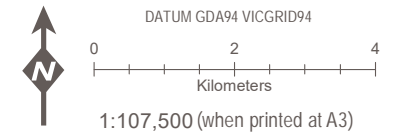
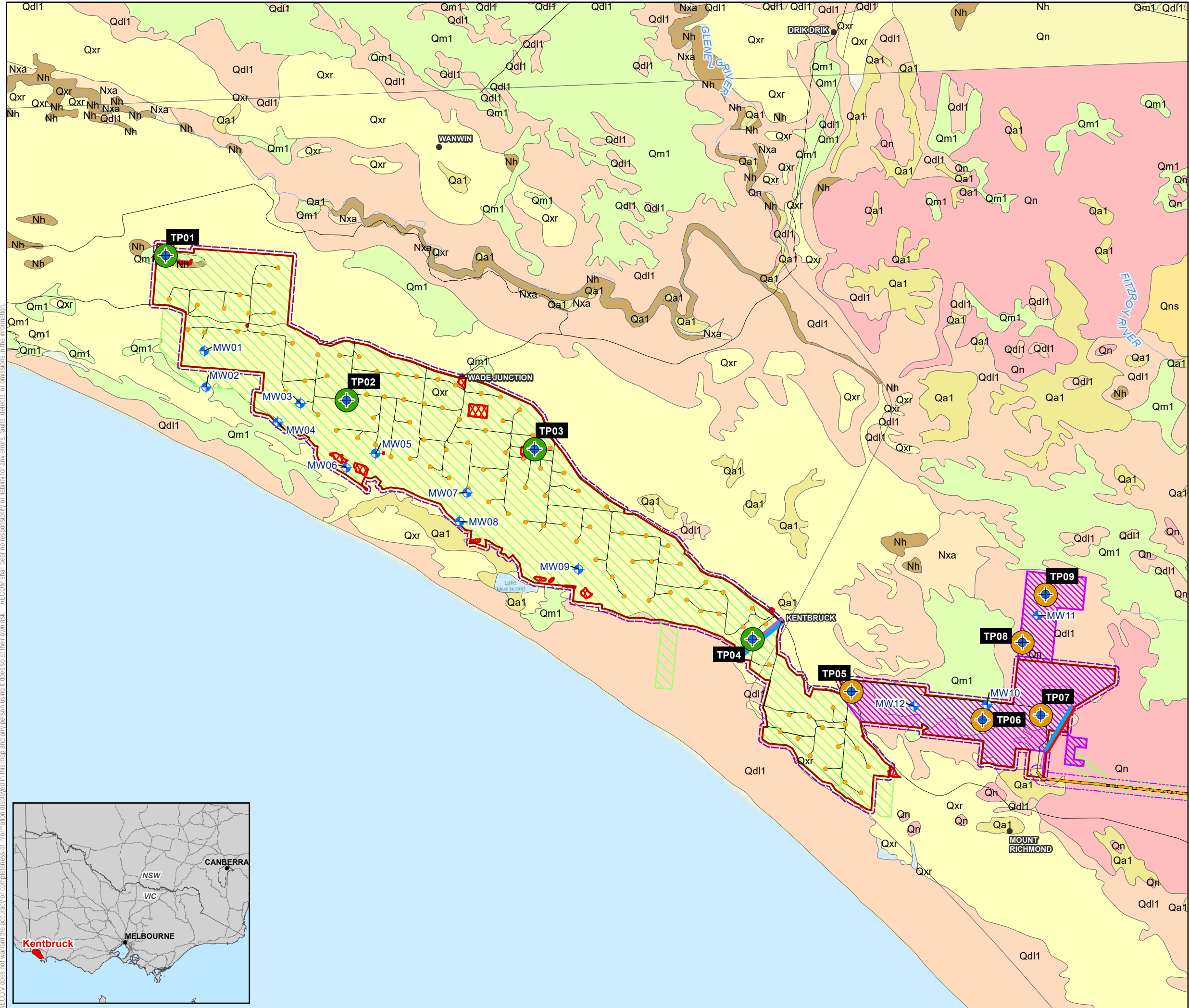
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**Acid Sulfate Soils and Contamination Assessment
Kentbruck Green Power Hub EES**

HISTORICAL IMAGERY 2018

PROJECT #:	60591699
CREATED BY:	JB
LAST MODIFIED:	mcmahonj5: 31/10/2023
VERSION:	1

Figure F5I



- Legend**
- Monitoring Well
 - Acid Sulfate Soil (ASS)
 - Delineation of ASS areas by
 - ASS management required
 - No ASS soil management
 - Test Pits
 - All samples reported Net Acidity below the ASS management Action Criteria
 - One or more samples reported Net Acidity above the ASS management Action Criteria. Note TP14, TP15 and TP16 are not considered ASS material as RIS <0.01%S
 - Turbine location
 - Transmission Line (Underground)
 - 200m Alignment
 - Wind Farm Site Boundary
 - Wind Farm Site Boundary - 100m
 - Work Exclusion
 - Internal access roads
 - Roads
 - Western Wind Farm
 - Watercourses
 - Central Wind Farm
 - Transmission Line
 - Geology**
 - Qa1: Quaternary (Holocene) Fluvial: alluvium, gravel, sand, silt
 - Qd1: Quaternary (Holocene), Aeolian: coastal and inland dunes: dune sand, some swamp deposits
 - Qm1: Quaternary (Holocene), Aeolian and littoral: coastal and inland dunes: dune sand, some swamp deposits, beach sand
 - Qn: Quaternary (Holocene), Extrusive: tholeiitic to alkaline basalts, minor scoria and ash
 - Qns: Quaternary (Holocene), Extrusive:
 - Qxr: Quaternary (Pleistocene), Aeolian, dune deposits: calcarenite

Data Sources:
 1. Locality, Railway, Drainage Line, Streets, Features © StreetPro 2014
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 3. Essential Habitat © VICMAP 2018
 4. Conservation Areas © VICMAP 2018
 5. Protected Areas © VICMAP 2018
 6. Regional Ecosystems v8 © VICMAP 2018
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 8. Waterway Barrier Works © VICMAP 2018

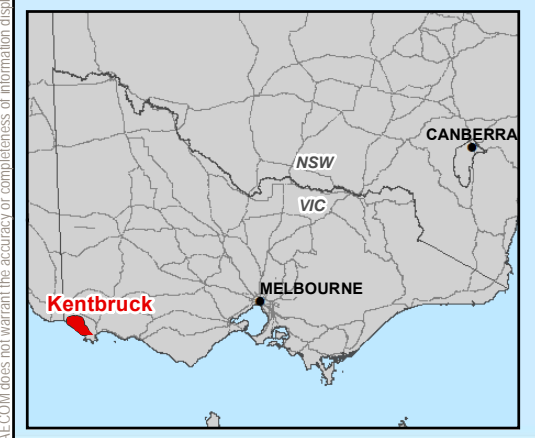
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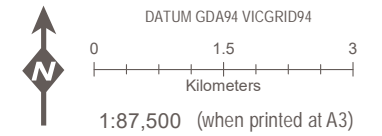
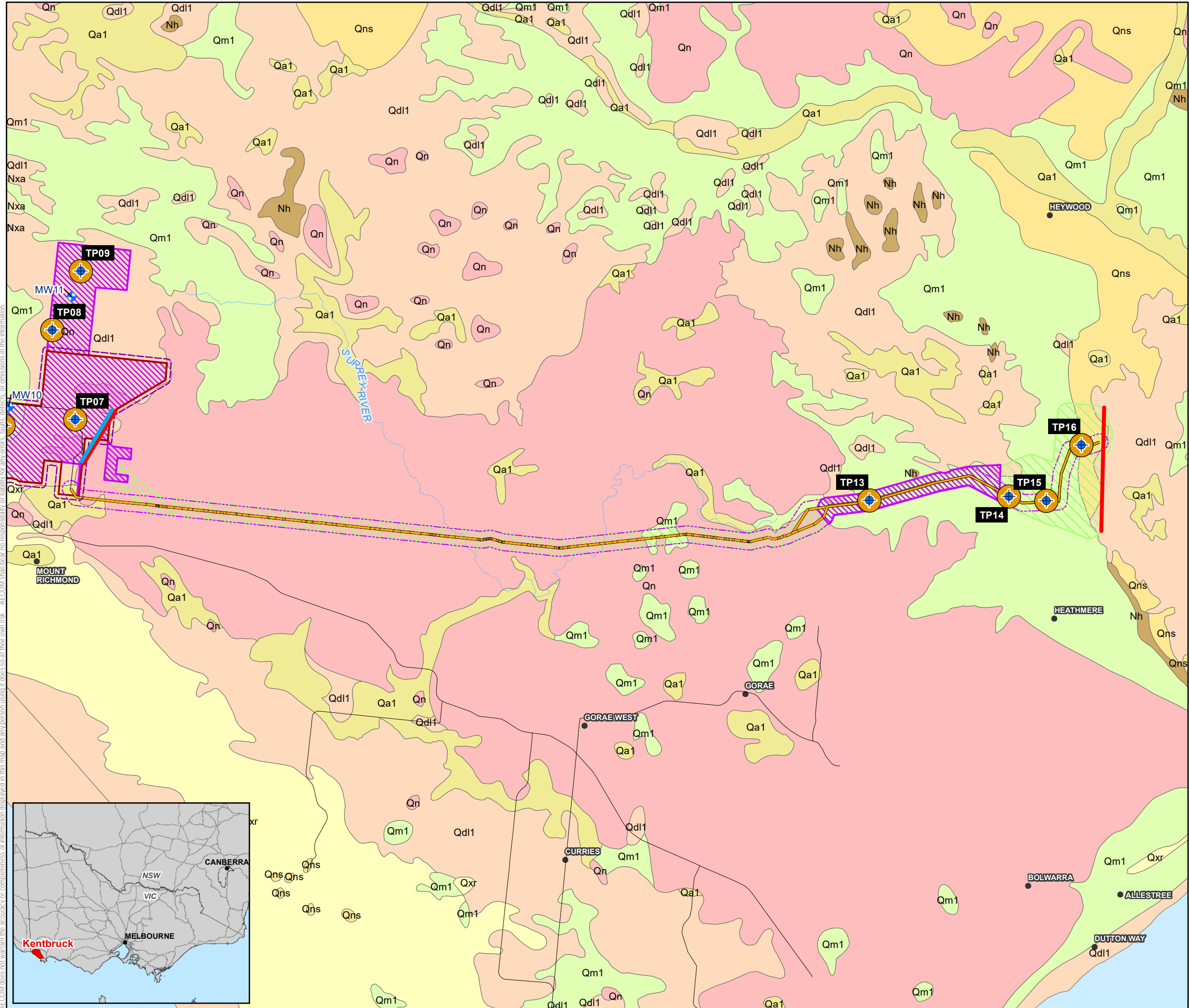
**Acid Sulfate Soil and Contamination Assessment
 Kentbruck Green Power Hub EES**

ACID SULFATE SOIL AREAS

PROJECT #:	60591699	Figure F6a
CREATED BY:	JB	
LAST MODIFIED:	mcmahonj5: 31/10/2023	
VERSION:	1	

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Legend

- Monitoring Well
- Acid Sulfate Soil (ASS)**
- Delineation of ASS areas by**
- ASS management required
- No ASS soil management
- Test Pits
- One or more samples reported Net Acidity above the ASS management Action Criteria. Note TP14, TP15 and TP16 are not considered ASS material as RIS <0.01%S
- Transmission Line (Underground)
- 200m Alignment
- Wind Farm Site Boundary
- Wind Farm Site Boundary - 100m
- Internal access roads
- Roads
- Watercourses
- Central Wind Farm
- Transmission Line
- Geology**
- Qa1: Quaternary (Holocene) Fluvial: alluvium, gravel, sand, silt
- Qd1: Quaternary (Holocene), Aeolian: coastal and inland dunes: dune sand, some swamp deposits
- Qm1: Quaternary (Holocene), Aeolian and littoral: coastal and inland dunes: dune sand, some swamp deposits, beach sand
- Qn: Quaternary (Holocene), Extrusive: tholeiitic to alkaline basalts, minor scoria and ash
- Qns: Quaternary (Holocene), Extrusive:
- Qxr: Quaternary (Pleistocene), Aeolian, dune deposits: calcarenite

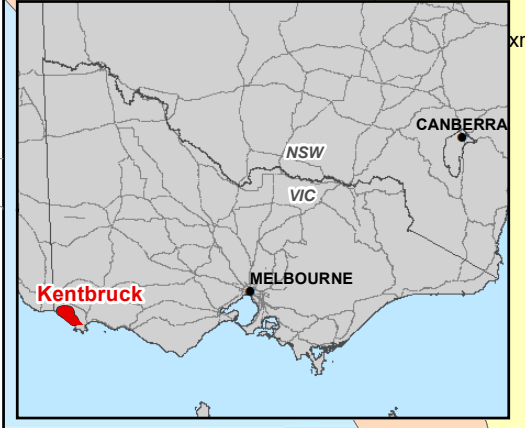
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Acid Sulfate Soil and Contamination Assessment	
Kentbruck Green Power Hub EES	
ACID SULFATE SOIL AREAS	
PROJECT #:	60591699
CREATED BY:	JB
LAST MODIFIED:	mcmahonj5: 31/10/2023
VERSION:	1

Figure F6b

Legend

- Monitoring Well
- Turbine location
- Transmission Line (Underground)
- 200m Alignment Buffer
- Wind Farm Site Boundary - 100m Buffer
- Wind Farm Site Boundary
- Work Exclusion Area
- Internal access roads
- Roads
- Watercourses

Exceedance Criteria
 ANZG (2018) Freshwater
 95% toxicant DGVs
 NHMRC 2011 Drinking Water
 Health (updated 2018)
ANZG (2018) Marine water
99% toxicant DGVs

Data Sources:
 1. Locality, Railway, Drainage Line, Streets, Features © StreetPro 2014
 2. State Controlled Roads © (VICMAP) 2018
 3. Essential Habitat © (VICMAP) 2018
 4. Conservation Areas © (VICMAP) 2018
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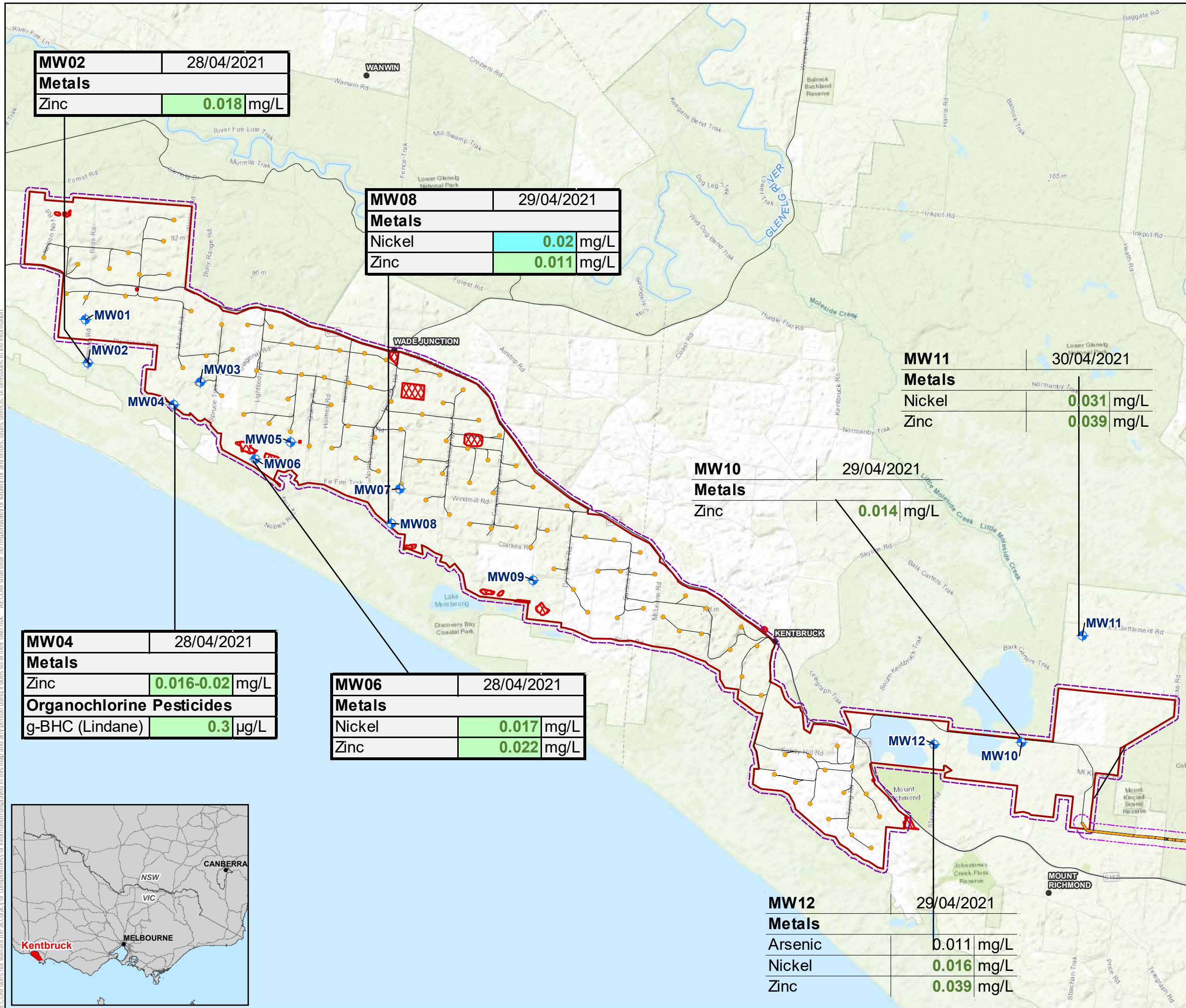
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Acid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES

GROUNDWATER EXCEEDANCES

PROJECT #: 60591699
 CREATED BY: JB
 LAST MODIFIED: mcmahonj5: 31/10/2023
 VERSION: 1

Figure F7



MW02	28/04/2021
Metals	
Zinc	0.018 mg/L

MW08	29/04/2021
Metals	
Nickel	0.02 mg/L
Zinc	0.011 mg/L

MW11	30/04/2021
Metals	
Nickel	0.031 mg/L
Zinc	0.039 mg/L

MW10	29/04/2021
Metals	
Zinc	0.014 mg/L

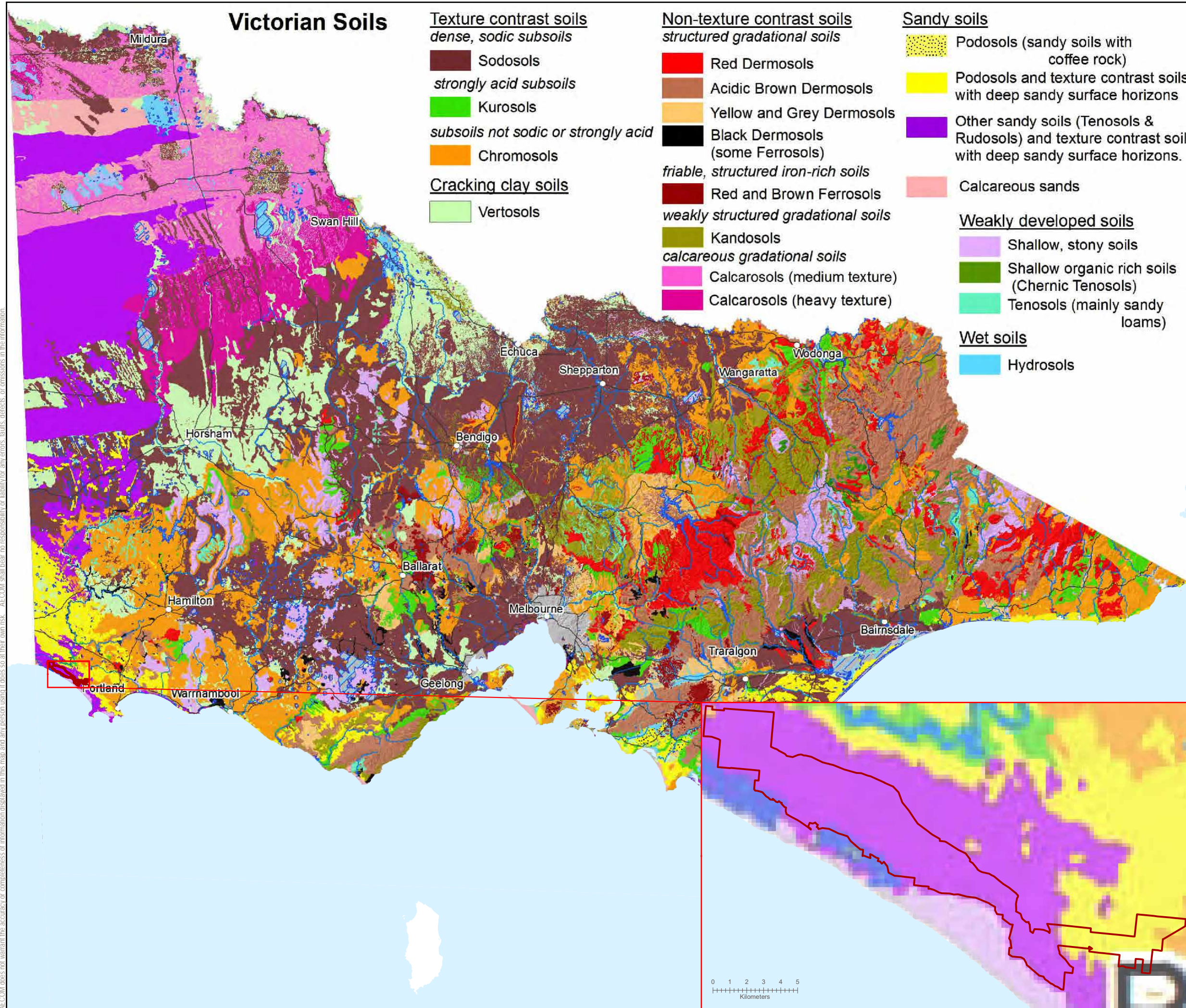
MW04	28/04/2021
Metals	
Zinc	0.016-0.02 mg/L
Organochlorine Pesticides	
g-BHC (Lindane)	0.3 µg/L

MW06	28/04/2021
Metals	
Nickel	0.017 mg/L
Zinc	0.022 mg/L

MW12	29/04/2021
Metals	
Arsenic	0.011 mg/L
Nickel	0.016 mg/L
Zinc	0.039 mg/L

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Victorian Soils

Texture contrast soils

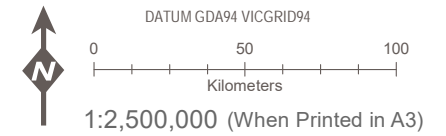
- dense, sodic subsoils*
- Sodosols
- strongly acid subsoils*
- Kurosols
- subsoils not sodic or strongly acid*
- Chromosols
- Cracking clay soils
- Vertosols

Non-texture contrast soils

- structured gradational soils*
- Red Dermosols
- Acidic Brown Dermosols
- Yellow and Grey Dermosols
- Black Dermosols (some Ferrosols)
- friable, structured iron-rich soils*
- Red and Brown Ferrosols
- weakly structured gradational soils*
- Kandosols
- calcareous gradational soils*
- Calcarosols (medium texture)
- Calcarosols (heavy texture)

Sandy soils

- Podosols (sandy soils with coffee rock)
- Podosols and texture contrast soils with deep sandy surface horizons
- Other sandy soils (Tenosols & Rudosols) and texture contrast soil with deep sandy surface horizons.
- Calcareous sands
- Weakly developed soils
- Shallow, stony soils
- Shallow organic rich soils (Chernic Tenosols)
- Tenosols (mainly sandy loams)
- Wet soils
- Hydrosols



Legend

- Wind Farm Site Boundary

OVERVIEW (AUSTRALIA)



Data Sources:

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Acid Sulfate Soils and Contamination Assessment Kentbruck Green Power Hub EES

LOCATION PLAN

PROJECT #:	60591699	Figure F8
CREATED BY:	JB	
LAST MODIFIED:	JM: 31/10/2023	
VERSION:	1	

Appendix B

Borelogs






AECOM
 Level 45, 80 Collins Street
 MELBOURNE VIC 3004
 Telephone: 03 9653 1234
 Fax: 03 9654 7117

TEST PIT LOG

TP01

PROJECT NUMBER 60591699 DATE 11/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
							Moss, grass and pine needles	
0.2			TP01_0.2	*				0.20
0.3			TP01_0.5				SAND; brown/red, fine, loose, trace roots and organic matter, dry, no odour	
							LIMESTONE; yellow/white, dense-very dense, dry, no odour	0.80
			TP01_1.0		1		EOH @ 1.1 mbgl Refusal on very dense cemented sandstone / limestone Total Depth: 1.10 m	1.10

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



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 Fax: 03 9654 7117

TEST PIT LOG

TP02

PROJECT NUMBER 60591699 DATE 11/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
0.1			TP02_0.0	*			SAND; grey/black, loose trace pine needles and roots, moist, no odour	
0.2			TP02_0.5	*				
							becoming tan, fine sand, loose, dry, no odour	0.80
0.1			TP02_1.0		1			
0.3			TP02_1.5					
							Cemented layer	1.70
								1.80
0			TP02_2.0		2		SAND; fine grained sand, tan/brown, loose, dry, no odour	
0.2			TP02_2.5					
0.1			TP02_3.0		3		Cemented layer, dense, dark red/brown, dry, no odour	2.90
								3.10
0			TP02_3.5				SAND; fine grained, tan/brown, loose, dry, no odour	
0			TP02_4.0		4			4.10
							Yellow/white limestone	4.20
							EOH @ 4.2 mbgl Refusal on limestone	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21

Total Depth: 4.20 m



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TEST PIT LOG

TP03

PROJECT NUMBER 60591699 DATE 11/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
			TP03_0.0	*	0.0		FILL; fine grained sand, brown, loose, slightly moist with wood chips and pine needles	0.10
0.4			TP03_0.5	*	0.5		SAND; fine grained, red/brown, loose, dry, no odour	
0.1			TP03_1.0		1.0		becoming yellow/white sand, fine to medium grained, loose, with cemented bands that are easily broken	
0			TP03_1.5		1.5		more cemented sands, becoming dense	
0.1			TP03_2.0		2.0		becoming white, very dense sandstone-limestone	2.00
					2.30		EOH @ 2.3 mbgl Refusal on rock Total Depth: 2.30 m	2.30

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



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TEST PIT LOG

TP04

PROJECT NUMBER 60591699 DATE 11/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
0.2			TP04_0.0	*			SAND; fine grained, black, loose, slightly moist, no odour, trace roots, pine needles and bark	
0.1			TP04_0.5	*				
0			TP04_1.0		1		becoming tan/brown, fine grained sand, loose, dry, no odour, trace roots	
							Cemented layer	1.30
0.3			TP04_1.5				SAND; fine grained, tan/brown, loose, dry, no odour	1.40
0.1			TP04_2.0		2		becoming brown, fine grained sand, loose, dry	
							Cemented layer	2.40
0.2			TP04_2.5				SAND; fine grained, brown, loose, dry, no odour	2.50
0			TP04_3.0		3			
0.1			TP04_3.5					
							SAND; fine to medium grained, tan/yellow, loose, dry, no odour	3.70
0			TP04_4.0		4			
0			TP04_4.5					
			TP04_5.0		5			5.10
							EOH @ 5.1 mbgl Target depth reached Total Depth: 5.10 m	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



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TEST PIT LOG

TP05

PROJECT NUMBER 60591699 DATE 11/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
1.3			TP05_0.0	*			FILL; fine grained sand, black, loose, some roots and woody fragments, possible old tree stump, slightly moist, no odour	0.60
2			TP05_0.5				SAND; fine to medium grained, tan/white, loose, slightly moist, no odour	
0.3			TP05_1.0	*	1			4.50
0.4			TP05_1.5					
0.1			TP05_2.0		2		becoming red/brown, fine to medium grained sand, loose, slightly moist, no odour	
0.2			TP05_2.5					
0.1			TP05_3.0		3			
0.4			TP05_3.5					
0.3			TP05_4.0		4		becoming white, medium grained, loose, wet, no odour	
0.5			TP05_4.4					
							EOH @ 4.5 mbgl Practical refusal due to water and cave in	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21

Total Depth: 4.50 m



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TEST PIT LOG

TP06

PROJECT NUMBER 60591699 DATE 12/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
0.5			TP06_0.0	*			SAND; fine to medium grained, black, trace high plasticity clay, grass present and some roots and organics, loose, moist and no odour	0.30
3.1			TP06_0.5	*			SAND; fine to medium grained, grey, loose, moist, no odour	0.80
4			TP06_1.0		1		Cemented SAND/ASH, medium grained, black, dense, slightly moist, no odour; able to be crumbled by hand	1.20
0.6			TP06_1.5				SCORIA; orange.brown, medium grained, dense to very dense, slightly moist, no odour	2.30
0.2			TP06_2.0		2		becoming difficult to dig by excavator	
							EOH @ 2.3 m bgl Refusal on rock	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21

Total Depth: 2.30 m



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TEST PIT LOG

TP07

PROJECT NUMBER 60591699 DATE 12/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
3			TP07_0.0	*			Clayey SAND, fine to medium grained with high plasticity clay, black, loose, moist, natural organic odour, grass, roots and peat present	
2.4			TP07_0.5	*				
							wet/saturated perched water	0.90
2.6			TP07_1.0		1		CLAY, brown/black, highplasticity, firm, trace roots, wet, no odour	
1.8			TP07_1.5				becoming grey, high plasticity clay, soft, wet, no odour	
2.4			TP07_2.0		2			
2.2			TP07_2.5					
1.9			TP07_3.0		3			
3			TP07_3.5					
3.1			TP07_4.0		4			
2.6			TP07_4.5					
1.9			TP07_5.0		5			
							EOH @ 5.2 m bgl Target depth reached	5.20

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21

Total Depth: 5.20 m



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TEST PIT LOG

TP08

PROJECT NUMBER 60591699 DATE 12/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
2.7			TP08_0.0	*	0.0		SAND; fine to medium grained, loose, with grass, roots and organics, s/moist, no odour	0.30
2.1			TP08_0.5		0.5		SAND, grey/brown, fine, loose, s/moist, no odour	
1.7			TP08_1.0		1.0			
1.1			TP08_1.5		1.5		Sandy CLAY, orange/brown, high plasticity clay and fine sands, firm to stiff, s/moist, no odour	1.40
1.5			TP08_2.0		2.0			
3			TP08_2.5		2.5			
1.8			TP08_3.0		3.0		CLAY, high plasticity, orange/brown/red/grey, mottled, firm, s/moist, no odour	2.80
1			TP08_3.5		3.5			
0.3			TP08_4.0		4.0		becoming red with trace basalt gravels to 50mm	
0.4			TP08_4.5		4.5		increasing basalt gravels and cobbles to 300mm	
			TP08_5.0		5.0			
					5.1		EOH @ 5.1 m bgl Target depth reached Total Depth: 5.10 m	5.10

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



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 MELBOURNE VIC 3004
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TEST PIT LOG

TP09

PROJECT NUMBER 60591699 DATE 12/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Excavator GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
0.8			TP09_0.0	*	0.0		FILL; sand, fine to medium grained, black/grey with bark and wood chips, slightly moist, loose, no odour	0.60
1.2			TP09_0.5	*	0.5		SAND; fine to medium grained, tan/grey, loose, slightly moist, no odour	
0.1			TP09_1.0		1.0			2.80
0.1			TP09_1.5		1.5			
0.2			TP09_2.0		2.0			
0			TP09_2.5		2.5			
1			TP09_3.0		3.0		SAND, fine to medium grained, black/red/brown, cemented, dense, moist, no odour	
1.1			TP09_3.5		3.5		becoming wet/saturated and medium density	5.30
0.8			TP09_4.0		4.0			
1.2			TP09_4.5		4.5			
0.2			TP09_5.0		5.0			
							EOH @ 5.3 mbgl Target depth reached Total Depth: 5.30 m	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



AECOM
 Level 45, 80 Collins Street
 MELBOURNE VIC 3004
 Telephone: 03 9653 1234
 Fax: 03 9654 7117

TEST PIT LOG

TP13

PROJECT NUMBER 60591699 DATE 13/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Backhoe GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
3			TP13_0.0	*	0.0		Clayey SAND; fine grained, high plasticity clay, black, with roots and organics, moist, no odour	0.20
							CLAY; high plasticity, black/grey, trace roots, moist-wet, soft, natural organic odour	
			TP13_0.5	*	0.5			
							water entering at 0.7m	
2.4			TP13_1.0		1.0			
							SILT; high plasticity, black, trace organics, very soft, wet, natural organic odour	1.20
2.7			TP13_1.5		1.5			
3.1			TP13_2.0		2.0			
							EOH @ 2.1 m bgl Target depth reached Total Depth: 2.10 m	2.10

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



AECOM
 Level 45, 80 Collins Street
 MELBOURNE VIC 3004
 Telephone: 03 9653 1234
 Fax: 03 9654 7117

TEST PIT LOG

TP14

PROJECT NUMBER 60591699 DATE 13/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Backhoe GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
0.7			TP14_0.0	*			Clayey SAND; medium grained sand and high plasticity clay, brown, trace roots, slightly moist, no odour, medium density	0.30
			TP14_0.5	*			Gravelly CLAY; high plasticity, orange/brown, coarse basaltic gravels to 30mm, firm, slightly moist	1.30
			TP14_1.0		1			
			TP14_1.5				CLAY; grey/orange/tan/red, mottled, high plasticity, soft-firm, slightly moist, no odour	2.20
			TP14_2.0		2			
							EOH @ 2.2 mbgl Target depth reached Total Depth: 2.20 m	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



AECOM
 Level 45, 80 Collins Street
 MELBOURNE VIC 3004
 Telephone: 03 9653 1234
 Fax: 03 9654 7117

TEST PIT LOG

TP15

PROJECT NUMBER 60591699 DATE 13/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Backhoe GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
2.1			TP15_0.0	*			Clayey SAND; medium grained sand and high plasticity clay, brown, trace roots, slightly moist, no odour, medium density	0.40
0.6			TP15_0.5	*			Gravelly CLAY; high plasticity, orange/brown, coarse basaltic gravels to 30mm, firm, slightly moist	1.20
0.2			TP15_1.0		1			
0.9			TP15_1.5				CLAY; grey/orange/tan/red, mottled, high plasticity, soft-firm, slightly moist, no odour	2.10
1.5			TP15_2.0		2			
							EOH @ 2.1 m bgl Target depth reached Total Depth: 2.10 m	2.10

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21



AECOM
 Level 45, 80 Collins Street
 MELBOURNE VIC 3004
 Telephone: 03 9653 1234
 Fax: 03 9654 7117

TEST PIT LOG

TP16

PROJECT NUMBER 60591699 DATE 13/5/2021
 PROJECT NAME Kentbruck EES LOGGED BY BE
 LOCATION Kentbruck STABILISED WATER LEVEL _____
 EXCAVATION METHOD Backhoe GROUND WATER ELEVATION _____
 SAMPLING METHOD Grab
 SURFACE ELEVATION _____
 COMMENTS _____

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE NUMBER	ANALYSED	DEPTH (m BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
0.4			TP16_0.0	*			Clayey SAND; medium grained sand and high plasticity clay, brown, trace roots, slightly moist, no odour, medium density	0.30
0.7			TP16_0.5				Sandy CLAY; high plasticity, brown/orange, fine grained sand, firm, slightly moist, no odour	
1.2			TP16_1.0		1		becoming orange/tan/red/mottled	2.10
0.5			TP16_1.5				becoming stiff	
0.2			TP16_2.0		2		EOH at 2.1 mbgl Target depth reached Total Depth: 2.10 m	

TEST PIT LOG KENTBRUCK CONTAM.GPJ HLA_SYD.GDT 20/5/21

Appendix C

Photo Plates

DRAFT

Appendix C – Plates

Photo: 1
Date: 27/04/2021
Description:
Goldby Farm



Photo: 2
Date: 27/04/2021
Description:
Green Triangle
Forest Products



DRAFT

Photo: 3
Date: 11/05/2021
Description:
TP01



Photo: 4
Date: 11/05/2021
Description:
TP02



DRAFT

Photo: 5
Date: 11/05/2021
Description:
TP03



Photo: 6
Date: 11/05/2021
Description:
TP04



DRAFT

Photo: 7
Date: 12/05/2021
Description:
TP05



Photo: 8
Date: 12/05/2021
Description:
TP06



DRAFT

Photo: 9
Date: 12/05/2021
Description:
TP07 – saturation
layer



Photo: 10
Date: 12/05/2021
Description:
TP09



DRAFT

Photo: 11
Date: 13/05/2021
Description:
TP13



Photo: 12
Date: 13/05/2021
Description:
TP14



DRAFT

Photo: 13
Date: 13/05/2021
Description:
TP15



Photo: 14
Date: 13/05/2021
Description:
TP16



Appendix D

Field Records &
Equipment Calibration
Certificates


FQM - NAPL and Groundwater Level Gauging Record

Project Name:	Kentbruck EES	Project Location:	Kentbruck Plantation	PM Name:	MW
Project Number:	60591699	Client:	Neoen	Fieldwork Staff Name:	BM/TD

Confirm NAPL and groundwater levels by repeat measurements. All columns must be completed. If NAPL is not present in a well write 'ND' (Not Detected) in the relevant column.

Field Data											
Well ID	Date (dd/mm/yy)	Time (24hr:mm)	PID Reading (ppm)	Depth to LNAPL (mBTOC)	Depth to Groundwater (mBTOC)	LNAPL Thickness From (m)	Depth to DNAPL (mBTOC)	Total Well Depth (mBTOC)	DNAPL Thickness To (m)	Comments (well condition, odour, NAPL colour and viscosity)	
MW01	27/02/21	13:02			8.48			9.77	+0.84	Stick up: pip. 0.2 ppm.	
MW02	27/02/21	14:02			5.11			6.83	+0.77	stick up: PID 0.2 ppm	
MW03	27/04/21	11:18	509017.35 E	5784753.53M	1.48		3.32 mHAE	3.83	-0.10m	flush: PID: 22.0; 8.52 MSL	
MW03	27/04/21	11:01	509704.68 E	5785281.77M	7.63		15.02 mHAE	8.80	-0.12m	PID: 0.0; 17.63 MSL	
MW05	27/04/21	10:34	511869.81 E	5783705.29M	7.37		11.82 HAE	9.44m	-0.11m	PID: 1.2; 18.77 MSL	
MW06	27/04/21	10:19	510974.63 E	5783329.61M	2.93		5.17 HAE	4.86m	-0.09m	PID: 0.0; 8.66 MSL	
MW07	27/04/21	9:39	514512.76 E	5782436.78M	6.34		12.76 HAE	7.76m	-0.09m	PID: 0.0; 16.4 MSL	
MW08	27/04/21	9:22	514270.97 E	5781593.94M	1.69		5.80 HAE	3.74m	-0.09m	PID: 0.0; 9.32 MSL	
MW09	27/04/21	8:05	517618.86 E	5780047.40M	4.456		14.59 HAE	5.88m	-0.10m	PID: 0.0; 16.96 MSL	
MW10	26/04/21	15:08			1.49			5.16m	+0.75m	stick up:	
MW11	26/04/21	16:00			2.755			6.30m	+0.83m	stick up:	
MW12	26/04/21	13:46	527445.47 E	5775579.14M	2.370	1.77	138.98 MSL	8.16m	+0.6m	stick up:	
DG1	26/04/21	12:42			2.66			12.1m		pump @ Bottom 'pumping prior to dip	
DG2	26/04/21	13:00			2.94	2.33		11.3m		stick up highest point on farm	
DG3	26/04/21	13:20								could not open; clay	
DG4	26/04/21	13:28	525902.07 E	5776053.73M	1.73	1.63	126.15 MSL	12.55m	+0.1m	130mm diameter bore, cap dislodged	
10/241	27/04/21	10:00	514515.08 E	5785820.85M	11.37		33.80 HAE	13.5m	+0.58m	stick up; 37.60 MSL; open (no cap)	
MH1	27/4/21	13:40			23.79				+0.340m	windmill bore; pump @ bottom-bore not pumping	
DJ1	27/04/21	15:08			22.98				+0.12m	windmill bore; bore not pumping	
HCI	27/04/21	15:30			25.62				+0.18m	solar panel connected near water tank	

Measurement Equipment			Notes/Comments		
Make & Model:		Supplier:	(PID) - photo ionisation detector; (ppm) - parts per million; (LNAPL) - light non-aqueous phase liquids; (DNAPL) - dense light non-aqueous phase liquid; (mBTOC) - metres below top of casing Surveyed ground level from BM bellybottom = ±0.00m. reference for survey.		
Serial No.:		Calibration Report Provided?			

Approval and Distribution	
 Fieldwork Staff Signature	27/4/21 Date
_____ Project Manager Signature	_____ Date

Distribution: Project Central File

ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: M102				
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 28/04/21				
General Bore Information				Decontamination		Sampling Method				
Date of GW Level: 28/04/21		Bore Radius (mm): 175		Chem Kit Serial No.: 741		<input checked="" type="checkbox"/> Decontaminated <input type="checkbox"/> Dedicated <input type="checkbox"/> Disposable <input type="checkbox"/> Other (specify)				
Depth to GW (m-pvc): 5.11		Screen Interval (m):		Chem Kit Model: 2032		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM3 <input type="checkbox"/> Intake depth:				
Bore Depth (m-pvc): 6.83		Casing Radius (mm): 50		Corrected Redox: Y / N		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve <input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra <input type="checkbox"/> Other (specify)				
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Sampling Depth (m-pvc): Gauging <input type="checkbox"/> Hydrasleeve Install time: Hydrasleeve in <input type="checkbox"/> Sampling Start Time: Hydrasleeve out <input type="checkbox"/> Parameters				
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved						
Key Type (if applicable):										
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):				
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
13:54	1.5	5.11	CPM3	-	1141	6.42	118.5	18.7	White, no odour, mod turbidity	
13:57	2.4			-	1115	6.46	44.9	18.8	"	
14:00	3.3			-	1323	6.13	44.6	18.6	"	
14:03	4.2			-	1218	6.27	34.3	18.5	"	
14:06	5.1			-	1166	6.33	15.1	18.5	white/brown	
14:09	6.0			-	1164	6.33	9.8	18.5	white/brown, cloudy, as above	
14:12	8.9			3.70	1162	6.30	13.5	18.5	"	
14:15	7.8			3.71	1142	6.33	12.9	16.4	"	
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 50 mL metals (HNO ₃)	(5)		Bore volume calculation, bore condition, fate of tubing, redox correction etc. No DO readings available - probe not reading			
Metals		x 40 mL Vial (H ₂ SO ₄)	x 100 mL Amber	x 250 mL Plastic						
Approval and Distribution										
Fieldwork Staff Signature		Date		Checker Name and Signature		Date				
Project Manager Signature		Date		Distribution: Project Central File						

FQM - Groundwater Sampling and Purging Record

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: MW04				
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 28/04/21				
Well Development or Well Sampling Event? (circle)										
General Bore Information			Parameter Info.		Decontamination		Sampling Method		Hydrasleeve Info	
Date of GW Level: 28/4/21	Bore Radius (mm): 175	Chem Kit Serial No.: 451	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: CPM3	Hydrasleeve Size:	Monitoring sequence followed (number in order):				
Depth to GW (m-pvc): 1.49	Screen Interval (m): 1-3	Chem Kit Model: 2032	<input type="checkbox"/> Dedicated	Intake depth: 2.5	Hydrasleeve Type:					
Bore Depth (m-pvc): 3.83	Casing Radius (mm): 50	Corrected Redox: Y / (N)	<input type="checkbox"/> Disposable	<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):	Gauging				
Depth to Product (m-pvc):	Cover Type (gatic/stick-up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra	Hydrasleeve Install time:	Hydrasleeve in				
Product Thickness (m):	Bore Locked (YES/NO): hex	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)	Sampling Start Time:	Hydrasleeve out				
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved				Parameters				
Calculated bore volume (L):	Includes/ excludes bore annulus (circle):	# purge volumes removed:	Total purged volume (L):							
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
8:29	1.5	1.49	CPM3	6.68	1347	7.56	-14.1	15.0	no odour, light yellow-brn, mod turb	
8:32	2.4			5.96	1347	7.38	2.3	15.1	no sheen.	
8:35	3.3			5.78	1349	7.35	10.4	15.1		
8:38	4.2			5.55	1350	7.32	17.8	15.2		
8:41	5.1			5.50	1350	7.32	20.8	15.2		
8:44	6.0			5.70	1352	7.32	24.7	15.3	no, lt ylw-br, mod turb	
Stable & Sampled										
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments		
Field Filtered: Metals	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	3 x 60 mL metals (HNO ₃)	QC01 - DUP QC02 - TRIP (16)		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		x 40 mL Vial (H ₂ SO ₄)	4 x 100 mL Amber	3 x 250 mL Plastic			DO fluctuating - potentially due to poor seal at pump Extra amber for lab QC			
Approval and Distribution										
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 28/4/21		Checker Name and Signature: _____		Date: _____				
Project Manager Signature: _____		Date: _____		Distribution: Project Central File						

FQM - Groundwater Sampling and Purging Record

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: M206				
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 28/04/21				
Well Development or Well Sampling Event? (circle)										
General Bore Information			Parameter Info.		Decontamination		Sampling Method		Hydrasleeve Info.	
Date of GW Level: 28/4/21	Bore Radius (mm): 175	Chem Kit Serial No.: 281	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: CPM3	Hydrasleeve Size:	Monitoring sequence followed (number in order):				
Depth to GW (m-pvc): 2.93	Screen Interval (m): 2-5	Chem Kit Model: 2032	<input type="checkbox"/> Dedicated	Intake depth: 4.00	Hydrasleeve Type:					
Bore Depth (m-pvc): 4.83	Casing Radius (mm): 50	Corrected Redox: Y / (N)	<input type="checkbox"/> Disposable	<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):	Gauging			
Depth to Product (m-pvc): -	Cover Type (gate/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Hydrasleeve Install time:	Hydrasleeve in			
Product Thickness (m): -	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)		Sampling Start Time:	Hydrasleeve out			
	Key Type (if applicable): Hex	<input checked="" type="checkbox"/> Retrieved					Parameters			
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):							
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
14:58	0.5	2.93	CPM3	7.92	1850	6.55	74.3	17.4	Grange (brown), no odour, mod turbidity	
15:01	1.4			6.83	1897	6.35	70.2	17.3	"	
15:04	2.3			6.52	1900	6.25	67	17.2	"	
15:07	3.2			5.90	1909	6.17	62.5	17.1	"	
15:10	4.6			5.50	1895	6.14	59.5	17.0	"	
15:13	5.0			5.24	1886	6.12	57.1	17.0	"	
15:16	6.9			4.98	1889	6.11	55.7	17.0	"	
					stable & sampled					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% (turbidity (if using a turbidity meter))	
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO ₃)			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
Metals	-	x 40 mL Vial (H ₂ SO ₄)	x 100 mL Amber	x 250 mL Plastic	(5)		DO probe low reading.			
Approval and Distribution										
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 28/04/21		Checker Name and Signature: _____			Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File						

FQM - Groundwater Sampling and Purging Record

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: MW08				
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 29/04/21				
Well Development or Well Sampling Event? (circle)										
General Bore Information			Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: 29/04/21	Bore Radius (mm): 175	Chem Kit Serial No.: YJ	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM3		Intake depth: 2.5		Hydrasleeve Size:	Monitoring sequence followed (number in order):
Depth to GW (m-pvc): 1.70	Screen Interval (m):	Chem Kit Model: 2032	<input type="checkbox"/> Dedicated		<input type="checkbox"/> Bailer		<input type="checkbox"/> Hydrasleeve		Hydrasleeve Type:	
Bore Depth (m-pvc): 3.74	Casing Radius (mm):	Corrected Redox: Y / (N)	<input type="checkbox"/> Disposable		<input type="checkbox"/> Peristaltic Pump		<input type="checkbox"/> Waterra		Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc): -	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Other (specify)				Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole							Sampling Start Time:	Hydrasleeve out
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved								Parameters
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):				
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
13:12	0.5	1.70	CPM3	-	1467	6.38	14.4	17.4	No odour, yellow-brown, high turbidity	
13:15	1.4			-	1461	6.40	-8.8	17.3		
13:18	2.3			-	1450	6.47	35.7	17.1	" , medium turbidity	
13:21	3.2			-	1444	6.46	-59	17.2		
13:24	4.1			-	1475	6.46	-79.5	17.1	" , Med turbidity	
13:27	5.0			-	1484	6.42	-86.7	17.0	" ,	
13:30	5.9			-	1490	6.41	-88.6	17.1	" minor surface colour	
				State to Sampled						
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO ₃)			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		2 x 40 mL Vial (H ₂ SO ₄)	2 x 100 mL Amber	1 x 250 mL Plastic	(6)		00 probe not reading at 13:18			
Approval and Distribution										
Fieldwork Staff Signature		Date: 29/04/21		Checker Name and Signature			Date			
Project Manager Signature		Date		Distribution: Project Central File						


FQM - Groundwater Sampling and Purging Record

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: MW/10			
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 29/04/21			
Well Development or Well Sampling Event? (circle)									
General Bore Information		Parameter Info.		Decontamination		Sampling Method			
Date of GW Level: 29/04/21	Bore Radius (mm): 175	Chem Kit Serial No.: X51	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: CPMS		Monitoring sequence followed (number in order):			
Depth to GW (m-pvc): 1.49	Screen Interval (m):	Chem Kit Model: 2032	<input type="checkbox"/> Dedicated	Intake depth:		Hydrasleeve Size:			
Bore Depth (m-pvc): 5.16	Casing Radius (mm): 80	Corrected Redox: Y / (N)	<input type="checkbox"/> Disposable	<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Hydrasleeve Type:			
Depth to Product (m-pvc): -	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Sampling Depth (m-pvc): Gauging			
Product Thickness (m): -	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)		Hydrasleeve Install time: Hydrasleeve in			
	Key Type (if applicable):	<input type="checkbox"/> Retrieved				Sampling Start Time: Hydrasleeve out			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	EC. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
16:16	0.5	1.505	CPMS	0.85	467.2	5.09	-108.1	16.1	sulfur odour, dark brown, high turbidity
16:19	1.4	1.49	↓	0.82	366.7	5.02	-110.0	16.1	"
16:22	2.3		↓	0.12	464.5	5.00	-130.0	15.9	"
16:25	3.2	1.50	↓	0.03	463.9	4.97	-137.5	15.8	"
16:28	4.1	1.50	↓	0.02	463.7	4.97	-140.0	15.8	"
16:31	5.0	1.50	↓	-	463.6	4.95	-143.5	15.7	"
					stable & sampled				
				[16:40 0.83]	← grab sample				
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered: metals	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO ₃)			Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
		x 40 mL Vial (H ₂ SO ₄)	x 100 mL Amber	x 250 mL Plastic			DO not working after 16:28. 16:40 grab sample collected and DO reading.		
Approval and Distribution									
Fieldwork Staff Signature		Date: 29/04/21		Checker Name and Signature		Date			
Project Manager Signature		Date		Distribution: Project Central File					

ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: MW-11					
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 30.04.21					
Well-Development or Well Sampling Event? (circle)											
General Bore Information			Parameter Info.		Decontamination		Sampling Method		Hydrasleeve Info.		
Date of GW Level: 30/4/21	Bore Radius (mm): 175	Chem Kit Serial No.: 481	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: CPM3	Hydrasleeve Size:	Monitoring sequence followed (number in order): Gauging Hydrasleeve in Hydrasleeve out Parameters					
Depth to GW (m-pvc): 2.74m	Screen Interval (m):	Chem Kit Model: 2032	<input type="checkbox"/> Dedicated	Intake depth: 5.8	Hydrasleeve Type:						
Bore Depth (m-pvc): 6.30m	Casing Radius (mm): 50	Corrected Redox: Y / (N)	<input type="checkbox"/> Disposable	<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve						
Depth to Product (m-pvc):	Cover Type (gate/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra						
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)							
	Key Type (if applicable): Key	<input checked="" type="checkbox"/> Retrieved									
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):								
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
12:47:52	2.0	2.74	CPM3	0.69	449	4.38	208.7	15.4	No odour, dk br, high turbidity		
8:55	3.9	2.74		0.41	447	4.35	202.4	15.4			
8:58	3.8			0.16	448.5	4.30	193.8	15.4			
9:01	4.7			0.12	449.0	4.28	184.3	15.4			
9:04	5.8	2.75		0.08	449.6	4.25	166.3	15.5			
9:07	6.5			0.05	450.0	4.24	158.2	15.5			
9:10	7.4			0.04	451.7	4.23	149.6	15.5			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered: metals	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	1	x 60 mL metals (HNO ₃)			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		2	x 40 mL Vial (H ₂ SO ₄)	2	x 100 mL Amber					1	x 60 mL Plastic
Approval and Distribution											
Fieldwork Staff Signature: 		Date: 30/4/21		Checker Name and Signature				Date			
Project Manager Signature		Date		Distribution: Project Central File							

ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Kentbruck EES		Project Number: 60591699		PM Name: MW		Bore ID: NW12			
Client: Neoen		Project Location: Kentbruck Plantation		Fieldwork Staff: BM/TD		Sample Date: 27/04/21			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 29/4/21	Bore Radius (mm): 175	Chem Kit Serial No.: 881	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:		Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): 2.35	Screen Interval (m):	Chem Kit Model: 2832	<input type="checkbox"/> Dedicated		Intake depth:				
Bore Depth (m-pvc): 6.16	Casing Radius (mm): 50	Corrected Redox: Y / (N)	<input type="checkbox"/> Disposable		<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Hydrasleeve Size:		
Depth to Product (m-pvc): -	Cover Type (gatic/slick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Type:		
Product Thickness (m): -	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input type="checkbox"/>		<input type="checkbox"/> Other (specify)		Sampling Depth (m-pvc): Gauging		
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved	<input type="checkbox"/>				Hydrasleeve Install time: Hydrasleeve in		
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):		Sampling Start Time: Hydrasleeve out			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
15:15	0.5	2.41	CPM3	4.34	847	4.74	-110.6	16.3	sulfur odour, dark brown, high turbidity
15:18	1.4	2.40	↓	3.64	839	4.67	-115.0	16.3	strong
15:21	2.3	2.32	↓	3.04	831	4.68	-117.6	16.2	↓
15:24	3.2	2.35	↓	-	822	4.67	-118.6	16.2	↓
15:27	4.1	2.35	↓	-	817	4.67	-118.9	16.1	↓
15:30					stable samples				
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO ₃)	(6)		Bore volume calculation, bore condition, fate of tubing, redox correction etc. DO probe wof reading @ 15:24		
Metals		2 x 40 mL Vial (H ₂ SO ₄)	2 x 100 mL Amber	500 x 250 mL Plastic					
Approval and Distribution									
Fieldwork Staff Signature		Date: 27/04/21		Checker Name and Signature		Date			
Project Manager Signature		Date		Distribution: Project Central File				pump 1288	

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Kentbruck EES	Project Number:	60591699
Project Location:	Kentbruck Plantation	Client:	Neoen
PM Name:	MW	Fieldwork Staff Name:	BM/TD

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	ENRIP
Make and Model:	YSI
Serial Number:	7032

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	29/4/21				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm ORP
Calibration Standard Concentration:	4.60	7.00	2760	6	~ 247
Bump Test Reading:	4.03	7.21	9.5	0.07	250
Bump Test Temperature:	9.8	9.8	9.5	9.5	9.7

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

TD Bump test all probes,
ok for use. checked by BM.

Approval and Distribution

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

B. Meyer
Fieldwork Staff Signature

29/4/21
Date

Distribution: Project Central File

FQM - Water Quality Meter Calibration Record

Project Name:	Kentbruck EES	Project Number:	60591699
Project Location:	Kentbruck Plantation	Client:	Neoen
PM Name:	MW	Fieldwork Staff Name:	BM/TD

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	
Make and Model:	
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm ORP
Calibration Standard Concentration:	4.00	7.00	2760	10	247.5 °C
Bump Test Reading:	3.92	7.04	2782	6.6	293.5
Bump Test Temperature:	9.9	9.9	9.9	9.8	10.2

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

DO reading negative / not sensing.
not suitable to calibrate

Approval and Distribution

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.



Fieldwork Staff Signature

30/4/21

Date

Distribution: Project Central File

Equipment Calibration Form

MiniRAE 3000 PID



Enqip #: 14030
Company: AECOM Australia Pty Ltd
Consultant: Sara Kennedy
PO #: 60591699/5
Certificate #: 20673

INSTRUMENT IDENTIFICATION

Model Number: PGM 7320
Serial Number: 592-915895

INSPECTION RECORD

Flow Rate: PASS
Buzzer: PASS
Date & Time: PASS

CALIBRATION DETAILS

Parameters	Standard	Result
Air	0.0 ppm	0.0 ppm
Isobutylene	100.0 ppm	100.0 ppm

Alarm Limits: High 100 Low 50

Calibration Successful: YES

Calibrated By: Doyle Schapendonk

Test Date: 7/05/2021



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P 1300 218 987

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Equipment Calibration Form

YSI ProPlus



Enqip #: 13932
Company: AECOM Australia Pty Ltd
Consultant: Breana McCartney
PO #: 60591699 / 4.0
Certificate #: 20494

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: 18L102032
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked: PASS **Date & Time:** PASS
Electrodes Cleaned/Checked: PASS **Temperature:** PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.00 pH
	Buffer 7.00	7.00 pH	7.00 pH
Redox	Standard ORP	234.5 mV @ 20 °C	234.5 mV
O ₂	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	99.9 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: Doyle Schapendonk

Test Date: 23/04/2021



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Instrument Quality Report Interface Meter



Enqip #: 13932
Company: AECOM Australia Pty Ltd
Consultant: Breana McCartney
PO #: 60591699 / 4.0
Certificate #: 20495

INSTRUMENT IDENTIFICATION

Instrument Type: Solinst Interface Meter
Model Number: 122
Serial Number: 5394

INSPECTION RECORD

Battery:	PASS	Water Tone:	PASS
Tape Condition:	PASS	Hydrocarbon Tone:	PASS

Tested By: Will Hatzimihalis

Test Date: 23/04/2021



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Equipment Calibration Form

MiniRAE 3000 PID



Enqip #: 13932
Company: AECOM Australia Pty Ltd
Consultant: Breana McCartney
PO #: 60591699 / 4.0
Certificate #: 20496

INSTRUMENT IDENTIFICATION

Model Number: PGM 7320
Serial Number: 592-905506

INSPECTION RECORD

Flow Rate: PASS
Buzzer: PASS
Date & Time: PASS

CALIBRATION DETAILS

Parameters	Standard	Result
Air	0.0 ppm	0.0 ppm
Isobutylene	100.0 ppm	100.0 ppm

Alarm Limits: High 100 Low 50

Calibration Successful: YES

Calibrated By: Darrin Arthur

Test Date: 23/04/2021



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Instrument Quality Report Interface Meter



Enqip #: 13932
Company: AECOM Australia Pty Ltd
Consultant: Breana McCartney
PO #: 60591699 / 4.0
Certificate #: 20497

INSTRUMENT IDENTIFICATION

Instrument Type: Solinst Interface Meter
Model Number: 122
Serial Number: 312216

INSPECTION RECORD

Battery:	PASS	Water Tone:	PASS
Tape Condition:	PASS	Hydrocarbon Tone:	PASS

Tested By: Will Hatzimihalis

Test Date: 23/04/2021



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Equipment Quality Report

Water Level Meter



Enqip #: 13823
Company: AECOM Australia Pty Ltd
Consultant: Breana McCartney
PO #: 60591699/4.0
Certificate #: 20284

INSTRUMENT IDENTIFICATION

Model Number: 100/122
Serial Number: 252699
Instrument Type: Solinst Interface Meter

INSPECTION RECORD

Battery:	PASS	Water Beeper:	PASS
Tape Condition:	PASS	Equipment Condition:	PASS

Tested By: Will Hatzimihalis

Test Date: 9/04/2021



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Equipment Calibration Form

YSI ProPlus



Enqip #: 13823
Company: AECOM Australia Pty Ltd
Consultant: Breana McCartney
PO #: 60591699/4.0
Certificate #: 20285

INSTRUMENT IDENTIFICATION

Model Number: 6050000
Serial Number: 170103037
Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked: PASS **Date & Time:** PASS
Electrodes Cleaned/Checked: PASS **Temperature:** PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value	Reading
pH	Buffer 4.00	4.00 pH	4.01 pH
	Buffer 7.00	7.00 pH	7.00 pH
Redox	Standard ORP	234.5 mV @ 20 °C	234.5 mV
O ₂	Zero Dissolved Oxygen	0.0 %	0.0 %
	Air	100.0 %	99.9 %
Conductivity	Standard Conductivity	2.76 mS/cm	2.76 mS/cm

Calibration Successful: YES

Calibrated By: Doyle Schapendonk

Test Date: 9/04/2021



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Appendix E

Tables

Table T1. Groundwater Gauging

Well ID	Top of Casing Elevation (mAHD)	Ground Surface Elevation (mAHD)	Height of casing (mbgs)	Installed Total Depth (mbgs)	Date Gauged	Measured Total Depth (mbTOC)	Measured Total Depth (mbgs)	Measured Total Depth (mAHD)	Depth to Water (mbTOC)	Depth to Water (mbgs)	Groundwater Elevation (mAHD)	Comments
MW02	9.843	9.073	0.77	6.5	27/04/21	6.83	6.1	3.0	5.110	4.3	4.7	Good condition, no odour
MW04	7.213	7.333	-0.12	4.0	27/04/21	3.83	4.0	3.4	1.480	1.6	5.7	Good condition, no odour
MW06	7.386	7.476	-0.09	5.0	27/04/21	4.86	5.0	2.5	2.930	3.0	4.5	Good condition, no odour
MW08	8.241	8.331	-0.09	4.0	27/04/21	3.74	3.8	4.5	1.690	1.8	6.6	Good condition, no odour
MW10	145.029	144.279	0.75	4.5	26/04/21	5.16	4.4	139.9	1.490	0.74	143.54	Good condition, no odour
MW11	137.830	137.000	0.83	6.0	26/04/21	6.30	5.5	131.5	2.755	1.93	135.08	Good condition, no odour
MW12	138.808	138.208	0.60	5.5	26/04/21	6.16	5.6	132.6	2.370	1.77	136.44	Good condition, no odour

Notes

mAHD = metres above Australian Height Datum

mbgs = metres below ground surface

mbTOC = metres below Top of Casing

TOC = Top of Casing

L = Litres

Total measured depth of wells less than installation depth due to infiltration of fine sand through gravel pack and screen. All groundwater bores constructed as per Australian standard bore construction requirements.

* - groundwater estimate based on water being below base of well

Table T2. Groundwater Sampling Stabilised Field Parameters

Bore ID	Date Sampled	Volume Removed (L)	Depth to Water (mbTOC)	Pump rate	Temperature (°C)	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	pH	Redox Field (mV)	Total Dissolved Solids (TDS) ¹	Redox Potential (Eh) ³	Comments
MW02	28/04/21	7.8	5.11	CPM3	16.4	3.71	1142	6.33	12.9	777	226	No odour, white, moderate turbidity; DO probe not reading
MW04	28/04/21	6.0	1.49	CPM3	15.3	5.70	1352	7.32	24.7	919	238	No odour, light yellow-brown, moderate turbidity
MW06	28/04/21	5.9	2.93	CPM3	17.0	4.98	1889	6.11	55.7	1285	268	No odour, orange-brown, moderate turbidity
MW08	29/04/21	5.9	1.70	CPM3	17.1	-	1490	6.41	-88.6	1013	124	Minor sulfur odour, yellow-brown, moderate turbidity; DO probe not reading
MW10	29/04/21	5.0	1.50	CPM3	15.7	0.83	464	4.95	-143.5	315	70	Sulfur odour, dark brown, high turbidity; DO probe not reading so grab sample collected for DO
MW11	30/04/21	7.4	2.74	CPM3	15.5	0.04	452	4.23	149.6	307	363	No odour, dark brown, high turbidity
MW12	29/04/21	4.1	2.35	CPM3	16.1	-	817	4.67	-118.9	556	94	Strong sulfur odour, dark brown, high turbidity; DO probe not reading

Notes

(1) TDS = Total Dissolved Solids

(2) TDS approximated as Electrical Conductivity x 0.68

(3) Corrected Redox Potential = Field Redox Potential + (224.98 - 0.7443* Temperature) (Redox potential converted from Ag/AgCl electrode to H2 electrode)

L = Litres

uS/cm = microsiemens per centimetre

mg/L = milligrams per litre

mV = millivolts

oC = degrees Celsius

TOC = Top of Casing

"-" - not measured

Table 3
Soil Analytical Results - Screening Criteria
Kemburck Green Power Hub EES
Neoen Australia Pty Ltd

Table with columns for Physico-Chemical Parameters, Major Ions, Polychlorinated Biphenyls, Chlorinated hydrocarbons, and Organochlorine Pesticides (OC). Rows include LOR, ANZECC & NHMRC 1992, NEPM 2013 Table 1A(1) HILs Rec C Soil, NEPM 2013 Table 1A(1) HILs Res A Soil, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, NEPM 2013 Table 1B(5) Generic EILs for Urban Res, NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil, NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil, and NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil.

Table with columns: Location Code, Field ID, Sample Depth Range, Sampled Date Time, Matrix Description, and various chemical parameters. Rows include TP14 and TP15 samples for Clavey SAND, Gravelly CLAY, and SANDY CLAY.

Env Stds Description

ANZECC & NHMRC 1992 Table 2 Development of Environmental Investigation Guidelines
NEPM 2013 Table 1A(1) HILs Rec C Soil: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1A(1) HILs Res A Soil: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1B(5) Generic EILs for Urban Res: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil: National Environment Protection (Assessment of Site Contaminant)
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil: National Environment Protection (Assessment of Site Contaminant)

Table T5
Soil Analytical Results – ASS pH Screening and CRS Testing
Kentbruck Green Power Hub EES
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Table with columns: Location, Sample Name, Sample Depth, Lab Report Number, Lab Report Number, Sampled Date, Matrix Description. Rows include TP04 (0.5 to 5.0) and TP05 (0.0 to 3.5) locations with sample details.

Table with columns: ChemName, output unit, LOR, and 18 data columns. Contains various chemical parameters such as pH, Reaction Rate, Difference, Interpretation, Chromium Reducible Sulfur Suite, Actual Acidity, Potential Acidity, Acid Neutralising Capacity, Retained Acidity, Acid Base Accounting, SPOCAS Suite, Acidity Trail, Sulfur Trail, Calcium Values, and Magnesium Values.

Table T5
Soil Analytical Results – ASS pH Screening and CRS Testing
Kentbruck Green Power Hub EES
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Location	TP15	TP16	TP16	TP16	TP16	TP16
Sample Name	TP15_2.0	TP16_0.0	TP16_0.5	TP16_1.0	TP16_1.5	TP16_2.0
Sample Depth	2	0	0.5	1	1.5	2
Lab Report Number		EM2108857		EM2108857		
Lab Report Number	EM2108857	EB2116038	EM2108857	EB2116038	EM2108857	EM2108857
Sampled Date	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Matrix Description	Clay, moist	Clayey sand, moist	Sandy clay, moist	Sandy clay, moist	Sandy clay, moist	Sandy clay, moist
Action Criteria EPA 655.1						
ChemName	output unit	LOR				
pHF	pH Unit	0.1	7.9	5.8	6.5	5.7
pHFOX	pH Unit	0.1	5.7	2.4	4.4	3.8
Reaction Rate	-	-	1	3	2	3
Difference	pH Unit	-	2.2	3.4	2.1	1.9
Interpretation			Unlikely ASS	PASS may be present	Uncertain	Borderline PASS may be present
					Borderline AASS maybe present	Borderline AASS maybe present
Chromium Reducible Sulfur Suite						
Actual Acidity						
pH (KCl)	pH Units	0.1	-	5	-	5.3
Titrateable Actual Acidity	mole H+/t	2	-	15	-	10
sulfidic - Titrateable Actual Acidity	% pyrite S	0.02	-	0.02	-	<0.02
Potential Acidity						
Chromium Reducible Sulfur	%S	0.005	-	0.008	-	0.009
Chromium Reducible Sulphur	mole H+/t	10	-	<10	-	<10
Acid Neutralising Capacity						
Acid Neutralising Capacity	% CaCO3	0.01	-	-	-	-
Acid Neutralising Capacity- acidity	mole H+/t	10	-	-	-	-
Acid Neutralising Capacity- sulfidic	%S	0.01	-	-	-	-
Retained Acidity						
Net Acid Soluble Sulfur	%S	0.02	-	-	-	-
Net Acid Soluble Sulfur (in sulfur units)	% pyrite S	0.02	-	-	-	-
Net Acid Soluble Sulfur (in acid units)	mole H+/t	10	-	-	-	-
KCl Extractable Sulfur	% S	0.02	-	-	-	-
HCl Extractable Sulfur	%S	0.02	-	-	-	-
Acid Base Accounting						
ANC Fineness Factor	-	0.5	-	1.5	-	1.5
Net Acidity (sulfur units)	% S	0.02	-	0.03	-	0.02
Net Acidity (acidity units)	mole H+/t	10	-	20	-	16
Liming Rate	kg CaCO3/t	1	-	2	-	1
Net Acidity excluding ANC (sulfur units)	% S	0.02	0.03	0.03*	-	0.02
Net Acidity excluding ANC (acidity units)	mole H+/t	10	18	20*	-	16
Liming Rate excluding ANC	kg CaCO3/t	1	-	2	-	1
SPOCAS Suite						
pH (KCl)	pH Units	0.1	-	-	-	-
pH (Ox)	pH Units	0.1	-	-	-	-
Acidity Trail						
Titrateable Actual Acidity (23F)	mole H+ / t	2	-	-	-	-
Titrateable Peroxide Acidity	mole H+/t	2	-	-	-	-
Titrateable Sulfidic Acidity	mole H+/t	2	-	-	-	-
sulfidic - Titrateable Actual Acidity (s-23F)	% pyrite S	0.02	-	-	-	-
sulfidic - Titrateable Peroxide Acidity	% pyrite S	0.02	-	-	-	-
sulfidic - Titrateable Sulfidic Acidity	% pyrite S	0.02	-	-	-	-
Sulfur Trail						
KCl Extractable Sulfur (23Ce)	% S	0.02	-	-	-	-
Sulfur in Peroxide	% S	0.02	-	-	-	-
Peroxide Oxidisable Sulfur	% S	0.02	-	-	-	-
acidity - Peroxide Oxidisable Sulfur	mole H+/t	10	-	-	-	-
Calcium Values						
KCl Extractable Calcium	% Ca	0.02	-	-	-	-
Calcium in Peroxide	% Ca	0.02	-	-	-	-
Acid Reacted Calcium	% Ca	0.02	-	-	-	-
acidity - Acid Reacted Calcium	mole H+/t	10	-	-	-	-
sulfidic - Acid Reacted Calcium	% S	0.02	-	-	-	-
Magnesium Values						
KCl Extractable Magnesium	% Mg	0.02	-	-	-	-
Magnesium in Peroxide	% Mg	0.02	-	-	-	-
Acid Reacted Magnesium	% Mg	0.02	-	-	-	-
acidity - Acid Reacted Magnesium	mole H+/t	10	-	-	-	-
sulfidic - Acid Reacted Magnesium	% S	0.02	-	-	-	-

Table T6
Groundwater Analytical Results – Screening criteria
Kentbruck Green Power Hub EES
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Chemical Name	output unit	EQL	Monitoring Zone						Plantation Zone				BESS Area			
			Location	MW02	MW04	MW04	MW04	MW06	MW08	MW10	MW11					
			Field ID	MW02	MW04	QC01 28/4/21	QC02 28/4/21	MW06	MW08	MW10	MW11					
			Sample Date	28/04/2021	28/04/2021	28/04/2021	28/04/2021	28/04/2021	29/04/2021	29/04/2021	30/04/2021					
			Sample Type	Primary	Primary	Duplicate	Triplicate	Primary	Primary	Primary	Primary					
Lab Report Number	EM2107935	EM2107935	EM2107935	792485	EM2107935	EM2107935	EM2107935	EM2107935	EM2107935							
			Australian Drinking Water Health (Updated 2018)	ANZECC 2000 Irrigation Long Term Trigger Values	ANZECC 2000 Livestock DW Low Risk Trigger Values	ANZG (2018) Freshwater 95% LOSP Toxicant DGVs	ANZG (2018) Marine Water 99% LOSP Toxicant DGVs	NHMRC 2008 Guidelines for Managing Risks in Recreational Waters	Standards Australia - AS2159 2009 Buildings and Structures							
Profenofos	µg/L	0.01	0.3					3	-	<0.01	-	-	-	<0.01	<0.01	<0.01
Prothiofos	µg/L	0.1							<0.5	<0.1	<0.5	-	<0.5	<0.1	<0.1	<0.1
Ronnel	µg/L	10							-	<10	-	<2	-	<10	<10	<10
Sulfotepp	µg/L	0.005							-	<0.005	-	-	-	<0.005	<0.005	<0.005
Trichloronate	µg/L	0.5							-	<0.5	-	<2	-	<0.5	<0.5	<0.5
Terbufos	µg/L	0.01	0.9					9	-	<0.01	-	<2	-	<0.01	<0.01	<0.01
Thiometon	µg/L	0.5	4					40	-	<0.5	-	-	-	<0.5	<0.5	<0.5
Tetrachlorvinphos	µg/L	0.01	100					1000	-	<0.01	-	<2	-	<0.01	<0.01	<0.01
Phenoxyacetic Acid Herbicides																
2,4,5-TP (Silvex)	µg/L	10	10					100	<10	<10	<10	<2	<10	<10	<10	<10
2,6-D	µg/L	10							<10	<10	<10	-	<10	<10	<10	<10
4-Chlorophenoxy acetic acid	µg/L	10							<10	<10	<10	-	<10	<10	<10	<10
Clopyralid	µg/L	10	2000					20000	<10	<10	<10	-	<10	<10	<10	<10
Dicamba	µg/L	10	100					1000	<10	<10	<10	<2	<10	<10	<10	<10
Fluroxypyr	µg/L	10							<10	<10	<10	-	<10	<10	<10	<10
Mecoprop	µg/L	10							<10	<10	<10	<2	<10	<10	<10	<10
Picloram	µg/L	10	300					3000	<10	<10	<10	-	<10	<10	<10	<10
Triclopyr	µg/L	10	20					200	<10	<10	<10	-	<10	<10	<10	<10
Fungicides																
Fosetyl-al	µg/L	10							-	<10	-	-	-	<10	<10	<10
Herbicides																
2,4,5-Trichlorophenoxy acetic acid	µg/L	10	100			36		1000	<10	<10	<10	<2	<10	<10	<10	<10
2,4-Dichlorprop	µg/L	10	100					1000	<10	<10	<10	<2	<10	<10	<10	<10
2,4-Dichlorophenoxy acetic acid	µg/L	10	30			280		300	<10	<10	<10	<2	<10	<10	<10	<10
4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	µg/L	10							<10	<10	<10	<2	<10	<10	<10	<10
2-Methyl-4-chlorophenoxyacetic acid	µg/L	10	40					400	<10	<10	<10	<2	<10	<10	<10	<10
2,4,6-Trichlorophenoxy acetic acid	µg/L	10							<10	<10	<10	-	<10	<10	<10	<10
2-Methyl-4-Chlorophenoxy Butanoic Acid	µg/L	10							<10	<10	<10	<2	<10	<10	<10	<10
Inorganics																
Carbonate Alkalinity (as CaCO3)	mg/L	1							<1	<1	<1	<10	<1	<1	<1	<1
Other																
Actril	µg/L	1							-	-	-	<2	-	-	-	-
Triazophos	µg/L	0.005							-	<0.005	-	-	-	<0.005	<0.005	<0.005
Pesticides																
Formothion	µg/L	20	50					500	-	<20	-	-	-	<20	<20	<20
Pirimiphos-methyl	µg/L	0.01	90					900	-	<0.01	-	<20	-	<0.01	<0.01	<0.01
Temephos	µg/L	0.02	400				0.0004	4000	-	<0.02	-	-	-	<0.02	<0.02	<0.02
Trichlorfon	µg/L	0.02	7					70	-	<0.02	-	-	-	<0.02	<0.02	<0.02
Un-assigned																
Acephate	µg/L	0.5	8					80	-	<0.5	-	-	-	<0.5	<0.5	<0.5
Tokuthion	mg/L	0.002							-	-	-	<0.002	-	-	-	-

Table T6
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Kentbruck Green Power Hub EES
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

			Monitoring Zone						
			Australian Drinking Water Health (Updated 2018)	ANZECC 2000 Irrigation Long Term Trigger Values	ANZECC 2000 Livestock DW Low Risk Trigger Values	ANZG (2018) Freshwater 95% LOSP Toxicant DGVs	ANZG (2018) Marine Water 99% LOSP Toxicant DGVs	NHMRC 2008 Guidelines for Managing Risks in Recreational Waters	Standards Australia - AS2159 2009 Buildings and Structures
Chemical Name	output unit	EQL							
NA									
Naphthalene (MAH)	mg/L	0.01							-
Pesticides by LCMSMS (Positive)									
Bensulide	µg/L	0.1							<0.1
Naftalofos	µg/L	1							<1
Demeton-O & Demeton-S	µg/L	0.02							<0.02
Physio-Chemical Parameters									
Total Dissolved Solids	mg/L	10							1540
Total Petroleum Hydrocarbons									
C6-C9 fraction	µg/L	20							<20
C10-C14 fraction	µg/L	50							<50
C15-C28 fraction	µg/L	100							<100
C29-C36 fraction	µg/L	50							<50
C10-C36 fraction (sum)	µg/L	50							<50
Total Recoverable Hydrocarbons									
C6-C10 fraction	µg/L	20							<20
C6-C10 fraction (minus BTEX)(F1)	µg/L	20							<20
>C10-C16 fraction	µg/L	100							<100
>C10-C16 (minus Naphthalene)(F2)	µg/L	100							<100
>C16-C34 fraction	µg/L	100							<100
>C34-C40 fraction	µg/L	100							<100
>C10-C40 fraction (sum)	µg/L	100							<100
Monocyclic Aromatic Hydrocarbons									
Benzene	µg/L	1	1			950	500	10	<1
Toluene	µg/L	2	800			180	110	8000	<2
Ethylbenzene	µg/L	2	300			80	50	3000	<2
m&p-Xylene	µg/L	2							<2
o-Xylene	µg/L	2				350			<2
Total Xylenes	µg/L	2	600					6000	<2
Total BTEX	µg/L	1							<1
Naphthalene									
Naphthalene (VOC)	µg/L	5							<5
Phenolic Compounds									
4,6-Dinitro-2-methylphenol	µg/L	1							-
Dinoseb	µg/L	1							-
Metals									
Arsenic (Filtered)	µg/L	1	10	100	500			100	11
Cadmium (Filtered)	µg/L	0.1	2	10	10	0.2	0.7	20	<0.1
Chromium (Filtered)	µg/L	1		100	1000			500	1
Copper (Filtered)	µg/L	1	2000	200	400	1.4	0.3	20000	<1
Lead (Filtered)	µg/L	1	10	2000	100	3.4	2.2	100	<1
Mercury (Filtered)	µg/L	0.1	1	2	2	0.6	0.1	10	<0.1
Nickel (Filtered)	µg/L	1	20	200	1000	11	7	200	16
Zinc (Filtered)	µg/L	5		2000	20000	8	7		39
Alkalinity									
Bicarbonate Alkalinity as CaCO3	mg/L	1							56
Hydroxide Alkalinity as CaCO3	mg/L	1							<1
Total Alkalinity as CaCO3	mg/L	1							56
Bicarbonate as HCO3	mg/L								68.32
Nutrients									
Ammonia (as N)	mg/L	0.01				0.9	0.5		-
Nitrate (as N)	mg/L	0.02							-
Major Ions									
Chloride	mg/L	1						6000	204
Calcium	mg/L	1							26
Magnesium	mg/L	1							19
Potassium	mg/L	1							2
Sodium	mg/L	1							86
Sulfate as SO4	mg/L	1						5000	35
Total Anions	meq/L	0.01							7.6
Total Cations	meq/L	0.01							6.65
Sulfate (as SO4-) (Filtered)	mg/L	1							35
Ionic Balance	%	0.01							6.66
Polychlorinated Biphenyls									
Polychlorinated Biphenyls	µg/L	0.1							<0.1
Arochlor 1016	µg/L	0.1							<0.1
Arochlor 1221	µg/L	0.1							<0.1
Arochlor 1232	µg/L	0.1							<0.1
Arochlor 1242	µg/L	0.1				0.6			<0.1

Table T6
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Kentbruck Green Power Hub EES
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

			Monitoring Zone						
			Australian Drinking Water Health (Updated 2018)	ANZECC 2000 Irrigation Long Term Trigger Values	ANZECC 2000 Livestock DW Low Risk Trigger Values	ANZG (2018) Freshwater 95% LOSP Toxicant DGVs	ANZG (2018) Marine Water 99% LOSP Toxicant DGVs	NHMRC 2008 Guidelines for Managing Risks in Recreational Waters	Standards Australia - AS2159 2009 Buildings and Structures
Chemical Name	output unit	EQL							
Arochlor 1248	µg/L	0.1							<0.1
Arochlor 1254	µg/L	0.1				0.03			<0.1
Arochlor 1260	µg/L	0.1							<0.1
Organochlorine Pesticides (OC)									
Aldrin	µg/L	0.01							<0.01
Dieldrin	µg/L	0.01							<0.01
Aldrin + Dieldrin	µg/L	0.5	0.3					3	-
a-BHC	µg/L	0.01							<0.01
b-BHC	µg/L	0.01							<0.01
d-BHC	µg/L	0.01							<0.01
g-BHC (Lindane)	µg/L	0.01	10			0.2		100	<0.01
cis-Chlordane	µg/L	0.01							<0.01
trans-Chlordane	µg/L	0.01							<0.01
Chlordane	µg/L	0.01	2			0.08		20	<0.01
DDD	µg/L	0.01							<0.01
DDE	µg/L	0.01							<0.01
DDT	µg/L	0.01	9			0.01		90	<0.01
DDT+DDE+DDD	µg/L	0.01							<0.01
Endosulfan	µg/L	0.01	20			0.2	0.005	200	<0.01
Endosulfan 1	µg/L	0.01							<0.01
Endosulfan 2	µg/L	0.01							<0.01
Endosulfan sulfate	µg/L	0.01							<0.01
Endrin	µg/L	0.01				0.02	0.004		<0.01
Endrin aldehyde	µg/L	0.01							<0.01
Endrin ketone	µg/L	0.01							<0.01
Heptachlor	µg/L	0.005	0.3			0.09		3	<0.005
Heptachlor epoxide	µg/L	0.01							<0.01
Hexachlorobenzene (HCB)	µg/L	0.01				0.1	0.05		<0.01
Methoxychlor	µg/L	0.01							<0.01
Oxychlordane	µg/L	0.01							<0.01
Toxaphene	µg/L	1				0.2			-
Organochlorine pesticides (sum)	µg/L	2							-
Other organochlorine pesticides (sum)	µg/L	2							-
Organophosphorus Pesticides (OP)									
Bolstar (Sulprofos)	µg/L	0.05	10					100	<0.05
Azinphos Ethyl	µg/L	0.02							<0.02
Mevinphos (Phosdrin)	µg/L	0.02	5					50	<0.02
Omethoate	µg/L	0.01	1					10	<0.01
Pyrazophos	µg/L	0.1	20					200	<0.1
Azinphos Methyl	µg/L	0.02	30			0.02		300	<0.02
Bromophos-ethyl	µg/L	0.1	10					100	<0.1
Carbophenothion	µg/L	0.02	0.5					5	<0.02
Chlorfenvinphos	µg/L	0.02	2					20	<0.02
Chlorpyrifos	µg/L	0.02	10			0.01	0.0005	100	<0.02
Chlorpyrifos-methyl	µg/L	0.2							<0.2
Coumaphos	µg/L	0.01							<0.01
Demeton-O	µg/L	0.02							<0.02
Demeton-S	µg/L	0.02							<0.02
Demeton-S-methyl	µg/L	0.02							<0.02
Diazinon	µg/L	0.01	4			0.01		40	<0.01
Dichlorvos	µg/L	0.2	5					50	<0.2
Dimethoate	µg/L	0.02	7			0.15		70	<0.02
Disulfoton	µg/L	0.05	4					40	<0.05
EPN	µg/L	0.05							<0.05
Ethion	µg/L	0.02	4					40	<0.02
Ethoprop	µg/L	0.01	1					10	<0.01
Fenamiphos	µg/L	0.01	0.5					5	<0.01
Fenitrothion	µg/L	2	7			0.2		70	<2
Fensulfotthion	µg/L	0.01	10					100	<0.01
Fenthion	µg/L	0.05	7					70	<0.05
Malathion	µg/L	0.02	70			0.05		700	<0.02
Merphos	µg/L	2							-
Methidathion	µg/L	0.1	6					60	<0.1
Monocrotophos	µg/L	0.02	2					20	<0.02
Naled (Dibrom)	µg/L	2							-
Parathion	µg/L	0.2	20			0.004		200	<0.2
Parathion-methyl	µg/L	0.5	0.7					7	<0.5
Phorate	µg/L	0.1							<0.1
Pirimphos-ethyl	µg/L	0.01	0.5					5	<0.01

Table T6
Groundwater Analytical Results – Screening criteria
Kentbruck Green Power Hub EES
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

			Monitoring Zone						
			Location	MW12					
			Field ID	MW12					
			Sample Date	29/04/2021					
			Sample Type	Priamry					
			Lab Report Number	EM2107935					
			Australian Drinking Water Health (Updated 2018)	ANZECC 2000 Irrigation Long Term Trigger Values	ANZECC 2000 Livestock DW Low Risk Trigger Values	ANZG (2018) Freshwater 95% LOSP Toxicant DGVs	ANZG (2018) Marine Water 99% LOSP Toxicant DGVs	NHMRC 2008 Guidelines for Managing Risks in Recreational Waters	Standards Australia - AS2159 2009 Buildings and Structures
Chemical Name	output unit	EQL							
Profenofos	µg/L	0.01	0.3					3	<0.01
Prothiofos	µg/L	0.1							<0.1
Ronnel	µg/L	10							<10
Sulfotepp	µg/L	0.005							<0.005
Trichloronate	µg/L	0.5							<0.5
Terbufos	µg/L	0.01	0.9					9	<0.01
Thiometon	µg/L	0.5	4					40	<0.5
Tetrachlorvinphos	µg/L	0.01	100					1000	<0.01
Phenoxyacetic Acid Herbicides									
2,4,5-TP (Silvex)	µg/L	10	10					100	<10
2,6-D	µg/L	10							<10
4-Chlorophenoxy acetic acid	µg/L	10							<10
Clopyralid	µg/L	10	2000					20000	<10
Dicamba	µg/L	10	100					1000	<10
Fluroxypyr	µg/L	10							<10
Mecoprop	µg/L	10							<10
Picloram	µg/L	10	300					3000	<10
Triclopyr	µg/L	10	20					200	<10
Fungicides									
Fosetyl-al	µg/L	10							<10
Herbicides									
2,4,5-Trichlorophenoxy acetic acid	µg/L	10	100			36		1000	<10
2,4-Dichlorprop	µg/L	10	100					1000	<10
2,4-Dichlorophenoxy acetic acid	µg/L	10	30			280		300	<10
4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	µg/L	10							<10
2-Methyl-4-chlorophenoxyacetic acid	µg/L	10	40					400	<10
2,4,6-Trichlorophenoxy acetic acid	µg/L	10							<10
2-Methyl-4-Chlorophenoxy Butanoic Acid	µg/L	10							<10
Inorganics									
Carbonate Alkalinity (as CaCO3)	mg/L	1							<1
Other									
Actril	µg/L	1							-
Triazophos	µg/L	0.005							<0.005
Pesticides									
Formothion	µg/L	20	50					500	<20
Pirimiphos-methyl	µg/L	0.01	90					900	<0.01
Temephos	µg/L	0.02	400				0.0004	4000	<0.02
Trichlorfon	µg/L	0.02	7					70	<0.02
Un-assigned									
Acephate	µg/L	0.5	8					80	<0.5
Tokuthion	mg/L	0.002							-

	Metals						So-Chemical Para	Inorganics	
	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	pH-F (Field pH test)*	pH-FOX (Field pH Peroxide test)*	Reaction Ratings*
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	pH Units	-
LOR	5	2	5	5	2	5			0.1
ANZECC & NHMRC 1992									6 - 8
NEPM 2013 Table 1A(1) HILs Rec C Soil	300		17000	600	1200	30000			
NEPM 2013 Table 1A(1) HILs Res A Soil	100		6000	300	400	7400			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay									
0-1m									
1-2m									
2-4m									
>4m									
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand									
0-1m									
1-2m									
2-4m									
>4m									
NEPM 2013 Table 1B(5) Generic EILs for Urban Res	114	355	70	1108	37	79			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil									
0-2m									
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil									
0-2m									
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil									
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil									

Location Code	Field ID	Sample Depth (m bgl)	Sampled Date	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	pH-F	pH-FOX	Reaction
TP10	TP10_0.0-0.1	0.05	20/10/2021	<2	340	<5	21	21	12	-	-	-
TP10	TP10_0.45-0.5	0.475	20/10/2021	<2	340	<5	18	53	12	6.5	5.1	4
TP10	TP10_0.95-1.0	0.975	21/10/2021	3.2	220	<5	9.4	100	15	-	-	-
TP10	TP10_1.45-1.50	1.475	22/10/2021	<2	330	8.7	8	180	23	-	-	-
TP10	TP10_1.95-2.0	1.975	23/10/2021	2.5	390	22	8.9	130	42	-	-	-
TP11	TP11_0.0-0.1	0.05	24/10/2021	<2	470	33	18	140	33	-	-	-
TP11	TP11_0.45-0.5	0.475	25/10/2021	<2	300	20	7.8	85	21	-	-	-
TP11	TP11_0.95-1.0	0.975	26/10/2021	<2	330	24	8.1	88	26	6	5.1	2
TP11	TP11_1.45-1.50	1.475	27/10/2021	2.2	430	45	5.3	88	42	-	-	-
TP11	TP11_1.95-2.0	1.975	28/10/2021	<2	450	36	5.6	89	52	-	-	-
TP12	TP12_0.0-0.1	0.05	29/10/2021	<2	240	9.9	11	51	17	-	-	-
TP12	TP12_0.45-0.5	0.475	30/10/2021	<2	260	11	11	56	17	-	-	-
TP12	TP12_0.95-1.0	0.975	31/10/2021	<2	230	12	8.4	53	16	6.5	4.1	2
TP12	TP12_1.45-1.50	1.475	1/11/2021	<2	290	15	9.6	65	22	-	-	-
TP12	TP12_1.95-2.0	1.975	2/11/2021	4.6	450	15	14	39	17	-	-	-

Env Stds Description

ANZECC & NHMRC 1992 Table 2 Development of Environmental Investigation Guidelines
 NEPM 2013 Table 1A(1) HILs Rec C Soil: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Health investigation levels for soil contaminants
 NEPM 2013 Table 1A(1) HILs Res A Soil: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Health investigation levels for soil contaminants
 NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Soil HSLs for vapour intrusion
 NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Soil HSLs for vapour intrusion
 NEPM 2013 Table 1B(5) Generic EILs for Urban Res: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Generic EILs for aged As, fresh DDT and fresh naphthalene
 NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil
 NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil
 NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Management Limits for TPH fractions F1-F4 in soil
 NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil: National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1). Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, Management Limits for TPH fractions F1-F4 in soil

Table 2
 AGT (2022) Soil Results – IWRG Categorisation
 Kentbruck Green Power Hub EES
 Neoen Australia Pty Ltd - Kentbruck Green Power Hub

			Location	TP10	TP10	TP10	TP10	TP10	TP10	TP11	TP11	TP11	TP11	TP11	TP11	TP12	TP12	TP12	TP12	TP12	
			Sample Name	TP10_0.0-0.1	TP10_0.45-0.5	TP10_0.95-1.0	TP10_1.45-1.50	TP10_1.95-2.0	TP11_0.0-0.1	TP11_0.45-0.5	TP11_0.95-1.0	TP11_1.45-1.50	TP11_1.95-2.0	TP12_0.0-0.1	TP12_0.45-0.5	TP12_0.95-1.0	TP12_1.45-1.50	TP12_1.95-2.0			
			Sample Depth (m)	0.05	0.475	0.975	1.475	1.975	0.05	0.475	0.975	1.475	1.975	0.05	0.475	0.975	1.475	1.975			
			Sampled Date	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021	20/10/2021
			EPA VIC 1828.2 March 2021 Category B	EPA VIC 1828.2 March 2021 Category C	EPA VIC 1828.2 March 2021 Category D Industrial Waste	EPA VIC 1828.2 March 2021 Fill Material Upper Limit															
Chem Group	Chem Name	Unit																			
Acid Sulfate	pH-F (Field pH test)*	pH Unit	-	-	-	-	-	6.5	-	-	-	-	-	6	-	-	-	-	6.5	-	-
Soils Field pH	pH-FOX (Field pH Peroxide test)*	pH Unit	-	-	-	-	-	5.1	-	-	-	-	-	5.1	-	-	-	-	4.1	-	-
Test	Reaction Ratings*		-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	2	-	-
Heavy Metals	Arsenic	mg/kg	2000	500	500	20	<2	<2	3.2	<2	2.5	<2	<2	<2	2.2	<2	<2	<2	<2	<2	4.6
	Cadmium	mg/kg	400	100	100	3	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
	Chromium	mg/kg					340	340	220	330	390	470	300	330	430	450	240	260	230	290	450
	Copper	mg/kg	20000	5000	5000	100	<5	<5	<5	8.7	22	33	20	24	45	36	9.9	11	12	15	15
	Lead	mg/kg	6000	1500	1500	300	21	18	9.4	8	8.9	18	7.8	8.1	5.3	5.6	11	11	8.4	9.6	14
	Mercury	mg/kg	300	75	75	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nickel	mg/kg	12000	3000	3000	60	21	53	100	180	130	140	85	88	88	89	51	56	53	65	39
	Zinc	mg/kg	140000	35000	35000	200	12	12	15	23	42	33	21	26	42	52	17	17	16	22	17

Appendix F

Laboratory Reports

ANZ
FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLER: <i>RE</i>		Destination Laboratory	
PROJECT MANAGER (PM): SK		SITE: Kentbruck EES		MOBILE: <i>0411 3396202</i>		PHONE:	
PROJECT NUMBER & TASK COI: 60591699		P.O. NO.: EN/096/16		EMAIL REPORT TO: sara.kennedy@aecom.com		ALS	
RESULTS REQUIRED (Date): <i>Standard</i>		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORIAN USE ONLY: COOLER USE: SAMPLER TEMPERATURE: CHILLED: Yes/No		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: <i>Analysis to be emailed</i>				Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	<i>TPO1-0.2</i>	<i>S</i>	<i>11/5/21</i>		<i>JAR, Bag</i>	<i>2</i>	
	<i>-0.5</i>				<i>↓</i>	<i>2</i>	
	<i>-1.0</i>				<i>Bag</i>	<i>1</i>	
	<i>TPO2-0.0</i>				<i>JAR, Bag</i>	<i>2</i>	
	<i>-0.5</i>				<i>↓</i>	<i>2</i>	
	<i>-1.0</i>				<i>↓</i>	<i>2</i>	
	<i>-1.5</i>				<i>↓</i>	<i>2</i>	
	<i>-2.0</i>				<i>↓</i>	<i>2</i>	
	<i>-2.5</i>				<i>Bag</i>	<i>1</i>	
	<i>-3.0</i>				<i>↓</i>	<i>1</i>	
	<i>-3.5</i>				<i>↓</i>	<i>1</i>	
	<i>-4.0</i>				<i>↓</i>	<i>1</i>	
	<i>TPO3-0.0</i>				<i>JAR, Bag</i>	<i>2</i>	
	<i>-0.5</i>				<i>↓</i>	<i>2</i>	
	<i>-1.0</i>				<i>↓</i>	<i>2</i>	
	<i>-1.5</i>				<i>↓</i>	<i>2</i>	
	<i>-2.0</i>				<i>↓</i>	<i>2</i>	
	<i>TPO4-0.0</i>				<i>↓</i>	<i>2</i>	
	<i>-0.5</i>				<i>↓</i>	<i>2</i>	
RELINQUISHED BY: Name: <i>Ben Spaten</i> Of: <i>Recon</i> Date: <i>14/5/21</i> Time:		RECEIVED BY: Name: Of: Date: Time:		RECEIVED BY: Name: <i>Prove</i> Of: Date: Time:		METHOD OF SHIPMENT Con' Note No: Transport Co:	
<p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Unpreserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar</p>							

Environmental Division
 Melbourne
 Work Order Reference
EM2108857



Telephone : + 61-3-8549 9600

Received: *[Signature]*, *14/5/21*
 C/note:
 Temp: *0-7°C* Seal: *Y* *(N)*
(Ice) Icebricks / NA
 ALS

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLER: <i>BE</i>		Destination Laboratory		
PROJECT MANAGER (PM): SK		SITE: <i>Kentbruck EES</i>		MOBILE: <i>0213396202</i>		PHONE:		
PROJECT NUMBER & TASK COI: <i>60591699</i>		P.O. NO.: EN/096/16		EMAIL REPORT TO: <i>sara.kennedy@aecom.com</i>		ALS		
RESULTS REQUIRED (Date): <i>Standard</i>		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)				
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:						Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
COOLER/SEALS (if appropriate)		<i>Analysis to be emailed</i>						
SAMPLER/SEALS (if appropriate)								
SAMPLER/SEALS (if appropriate)								
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION				HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles		
	<i>TPO4_1.0</i>	<i>S</i>	<i>11/5/21</i>		<i>JAR Bag</i>	<i>2</i>		
	<i>-1.5</i>				<i>↓</i>	<i>2</i>		
	<i>-2.0</i>				<i>↓</i>	<i>2</i>		
	<i>-2.5</i>				<i>Bag</i>	<i>1</i>		
	<i>-3.0</i>				<i>↓</i>	<i>1</i>		
	<i>-3.5</i>				<i>↓</i>	<i>1</i>		
	<i>-4.0</i>				<i>↓</i>	<i>1</i>		
	<i>-4.5</i>				<i>↓</i>	<i>1</i>		
	<i>↓ -5.0</i>				<i>JAR & bag</i>	<i>1</i>		
	<i>TPO5 0.0</i>				<i>JAR & bag</i>	<i>2</i>		
	<i>-0.5</i>				<i>↓</i>	<i>2</i>		
	<i>-1.0</i>				<i>↓</i>	<i>2</i>		
	<i>-1.5</i>				<i>↓</i>	<i>2</i>		
	<i>-2.0</i>				<i>↓</i>	<i>2</i>		
	<i>-2.5</i>				<i>Bag</i>	<i>1</i>		
	<i>-3.0</i>				<i>↓</i>	<i>1</i>		
	<i>-3.5</i>				<i>↓</i>	<i>1</i>		
	<i>-4.0</i>				<i>↓</i>	<i>1</i>		
	<i>↓ -4.4</i>				<i>↓</i>	<i>1</i>		
RELINQUISHED BY:			RECEIVED BY:			RECEIVED BY:		METHOD OF SHIPMENT
Name: <i>Ben Epstein</i>		Date: <i>4/5/21</i>		Name:		Date:		Con' Note No:
Of: <i>AECOM</i>		Time:		Of:		Time:		Transport Co:
<p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.</p> <p>Soil Container Codes: Jar = Unpreserved glass jar</p>								

ANZ
FQM - Generic Chain of Custody Form

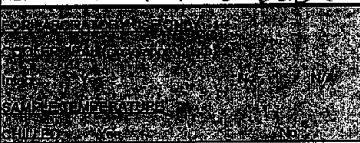
CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLER: <i>RE</i>		Destination Laboratory	
PROJECT MANAGER (PM): SK		SITE: Kentbruck EES		MOBILE: <i>0413396202</i>		ALS	
PROJECT NUMBER & TASK COI: 60591699		P.O. NO.: EN/096/16		EMAIL REPORT TO: sara.kennedy@aecom.com			
RESULTS REQUIRED (Date): <i>Standard</i>		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY: COOLER USE (if appropriate) No. _____ SAMPLE TEMPERATURE: CHILLED: No. _____		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					
		<i>Analysis to be completed</i>					
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	<i>TPO6 0.0</i>	<i>S</i>	<i>12/5/24</i>		<i>SAR & Bag</i>	<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
	<i>-1.5</i>					<i>2</i>	
	<i>-2.0</i>					<i>2</i>	
	<i>TPO7 -0.0</i>					<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
	<i>-1.5</i>					<i>2</i>	
	<i>-2.0</i>					<i>2</i>	
	<i>-2.5</i>				<i>Bag</i>	<i>1</i>	
	<i>-3.0</i>					<i>1</i>	
	<i>-3.5</i>					<i>1</i>	
	<i>-4.0</i>					<i>1</i>	
	<i>-4.5</i>					<i>1</i>	
	<i>-5.0</i>					<i>1</i>	
	<i>TPO6 -0.0</i>				<i>SAR & Bag</i>	<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: <i>Ben Cadein</i>		Name:		Name: <i>Mmm</i>		Con' Note No:	
Date: <i>14/5/24</i>		Date:		Date:		Transport Co:	
Of: <i>REC</i>		Of:		Of:			
Time:		Time:		Time:			
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.							
Soil Container Codes: Jar = Unpreserved glass jar							

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLER: <i>BS</i>		Destination Laboratory	
PROJECT MANAGER (PM): SK		SITE: Kentbruck EES		MOBILE: <i>0413596202</i>		ALS	
PROJECT NUMBER & TASK CCI: 60591699		P.O. NO.: EN/096/16		EMAIL REPORT TO: sara.kennedy@aecom.com			
RESULTS REQUIRED (Date): <i>Standard</i>		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR FORMALDOSE... COOLER SEAL... IMPACT... SAMPLE TEMPERATURE... CHILLED...		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: <i>Analysis to be carried</i>				Notes: e.g. Highly contaminated sample; e.g. "High PAHs expected"; Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	<i>T108-1.5</i>	<i>S</i>	<i>12/5/21</i>		<i>SAR & Bag</i>	<i>2</i>	
	<i>-2.0</i>				<i>↓</i>	<i>2</i>	
	<i>-2.5</i>				<i>Bag</i>	<i>1</i>	
	<i>-3.0</i>				<i>↓</i>	<i>1</i>	
	<i>-3.5</i>				<i>↓</i>	<i>1</i>	
	<i>-4.0</i>				<i>↓</i>	<i>1</i>	
	<i>-4.5</i>				<i>↓</i>	<i>1</i>	
	<i>-5.0</i>				<i>↓</i>	<i>1</i>	
	<i>T109-0.0</i>				<i>SAR & Bag</i>	<i>2</i>	
	<i>-0.5</i>				<i>↓</i>	<i>2</i>	
	<i>-1.0</i>				<i>↓</i>	<i>2</i>	
	<i>-1.5</i>				<i>↓</i>	<i>2</i>	
	<i>-2.0</i>				<i>↓</i>	<i>2</i>	
	<i>-2.5</i>				<i>Bag</i>	<i>1</i>	
	<i>-3.0</i>				<i>↓</i>	<i>1</i>	
	<i>-3.5</i>				<i>↓</i>	<i>1</i>	
	<i>-4.0</i>				<i>↓</i>	<i>1</i>	
	<i>-4.5</i>				<i>↓</i>	<i>1</i>	
	<i>-5.0</i>				<i>↓</i>	<i>1</i>	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: <i>Ben Gostein</i>		Name:		Name: <i>Monic</i>		Con' Note No:	
Date: <i>14/5/21</i>		Date:		Date:		Transport Co:	
Of: <i>AECOM</i>		Of:		Of:			
Time:		Time:		Time:			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLER: <i>BE</i>		Destination Laboratory	
PROJECT MANAGER (PM): SK		SITE: Kentbrook EES		MOBILE: <i>0413596202</i>		ALS	
PROJECT NUMBER & TASK COI 60591699		P.O. NO.: EN/096/16		EMAIL REPORT TO: sara.kennedy@aecom.com			
RESULTS REQUIRED (Date): <i>Starbuck</i>		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
		<i>Analysis to be carried</i>					
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	<i>TP13-0.0</i>	<i>S</i>	<i>13/5/24</i>		<i>JAR & Bag</i>	<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
	<i>-1.5</i>					<i>2</i>	
	<i>-2.0</i>					<i>2</i>	
	<i>TP14-0.0</i>					<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
	<i>-1.5</i>					<i>2</i>	
	<i>-2.0</i>					<i>2</i>	
	<i>TP15-0.0</i>					<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
	<i>-1.5</i>					<i>2</i>	
	<i>-2.0</i>					<i>2</i>	
	<i>TP16-0.0</i>					<i>2</i>	
	<i>-0.5</i>					<i>2</i>	
	<i>-1.0</i>					<i>2</i>	
	<i>-1.5</i>					<i>2</i>	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: <i>Ben Spaten</i>	Date: <i>14/5/24</i>	Name:	Date:	Name: <i>MOM</i>	Date:	Corr' Note No:	
Of: <i>ALCAN</i>	Time:	Of:	Time:	Of:	Time:	Transport Co:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag
 Soil Container Codes: Jar = Unpreserved glass jar



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2108857

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: sara.kennedy@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60591699	Page	: 1 of 5
Order number	: 60591699 5.0	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Kentbruck EES		
Sampler	: BE		

Dates

Date Samples Received	: 14-May-2021 10:20	Issue Date	: 19-May-2021
Client Requested Due Date	: 25-May-2021	Scheduled Reporting Date	: 28-May-2021

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 0.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 103 / 103

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **The scheduled reporting date has been extended due to analytical testing conducted by ALS interstate laboratories. Please refer to your quotation for further information.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale, ALS Sydney, and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA003 pH field/fox	SOIL - EA055-103 Moisture Content	SOIL - EP202(solids) Phenoxyacetic acids	SOIL - P-16 IWRG 621	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides
EM2108857-001	11-May-2021 00:00	TP01_0.2	✓	✓	✓		✓	✓
EM2108857-002	11-May-2021 00:00	TP01_0.5	✓					
EM2108857-003	11-May-2021 00:00	TP01_1.0	✓					
EM2108857-004	11-May-2021 00:00	TP02_0.0	✓	✓	✓		✓	✓
EM2108857-005	11-May-2021 00:00	TP02_0.5	✓	✓			✓	✓
EM2108857-006	11-May-2021 00:00	TP02_1.0	✓					
EM2108857-007	11-May-2021 00:00	TP02_1.5	✓					
EM2108857-008	11-May-2021 00:00	TP02_2.0	✓					
EM2108857-009	11-May-2021 00:00	TP02_2.5	✓					
EM2108857-010	11-May-2021 00:00	TP02_3.0	✓					
EM2108857-011	11-May-2021 00:00	TP02_3.5	✓					
EM2108857-012	11-May-2021 00:00	TP02_4.0	✓					
EM2108857-013	11-May-2021 00:00	TP03_0.0	✓	✓		✓		
EM2108857-014	11-May-2021 00:00	TP03_0.5	✓	✓	✓		✓	✓
EM2108857-015	11-May-2021 00:00	TP03_1.0	✓					
EM2108857-016	11-May-2021 00:00	TP03_1.5	✓					
EM2108857-017	11-May-2021 00:00	TP03_2.0	✓					
EM2108857-018	11-May-2021 00:00	TP04_0.0	✓	✓	✓		✓	✓
EM2108857-019	11-May-2021 00:00	TP04_0.5	✓	✓			✓	✓
EM2108857-020	11-May-2021 00:00	TP04_1.0	✓					
EM2108857-021	11-May-2021 00:00	TP04_1.5	✓					
EM2108857-022	11-May-2021 00:00	TP04_2.0	✓					
EM2108857-023	11-May-2021 00:00	TP04_2.5	✓					
EM2108857-024	11-May-2021 00:00	TP04_3.0	✓					
EM2108857-025	11-May-2021 00:00	TP04_3.5	✓					
EM2108857-026	11-May-2021 00:00	TP04_4.0	✓					
EM2108857-027	11-May-2021 00:00	TP04_4.5	✓					
EM2108857-028	11-May-2021 00:00	TP04_5.0	✓					
EM2108857-029	11-May-2021 00:00	TP05_0.0	✓	✓		✓		
EM2108857-030	11-May-2021 00:00	TP05_0.5	✓					
EM2108857-031	11-May-2021 00:00	TP05_1.0	✓	✓	✓		✓	✓
EM2108857-032	11-May-2021 00:00	TP05_1.5	✓					
EM2108857-033	11-May-2021 00:00	TP05_2.0	✓					
EM2108857-034	11-May-2021 00:00	TP05_2.5	✓					
EM2108857-035	11-May-2021 00:00	TP05_3.0	✓					



			SOIL - EA003 pH field/fox	SOIL - EA055-103 Moisture Content	SOIL - EP202(solids) Phenoxyacetic acids	SOIL - P-16 IWRG 621	SOIL - S-02 & Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides
EM2108857-036	11-May-2021 00:00	TP05_3.5	✓					
EM2108857-037	11-May-2021 00:00	TP05_4.0	✓					
EM2108857-038	11-May-2021 00:00	TP05_4.4	✓					
EM2108857-039	12-May-2021 00:00	TP06_0.0	✓	✓	✓		✓	✓
EM2108857-040	12-May-2021 00:00	TP06_0.5	✓	✓			✓	✓
EM2108857-041	12-May-2021 00:00	TP06_1.0	✓					
EM2108857-042	12-May-2021 00:00	TP06_1.5	✓					
EM2108857-043	12-May-2021 00:00	TP06_2.0	✓					
EM2108857-044	12-May-2021 00:00	TP07_0.0	✓	✓	✓		✓	✓
EM2108857-045	12-May-2021 00:00	TP07_0.5	✓	✓			✓	✓
EM2108857-046	12-May-2021 00:00	TP07_1.0	✓					
EM2108857-047	12-May-2021 00:00	TP07_1.5	✓					
EM2108857-048	12-May-2021 00:00	TP07_2.0	✓					
EM2108857-049	12-May-2021 00:00	TP07_2.5	✓					
EM2108857-050	12-May-2021 00:00	TP07_3.0	✓					
EM2108857-051	12-May-2021 00:00	TP07_3.5	✓					
EM2108857-052	12-May-2021 00:00	TP07_4.0	✓					
EM2108857-053	12-May-2021 00:00	TP07_4.5	✓					
EM2108857-054	12-May-2021 00:00	TP07_5.0	✓					
EM2108857-055	12-May-2021 00:00	TP08_0.0	✓	✓	✓		✓	✓
EM2108857-056	12-May-2021 00:00	TP08_0.5	✓					
EM2108857-057	12-May-2021 00:00	TP08_1.0	✓					
EM2108857-058	12-May-2021 00:00	TP08_1.5	✓					
EM2108857-059	12-May-2021 00:00	TP08_2.0	✓					
EM2108857-060	12-May-2021 00:00	TP08_2.5	✓					
EM2108857-061	12-May-2021 00:00	TP08_3.0	✓					
EM2108857-062	12-May-2021 00:00	TP08_3.5	✓					
EM2108857-063	12-May-2021 00:00	TP08_4.0	✓					
EM2108857-064	12-May-2021 00:00	TP08_4.5	✓					
EM2108857-065	12-May-2021 00:00	TP08_5.0	✓					
EM2108857-066	12-May-2021 00:00	TP09_0.0	✓	✓		✓		
EM2108857-067	12-May-2021 00:00	TP09_0.5	✓	✓	✓		✓	✓
EM2108857-068	12-May-2021 00:00	TP09_1.0	✓					
EM2108857-069	12-May-2021 00:00	TP09_1.5	✓					
EM2108857-070	12-May-2021 00:00	TP09_2.0	✓					
EM2108857-071	12-May-2021 00:00	TP09_2.5	✓					
EM2108857-072	12-May-2021 00:00	TP09_3.0	✓					
EM2108857-073	12-May-2021 00:00	TP09_3.5	✓					
EM2108857-074	12-May-2021 00:00	TP09_4.0	✓					
EM2108857-075	12-May-2021 00:00	TP09_4.5	✓					
EM2108857-076	12-May-2021 00:00	TP09_5.0	✓					



			SOIL - EA003 pH field/fox	SOIL - EA055-103 Moisture Content	SOIL - EP202(solids) Phenoxyacetic acids	SOIL - P-16 IWRG 621	SOIL - S-02 & Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides
EM2108857-077	13-May-2021 00:00	TP13_0.0	✓	✓	✓		✓	✓
EM2108857-078	13-May-2021 00:00	TP13_0.5	✓	✓			✓	✓
EM2108857-079	13-May-2021 00:00	TP13_1.0	✓					
EM2108857-080	13-May-2021 00:00	TP13_1.5	✓					
EM2108857-081	13-May-2021 00:00	TP13_2.0	✓					
EM2108857-082	13-May-2021 00:00	TP14_0.0	✓	✓		✓		
EM2108857-083	13-May-2021 00:00	TP14_0.5	✓	✓	✓		✓	✓
EM2108857-084	13-May-2021 00:00	TP14_1.0	✓					
EM2108857-085	13-May-2021 00:00	TP14_1.5	✓					
EM2108857-086	13-May-2021 00:00	TP14_2.0	✓					
EM2108857-087	13-May-2021 00:00	TP15_0.0	✓	✓	✓		✓	✓
EM2108857-088	13-May-2021 00:00	TP15_0.5	✓	✓			✓	✓
EM2108857-089	13-May-2021 00:00	TP15_1.0	✓					
EM2108857-090	13-May-2021 00:00	TP15_1.5	✓					
EM2108857-091	13-May-2021 00:00	TP15_2.0	✓					
EM2108857-092	13-May-2021 00:00	TP16_0.0	✓	✓	✓		✓	✓
EM2108857-093	13-May-2021 00:00	TP16_0.5	✓					
EM2108857-094	13-May-2021 00:00	TP16_1.0	✓					
EM2108857-095	13-May-2021 00:00	TP16_1.5	✓					
EM2108857-096	13-May-2021 00:00	TP16_2.0	✓					
EM2108857-097	11-May-2021 00:00	QC1_110521		✓			✓	✓
EM2108857-100	13-May-2021 00:00	QC5_130521		✓			✓	✓

Matrix: **WATER**

Laboratory sample ID Sampling date / time Sample ID

			WATER - W-02 & Metals
EM2108857-098	11-May-2021 00:00	QC3_110521	✓
EM2108857-099	12-May-2021 00:00	QC4_120521	✓

CERTIFICATE OF ANALYSIS

Work Order : **EM2108857**
Client : **AECOM Australia Pty Ltd**
Contact : SARA KENNEDY
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60591699
Order number : 60591699 5.0
C-O-C number : ----
Sampler : BE
Site : Kentbruck EES
Quote number : EN/096/18
No. of samples received : 103
No. of samples analysed : 103

Page : 1 of 69
Laboratory : Environmental Division Melbourne
Contact : Peter Ravlic
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 14-May-2021 10:20
Date Analysis Commenced : 18-May-2021
Issue Date : 01-Jun-2021 16:34



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Andrew Lu	VOC Section Supervisor	Melbourne Inorganics, Springvale, VIC
Andrew Lu	VOC Section Supervisor	Melbourne Organics, Springvale, VIC
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP202: Particular samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EG048G: EM2108857 #29 & 82 Sample required dilution for Hexavalent Chromium due to sample matrix interferences. LOR values have been adjusted accordingly.
- EG048G: EM2108857 #29 Poor matrix spike recovery for Hexavalent Chromium due to matrix effects. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP075(SIM)/EP068: Particular samples required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.
- ASS: EA003 (NATA Field and F(ox) screening): pH F(ox) Reaction Rate: 1 - Slight; 2 - Moderate; 3 - Strong; 4 - Extreme



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.2	TP01_0.5	TP01_1.0	TP02_0.0	TP02_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-001	EM2108857-002	EM2108857-003	EM2108857-004	EM2108857-005	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	6.9	8.0	8.6	8.5	7.9	
pH (Fox)	----	0.1	pH Unit	4.0	6.0	6.6	5.5	4.5	
Reaction Rate	----	1	Reaction Unit	3	3	3	3	3	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	6.0	----	----	8.6	7.2	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	14	----	----	<5	<5	
Cadmium	7440-43-9	1	mg/kg	<1	----	----	<1	<1	
Chromium	7440-47-3	2	mg/kg	20	----	----	<2	<2	
Copper	7440-50-8	5	mg/kg	<5	----	----	<5	<5	
Lead	7439-92-1	5	mg/kg	<5	----	----	<5	<5	
Nickel	7440-02-0	2	mg/kg	3	----	----	<2	<2	
Zinc	7440-66-6	5	mg/kg	<5	----	----	<5	<5	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	<0.1	<0.1	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
[^] Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
[^] Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.2	TP01_0.5	TP01_1.0	TP02_0.0	TP02_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-001	EM2108857-002	EM2108857-003	EM2108857-004	EM2108857-005	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	<0.2	<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	<0.2	<0.2	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	<0.2	<0.2	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	<0.05	<0.05	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.04	----	----	<0.02	----	
2,4-DB	94-82-6	0.02	mg/kg	<0.04	----	----	<0.02	----	
Dicamba	1918-00-9	0.02	mg/kg	<0.04	----	----	<0.02	----	
Mecoprop	93-65-2	0.02	mg/kg	<0.04	----	----	<0.02	----	
MCPA	94-74-6	0.02	mg/kg	<0.04	----	----	<0.02	----	
2,4-DP	120-36-5	0.02	mg/kg	<0.04	----	----	<0.02	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.2	TP01_0.5	TP01_1.0	TP02_0.0	TP02_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-001	EM2108857-002	EM2108857-003	EM2108857-004	EM2108857-005	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	<0.04	----	----	<0.02	----	
Triclopyr	55335-06-3	0.02	mg/kg	<0.04	----	----	<0.02	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.04	----	----	<0.02	----	
2.4.5-T	93-76-5	0.02	mg/kg	<0.04	----	----	<0.02	----	
MCPB	94-81-5	0.02	mg/kg	<0.04	----	----	<0.02	----	
Picloram	1918-02-1	0.02	mg/kg	<0.04	----	----	<0.02	----	
Clopyralid	1702-17-6	0.02	mg/kg	<0.04	----	----	<0.02	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	<0.04	----	----	<0.02	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	90.8	----	----	87.5	90.6	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	93.9	----	----	85.5	101	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	61.4	----	----	57.8	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_1.0	TP02_1.5	TP02_2.0	TP02_2.5	TP02_3.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-006	EM2108857-007	EM2108857-008	EM2108857-009	EM2108857-010	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	4.9	6.6	6.1	6.2	7.2	
pH (Fox)	----	0.1	pH Unit	3.1	3.5	3.6	3.7	4.8	
Reaction Rate	----	1	Reaction Unit	1	1	1	1	1	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	----	----	7.4	----	----	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	7.8	8.8	8.3	8.6	9.3	
pH (Fox)	----	0.1	pH Unit	6.3	6.7	5.9	6.7	6.7	
Reaction Rate	----	1	Reaction Unit	1	1	2	1	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	----	18.5	6.3	----	
EG005(ED093)T: Total Metals by ICP-AES									
Molybdenum	7439-98-7	2	mg/kg	----	----	<2	----	----	
Selenium	7782-49-2	5	mg/kg	----	----	<5	----	----	
Silver	7440-22-4	2	mg/kg	----	----	<2	----	----	
Tin	7440-31-5	5	mg/kg	----	----	<5	----	----	
Arsenic	7440-38-2	5	mg/kg	----	----	11	24	----	
Cadmium	7440-43-9	1	mg/kg	----	----	<1	<1	----	
Chromium	7440-47-3	2	mg/kg	----	----	----	25	----	
Copper	7440-50-8	5	mg/kg	----	----	<5	<5	----	
Lead	7439-92-1	5	mg/kg	----	----	<5	<5	----	
Nickel	7440-02-0	2	mg/kg	----	----	<2	2	----	
Zinc	7440-66-6	5	mg/kg	----	----	8	<5	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	----	<0.1	<0.1	----	
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	----	
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	----	----	<1	----	----	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	----	----	70	----	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	<0.05	----	
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	<0.05	----	
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	<0.05	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	<0.05	----	
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	<0.05	----	
Aldrin	309-00-2	0.05	mg/kg	----	----	----	<0.05	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	<0.05	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	<0.05	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	<0.05	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	<0.05	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	<0.05	----	
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	<0.05	----	
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	----	
Endrin	72-20-8	0.05	mg/kg	----	----	----	<0.05	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	<0.05	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	<0.05	----	
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	<0.05	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	<0.05	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	<0.2	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	<0.05	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	<0.2	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	<0.05	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----	
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----	
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----	
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----	
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----	
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	----	
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	----	----	
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	----	----	
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	----	----	
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	----	<0.5	----	----	
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	----	----	
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	----	----	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	<0.2	----	----	
^ Total Xylenes	----	0.5	mg/kg	----	----	<0.5	----	----	
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	----	----	<1	----	----	
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	<0.02	----	----	
1,1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	<0.01	----	----	
Methylene chloride	75-09-2	0.4	mg/kg	----	----	<0.4	----	----	
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	<0.02	----	----	
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	<0.01	----	----	
Chloroform	67-66-3	0.02	mg/kg	----	----	<0.02	----	----	
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	<0.01	----	----	
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	<0.01	----	----	
1,2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	<0.02	----	----	
Trichloroethene	79-01-6	0.02	mg/kg	----	----	<0.02	----	----	
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	<0.04	----	----	
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	<0.02	----	----	
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	<0.01	----	----	
1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	<0.02	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EP074I: Volatile Halogenated Compounds - Continued									
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	<0.02	----	----	
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	<0.02	----	----	
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	<0.02	----	----	
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	<0.02	----	----	
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	<0.01	----	----	
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	<0.01	----	----	
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	----	----	<0.01	----	----	
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	<0.03	----	----	
2,4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	<0.03	----	----	
2,6-Dichlorophenol	87-65-0	0.03	mg/kg	----	----	<0.03	----	----	
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	----	----	<0.03	----	----	
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	<0.05	----	----	
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	<0.05	----	----	
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	----	----	<0.03	----	----	
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	----	----	<0.05	----	----	
Pentachlorophenol	87-86-5	0.2	mg/kg	----	----	<0.2	----	----	
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	----	----	<0.03	----	----	
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg	----	----	<1	----	----	
2-Methylphenol	95-48-7	1	mg/kg	----	----	<1	----	----	
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	<1	----	----	
2-Nitrophenol	88-75-5	1	mg/kg	----	----	<1	----	----	
2,4-Dimethylphenol	105-67-9	1	mg/kg	----	----	<1	----	----	
2,4-Dinitrophenol	51-28-5	5	mg/kg	----	----	<5	----	----	
4-Nitrophenol	100-02-7	5	mg/kg	----	----	<5	----	----	
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	----	----	<5	----	----	
Dinoseb	88-85-7	5	mg/kg	----	----	<5	----	----	
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	----	----	<5	----	----	
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	----	<1	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	----	----	<0.5	----	----	
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	----	----	
Fluorene	86-73-7	0.5	mg/kg	----	----	<0.5	----	----	
Phenanthrene	85-01-8	0.5	mg/kg	----	----	<0.5	----	----	
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	----	----	
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	----	----	
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	----	----	
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	----	----	
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	----	----	
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	----	<1.0	----	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	----	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	----	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	0.6	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	1.2	----	----	
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg	----	----	<0.03	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	<0.03	----	----	
beta-BHC	319-85-7	0.03	mg/kg	----	----	<0.03	----	----	
gamma-BHC	58-89-9	0.03	mg/kg	----	----	<0.03	----	----	
delta-BHC	319-86-8	0.03	mg/kg	----	----	<0.03	----	----	
Heptachlor	76-44-8	0.03	mg/kg	----	----	<0.03	----	----	
Aldrin	309-00-2	0.03	mg/kg	----	----	<0.03	----	----	
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	<0.03	----	----	
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	<0.03	----	----	
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	<0.03	----	----	
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	<0.03	----	----	
4.4'-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----	
Dieldrin	60-57-1	0.03	mg/kg	----	----	<0.03	----	----	
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	<0.03	----	----	
Endrin	72-20-8	0.03	mg/kg	----	----	<0.03	----	----	
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	<0.03	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EP075I: Organochlorine Pesticides - Continued									
4.4'-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----	
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	<0.03	----	----	
4.4'-DDT	50-29-3	0.05	mg/kg	----	----	<0.05	----	----	
Methoxychlor	72-43-5	0.03	mg/kg	----	----	<0.03	----	----	
^ Sum of organochlorine pesticides	----	0.03	mg/kg	----	----	<0.03	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	<0.03	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	----	<0.05	----	----	
^ Chlordane	57-74-9	0.03	mg/kg	----	----	<0.03	----	----	
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	<0.03	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----	
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----	
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	----	----	
C15 - C28 Fraction	----	100	mg/kg	----	----	150	----	----	
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	----	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	150	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg	----	----	<50	----	----	
>C16 - C34 Fraction	----	100	mg/kg	----	----	230	----	----	
>C34 - C40 Fraction	----	100	mg/kg	----	----	<100	----	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	230	----	----	
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	<50	----	----	
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	<10	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	----	----	<0.02	----	
2.4-DB	94-82-6	0.02	mg/kg	----	----	----	<0.02	----	
Dicamba	1918-00-9	0.02	mg/kg	----	----	----	<0.02	----	
Mecoprop	93-65-2	0.02	mg/kg	----	----	----	<0.02	----	
MCPA	94-74-6	0.02	mg/kg	----	----	----	<0.02	----	
2.4-DP	120-36-5	0.02	mg/kg	----	----	----	<0.02	----	
2.4-D	94-75-7	0.02	mg/kg	----	----	----	<0.02	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	----	----	<0.02	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-011	EM2108857-012	EM2108857-013	EM2108857-014	EM2108857-015	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	----	----	<0.02	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	----	----	<0.02	----	
MCPB	94-81-5	0.02	mg/kg	----	----	----	<0.02	----	
Picloram	1918-02-1	0.02	mg/kg	----	----	----	<0.02	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	----	----	<0.02	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	----	----	<0.02	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	89.7	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	91.9	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	----	----	101	----	
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	72.6	----	----	
Toluene-D8	2037-26-5	0.1	%	----	----	61.7	----	----	
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	65.9	----	----	
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%	----	----	72.6	----	----	
2-Chlorophenol-D4	93951-73-6	0.025	%	----	----	64.2	----	----	
2.4.6-Tribromophenol	118-79-6	0.025	%	----	----	89.2	----	----	
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%	----	----	80.9	----	----	
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	----	----	77.1	----	----	
2-Fluorobiphenyl	321-60-8	0.025	%	----	----	89.7	----	----	
Anthracene-d10	1719-06-8	0.025	%	----	----	90.5	----	----	
4-Terphenyl-d14	1718-51-0	0.025	%	----	----	81.5	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	----	----	57.1	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP03_1.5	TP03_2.0	TP04_0.0	TP04_0.5	TP04_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-016	EM2108857-017	EM2108857-018	EM2108857-019	EM2108857-020	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	8.9	9.4	8.4	8.6	8.6	
pH (Fox)	----	0.1	pH Unit	6.7	6.8	6.5	7.6	7.8	
Reaction Rate	----	1	Reaction Unit	1	3	4	4	4	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	----	16.7	11.3	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	----	16	18	----	
Cadmium	7440-43-9	1	mg/kg	----	----	<1	<1	----	
Chromium	7440-47-3	2	mg/kg	----	----	16	19	----	
Copper	7440-50-8	5	mg/kg	----	----	<5	<5	----	
Lead	7439-92-1	5	mg/kg	----	----	<5	<5	----	
Nickel	7440-02-0	2	mg/kg	----	----	6	8	----	
Zinc	7440-66-6	5	mg/kg	----	----	16	9	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	----	<0.1	<0.1	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	<0.05	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	<0.05	----	
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	<0.05	----	
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	<0.05	----	
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	<0.05	----	
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	<0.05	----	
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	<0.05	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	<0.05	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	<0.05	<0.05	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	<0.05	<0.05	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	<0.05	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	<0.05	----	
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	<0.05	----	
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	<0.05	----	
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	<0.05	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	<0.05	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	<0.05	<0.05	----	
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	<0.05	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP03_1.5	TP03_2.0	TP04_0.0	TP04_0.5	TP04_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-016	EM2108857-017	EM2108857-018	EM2108857-019	EM2108857-020	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	<0.05	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	<0.05	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	<0.2	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	<0.05	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	<0.2	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	<0.05	<0.05	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	----	<0.05	<0.05	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	<0.05	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	<0.05	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	<0.2	----	
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	<0.05	----	
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	<0.05	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	<0.05	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	<0.2	----	
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	<0.05	----	
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	<0.05	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	<0.05	----	
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	<0.2	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	<0.05	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	<0.05	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	<0.05	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	<0.05	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	<0.05	----	
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	<0.05	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	<0.05	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	<0.05	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	----	<0.02	----	----	
2,4-DB	94-82-6	0.02	mg/kg	----	----	<0.02	----	----	
Dicamba	1918-00-9	0.02	mg/kg	----	----	<0.02	----	----	
Mecoprop	93-65-2	0.02	mg/kg	----	----	<0.02	----	----	
MCPA	94-74-6	0.02	mg/kg	----	----	<0.02	----	----	
2,4-DP	120-36-5	0.02	mg/kg	----	----	<0.02	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP03_1.5	TP03_2.0	TP04_0.0	TP04_0.5	TP04_1.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-016	EM2108857-017	EM2108857-018	EM2108857-019	EM2108857-020	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	----	<0.02	----	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	----	<0.02	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	----	<0.02	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	----	<0.02	----	----	
MCPB	94-81-5	0.02	mg/kg	----	----	<0.02	----	----	
Picloram	1918-02-1	0.02	mg/kg	----	----	<0.02	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	----	<0.02	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	----	<0.02	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	----	90.7	92.2	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	----	104	107	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	----	59.7	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_1.5	TP04_2.0	TP04_2.5	TP04_3.0	TP04_3.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-021	EM2108857-022	EM2108857-023	EM2108857-024	EM2108857-025	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	8.6	8.7	8.8	9.1	9.0	
pH (Fox)	----	0.1	pH Unit	8.1	8.1	7.7	6.9	7.1	
Reaction Rate	----	1	Reaction Unit	4	4	2	2	2	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-026	EM2108857-027	EM2108857-028	EM2108857-029	EM2108857-030	
				Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	----	----	----	3.4	----	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	9.4	9.5	9.3	4.8	4.6	
pH (Fox)	----	0.1	pH Unit	6.7	6.6	6.7	2.8	2.7	
Reaction Rate	----	1	Reaction Unit	1	1	1	3	3	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%	----	----	----	20.8	----	
EG005(ED093)T: Total Metals by ICP-AES									
Molybdenum	7439-98-7	2	mg/kg	----	----	----	<2	----	
Selenium	7782-49-2	5	mg/kg	----	----	----	<5	----	
Silver	7440-22-4	2	mg/kg	----	----	----	<2	----	
Tin	7440-31-5	5	mg/kg	----	----	----	<5	----	
Arsenic	7440-38-2	5	mg/kg	----	----	----	<5	----	
Cadmium	7440-43-9	1	mg/kg	----	----	----	<1	----	
Copper	7440-50-8	5	mg/kg	----	----	----	<5	----	
Lead	7439-92-1	5	mg/kg	----	----	----	<5	----	
Nickel	7440-02-0	2	mg/kg	----	----	----	<2	----	
Zinc	7440-66-6	5	mg/kg	----	----	----	<5	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	----	----	<0.1	----	
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	<2.0	----	
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	----	----	----	1	----	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	----	----	----	50	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	----	----	----	<0.2	----	
Toluene	108-88-3	0.5	mg/kg	----	----	----	<0.5	----	
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	<0.5	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	<0.5	----	
Styrene	100-42-5	0.5	mg/kg	----	----	----	<0.5	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-026	EM2108857-027	EM2108857-028	EM2108857-029	EM2108857-030	
				Result	Result	Result	Result	Result	
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	----	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	<0.2	----	
^ Total Xylenes	----	0.5	mg/kg	----	----	----	<0.5	----	
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	----	
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	<0.02	----	
1,1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	<0.01	----	
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	<0.4	----	
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	<0.02	----	
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	<0.01	----	
Chloroform	67-66-3	0.02	mg/kg	----	----	----	<0.02	----	
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	<0.01	----	
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	<0.01	----	
1,2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	<0.02	----	
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	<0.02	----	
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	<0.04	----	
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	<0.02	----	
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	<0.01	----	
1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	<0.02	----	
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	<0.02	----	
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	<0.02	----	
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	<0.02	----	
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	<0.02	----	
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	----	<0.01	----	
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	----	<0.01	----	
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	----	----	----	<0.01	----	
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	----	<0.03	----	
2,4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	----	<0.03	----	
2,6-Dichlorophenol	87-65-0	0.03	mg/kg	----	----	----	<0.03	----	
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	----	----	----	<0.03	----	
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	----	<0.05	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-026	EM2108857-027	EM2108857-028	EM2108857-029	EM2108857-030	
				Result	Result	Result	Result	Result	
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	----	<0.05	----	
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	----	----	----	<0.03	----	
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	----	----	----	<0.06	----	
Pentachlorophenol	87-86-5	0.2	mg/kg	----	----	----	<0.2	----	
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	----	----	----	<0.03	----	
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg	----	----	----	<1	----	
2-Methylphenol	95-48-7	1	mg/kg	----	----	----	<1	----	
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	<1	----	
2-Nitrophenol	88-75-5	1	mg/kg	----	----	----	<1	----	
2,4-Dimethylphenol	105-67-9	1	mg/kg	----	----	----	<1	----	
2,4-Dinitrophenol	51-28-5	5	mg/kg	----	----	----	<5	----	
4-Nitrophenol	100-02-7	5	mg/kg	----	----	----	<5	----	
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	----	----	----	<5	----	
Dinoseb	88-85-7	5	mg/kg	----	----	----	<5	----	
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	----	----	----	<5	----	
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	----	----	<1	----	
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	----	
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	----	
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	----	
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	----	
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	----	
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	----	
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	----	
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	----	
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	----	
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	----	
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	----	----	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	----	
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	----	
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-026	EM2108857-027	EM2108857-028	EM2108857-029	EM2108857-030	
				Result	Result	Result	Result	Result	
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	<0.5	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	0.6	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	1.2	----	
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg	----	----	----	<0.03	----	
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	----	<0.03	----	
beta-BHC	319-85-7	0.03	mg/kg	----	----	----	<0.03	----	
gamma-BHC	58-89-9	0.03	mg/kg	----	----	----	<0.03	----	
delta-BHC	319-86-8	0.03	mg/kg	----	----	----	<0.03	----	
Heptachlor	76-44-8	0.03	mg/kg	----	----	----	<0.03	----	
Aldrin	309-00-2	0.03	mg/kg	----	----	----	<0.03	----	
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	----	<0.03	----	
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	----	<0.03	----	
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	----	<0.03	----	
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	----	<0.03	----	
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	----	
Dieldrin	60-57-1	0.03	mg/kg	----	----	----	<0.03	----	
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	----	<0.03	----	
Endrin	72-20-8	0.03	mg/kg	----	----	----	<0.03	----	
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	----	<0.03	----	
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	----	
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	----	<0.03	----	
4,4'-DDT	50-29-3	0.05	mg/kg	----	----	----	<0.05	----	
Methoxychlor	72-43-5	0.03	mg/kg	----	----	----	<0.03	----	
^ Sum of organochlorine pesticides	----	0.03	mg/kg	----	----	----	<0.03	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	----	<0.03	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	----	----	<0.05	----	
^ Chlordane	57-74-9	0.03	mg/kg	----	----	----	<0.03	----	
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	----	<0.03	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	----	
C10 - C14 Fraction	----	50	mg/kg	----	----	----	<50	----	
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	<10	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-026	EM2108857-027	EM2108857-028	EM2108857-029	EM2108857-030	
				Result	Result	Result	Result	Result	
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg	----	----	----	120	----	
C29 - C36 Fraction	----	100	mg/kg	----	----	----	160	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	280	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	<50	----	
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	250	----	
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	<100	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	250	----	
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	<50	----	
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	<10	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	100	----	
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	84.4	----	
Toluene-D8	2037-26-5	0.1	%	----	----	----	73.0	----	
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	77.1	----	
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%	----	----	----	79.5	----	
2-Chlorophenol-D4	93951-73-6	0.025	%	----	----	----	70.6	----	
2,4,6-Tribromophenol	118-79-6	0.025	%	----	----	----	86.9	----	
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%	----	----	----	89.6	----	
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%	----	----	----	85.2	----	
2-Fluorobiphenyl	321-60-8	0.025	%	----	----	----	96.4	----	
Anthracene-d10	1719-06-8	0.025	%	----	----	----	102	----	
4-Terphenyl-d14	1718-51-0	0.025	%	----	----	----	89.2	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_1.0	TP05_1.5	TP05_2.0	TP05_2.5	TP05_3.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-031	EM2108857-032	EM2108857-033	EM2108857-034	EM2108857-035	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	5.1	4.5	4.7	4.6	5.1	
pH (Fox)	----	0.1	pH Unit	3.5	3.5	3.1	2.8	3.7	
Reaction Rate	----	1	Reaction Unit	1	1	1	3	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	2.6	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----	
Chromium	7440-47-3	2	mg/kg	<2	----	----	----	----	
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----	
Lead	7439-92-1	5	mg/kg	<5	----	----	----	----	
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----	
Zinc	7440-66-6	5	mg/kg	<5	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----	
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----	
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----	
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----	
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_1.0	TP05_1.5	TP05_2.0	TP05_2.5	TP05_3.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-031	EM2108857-032	EM2108857-033	EM2108857-034	EM2108857-035	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	----	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----	
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----	
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----	
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----	
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----	
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	----	----	----	----	
2,4-DB	94-82-6	0.02	mg/kg	<0.02	----	----	----	----	
Dicamba	1918-00-9	0.02	mg/kg	<0.02	----	----	----	----	
Mecoprop	93-65-2	0.02	mg/kg	<0.02	----	----	----	----	
MCPA	94-74-6	0.02	mg/kg	<0.02	----	----	----	----	
2,4-DP	120-36-5	0.02	mg/kg	<0.02	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_1.0	TP05_1.5	TP05_2.0	TP05_2.5	TP05_3.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-031	EM2108857-032	EM2108857-033	EM2108857-034	EM2108857-035	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	<0.02	----	----	----	----	
Triclopyr	55335-06-3	0.02	mg/kg	<0.02	----	----	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	----	----	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	<0.02	----	----	----	----	
MCPB	94-81-5	0.02	mg/kg	<0.02	----	----	----	----	
Picloram	1918-02-1	0.02	mg/kg	<0.02	----	----	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	<0.02	----	----	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	----	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	94.0	----	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	106	----	----	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	59.5	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_3.5	TP05_4.0	TP05_4.4	TP06_0.0	TP06_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-036	EM2108857-037	EM2108857-038	EM2108857-039	EM2108857-040	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	6.6	9.2	9.3	4.9	4.6	
pH (Fox)	----	0.1	pH Unit	4.7	6.7	6.8	2.9	3.2	
Reaction Rate	----	1	Reaction Unit	1	1	1	3	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	----	----	35.2	6.8	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	----	----	<5	<5	
Cadmium	7440-43-9	1	mg/kg	----	----	----	<1	<1	
Chromium	7440-47-3	2	mg/kg	----	----	----	<2	<2	
Copper	7440-50-8	5	mg/kg	----	----	----	14	<5	
Lead	7439-92-1	5	mg/kg	----	----	----	<5	<5	
Nickel	7440-02-0	2	mg/kg	----	----	----	<2	<2	
Zinc	7440-66-6	5	mg/kg	----	----	----	14	<5	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	----	----	<0.1	<0.1	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	<0.05	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	<0.05	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	<0.05	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
Endrin	72-20-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	<0.05	<0.05	
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_3.5	TP05_4.0	TP05_4.4	TP06_0.0	TP06_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-036	EM2108857-037	EM2108857-038	EM2108857-039	EM2108857-040	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	<0.05	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	<0.2	<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	<0.2	<0.2	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	<0.2	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	<0.05	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	----	----	<0.04	----	
2,4-DB	94-82-6	0.02	mg/kg	----	----	----	<0.04	----	
Dicamba	1918-00-9	0.02	mg/kg	----	----	----	<0.04	----	
Mecoprop	93-65-2	0.02	mg/kg	----	----	----	<0.04	----	
MCPA	94-74-6	0.02	mg/kg	----	----	----	<0.04	----	
2,4-DP	120-36-5	0.02	mg/kg	----	----	----	<0.04	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_3.5	TP05_4.0	TP05_4.4	TP06_0.0	TP06_0.5
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-036	EM2108857-037	EM2108857-038	EM2108857-039	EM2108857-040	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	----	----	<0.04	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	----	----	<0.04	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	----	----	<0.04	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	----	----	<0.04	----	
MCPB	94-81-5	0.02	mg/kg	----	----	----	<0.04	----	
Picloram	1918-02-1	0.02	mg/kg	----	----	----	<0.04	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	----	----	<0.04	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	----	----	<0.04	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	96.9	92.0	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	----	----	93.9	104	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	----	----	53.4	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_1.0	TP06_1.5	TP06_2.0	TP07_0.0	TP07_0.5
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-041	EM2108857-042	EM2108857-043	EM2108857-044	EM2108857-045	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	4.4	4.6	4.9	5.2	4.0	
pH (Fox)	----	0.1	pH Unit	2.7	3.2	3.7	2.0	2.6	
Reaction Rate	----	1	Reaction Unit	1	1	1	4	4	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	----	----	34.8	49.4	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	----	----	<5	15	
Cadmium	7440-43-9	1	mg/kg	----	----	----	<1	<1	
Chromium	7440-47-3	2	mg/kg	----	----	----	32	47	
Copper	7440-50-8	5	mg/kg	----	----	----	18	13	
Lead	7439-92-1	5	mg/kg	----	----	----	12	12	
Nickel	7440-02-0	2	mg/kg	----	----	----	10	10	
Zinc	7440-66-6	5	mg/kg	----	----	----	8	8	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	----	----	<0.1	0.2	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	<0.05	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	<0.05	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	<0.05	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
Endrin	72-20-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	<0.05	<0.05	
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_1.0	TP06_1.5	TP06_2.0	TP07_0.0	TP07_0.5
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-041	EM2108857-042	EM2108857-043	EM2108857-044	EM2108857-045	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	<0.05	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	<0.2	<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	<0.2	<0.2	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	<0.2	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	<0.05	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	<0.05	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	----	----	<0.04	----	
2,4-DB	94-82-6	0.02	mg/kg	----	----	----	<0.04	----	
Dicamba	1918-00-9	0.02	mg/kg	----	----	----	<0.04	----	
Mecoprop	93-65-2	0.02	mg/kg	----	----	----	<0.04	----	
MCPA	94-74-6	0.02	mg/kg	----	----	----	<0.04	----	
2,4-DP	120-36-5	0.02	mg/kg	----	----	----	<0.04	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_1.0	TP06_1.5	TP06_2.0	TP07_0.0	TP07_0.5
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-041	EM2108857-042	EM2108857-043	EM2108857-044	EM2108857-045	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	----	----	<0.04	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	----	----	<0.04	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	----	----	<0.04	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	----	----	<0.04	----	
MCPB	94-81-5	0.02	mg/kg	----	----	----	<0.04	----	
Picloram	1918-02-1	0.02	mg/kg	----	----	----	<0.04	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	----	----	<0.04	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	----	----	<0.04	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	92.9	92.2	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	----	----	116	119	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	----	----	59.1	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_1.0	TP07_1.5	TP07_2.0	TP07_2.5	TP07_3.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-046	EM2108857-047	EM2108857-048	EM2108857-049	EM2108857-050	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	4.5	5.6	5.8	5.9	6.3	
pH (Fox)	----	0.1	pH Unit	1.5	2.5	3.0	3.3	3.4	
Reaction Rate	----	1	Reaction Unit	4	4	4	4	4	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_3.5	TP07_4.0	TP07_4.5	TP07_5.0	TP08_0.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-051	EM2108857-052	EM2108857-053	EM2108857-054	EM2108857-055	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	6.0	5.9	6.2	6.7	6.3	
pH (Fox)	----	0.1	pH Unit	3.4	3.5	3.2	3.5	3.7	
Reaction Rate	----	1	Reaction Unit	4	4	4	2	3	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	----	----	----	14.1	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	----	----	----	<5	
Cadmium	7440-43-9	1	mg/kg	----	----	----	----	<1	
Chromium	7440-47-3	2	mg/kg	----	----	----	----	<2	
Copper	7440-50-8	5	mg/kg	----	----	----	----	<5	
Lead	7439-92-1	5	mg/kg	----	----	----	----	<5	
Nickel	7440-02-0	2	mg/kg	----	----	----	----	<2	
Zinc	7440-66-6	5	mg/kg	----	----	----	----	<5	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	----	----	----	<0.1	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	----	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	----	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	----	<0.05	
Aldrin	309-00-2	0.05	mg/kg	----	----	----	----	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	----	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	----	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	----	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	----	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	----	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	----	<0.05	
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05	
Endrin	72-20-8	0.05	mg/kg	----	----	----	----	<0.05	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	----	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	----	<0.05	
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_3.5	TP07_4.0	TP07_4.5	TP07_5.0	TP08_0.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-051	EM2108857-052	EM2108857-053	EM2108857-054	EM2108857-055	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	----	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	----	<0.05	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	----	<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	----	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	----	<0.2	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	----	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	----	<0.05	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	----	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	----	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	----	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	----	<0.05	
Diazinon	333-41-5	0.05	mg/kg	----	----	----	----	<0.05	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	----	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	----	<0.2	
Malathion	121-75-5	0.05	mg/kg	----	----	----	----	<0.05	
Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05	
Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	----	<0.05	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	----	<0.05	
Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	----	<0.05	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	----	----	----	<0.04	
2,4-DB	94-82-6	0.02	mg/kg	----	----	----	----	<0.04	
Dicamba	1918-00-9	0.02	mg/kg	----	----	----	----	<0.04	
Mecoprop	93-65-2	0.02	mg/kg	----	----	----	----	<0.04	
MCPA	94-74-6	0.02	mg/kg	----	----	----	----	<0.04	
2,4-DP	120-36-5	0.02	mg/kg	----	----	----	----	<0.04	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_3.5	TP07_4.0	TP07_4.5	TP07_5.0	TP08_0.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-051	EM2108857-052	EM2108857-053	EM2108857-054	EM2108857-055	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	----	----	----	<0.04	
Triclopyr	55335-06-3	0.02	mg/kg	----	----	----	----	<0.04	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	----	----	----	<0.04	
2.4.5-T	93-76-5	0.02	mg/kg	----	----	----	----	<0.04	
MCPB	94-81-5	0.02	mg/kg	----	----	----	----	<0.04	
Picloram	1918-02-1	0.02	mg/kg	----	----	----	----	<0.04	
Clopyralid	1702-17-6	0.02	mg/kg	----	----	----	----	<0.04	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	----	----	----	<0.04	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	----	98.3	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	----	----	----	117	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	----	----	----	60.0	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08_0.5	TP08_1.0	TP08_1.5	TP08_2.0	TP08_2.5
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-056	EM2108857-057	EM2108857-058	EM2108857-059	EM2108857-060	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	5.1	5.1	5.0	4.9	4.8	
pH (Fox)	----	0.1	pH Unit	3.0	3.0	3.4	3.6	3.6	
Reaction Rate	----	1	Reaction Unit	1	1	2	1	1	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08_3.0	TP08_3.5	TP08_4.0	TP08_4.5	TP08_5.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-061	EM2108857-062	EM2108857-063	EM2108857-064	EM2108857-065	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	4.6	4.7	4.8	5.1	5.0	
pH (Fox)	----	0.1	pH Unit	3.4	3.4	3.5	3.7	3.6	
Reaction Rate	----	1	Reaction Unit	1	1	1	2	2	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	6.5	----	----	----	----	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	6.8	6.1	5.7	5.6	5.1	
pH (Fox)	----	0.1	pH Unit	4.1	3.0	3.3	3.3	3.1	
Reaction Rate	----	1	Reaction Unit	3	2	2	1	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%	41.3	----	----	----	----	
Moisture Content	----	1.0	%	----	9.2	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----	
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----	
Silver	7440-22-4	2	mg/kg	<2	----	----	----	----	
Tin	7440-31-5	5	mg/kg	<5	----	----	----	----	
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----	
Chromium	7440-47-3	2	mg/kg	----	<2	----	----	----	
Copper	7440-50-8	5	mg/kg	<5	<5	----	----	----	
Lead	7439-92-1	5	mg/kg	<5	<5	----	----	----	
Nickel	7440-02-0	2	mg/kg	<2	<2	----	----	----	
Zinc	7440-66-6	5	mg/kg	<5	<5	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	<1	----	----	----	----	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	50	----	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	----	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	----	----	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	----	----	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	----	----	
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	----	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	----	----	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----	
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.05	----	----	----	
4,4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	<0.05	----	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	<0.05	----	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----	
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----	
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	----	----	
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	----	----	
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	----	----	
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	----	----	
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----	
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----	
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	<0.5	----	----	----	
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----	
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	----	
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----	
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----	
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	----	----	----	
1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	----	----	----	
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	----	----	----	
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	----	----	----	
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	----	----	----	
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	----	----	----	
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	----	----	----	
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	----	----	----	
1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	----	----	----	
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	----	----	----	
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	----	----	----	
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	----	----	----	
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EP074I: Volatile Halogenated Compounds - Continued									
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	----	----	----	
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	----	----	----	
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	----	----	----	
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	----	----	----	----	
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	----	----	----	----	
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	----	----	----	----	
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	----	----	----	
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	----	----	----	----	
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	----	----	----	----	
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	----	----	----	----	
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	----	----	----	----	
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	----	----	----	----	
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	----	----	----	----	
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	----	----	----	----	
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.06	----	----	----	----	
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	----	----	----	----	
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg	<1	----	----	----	----	
2-Methylphenol	95-48-7	1	mg/kg	<1	----	----	----	----	
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----	
2-Nitrophenol	88-75-5	1	mg/kg	<1	----	----	----	----	
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	----	----	----	----	
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	----	----	----	----	
4-Nitrophenol	100-02-7	5	mg/kg	<5	----	----	----	----	
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	----	----	----	----	
Dinoseb	88-85-7	5	mg/kg	<5	----	----	----	----	
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	----	----	----	----	
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----	
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----	
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----	
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----	
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	<1.0	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----	
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	----	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	----	----	----	----	
beta-BHC	319-85-7	0.03	mg/kg	<0.03	----	----	----	----	
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	----	----	----	
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	----	----	----	
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	----	----	----	
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	----	----	----	
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	----	----	----	
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	----	----	----	
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	----	----	----	
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	----	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----	
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	----	----	----	
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	----	----	----	
Endrin	72-20-8	0.03	mg/kg	<0.03	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EP075I: Organochlorine Pesticides - Continued									
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	----	----	----	
4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----	
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	----	----	----	
4.4'-DDT	50-29-3	0.05	mg/kg	<0.05	----	----	----	----	
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	----	----	----	
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	----	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----	
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	----	----	----	
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----	
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----	
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----	
C15 - C28 Fraction	----	100	mg/kg	190	----	----	----	----	
C29 - C36 Fraction	----	100	mg/kg	220	----	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	410	----	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg	50	----	----	----	----	
>C16 - C34 Fraction	----	100	mg/kg	330	----	----	----	----	
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	380	----	----	----	----	
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	50	----	----	----	----	
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	<0.02	----	----	----	
2.4-DB	94-82-6	0.02	mg/kg	----	<0.02	----	----	----	
Dicamba	1918-00-9	0.02	mg/kg	----	<0.02	----	----	----	
Mecoprop	93-65-2	0.02	mg/kg	----	<0.02	----	----	----	
MCPA	94-74-6	0.02	mg/kg	----	<0.02	----	----	----	
2.4-DP	120-36-5	0.02	mg/kg	----	<0.02	----	----	----	
2.4-D	94-75-7	0.02	mg/kg	----	<0.02	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-066	EM2108857-067	EM2108857-068	EM2108857-069	EM2108857-070	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
Triclopyr	55335-06-3	0.02	mg/kg	----	<0.02	----	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	<0.02	----	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	<0.02	----	----	----	
MCPB	94-81-5	0.02	mg/kg	----	<0.02	----	----	----	
Picloram	1918-02-1	0.02	mg/kg	----	<0.02	----	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	<0.02	----	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	<0.02	----	----	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	93.9	----	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	91.0	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	116	----	----	----	
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%	96.7	----	----	----	----	
Toluene-D8	2037-26-5	0.1	%	88.6	----	----	----	----	
4-Bromofluorobenzene	460-00-4	0.1	%	90.7	----	----	----	----	
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%	72.8	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	0.025	%	65.4	----	----	----	----	
2.4.6-Tribromophenol	118-79-6	0.025	%	70.9	----	----	----	----	
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%	84.0	----	----	----	----	
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	81.0	----	----	----	----	
2-Fluorobiphenyl	321-60-8	0.025	%	79.6	----	----	----	----	
Anthracene-d10	1719-06-8	0.025	%	86.7	----	----	----	----	
4-Terphenyl-d14	1718-51-0	0.025	%	84.9	----	----	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	61.1	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_2.5	TP09_3.0	TP09_3.5	TP09_4.0	TP09_4.5
				Sampling date / time	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00
Compound	CAS Number	LOR	Unit	EM2108857-071	EM2108857-072	EM2108857-073	EM2108857-074	EM2108857-075	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	5.5	5.5	5.4	5.3	5.7	
pH (Fox)	----	0.1	pH Unit	3.2	3.3	4.1	3.6	4.0	
Reaction Rate	----	1	Reaction Unit	1	3	2	2	2	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_5.0	TP13_0.0	TP13_0.5	TP13_1.0	TP13_1.5
Sampling date / time				12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-076	EM2108857-077	EM2108857-078	EM2108857-079	EM2108857-080	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	6.1	5.3	6.9	6.9	7.0	
pH (Fox)	----	0.1	pH Unit	3.8	2.3	4.2	4.0	3.3	
Reaction Rate	----	1	Reaction Unit	3	3	4	2	2	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	47.0	34.6	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	<5	<5	----	----	
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	----	----	
Chromium	7440-47-3	2	mg/kg	----	107	105	----	----	
Copper	7440-50-8	5	mg/kg	----	11	7	----	----	
Lead	7439-92-1	5	mg/kg	----	6	5	----	----	
Nickel	7440-02-0	2	mg/kg	----	33	29	----	----	
Zinc	7440-66-6	5	mg/kg	----	13	6	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	<0.05	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	<0.05	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	<0.05	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
Endrin	72-20-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.05	<0.05	----	----	
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	<0.05	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_5.0	TP13_0.0	TP13_0.5	TP13_1.0	TP13_1.5
Sampling date / time				12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-076	EM2108857-077	EM2108857-078	EM2108857-079	EM2108857-080	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	<0.05	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	<0.2	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	<0.2	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	<0.05	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	<0.2	----	----	
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	<0.05	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	<0.2	----	----	
Malathion	121-75-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
Parathion	56-38-2	0.2	mg/kg	----	<0.2	<0.2	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	<0.05	----	----	
Ethion	563-12-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	<0.05	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	<0.04	----	----	----	
2,4-DB	94-82-6	0.02	mg/kg	----	<0.04	----	----	----	
Dicamba	1918-00-9	0.02	mg/kg	----	<0.04	----	----	----	
Mecoprop	93-65-2	0.02	mg/kg	----	<0.04	----	----	----	
MCPA	94-74-6	0.02	mg/kg	----	<0.04	----	----	----	
2,4-DP	120-36-5	0.02	mg/kg	----	<0.04	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_5.0	TP13_0.0	TP13_0.5	TP13_1.0	TP13_1.5
Sampling date / time				12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-076	EM2108857-077	EM2108857-078	EM2108857-079	EM2108857-080	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	<0.04	----	----	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	<0.04	----	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	<0.04	----	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	<0.04	----	----	----	
MCPB	94-81-5	0.02	mg/kg	----	<0.04	----	----	----	
Picloram	1918-02-1	0.02	mg/kg	----	<0.04	----	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	<0.04	----	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	<0.04	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	91.9	91.6	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	121	109	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	55.8	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	----	4.8	----	----	----	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	7.3	6.1	7.2	7.0	7.0	
pH (Fox)	----	0.1	pH Unit	2.1	2.4	4.6	4.7	5.0	
Reaction Rate	----	1	Reaction Unit	2	3	2	1	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%	----	20.9	----	----	----	
Moisture Content	----	1.0	%	----	----	11.3	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Molybdenum	7439-98-7	2	mg/kg	----	<2	----	----	----	
Selenium	7782-49-2	5	mg/kg	----	<5	----	----	----	
Silver	7440-22-4	2	mg/kg	----	<2	----	----	----	
Tin	7440-31-5	5	mg/kg	----	<5	----	----	----	
Arsenic	7440-38-2	5	mg/kg	----	8	80	----	----	
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	----	----	
Chromium	7440-47-3	2	mg/kg	----	----	120	----	----	
Copper	7440-50-8	5	mg/kg	----	<5	<5	----	----	
Lead	7439-92-1	5	mg/kg	----	<5	8	----	----	
Nickel	7440-02-0	2	mg/kg	----	3	8	----	----	
Zinc	7440-66-6	5	mg/kg	----	<5	<5	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<2.0	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	----	<1	----	----	----	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	----	60	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	----	----	
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	----	----	
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	----	----	
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	----	----	
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	<0.05	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	<0.05	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	----	----	
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----	
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	<0.05	----	----	
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	<0.05	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	----	<0.05	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	----	----	
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	----	----	
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	----	----	
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	----	----	
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	----	----	
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	----	----	
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	----	----	
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	----	----	
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	----	----	
Styrene	100-42-5	0.5	mg/kg	----	<0.5	----	----	----	
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	----	----	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	----	----	----	
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	----	----	
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	----	<1	----	----	----	
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	----	----	----	
1,1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	----	----	----	
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	----	----	----	
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	----	----	----	
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	----	----	----	
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	----	----	----	
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	----	----	----	
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	----	----	----	
1,2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	----	----	----	
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	----	----	----	
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	----	----	----	
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	----	----	----	
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EP074I: Volatile Halogenated Compounds - Continued									
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	----	----	----	
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	----	----	----	
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	----	----	----	
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	<0.02	----	----	----	
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	<0.02	----	----	----	
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	<0.01	----	----	----	
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	<0.01	----	----	----	
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	----	<0.01	----	----	----	
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg	----	<0.03	----	----	----	
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	<0.03	----	----	----	
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	----	<0.03	----	----	----	
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	----	<0.03	----	----	----	
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	<0.05	----	----	----	
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	<0.05	----	----	----	
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	----	<0.03	----	----	----	
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	----	<0.05	----	----	----	
Pentachlorophenol	87-86-5	0.2	mg/kg	----	<0.2	----	----	----	
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	----	<0.03	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg	----	<1	----	----	----	
2-Methylphenol	95-48-7	1	mg/kg	----	<1	----	----	----	
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	<1	----	----	----	
2-Nitrophenol	88-75-5	1	mg/kg	----	<1	----	----	----	
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	<1	----	----	----	
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	<5	----	----	----	
4-Nitrophenol	100-02-7	5	mg/kg	----	<5	----	----	----	
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	<5	----	----	----	
Dinoseb	88-85-7	5	mg/kg	----	<5	----	----	----	
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	<5	----	----	----	
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	<1	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	----	----	
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	----	----	
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	----	----	
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	----	----	
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	----	----	
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	----	----	
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	----	----	
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	----	----	
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	----	----	
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	----	<1.0	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	----	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	----	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	0.6	----	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	----	----	----	
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg	----	<0.03	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	<0.03	----	----	----	
beta-BHC	319-85-7	0.03	mg/kg	----	<0.03	----	----	----	
gamma-BHC	58-89-9	0.03	mg/kg	----	<0.03	----	----	----	
delta-BHC	319-86-8	0.03	mg/kg	----	<0.03	----	----	----	
Heptachlor	76-44-8	0.03	mg/kg	----	<0.03	----	----	----	
Aldrin	309-00-2	0.03	mg/kg	----	<0.03	----	----	----	
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	<0.03	----	----	----	
cis-Chlordane	5103-71-9	0.03	mg/kg	----	<0.03	----	----	----	
trans-Chlordane	5103-74-2	0.03	mg/kg	----	<0.03	----	----	----	
Endosulfan 1	959-98-8	0.03	mg/kg	----	<0.03	----	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----	
Dieldrin	60-57-1	0.03	mg/kg	----	<0.03	----	----	----	
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	<0.03	----	----	----	
Endrin	72-20-8	0.03	mg/kg	----	<0.03	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EP075I: Organochlorine Pesticides - Continued									
Endosulfan 2	33213-65-9	0.03	mg/kg	----	<0.03	----	----	----	
4.4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----	
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	<0.03	----	----	----	
4.4'-DDT	50-29-3	0.05	mg/kg	----	<0.05	----	----	----	
Methoxychlor	72-43-5	0.03	mg/kg	----	<0.03	----	----	----	
^ Sum of organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	<0.03	----	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.05	----	----	----	
^ Chlordane	57-74-9	0.03	mg/kg	----	<0.03	----	----	----	
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	----	
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	----	----	
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	----	----	
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	----	----	
C29 - C36 Fraction	----	100	mg/kg	----	120	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	120	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	----	----	
>C16 - C34 Fraction	----	100	mg/kg	----	120	----	----	----	
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	----	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	120	----	----	----	
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	----	----	
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	----	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	----	<0.02	----	----	
2.4-DB	94-82-6	0.02	mg/kg	----	----	<0.02	----	----	
Dicamba	1918-00-9	0.02	mg/kg	----	----	<0.02	----	----	
Mecoprop	93-65-2	0.02	mg/kg	----	----	<0.02	----	----	
MCPA	94-74-6	0.02	mg/kg	----	----	<0.02	----	----	
2.4-DP	120-36-5	0.02	mg/kg	----	----	<0.02	----	----	
2.4-D	94-75-7	0.02	mg/kg	----	----	<0.02	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-081	EM2108857-082	EM2108857-083	EM2108857-084	EM2108857-085	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
Triclopyr	55335-06-3	0.02	mg/kg	----	----	<0.02	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	----	<0.02	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	----	<0.02	----	----	
MCPB	94-81-5	0.02	mg/kg	----	----	<0.02	----	----	
Picloram	1918-02-1	0.02	mg/kg	----	----	<0.02	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	----	<0.02	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	----	<0.02	----	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	----	88.1	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	----	89.5	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	----	108	----	----	
EP074S: VOC Surrogates (Ultra-Trace)									
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	88.1	----	----	----	
Toluene-D8	2037-26-5	0.1	%	----	84.6	----	----	----	
4-Bromofluorobenzene	460-00-4	0.1	%	----	85.4	----	----	----	
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%	----	70.8	----	----	----	
2-Chlorophenol-D4	93951-73-6	0.025	%	----	63.2	----	----	----	
2.4.6-Tribromophenol	118-79-6	0.025	%	----	65.2	----	----	----	
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%	----	79.9	----	----	----	
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	----	75.5	----	----	----	
2-Fluorobiphenyl	321-60-8	0.025	%	----	90.1	----	----	----	
Anthracene-d10	1719-06-8	0.025	%	----	88.8	----	----	----	
4-Terphenyl-d14	1718-51-0	0.025	%	----	96.2	----	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	----	50.5	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP14_2.0	TP15_0.0	TP15_0.5	TP15_1.0	TP15_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-086	EM2108857-087	EM2108857-088	EM2108857-089	EM2108857-090	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	7.0	6.1	6.4	6.7	7.9	
pH (Fox)	----	0.1	pH Unit	5.0	2.9	4.5	5.0	5.8	
Reaction Rate	----	1	Reaction Unit	1	3	2	1	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	21.3	26.7	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	8	21	----	----	
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	----	----	
Chromium	7440-47-3	2	mg/kg	----	50	105	----	----	
Copper	7440-50-8	5	mg/kg	----	<5	<5	----	----	
Lead	7439-92-1	5	mg/kg	----	5	6	----	----	
Nickel	7440-02-0	2	mg/kg	----	9	17	----	----	
Zinc	7440-66-6	5	mg/kg	----	6	<5	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	<0.05	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	<0.05	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	<0.05	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
Endrin	72-20-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.05	<0.05	----	----	
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	<0.05	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP14_2.0	TP15_0.0	TP15_0.5	TP15_1.0	TP15_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-086	EM2108857-087	EM2108857-088	EM2108857-089	EM2108857-090	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	<0.05	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
4.4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	<0.2	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	<0.2	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	<0.05	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	<0.05	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	<0.2	----	----	
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	<0.05	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	<0.2	----	----	
Malathion	121-75-5	0.05	mg/kg	----	<0.05	<0.05	----	----	
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	<0.05	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
Parathion	56-38-2	0.2	mg/kg	----	<0.2	<0.2	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	<0.05	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	<0.05	----	----	
Ethion	563-12-2	0.05	mg/kg	----	<0.05	<0.05	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	<0.05	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	<0.05	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	<0.04	----	----	----	
2.4-DB	94-82-6	0.02	mg/kg	----	<0.04	----	----	----	
Dicamba	1918-00-9	0.02	mg/kg	----	<0.04	----	----	----	
Mecoprop	93-65-2	0.02	mg/kg	----	<0.04	----	----	----	
MCPA	94-74-6	0.02	mg/kg	----	<0.04	----	----	----	
2.4-DP	120-36-5	0.02	mg/kg	----	<0.04	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP14_2.0	TP15_0.0	TP15_0.5	TP15_1.0	TP15_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-086	EM2108857-087	EM2108857-088	EM2108857-089	EM2108857-090	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	<0.04	----	----	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	<0.04	----	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	<0.04	----	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	<0.04	----	----	----	
MCPB	94-81-5	0.02	mg/kg	----	<0.04	----	----	----	
Picloram	1918-02-1	0.02	mg/kg	----	<0.04	----	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	<0.04	----	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	<0.04	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	90.8	91.1	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	109	104	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	54.1	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP15_2.0	TP16_0.0	TP16_0.5	TP16_1.0	TP16_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-091	EM2108857-092	EM2108857-093	EM2108857-094	EM2108857-095	
				Result	Result	Result	Result	Result	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	7.9	5.8	6.5	5.7	5.4	
pH (Fox)	----	0.1	pH Unit	5.7	2.4	4.4	3.8	3.9	
Reaction Rate	----	1	Reaction Unit	1	3	2	3	1	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	20.6	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	<5	----	----	----	
Cadmium	7440-43-9	1	mg/kg	----	<1	----	----	----	
Chromium	7440-47-3	2	mg/kg	----	63	----	----	----	
Copper	7440-50-8	5	mg/kg	----	6	----	----	----	
Lead	7439-92-1	5	mg/kg	----	<5	----	----	----	
Nickel	7440-02-0	2	mg/kg	----	9	----	----	----	
Zinc	7440-66-6	5	mg/kg	----	<5	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	----	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	----	----	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	----	----	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	----	----	
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	----	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	----	----	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	----	----	
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----	
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.05	----	----	----	
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP15_2.0	TP16_0.0	TP16_0.5	TP16_1.0	TP16_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-091	EM2108857-092	EM2108857-093	EM2108857-094	EM2108857-095	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	<0.05	----	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.05	----	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----	
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----	
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	----	----	
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	----	----	
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	----	----	
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	----	----	
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	----	----	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	----	<0.04	----	----	----	
2,4-DB	94-82-6	0.02	mg/kg	----	<0.04	----	----	----	
Dicamba	1918-00-9	0.02	mg/kg	----	<0.04	----	----	----	
Mecoprop	93-65-2	0.02	mg/kg	----	<0.04	----	----	----	
MCPA	94-74-6	0.02	mg/kg	----	<0.04	----	----	----	
2,4-DP	120-36-5	0.02	mg/kg	----	<0.04	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP15_2.0	TP16_0.0	TP16_0.5	TP16_1.0	TP16_1.5
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-091	EM2108857-092	EM2108857-093	EM2108857-094	EM2108857-095	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
2.4-D	94-75-7	0.02	mg/kg	----	<0.04	----	----	----	
Triclopyr	55335-06-3	0.02	mg/kg	----	<0.04	----	----	----	
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	----	<0.04	----	----	----	
2.4.5-T	93-76-5	0.02	mg/kg	----	<0.04	----	----	----	
MCPB	94-81-5	0.02	mg/kg	----	<0.04	----	----	----	
Picloram	1918-02-1	0.02	mg/kg	----	<0.04	----	----	----	
Clopyralid	1702-17-6	0.02	mg/kg	----	<0.04	----	----	----	
Fluroxypyr	69377-81-7	0.02	mg/kg	----	<0.04	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	93.4	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	113	----	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	53.2	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16_2.0	QC1_110521	QC5_130521	----	----
Sampling date / time				13-May-2021 00:00	11-May-2021 00:00	13-May-2021 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM2108857-096	EM2108857-097	EM2108857-100	-----	-----	
				Result	Result	Result	----	----	
EA003 :pH (field/fox)									
pH (F)	----	0.1	pH Unit	5.4	----	----	----	----	
pH (Fox)	----	0.1	pH Unit	3.8	----	----	----	----	
Reaction Rate	----	1	Reaction Unit	1	----	----	----	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	20.9	19.2	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	<5	10	----	----	
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	----	----	
Chromium	7440-47-3	2	mg/kg	----	<2	21	----	----	
Copper	7440-50-8	5	mg/kg	----	7	<5	----	----	
Lead	7439-92-1	5	mg/kg	----	<5	<5	----	----	
Nickel	7440-02-0	2	mg/kg	----	<2	3	----	----	
Zinc	7440-66-6	5	mg/kg	----	8	<5	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.10	<0.05	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.10	<0.05	----	----	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.10	<0.05	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.10	<0.05	----	----	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.10	<0.05	----	----	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.10	<0.05	----	----	
Aldrin	309-00-2	0.05	mg/kg	----	<0.10	<0.05	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.10	<0.05	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.10	<0.05	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.10	<0.05	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.10	<0.05	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.10	<0.05	----	----	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.10	<0.05	----	----	
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.10	<0.05	----	----	
Endrin	72-20-8	0.05	mg/kg	----	<0.10	<0.05	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.10	<0.05	----	----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.10	<0.05	----	----	
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.10	<0.05	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16_2.0	QC1_110521	QC5_130521	----	----
Sampling date / time				13-May-2021 00:00	11-May-2021 00:00	13-May-2021 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM2108857-096	EM2108857-097	EM2108857-100	-----	-----	
				Result	Result	Result	----	----	
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.10	<0.05	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.10	<0.05	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	<0.2	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.10	<0.05	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	<0.2	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	<0.10	<0.05	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.10	<0.05	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.10	<0.05	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.10	<0.05	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	<0.2	----	----	
Dimethoate	60-51-5	0.05	mg/kg	----	<0.10	<0.05	----	----	
Diazinon	333-41-5	0.05	mg/kg	----	<0.10	<0.05	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.10	<0.05	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	<0.2	----	----	
Malathion	121-75-5	0.05	mg/kg	----	<0.10	<0.05	----	----	
Fenthion	55-38-9	0.05	mg/kg	----	<0.10	<0.05	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.10	<0.05	----	----	
Parathion	56-38-2	0.2	mg/kg	----	<0.2	<0.2	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.10	<0.05	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.10	<0.05	----	----	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.10	<0.05	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.10	<0.05	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.10	<0.05	----	----	
Ethion	563-12-2	0.05	mg/kg	----	<0.10	<0.05	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.10	<0.05	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.10	<0.05	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	95.9	92.4	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	106	119	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC3_110521	QC4_120521	QC8_130521	QC9_130521	QC10_130521
Sampling date / time				11-May-2021 00:00	12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-098	EM2108857-099	EM2108857-102	EM2108857-103	EM2108857-104	
				Result	Result	Result	Result	Result	
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----	
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----	
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----	
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----	
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----	
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----	
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----	
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----	
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----	
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----	
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----	
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----	
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----	
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----	
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	----	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	----	----	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC3_110521	QC4_120521	QC8_130521	QC9_130521	QC10_130521
Sampling date / time				11-May-2021 00:00	12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-098	EM2108857-099	EM2108857-102	EM2108857-103	EM2108857-104	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	----	----	
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	----	----	
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	----	----	----	
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	----	----	
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	----	----	
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	----	----	----	
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	----	----	
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	----	----	
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	----	----	
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	----	----	----	
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	----	----	
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	----	----	
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	----	----	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	----	----	<20	<20	<20	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	----	----	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	----	----	<20	<20	<20	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	----	----	<1	<1	<1	
Toluene	108-88-3	2	µg/L	----	----	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	----	----	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	----	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	----	----	<2	<2	<2	
^ Total Xylenes	----	2	µg/L	----	----	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	----	----	<1	<1	<1	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC3_110521	QC4_120521	QC8_130521	QC9_130521	QC10_130521
Sampling date / time				11-May-2021 00:00	12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2108857-098	EM2108857-099	EM2108857-102	EM2108857-103	EM2108857-104	
				Result	Result	Result	Result	Result	
EP080: BTEXN - Continued									
Naphthalene	91-20-3	5	µg/L	----	----	<5	<5	<5	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	71.2	79.3	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	83.9	89.4	----	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	----	----	96.5	99.4	98.5	
Toluene-D8	2037-26-5	2	%	----	----	100	103	101	
4-Bromofluorobenzene	460-00-4	2	%	----	----	107	112	109	



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	62	128
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	40	139
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2,4,6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1,2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2,4-Dichlorophenyl Acetic Acid	19719-28-9	45	139

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	117
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	51	127
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Page : 69 of 69
Work Order : EM2108857
Client : AECOM Australia Pty Ltd
Project : 60591699



Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA003 :pH (field/fox)

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(SOIL) EP202S: Phenoxyacetic Acid Herbicide Surrogate

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology). Only applies to samples EM2108857 (039).

(SOIL) EG005(ED093)T: Total Metals by ICP-AES

(SOIL) EG035T: Total Recoverable Mercury by FIMS

(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

(SOIL) EP068A: Organochlorine Pesticides (OC)

(SOIL) EP068B: Organophosphorus Pesticides (OP)

(SOIL) EP068T: Organophosphorus Pesticide Surrogate

(SOIL) EP068S: Organochlorine Pesticide Surrogate

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

Work Order	: EM2108857	Page	: 1 of 122
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY		
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: sara.kennedy@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60591699	Date Received	: 14-May-2021 10:20
Order number	: 60591699 5.0	Date Analysed	: 18-May-2021
C-O-C number	: ----	Date Issued	: 01-Jun-2021 16:36
No. of samples received	: 103		
No. of samples analysed	: 103	Quote number	: EN/096/18

General Comments

This guideline comparison report **only** provides comparison of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702 and measurement uncertainty.

This guideline comparison report only provides comparison data for parameters, specifically listed within the IWRG621 (2009) guideline, that are analysed by ALS.

Only results in the 'Analytical Results' section have been compared to the guideline.

Additional information pertinent to this report will be found in the following separate attachments: Certificate of Analysis, Quality Control Report, QA/QC Compliance Assessment to Assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Limits	Result
TP05_0.0	EM2108857-029	pH (CaCl2)	EA001	0.1	> 4 pH Unit< 9 pH Unit	3.4 pH Unit
TP05_0.0	EM2108857-029	Hexavalent Chromium	EG048G	0.5	< 1 mg/kg	<2.0 mg/kg
TP14_0.0	EM2108857-082	Hexavalent Chromium	EG048G	0.5	< 1 mg/kg	<2.0 mg/kg

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Category C

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Limits	Result
TP05_0.0	EM2108857-029	pH (CaCl2)	EA001	0.1	> 4 pH Unit< 9 pH Unit	3.4 pH Unit



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP02_1.0	TP02_1.5	TP02_2.0	TP02_2.5	TP02_3.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
						EM2108857-006 MU	EM2108857-007 MU	EM2108857-008 MU	EM2108857-009 MU	EM2108857-010 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		Lower Limit	Upper Limit	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
				Sampling date/time				11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
				EM2108857-011 MU	EM2108857-012 MU			EM2108857-013 MU	EM2108857-014 MU	EM2108857-015 MU		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	---	---	7.4 ± 0.2	---	---	---	---
EG005(ED093)T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	---	2000	---	---	11 ± 2	---	---	---	---
Cadmium	EG005T	1	mg/kg	---	400	---	---	<1 ..	---	---	---	---
Copper	EG005T	5	mg/kg	---	20000	---	---	<5 ..	---	---	---	---
Lead	EG005T	5	mg/kg	---	6000	---	---	<5 ..	---	---	---	---
Molybdenum	EG005T	2	mg/kg	---	4000	---	---	<2 ..	---	---	---	---
Nickel	EG005T	2	mg/kg	---	12000	---	---	<2 ..	---	---	---	---
Selenium	EG005T	5	mg/kg	---	200	---	---	<5 ..	---	---	---	---
Silver	EG005T	2	mg/kg	---	720	---	---	<2 ..	---	---	---	---
Zinc	EG005T	5	mg/kg	---	140000	---	---	8 ± 2	---	---	---	---
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	---	300	---	---	<0.1 ..	---	---	---	---
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	---	2000	---	---	<0.5 ..	---	---	---	---
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	---	10000	---	---	<1 ..	---	---	---	---
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	---	40000	---	---	70 ± 30	---	---	---	---
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	---	16	---	---	<0.2 ..	---	---	---	---
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	---	240	---	---	<0.2 ..	---	---	---	---
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	---	4.8	---	---	<0.02 ..	---	---	---	---
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	---	11	---	---	<0.02 ..	---	---	---	---
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	---	50	---	---	<0.01 ..	---	---	---	---
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	---	320	---	---	<0.03 ..	---	---	---	---
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	---	2200	---	---	<1 ..	---	---	---	---
EP075B: Polynuclear Aromatic Hydrocarbons												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	---	20	---	---	<0.5 ..	---	---	---	---
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	---	400	---	---	<0.5 ..	---	---	---	---
EP075I: Organochlorine Pesticides												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
				Guideline	Guideline					
				Lower Limit	Upper Limit					
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
						EM2108857-011 MU	EM2108857-012 MU	EM2108857-013 MU	EM2108857-014 MU	EM2108857-015 MU
EP075: Organochlorine Pesticides - Continued										
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8	----	----	<0.03	--	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8	----	----	<0.03	--	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	----	----	<0.05	--	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16	----	----	<0.03	--	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50	----	----	<0.03	--	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600	----	----	<10	--	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000	----	----	150	± 30	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
						EM2108857-011 MU	EM2108857-012 MU	EM2108857-013 MU	EM2108857-014 MU	EM2108857-015 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	4	9	----	----	7.4 ± 0.2	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	500	----	----	11 ± 2	----	----	
Cadmium	EG005T	1	mg/kg	----	100	----	----	<1 ..	----	----	
Copper	EG005T	5	mg/kg	----	5000	----	----	<5 ..	----	----	
Lead	EG005T	5	mg/kg	----	1500	----	----	<5 ..	----	----	
Molybdenum	EG005T	2	mg/kg	----	1000	----	----	<2 ..	----	----	
Nickel	EG005T	2	mg/kg	----	3000	----	----	<2 ..	----	----	
Selenium	EG005T	5	mg/kg	----	50	----	----	<5 ..	----	----	
Silver	EG005T	2	mg/kg	----	180	----	----	<2 ..	----	----	
Tin	EG005T	5	mg/kg	----	500	----	----	<5 ..	----	----	
Zinc	EG005T	5	mg/kg	----	35000	----	----	8 ± 2	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	75	----	----	<0.1 ..	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	----	----	<0.5 ..	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	2500	----	----	<1 ..	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	10000	----	----	70 ± 30	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	4	----	----	<0.2 ..	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	----	----	<0.2 ..	----	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	----	----	<0.02 ..	----	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	----	----	<0.02 ..	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	----	----	<0.01 ..	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	----	----	<0.03 ..	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	----	----	<1 ..	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	----	----	<0.5 ..	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	----	----	<0.5 ..	----	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
				Guideline	Guideline					
				Lower Limit	Upper Limit					
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
						EM2108857-011 MU	EM2108857-012 MU	EM2108857-013 MU	EM2108857-014 MU	EM2108857-015 MU
EP075: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	----	----	<0.03	--	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	----	----	<0.03	--	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	----	----	<0.05	--	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	----	----	<0.03	--	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	----	----	<0.03	--	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	----	----	<10	--	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	----	----	150	± 30	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
				Sampling date/time						
				Lower Limit	Upper Limit					
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
						EM2108857-011 MU	EM2108857-012 MU	EM2108857-013 MU	EM2108857-014 MU	EM2108857-015 MU
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	----	----	7.4 ± 0.2	----	----
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	20	----	----	11 ± 2	----	----
Cadmium	EG005T	1	mg/kg	----	3	----	----	<1 ..	----	----
Copper	EG005T	5	mg/kg	----	100	----	----	<5 ..	----	----
Lead	EG005T	5	mg/kg	----	300	----	----	<5 ..	----	----
Molybdenum	EG005T	2	mg/kg	----	40	----	----	<2 ..	----	----
Nickel	EG005T	2	mg/kg	----	60	----	----	<2 ..	----	----
Selenium	EG005T	5	mg/kg	----	10	----	----	<5 ..	----	----
Silver	EG005T	2	mg/kg	----	10	----	----	<2 ..	----	----
Tin	EG005T	5	mg/kg	----	50	----	----	<5 ..	----	----
Zinc	EG005T	5	mg/kg	----	200	----	----	8 ± 2	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	1	----	----	<0.1 ..	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	----	----	<0.5 ..	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	50	----	----	<1 ..	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	450	----	----	70 ± 30	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	----	----	<0.1 ..	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	1	----	----	<0.2 ..	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	----	----	<0.2 ..	----	----
EP074I: Volatile Halogenated Compounds										
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	----	----	<0.01 ..	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	----	----	<0.03 ..	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	----	----	<1 ..	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	----	----	<0.5 ..	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	----	----	<0.5 ..	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP02_3.5	TP02_4.0	TP03_0.0	TP03_0.5	TP03_1.0
							11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
							EM2108857-011 MU	EM2108857-012 MU	EM2108857-013 MU	EM2108857-014 MU	EM2108857-015 MU
EP075: Organochlorine Pesticides											
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	----	----	<0.03	--	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	----	----	<10	--	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	----	----	150	± 30	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP03_1.5	TP03_2.0	TP04_0.0	TP04_0.5	TP04_1.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
						EM2108857-016 MU	EM2108857-017 MU	EM2108857-018 MU	EM2108857-019 MU	EM2108857-020 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP04_1.5	TP04_2.0	TP04_2.5	TP04_3.0	TP04_3.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
						EM2108857-021 MU	EM2108857-022 MU	EM2108857-023 MU	EM2108857-024 MU	EM2108857-025 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						11-May-2021 15:00
						EM2108857-026 MU	EM2108857-027 MU	EM2108857-028 MU	EM2108857-029 MU	EM2108857-030 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	----	----	----	3.4 ± 0.07	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	2000	----	----	----	<5 ..	----	
Cadmium	EG005T	1	mg/kg	----	400	----	----	----	<1 ..	----	
Copper	EG005T	5	mg/kg	----	20000	----	----	----	<5 ..	----	
Lead	EG005T	5	mg/kg	----	6000	----	----	----	<5 ..	----	
Molybdenum	EG005T	2	mg/kg	----	4000	----	----	----	<2 ..	----	
Nickel	EG005T	2	mg/kg	----	12000	----	----	----	<2 ..	----	
Selenium	EG005T	5	mg/kg	----	200	----	----	----	<5 ..	----	
Silver	EG005T	2	mg/kg	----	720	----	----	----	<2 ..	----	
Zinc	EG005T	5	mg/kg	----	140000	----	----	----	<5 ..	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	300	----	----	----	<0.1 ..	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	----	----	----	<2.0 ..	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	10000	----	----	----	1 ± 0.1	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	40000	----	----	----	50 ± 30	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	16	----	----	----	<0.2 ..	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	----	----	----	<0.2 ..	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	----	----	----	<0.02 ..	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	----	----	----	<0.02 ..	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	----	----	----	<0.01 ..	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	----	----	----	<0.03 ..	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	----	----	----	<1 ..	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	----	----	----	<0.5 ..	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5	
							11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
							EM2108857-026 MU	EM2108857-027 MU	EM2108857-028 MU	EM2108857-029 MU	EM2108857-030 MU	
EP075B: Polynuclear Aromatic Hydrocarbons - Continued												
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg		----	400	----	----	----	<0.5	..	----
EP075I: Organochlorine Pesticides												
Heptachlor	EP075-EM	0.03	mg/kg		----	4.8	----	----	----	<0.03	..	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg		----	4.8	----	----	----	<0.03	..	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg		----	50	----	----	----	<0.05	..	----
Chlordane	EP075-EM-SUM	0.03	mg/kg		----	16	----	----	----	<0.03	..	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg		----	50	----	----	----	<0.03	..	----
EP080/071: Total Petroleum Hydrocarbons												
C6 - C9 Fraction	EP074-UT	10	mg/kg		----	2600	----	----	----	<10	..	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg		----	40000	----	----	----	280	± 50	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5		
				Sampling date/time							Lower Limit	Upper Limit
				Guideline	Guideline							
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00		
						EM2108857-026 MU	EM2108857-027 MU	EM2108857-028 MU	EM2108857-029 MU	EM2108857-030 MU		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	----	----	----	3.4 ± 0.07	----		
EG005(ED093)T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	500	----	----	----	<5 ..	----		
Cadmium	EG005T	1	mg/kg	----	100	----	----	----	<1 ..	----		
Copper	EG005T	5	mg/kg	----	5000	----	----	----	<5 ..	----		
Lead	EG005T	5	mg/kg	----	1500	----	----	----	<5 ..	----		
Molybdenum	EG005T	2	mg/kg	----	1000	----	----	----	<2 ..	----		
Nickel	EG005T	2	mg/kg	----	3000	----	----	----	<2 ..	----		
Selenium	EG005T	5	mg/kg	----	50	----	----	----	<5 ..	----		
Silver	EG005T	2	mg/kg	----	180	----	----	----	<2 ..	----		
Tin	EG005T	5	mg/kg	----	500	----	----	----	<5 ..	----		
Zinc	EG005T	5	mg/kg	----	35000	----	----	----	<5 ..	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	75	----	----	----	<0.1 ..	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	----	----	----	<2.0 ..	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	2500	----	----	----	1 ± 0.1	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	10000	----	----	----	50 ± 30	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	4	----	----	----	<0.2 ..	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	----	----	----	<0.2 ..	----		
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	----	----	----	<0.02 ..	----		
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	----	----	----	<0.02 ..	----		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	----	----	----	<0.01 ..	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	----	----	----	<0.03 ..	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	----	----	----	<1 ..	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5
							11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
							EM2108857-026 MU	EM2108857-027 MU	EM2108857-028 MU	EM2108857-029 MU	EM2108857-030 MU
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	----	----	----	<0.5	--	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	----	----	----	<0.5	--	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	----	----	----	<0.03	--	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	----	----	----	<0.03	--	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	----	----	----	<0.05	--	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	----	----	----	<0.03	--	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	----	----	----	<0.03	--	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	----	----	----	<10	--	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	----	----	----	280	± 50	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
						EM2108857-026 MU	EM2108857-027 MU	EM2108857-028 MU	EM2108857-029 MU	EM2108857-030 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	4	9	----	----	----	3.4 ± 0.07	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	20	----	----	----	<5 ..	----	
Cadmium	EG005T	1	mg/kg	----	3	----	----	----	<1 ..	----	
Copper	EG005T	5	mg/kg	----	100	----	----	----	<5 ..	----	
Lead	EG005T	5	mg/kg	----	300	----	----	----	<5 ..	----	
Molybdenum	EG005T	2	mg/kg	----	40	----	----	----	<2 ..	----	
Nickel	EG005T	2	mg/kg	----	60	----	----	----	<2 ..	----	
Selenium	EG005T	5	mg/kg	----	10	----	----	----	<5 ..	----	
Silver	EG005T	2	mg/kg	----	10	----	----	----	<2 ..	----	
Tin	EG005T	5	mg/kg	----	50	----	----	----	<5 ..	----	
Zinc	EG005T	5	mg/kg	----	200	----	----	----	<5 ..	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	1	----	----	----	<0.1 ..	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	----	----	----	<2.0 ..	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	50	----	----	----	1 ± 0.1	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	450	----	----	----	50 ± 30	----	
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	----	----	----	<0.1 ..	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	1	----	----	----	<0.2 ..	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	----	----	----	<0.2 ..	----	
EP074I: Volatile Halogenated Compounds											
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	----	----	----	<0.01 ..	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	----	----	----	<0.03 ..	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	----	----	----	<1 ..	----	
EP075B: Polynuclear Aromatic Hydrocarbons											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP04_4.0	TP04_4.5	TP04_5.0	TP05_0.0	TP05_0.5	
							11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	
							EM2108857-026 MU	EM2108857-027 MU	EM2108857-028 MU	EM2108857-029 MU	EM2108857-030 MU	
EP075B: Polynuclear Aromatic Hydrocarbons - Continued												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg		----	1	----	----	----	<0.5	--	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg		----	20	----	----	----	<0.5	--	----
EP075I: Organochlorine Pesticides												
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg		----	1	----	----	----	<0.03	--	----
EP080/071: Total Petroleum Hydrocarbons												
C6 - C9 Fraction	EP074-UT	10	mg/kg		----	100	----	----	----	<10	--	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg		----	1000	----	----	----	280	± 50	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP05_1.0	TP05_1.5	TP05_2.0	TP05_2.5	TP05_3.0
				Sampling date/time						
				Lower Limit	Upper Limit					
						11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00
						EM2108857-031 MU	EM2108857-032 MU	EM2108857-033 MU	EM2108857-034 MU	EM2108857-035 MU
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----
EP074I: Volatile Halogenated Compounds										
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----
EP075I: Organochlorine Pesticides										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		Lower Limit	Upper Limit	TP05_3.5	TP05_4.0	TP05_4.4	TP06_0.0	TP06_0.5
				Sampling date/time								
				Guideline	Guideline							
								11-May-2021 15:00	11-May-2021 15:00	11-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00
								EM2108857-036 MU	EM2108857-037 MU	EM2108857-038 MU	EM2108857-039 MU	EM2108857-040 MU
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	----	----
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	----	----
EP074I: Volatile Halogenated Compounds												
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	----	----
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	----	----
EP075I: Organochlorine Pesticides												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP06_1.0	TP06_1.5	TP06_2.0	TP07_0.0	TP07_0.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						12-May-2021 15:00
						EM2108857-041 MU	EM2108857-042 MU	EM2108857-043 MU	EM2108857-044 MU	EM2108857-045 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP07_1.0	TP07_1.5	TP07_2.0	TP07_2.5	TP07_3.0
				Sampling date/time						
				Lower Limit	Upper Limit					
						12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00
						EM2108857-046 MU	EM2108857-047 MU	EM2108857-048 MU	EM2108857-049 MU	EM2108857-050 MU
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----
EP074I: Volatile Halogenated Compounds										
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----
EP075I: Organochlorine Pesticides										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		Lower Limit	Upper Limit	TP07_3.5	TP07_4.0	TP07_4.5	TP07_5.0	TP08_0.0		
				Sampling date/time									Guideline	Guideline
				12-May-2021 15:00	12-May-2021 15:00									
								EM2108857-051 MU	EM2108857-052 MU	EM2108857-053 MU	EM2108857-054 MU	EM2108857-055 MU		
EA001: pH in soil using 0.01M CaCl extract														
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	----	----		
EG005(ED093)T: Total Metals by ICP-AES														
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----		
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	----	----		
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----		
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----		
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----		
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----		
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----		
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----		
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----		
EG035T: Total Recoverable Mercury by FIMS														
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	----	----		
EG048: Hexavalent Chromium (Alkaline Digest)														
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	----	----		
EK026SF: Total CN by Segmented Flow Analyser														
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	----	----		
EK040T: Fluoride Total														
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	----	----		
EP074A: Monocyclic Aromatic Hydrocarbons														
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	----	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	----	----		
EP074I: Volatile Halogenated Compounds														
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	----	----		
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----		
EP075A: Phenolic Compounds (Halogenated)														
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	----	----		
EP075A: Phenolic Compounds (Non-halogenated)														
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	----	----		
EP075B: Polynuclear Aromatic Hydrocarbons														
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	----	----		
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	----	----		
EP075I: Organochlorine Pesticides														



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP08_0.5	TP08_1.0	TP08_1.5	TP08_2.0	TP08_2.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	
						EM2108857-056 MU	EM2108857-057 MU	EM2108857-058 MU	EM2108857-059 MU	EM2108857-060 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP08_3.0	TP08_3.5	TP08_4.0	TP08_4.5	TP08_5.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	
						EM2108857-061 MU	EM2108857-062 MU	EM2108857-063 MU	EM2108857-064 MU	EM2108857-065 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	
						EM2108857-066 MU	EM2108857-067 MU	EM2108857-068 MU	EM2108857-069 MU	EM2108857-070 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	6.5 ± 0.1	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	2000	<5 ..	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	400	<1 ..	----	----	----	----	
Copper	EG005T	5	mg/kg	----	20000	<5 ..	----	----	----	----	
Lead	EG005T	5	mg/kg	----	6000	<5 ..	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	4000	<2 ..	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	12000	<2 ..	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	200	<5 ..	----	----	----	----	
Silver	EG005T	2	mg/kg	----	720	<2 ..	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	140000	<5 ..	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	300	<0.1 ..	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5 ..	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1 ..	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	40000	50 ± 30	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2 ..	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2 ..	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02 ..	----	----	----	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02 ..	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01 ..	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03 ..	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1 ..	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	<0.5 ..	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400	<0.5 ..	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
							12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00
							EM2108857-066 MU	EM2108857-067 MU	EM2108857-068 MU	EM2108857-069 MU	EM2108857-070 MU
EP075I: Organochlorine Pesticides - Continued											
Heptachlor	EP075-EM	0.03	mg/kg		----	4.8	<0.03	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg		----	4.8	<0.03	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg		----	50	<0.05	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg		----	16	<0.03	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg		----	50	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg		----	2600	<10	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg		----	40000	410 ± 70	----	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	
						EM2108857-066 MU	EM2108857-067 MU	EM2108857-068 MU	EM2108857-069 MU	EM2108857-070 MU	
EA001: pH in soil using 0.01M CaCl2 extract											
pH (CaCl2)	EA001	0.1	pH Unit	4	9	6.5 ± 0.1	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	500	<5 ..	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	100	<1 ..	----	----	----	----	
Copper	EG005T	5	mg/kg	----	5000	<5 ..	----	----	----	----	
Lead	EG005T	5	mg/kg	----	1500	<5 ..	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	1000	<2 ..	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	3000	<2 ..	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	50	<5 ..	----	----	----	----	
Silver	EG005T	2	mg/kg	----	180	<2 ..	----	----	----	----	
Tin	EG005T	5	mg/kg	----	500	<5 ..	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	35000	<5 ..	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 ..	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5 ..	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1 ..	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	10000	50 ± 30	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2 ..	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2 ..	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02 ..	----	----	----	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02 ..	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01 ..	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03 ..	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1 ..	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5 ..	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5 ..	----	----	----	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
				Sampling date/time		12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00
				Lower Limit	Upper Limit	EM2108857-066 MU	EM2108857-067 MU	EM2108857-068 MU	EM2108857-069 MU	EM2108857-070 MU
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	410 ± 70	----	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	
						EM2108857-066 MU	EM2108857-067 MU	EM2108857-068 MU	EM2108857-069 MU	EM2108857-070 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	4	9	6.5 ± 0.1	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	20	<5 ..	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	3	<1 ..	----	----	----	----	
Copper	EG005T	5	mg/kg	----	100	<5 ..	----	----	----	----	
Lead	EG005T	5	mg/kg	----	300	<5 ..	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	40	<2 ..	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	60	<2 ..	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	10	<5 ..	----	----	----	----	
Silver	EG005T	2	mg/kg	----	10	<2 ..	----	----	----	----	
Tin	EG005T	5	mg/kg	----	50	<5 ..	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	200	<5 ..	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	1	<0.1 ..	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5 ..	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	50	<1 ..	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	450	50 ± 30	----	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1 ..	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2 ..	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2 ..	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01 ..	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03 ..	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1 ..	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	<0.5 ..	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	<0.5 ..	----	----	----	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP09_0.0	TP09_0.5	TP09_1.0	TP09_1.5	TP09_2.0
				Sampling date/time		12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00
				Lower Limit	Upper Limit	EM2108857-066 MU	EM2108857-067 MU	EM2108857-068 MU	EM2108857-069 MU	EM2108857-070 MU
EP075: Organochlorine Pesticides										
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03 ..	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	<10 ..	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	410 ± 70	----	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		Lower Limit	Upper Limit	TP09_2.5	TP09_3.0	TP09_3.5	TP09_4.0	TP09_4.5
				Sampling date/time				12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00	12-May-2021 15:00
				EM2108857-071 MU	EM2108857-072 MU			EM2108857-073 MU	EM2108857-074 MU	EM2108857-075 MU		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	----	----
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	----	----
EP074I: Volatile Halogenated Compounds												
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	----	----
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	----	----
EP075I: Organochlorine Pesticides												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		Lower Limit	Upper Limit	TP09_5.0	TP13_0.0	TP13_0.5	TP13_1.0	TP13_1.5
				Sampling date/time				12-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00
				EM2108857-076 MU	EM2108857-077 MU			EM2108857-078 MU	EM2108857-079 MU	EM2108857-080 MU		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	----	----
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	----	----
EP074I: Volatile Halogenated Compounds												
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	----	----
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	----	----
EP075I: Organochlorine Pesticides												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						
						13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	
						EM2108857-081 MU	EM2108857-082 MU	EM2108857-083 MU	EM2108857-084 MU	EM2108857-085 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	----	4.8 ± 0.1	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	2000	----	8 ± 2	----	----	----	
Cadmium	EG005T	1	mg/kg	----	400	----	<1	----	----	----	
Copper	EG005T	5	mg/kg	----	20000	----	<5	----	----	----	
Lead	EG005T	5	mg/kg	----	6000	----	<5	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	4000	----	<2	----	----	----	
Nickel	EG005T	2	mg/kg	----	12000	----	3 ± 0.4	----	----	----	
Selenium	EG005T	5	mg/kg	----	200	----	<5	----	----	----	
Silver	EG005T	2	mg/kg	----	720	----	<2	----	----	----	
Zinc	EG005T	5	mg/kg	----	140000	----	<5	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	300	----	<0.1	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	----	<2.0	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	10000	----	<1	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	40000	----	60 ± 30	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	16	----	<0.2	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	----	<0.2	----	----	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	----	<0.02	----	----	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	----	<0.02	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	----	<0.01	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	----	<0.03	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	----	<1	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	----	<0.5	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400	----	<0.5	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
							13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00
							EM2108857-081 MU	EM2108857-082 MU	EM2108857-083 MU	EM2108857-084 MU	EM2108857-085 MU
EP075: Organochlorine Pesticides - Continued											
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8	----	<0.03 ..	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8	----	<0.03 ..	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	----	<0.05 ..	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16	----	<0.03 ..	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50	----	<0.03 ..	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600	----	<10 ..	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000	----	120 ±20	----	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
				Sampling date/time						
				Lower Limit	Upper Limit					
						13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00
						EM2108857-081 MU	EM2108857-082 MU	EM2108857-083 MU	EM2108857-084 MU	EM2108857-085 MU
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	----	4.8 ± 0.1	----	----	----
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	500	----	8 ± 2	----	----	----
Cadmium	EG005T	1	mg/kg	----	100	----	<1 ..	----	----	----
Copper	EG005T	5	mg/kg	----	5000	----	<5 ..	----	----	----
Lead	EG005T	5	mg/kg	----	1500	----	<5 ..	----	----	----
Molybdenum	EG005T	2	mg/kg	----	1000	----	<2 ..	----	----	----
Nickel	EG005T	2	mg/kg	----	3000	----	3 ± 0.4	----	----	----
Selenium	EG005T	5	mg/kg	----	50	----	<5 ..	----	----	----
Silver	EG005T	2	mg/kg	----	180	----	<2 ..	----	----	----
Tin	EG005T	5	mg/kg	----	500	----	<5 ..	----	----	----
Zinc	EG005T	5	mg/kg	----	35000	----	<5 ..	----	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	----	<0.1 ..	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	----	<2.0 ..	----	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	----	<1 ..	----	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	----	60 ± 30	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	4	----	<0.2 ..	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	----	<0.2 ..	----	----	----
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	----	<0.02 ..	----	----	----
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	----	<0.02 ..	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	----	<0.01 ..	----	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	----	<0.03 ..	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	----	<1 ..	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	----	<0.5 ..	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	----	<0.5 ..	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
							13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00
							EM2108857-081 MU	EM2108857-082 MU	EM2108857-083 MU	EM2108857-084 MU	EM2108857-085 MU
EP075: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	----	<0.03	..	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	----	<0.03	..	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	----	<0.05	..	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	----	<0.03	..	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	----	<0.03	..	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	----	<10	..	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	----	120	±20	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						13-May-2021 15:00
						EM2108857-081 MU	EM2108857-082 MU	EM2108857-083 MU	EM2108857-084 MU	EM2108857-085 MU	
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	4	9	----	4.8 ± 0.1	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	20	----	8 ± 2	----	----	----	
Cadmium	EG005T	1	mg/kg	----	3	----	<1 ..	----	----	----	
Copper	EG005T	5	mg/kg	----	100	----	<5 ..	----	----	----	
Lead	EG005T	5	mg/kg	----	300	----	<5 ..	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	40	----	<2 ..	----	----	----	
Nickel	EG005T	2	mg/kg	----	60	----	3 ± 0.4	----	----	----	
Selenium	EG005T	5	mg/kg	----	10	----	<5 ..	----	----	----	
Silver	EG005T	2	mg/kg	----	10	----	<2 ..	----	----	----	
Tin	EG005T	5	mg/kg	----	50	----	<5 ..	----	----	----	
Zinc	EG005T	5	mg/kg	----	200	----	<5 ..	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	1	----	<0.1 ..	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	----	<2.0 ..	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	50	----	<1 ..	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	450	----	60 ± 30	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	----	<0.1 ..	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	1	----	<0.2 ..	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	----	<0.2 ..	----	----	----	
EP074I: Volatile Halogenated Compounds											
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	----	<0.01 ..	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	----	<0.03 ..	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	----	<1 ..	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	----	<0.5 ..	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	----	<0.5 ..	----	----	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID Sampling date/time	Guideline Lower Limit	Guideline Upper Limit	TP13_2.0	TP14_0.0	TP14_0.5	TP14_1.0	TP14_1.5
							13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00
							EM2108857-081 MU	EM2108857-082 MU	EM2108857-083 MU	EM2108857-084 MU	EM2108857-085 MU
EP075: Organochlorine Pesticides											
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	----	<0.03	--	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	----	<10	--	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	----	120	± 20	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP14_2.0	TP15_0.0	TP15_0.5	TP15_1.0	TP15_1.5
				Sampling date/time						
				Lower Limit	Upper Limit					
						13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00	13-May-2021 15:00
						EM2108857-086 MU	EM2108857-087 MU	EM2108857-088 MU	EM2108857-089 MU	EM2108857-090 MU
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----
EP074I: Volatile Halogenated Compounds										
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----
EP075I: Organochlorine Pesticides										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Sample ID		TP15_2.0	TP16_0.0	TP16_0.5	TP16_1.0	TP16_1.5	
				Sampling date/time	Guideline						Guideline
				Lower Limit	Upper Limit						13-May-2021 15:00
						EM2108857-091 MU	EM2108857-092 MU	EM2108857-093 MU	EM2108857-094 MU	EM2108857-095 MU	
EA001: pH in soil using 0.01M CaCl2 extract											
pH (CaCl2)	EA001	0.1	pH Unit	----	----	----	----	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	----	----	----	----	----	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds											
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----	----	----	----	----	----	
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----	----	----	----	----	----	
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----	----	----	----	----	----	
EP075I: Organochlorine Pesticides											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Lower Limit	Upper Limit	Sample ID	TP16_2.0	QC1_110521	QC5_130521	----	----		
						Sampling date/time	Guideline	Guideline	13-May-2021	11-May-2021	13-May-2021	----	----
									15:00	15:00	15:00		
						EM2108857-096 MU	EM2108857-097 MU	EM2108857-100 MU					
EA001: pH in soil using 0.01M CaCl extract													
pH (CaCl2)	EA001	0.1	pH Unit	----	----								
EG005(ED093)T: Total Metals by ICP-AES													
Arsenic	EG005T	5	mg/kg	----	----								
Cadmium	EG005T	1	mg/kg	----	----								
Copper	EG005T	5	mg/kg	----	----								
Lead	EG005T	5	mg/kg	----	----								
Molybdenum	EG005T	2	mg/kg	----	----								
Nickel	EG005T	2	mg/kg	----	----								
Selenium	EG005T	5	mg/kg	----	----								
Silver	EG005T	2	mg/kg	----	----								
Zinc	EG005T	5	mg/kg	----	----								
EG035T: Total Recoverable Mercury by FIMS													
Mercury	EG035T	0.1	mg/kg	----	----								
EG048: Hexavalent Chromium (Alkaline Digest)													
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----								
EK026SF: Total CN by Segmented Flow Analyser													
Total Cyanide	EK026SF	1	mg/kg	----	----								
EK040T: Fluoride Total													
Fluoride	EK040T	40	mg/kg	----	----								
EP074A: Monocyclic Aromatic Hydrocarbons													
Benzene	EP074-UT	0.2	mg/kg	----	----								
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	----								
EP074I: Volatile Halogenated Compounds													
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	----								
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	----								
Vinyl chloride	EP074-UT	0.02	mg/kg	----	----								
EP075A: Phenolic Compounds (Halogenated)													
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	----								
EP075A: Phenolic Compounds (Non-halogenated)													
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	----								
EP075B: Polynuclear Aromatic Hydrocarbons													
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	----								
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	----								
EP075I: Organochlorine Pesticides													

QUALITY CONTROL REPORT

Work Order	: EM2108857	Page	: 1 of 37
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60591699	Date Samples Received	: 14-May-2021
Order number	: 60591699 5.0	Date Analysis Commenced	: 18-May-2021
C-O-C number	: ----	Issue Date	: 01-Jun-2021
Sampler	: BE		
Site	: Kentbruck EES		
Quote number	: EN/096/18		
No. of samples received	: 103		
No. of samples analysed	: 103		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	Position	Accreditation Category
Andrew Lu	VOC Section Supervisor	Melbourne Inorganics, Springvale, VIC
Andrew Lu	VOC Section Supervisor	Melbourne Organics, Springvale, VIC
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3699102)									
EM2108857-001	TP01_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	20	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	13	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
EM2108857-040	TP06_0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3699104)									
EM2108857-088	TP15_0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	105	109	3.5	0% - 20%



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3699104) - continued									
EM2108857-088	TP15_0.5	EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	17	17	0.0	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	21	20	9.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	6	0.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit		
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3699585)									
EM2108857-039	TP06_0.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	15	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	14	16	13.0	No Limit
ES2118930-012	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	17	46.4	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	20	43.8	0% - 50%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	34	42.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	32	39	20.2	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	37	54	38.5	0% - 50%		
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 3684488)									
EM2108857-013	TP03_0.0	EA001: pH (CaCl2)	----	0.1	pH Unit	7.4	7.4	0.0	0% - 20%
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 3684814)									
EM2108857-066	TP09_0.0	EA001: pH (CaCl2)	----	0.1	pH Unit	6.5	6.4	0.0	0% - 20%
EA003 :pH (field/fox) (QC Lot: 3691907)									
EM2108857-001	TP01_0.2	EA003: pH (F)	----	0.1	pH Unit	6.9	6.7	2.9	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	4.0	4.2	3.9	0% - 20%



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA003 :pH (field/fox) (QC Lot: 3691907) - continued									
EM2108857-011	TP02_3.5	EA003: pH (F)	----	0.1	pH Unit	7.8	7.8	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	6.3	6.3	0.0	0% - 20%
EA003 :pH (field/fox) (QC Lot: 3691908)									
EM2108857-021	TP04_1.5	EA003: pH (F)	----	0.1	pH Unit	8.6	8.6	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	8.1	8.1	0.0	0% - 20%
EM2108857-031	TP05_1.0	EA003: pH (F)	----	0.1	pH Unit	5.1	5.1	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	3.5	3.4	3.2	0% - 20%
EA003 :pH (field/fox) (QC Lot: 3691909)									
EM2108857-041	TP06_1.0	EA003: pH (F)	----	0.1	pH Unit	4.4	4.4	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	2.7	2.7	0.0	0% - 20%
EM2108857-051	TP07_3.5	EA003: pH (F)	----	0.1	pH Unit	6.0	6.0	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	3.4	3.4	0.0	0% - 20%
EA003 :pH (field/fox) (QC Lot: 3691910)									
EM2108857-061	TP08_3.0	EA003: pH (F)	----	0.1	pH Unit	4.6	4.6	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	3.4	3.4	0.0	0% - 20%
EM2108857-071	TP09_2.5	EA003: pH (F)	----	0.1	pH Unit	5.5	5.6	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	3.2	3.2	0.0	0% - 20%
EA003 :pH (field/fox) (QC Lot: 3691911)									
EM2108857-081	TP13_2.0	EA003: pH (F)	----	0.1	pH Unit	7.3	7.2	0.0	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	2.1	2.1	0.0	0% - 20%
EM2108857-091	TP15_2.0	EA003: pH (F)	----	0.1	pH Unit	7.9	8.0	1.4	0% - 20%
		EA003: pH (Fox)	----	0.1	pH Unit	5.7	5.9	2.6	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3695251)									
EM2108857-001	TP01_0.2	EA055: Moisture Content	----	0.1	%	6.0	5.4	10.0	No Limit
EM2108857-044	TP07_0.0	EA055: Moisture Content	----	0.1	%	34.8	35.5	1.8	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3695252)									
EM2108857-088	TP15_0.5	EA055: Moisture Content	----	0.1	%	26.7	22.5	17.1	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3699588)									
ES2118814-041	Anonymous	EA055: Moisture Content	----	0.1	%	11.1	11.8	6.2	0% - 20%
ES2119020-001	Anonymous	EA055: Moisture Content	----	0.1	%	17.8	16.6	7.1	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3699103)									
EM2108857-001	TP01_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2108857-040	TP06_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3699105)									
EM2108857-088	TP15_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3699584)									
EM2108857-039	TP06_0.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2118930-012	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 3698842)									
EM2108857-013	TP03_0.0	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM2109484-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 3696991)									
EM2109402-001	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EM2109292-004	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 3699795)									
EM2109501-006	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EM2109484-001	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EK040T: Fluoride Total (QC Lot: 3696953)									
EM2108857-013	TP03_0.0	EK040T: Fluoride	16984-48-8	40	mg/kg	70	60	0.0	No Limit
EM2109501-008	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	200	210	4.9	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3694471)									
EM2108857-013	TP03_0.0	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2109501-013	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.5	<0.5	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3695714)									
EM2108857-001	TP01_0.2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EM2108857-055	TP08_0.0	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05
EP068: Hexachlorobenzene (HCB)	118-74-1			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: beta-BHC	319-85-7			0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3695714) - continued									
EM2108857-055	TP08_0.0	EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3696360)									
EM2108857-097	QC1_110521	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3698058)									
ES2119599-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3695714)									
EM2108857-001	TP01_0.2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3695714) - continued									
EM2108857-001	TP01_0.2	EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM2108857-055	TP08_0.0	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3696360)									
EM2108857-097	QC1_110521	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.10	<0.12	14.9	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3698058)									
ES2119599-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3684483)									
EM2108857-013	TP03_0.0	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3684746)									
EM2108857-066	TP09_0.0	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3686413)									
EM2108857-082	TP14_0.0	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3686413) - continued											
EM2108857-082	TP14_0.0	EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
			106-42-3								
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EM2109171-002	Anonymous	EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
			106-42-3								
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
	95-47-6										
EP074H: Naphthalene (QC Lot: 3684483)											
EM2108857-013	TP03_0.0	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
EP074H: Naphthalene (QC Lot: 3684746)											
EM2108857-066	TP09_0.0	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
EP074H: Naphthalene (QC Lot: 3686413)											
EM2108857-082	TP14_0.0	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
EM2109171-002	Anonymous	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
EP074I: Volatile Halogenated Compounds (QC Lot: 3684483)											
EM2108857-013	TP03_0.0	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
		EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
		EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
		EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
		EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit		
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit		
		EP074I: Volatile Halogenated Compounds (QC Lot: 3684746)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 3684746) - continued									
EM2108857-066	TP09_00	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit		
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit		
EP074I: Volatile Halogenated Compounds (QC Lot: 3686413)									
EM2108857-082	TP14_00	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit		
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit		
EM2109171-002	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 3686413) - continued									
EM2109171-002	Anonymous	EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit		
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 3694469)									
EM2109501-013	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-9-2	0.05	mg/kg	<0.28	<0.28	0.0	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.3	<0.3	0.0	No Limit
EM2108857-013	TP03_0,0	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-9-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 3694469)									



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 3694469) - continued									
EM2109501-013	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<6	<6	0.0	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<6	<6	0.0	No Limit
		EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<6	<6	0.0	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<6	<6	0.0	No Limit
		EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<6	<6	0.0	No Limit
EM2108857-013	TP03_0.0	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.0	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3694469)									
EM2109501-013	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	0.6	<0.5	23.2	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	1.8	0.7	93.5	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	3.5	1.5	82.6	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	1.9	0.9	76.0	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	39.6	# 12.5	104	0% - 20%
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	13.8	# 4.0	110	0% - 20%
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	97.4	# 28.4	110	0% - 20%
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	117	# 33.9	110	0% - 20%
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	53.3	# 15.8	108	0% - 20%
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	49.1	# 15.6	104	0% - 20%
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	68.5	# 23.6	97.3	0% - 20%
		EP075-EM: Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	23.7	# 10.3	79.1	0% - 20%
		EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	6.2	# 2.4	87.9	0% - 50%
		EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	26.8	# 12.8	71.2	0% - 20%
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	87.1	# 30.4	96.5	0% - 20%
EM2108857-013	TP03_0.0	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3694469) - continued									
EM2108857-013	TP03_0.0	EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	<1.0	<1.0	0.0	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 3694469)									
EM2109501-013	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.14	<0.14	0.0	No Limit
		EP075-EM: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.14	<0.14	0.0	No Limit
EP075-EM: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.14	<0.14	0.0	No Limit		
EP075-EM: 4.4'-DDT	50-29-3	0.05	mg/kg	<0.14	<0.14	0.0	No Limit		
EM2108857-013	TP03_0.0	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075I: Organochlorine Pesticides (QC Lot: 3694469) - continued									
EM2108857-013	TP03_0.0	EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4'-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3684483)									
EM2108857-013	TP03_0.0	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3684746)									
EM2108857-066	TP09_0.0	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3686413)									
EM2108857-082	TP14_0.0	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM2109171-002	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3694470)									
EM2108857-013	TP03_0.0	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	150	<100	42.1	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2109501-013	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	830	810	2.5	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	580	600	2.0	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3684483)									
EM2108857-013	TP03_0.0	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3684746)									
EM2108857-066	TP09_0.0	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3686413)									
EM2108857-082	TP14_0.0	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.0	No Limit
EM2109171-002	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3694470)									
EM2108857-013	TP03_0.0	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	230	<100	77.8	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2109501-013	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	1270	1260	0.9	0% - 50%
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	260	270	0.0	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 3695001)									
EP2105656-001	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
EP2105656-013	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 3695026)									
EM2108857-039	TP06_0.0	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.04	<0.04	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 3695026) - continued									
EM2108857-039	TP06_0.0	EP202: MCPA	94-74-6	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.04	<0.04	0.0	No Limit
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.04	<0.04	0.0	No Limit		
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 3699217)									
ES2118463-001	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		
ES2118463-003	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit		



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3699468)									
EM2108857-098	QC3_110521	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EM2109456-014	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0002	<0.0002	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.009	0.009	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.042	0.042	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.027	0.027	0.0	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.030	0.027	10.1	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3699469)									
EM2108857-098	QC3_110521	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM2109456-014	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	0.0015	0.0015	0.0	0% - 50%
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3684772)									
EM2109084-001	Anonymous	EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: 4.4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: 4.4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: 4.4'-DDT	50-29-3	2	µg/L	<2.0	<2.0	0.0	No Limit
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3684772)									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3684772) - continued										
EM2109084-001	Anonymous	EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit	
		EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	<2.0	0.0	No Limit	
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	<2.0	0.0	No Limit			
EP068: Parathion	56-38-2	2	µg/L	<2.0	<2.0	0.0	No Limit			
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3686552)										
EM2109232-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
EM2109228-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3686552)										
EM2109232-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
EM2109228-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
EP080: BTEXN (QC Lot: 3686552)										
EM2109232-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
EM2109228-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit			
EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit			



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

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

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699102)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	99.3	70.0	130	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	68.7	50.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	107	70.0	130	
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	102	70.0	130	
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	91.0	70.0	130	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	2.19 mg/kg	101	70.0	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	100	70.0	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----	
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.9 mg/kg	80.9	70.0	130	
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.33 mg/kg	98.5	70.0	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	77.1	70.0	130	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699104)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	99.5	70.0	130	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	68.2	50.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	108	70.0	130	
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	102	70.0	130	
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	91.6	70.0	130	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	2.19 mg/kg	81.1	70.0	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	100	70.0	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----	
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.9 mg/kg	81.9	70.0	130	
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.33 mg/kg	94.7	70.0	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	77.8	70.0	130	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699585)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	103	88.0	113	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	121	70.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	116	68.0	132	
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	110	89.0	111	
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	106	82.0	119	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	2.3 mg/kg	96.3	77.0	119	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	106	80.0	120	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----	
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.3 mg/kg	95.1	42.0	158	
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699585) - continued									
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	99.2	66.0	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3699103)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	81.2	70.0	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3699105)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	82.0	70.0	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3699584)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	91.4	70.0	125	
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3698842)									
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	20 mg/kg	93.9	70.0	130	
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3696991)									
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	75.4	70.0	130	
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3699795)									
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	97.3	70.0	130	
EK040T: Fluoride Total (QCLot: 3696953)									
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	86.8	75.2	110	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3694471)									
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	97.0	67.4	136	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3695714)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	71.8	126	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	72.2	125	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	70.0	124	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	69.1	124	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	69.2	125	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.7	66.6	122	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	68.8	123	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	67.2	124	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	126	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	70.2	126	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	72.1	124	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	68.0	122	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	68.9	124	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	55.8	130	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	67.9	124	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	72.0	127	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	102	66.3	131	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	62.4	131	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	92.2	55.4	130	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	High
EP068A: Organochlorine Pesticides (OC) (QLot: 3695714) - continued									
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.8	128	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	92.8	55.5	132	
EP068A: Organochlorine Pesticides (OC) (QLot: 3696360)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	71.8	126	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	72.2	125	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	70.0	124	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	69.1	124	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	69.2	125	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	66.6	122	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	68.8	123	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	67.2	124	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	66.0	126	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	70.2	126	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	72.1	124	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	68.0	122	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.9	124	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	55.8	130	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67.9	124	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	72.0	127	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	66.3	131	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	116	62.4	131	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	92.6	55.4	130	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	68.8	128	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	92.6	55.5	132	
EP068A: Organochlorine Pesticides (OC) (QLot: 3698058)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	69.0	113	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	65.0	117	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	104	67.0	119	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	68.0	116	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	65.0	117	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	67.0	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	69.0	115	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	100	62.0	118	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	63.0	117	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	66.0	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	64.0	116	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	66.0	116	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	67.0	115	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	67.0	123	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3698058) - continued									
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	69.0	115	
EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	121	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	79.7	56.0	120	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	62.0	124	
EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	88.6	66.0	120	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	64.0	122	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	86.8	54.0	130	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3695714)									
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.6	127	
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	63.0	129	
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	69.7	10.0	136	
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	58.3	128	
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	122	
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	68.0	122	
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	84.6	59.6	124	
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	63.8	128	
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	71.1	124	
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	67.4	126	
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	86.2	57.9	122	
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.2	123	
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	59.8	123	
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	65.4	127	
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	52.1	128	
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	65.2	122	
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	63.2	124	
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	65.9	127	
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	43.1	131	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3696360)									
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.6	127	
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	63.0	129	
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	96.5	10.0	136	
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	58.3	128	
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	122	
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	101	68.0	122	
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	95.6	59.6	124	
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	63.8	128	
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	71.1	124	
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	67.4	126	
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	93.6	57.9	122	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3696360) - continued									
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.2	123	
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	106	59.8	123	
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	125	65.4	127	
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	52.1	128	
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	65.2	122	
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	63.2	124	
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.5	65.9	127	
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	43.1	131	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3698058)									
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	59.0	119	
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	62.0	128	
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	76.6	54.0	126	
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	67.0	119	
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	70.0	120	
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	72.0	120	
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	95.7	68.0	120	
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	68.0	122	
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	69.0	117	
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	76.0	118	
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	93.6	64.0	122	
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	70.0	116	
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	121	
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	66.0	118	
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	68.0	124	
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	62.0	112	
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	68.0	120	
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	65.0	127	
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	41.0	123	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3684483)									
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	100	69.2	116	
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	97.1	67.7	116	
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	97.2	66.6	115	
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	97.7	65.2	112	
	106-42-3								
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	98.6	69.4	111	
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	97.9	68.4	110	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3684746)									
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	102	69.2	116	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3684746) - continued								
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	98.4	67.7	116
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	94.3	66.6	115
EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4.2 mg/kg	95.9	65.2	112
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	97.8	69.4	111
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	96.6	68.4	110
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3686413)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	94.0	69.2	116
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	96.3	67.7	116
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	95.2	66.6	115
EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4.2 mg/kg	90.5	65.2	112
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	91.7	69.4	111
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	87.7	68.4	110
EP074H: Naphthalene (QCLot: 3684483)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	96.0	72.3	114
EP074H: Naphthalene (QCLot: 3684746)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	94.2	72.3	114
EP074H: Naphthalene (QCLot: 3686413)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	105	72.3	114
EP074I: Volatile Halogenated Compounds (QCLot: 3684483)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	109	47.0	138
EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	107	57.6	125
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	95.1	72.3	115
EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	99.1	60.5	122
EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	98.8	70.3	112
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	96.5	66.6	115
EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	97.6	64.4	122
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	94.5	58.4	127
EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	101	72.9	114
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	101	64.7	115
EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	102	72.6	116
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	102	60.0	119
EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	96.8	71.8	116
EP074-UT: 1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	97.4	66.1	116
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	86.8	39.8	128
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	98.2	70.3	113
EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	89.8	62.6	113



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	High
EP074I: Volatile Halogenated Compounds (QCLot: 3684483) - continued									
EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	94.3	70.8	110	
EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	91.7	48.4	120	
EP074I: Volatile Halogenated Compounds (QCLot: 3684746)									
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	102	47.0	138	
EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	102	57.6	125	
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	95.9	72.3	115	
EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	100	60.5	122	
EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	100	70.3	112	
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	96.4	66.6	115	
EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	99.1	64.4	122	
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	98.2	58.4	127	
EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	105	72.9	114	
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	99.4	64.7	115	
EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	104	72.6	116	
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	96.4	60.0	119	
EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	97.6	71.8	116	
EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	103	66.1	116	
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	73.2	39.8	128	
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	97.2	70.3	113	
EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	94.4	62.6	113	
EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	95.0	70.8	110	
EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	77.6	48.4	120	
EP074I: Volatile Halogenated Compounds (QCLot: 3686413)									
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	90.2	47.0	138	
EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	83.2	57.6	125	
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	80.0	72.3	115	
EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	83.3	60.5	122	
EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	83.2	70.3	112	
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	78.8	66.6	115	
EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	83.8	64.4	122	
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	84.8	58.4	127	
EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	84.2	72.9	114	
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	100	64.7	115	
EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	114	72.6	116	
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	104	60.0	119	
EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	112	71.8	116	
EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	106	66.1	116	
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	90.8	39.8	128	
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	101	70.3	113	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP074I: Volatile Halogenated Compounds (QCLot: 3686413) - continued									
EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	93.8	62.6	113	
EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	94.9	70.8	110	
EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	95.2	48.4	120	
EP075A: Phenolic Compounds (Halogenated) (QCLot: 3694469)									
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	96.7	74.5	126	
EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	95.8	72.7	126	
EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	95.7	73.5	132	
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	95.9	72.8	128	
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	95.5	73.3	134	
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	94.4	72.4	128	
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	2 mg/kg	91.8	69.4	126	
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	0.05	mg/kg	<0.05	4 mg/kg	97.6	71.9	128	
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	85.8	54.4	135	
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3694469)									
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	97.6	71.5	130	
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	95.5	73.4	129	
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	96.3	74.3	129	
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	95.3	70.9	133	
EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	95.4	71.8	132	
EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	10 mg/kg	80.2	41.0	156	
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	10 mg/kg	97.2	65.3	134	
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	10 mg/kg	90.8	43.6	128	
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	10 mg/kg	93.0	62.0	128	
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	93.1	34.5	137	
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3694469)									
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	96.7	73.0	131	
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	112	76.3	130	
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	97.4	72.0	135	
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	99.0	74.4	131	
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	99.9	73.3	130	
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	99.4	78.4	127	
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	98.6	75.3	132	
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	98.4	75.4	130	
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	99.0	69.6	133	
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	102	75.0	133	
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	<1.0	4 mg/kg	103	75.8	133	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3694469) - continued									
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	101	65.1	130	
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	102	72.1	134	
EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	102	72.9	135	
EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	102	71.3	134	
EP075I: Organochlorine Pesticides (QCLot: 3694469)									
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	97.6	71.0	129	
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	93.6	74.8	126	
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	97.8	75.7	130	
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	97.7	70.8	130	
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	98.9	76.5	134	
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	93.4	75.5	131	
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	95.1	76.8	130	
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	96.5	73.6	130	
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	96.3	75.0	133	
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	96.0	75.3	131	
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	102	69.4	134	
EP075-EM: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	102	71.0	132	
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	99.9	78.0	133	
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	97.0	69.0	143	
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	102	55.7	145	
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	103	71.4	135	
EP075-EM: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	99.6	74.8	134	
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	99.0	70.2	135	
EP075-EM: 4.4'-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	98.7	77.7	133	
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	100	63.6	135	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3684483)									
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	89.1	61.1	119	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3684746)									
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	91.6	61.1	119	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3686413)									
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	96.3	61.1	119	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3694470)									
EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	840 mg/kg	84.6	74.4	129	
EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	2900 mg/kg	91.5	81.0	123	
EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	1490 mg/kg	88.7	81.8	121	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3684483)									
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	92.8	59.9	119	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Acceptable Limits (%)	
					Concentration	LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3684483) - continued								
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
	X							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3684746)								
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	92.6	59.9	119
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
	X							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3686413)								
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	98.9	59.9	119
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
	X							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3694470)								
EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	1110 mg/kg	90.7	75.4	132
EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	3900 mg/kg	89.5	80.8	120
EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	290 mg/kg	73.3	73.3	136
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3695001)								
EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	0.1 mg/kg	70.9	54.4	128
EP202: 2,4-DB	94-82-6	0.02	mg/kg	<0.02	0.1 mg/kg	60.5	45.5	130
EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	0.1 mg/kg	71.1	51.7	135
EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	0.1 mg/kg	72.6	60.0	130
EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	0.1 mg/kg	70.3	56.8	131
EP202: 2,4-DP	120-36-5	0.02	mg/kg	<0.02	0.1 mg/kg	68.0	50.0	141
EP202: 2,4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	70.6	68.5	131
EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	0.1 mg/kg	71.4	50.8	141
EP202: 2,4,5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	0.1 mg/kg	69.5	40.8	126
EP202: 2,4,5-T	93-76-5	0.02	mg/kg	<0.02	0.1 mg/kg	76.3	57.4	139
EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	0.1 mg/kg	61.5	38.9	137
EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	0.1 mg/kg	61.4	48.7	129
EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	0.1 mg/kg	67.9	49.4	106
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	0.1 mg/kg	71.6	53.2	128
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3695026)								
EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	0.1 mg/kg	68.8	54.4	128
EP202: 2,4-DB	94-82-6	0.02	mg/kg	<0.02	0.1 mg/kg	77.2	45.5	130
EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	0.1 mg/kg	93.7	51.7	135
EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	0.1 mg/kg	96.1	60.0	130
EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	0.1 mg/kg	83.3	56.8	131
EP202: 2,4-DP	120-36-5	0.02	mg/kg	<0.02	0.1 mg/kg	65.0	50.0	141
EP202: 2,4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	98.2	68.5	131
EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	0.1 mg/kg	68.9	50.8	141



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3695026) - continued									
EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	0.1 mg/kg	76.0	40.8	126	
EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	0.1 mg/kg	88.2	57.4	139	
EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	0.1 mg/kg	82.3	38.9	137	
EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	0.1 mg/kg	77.2	48.7	129	
EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	0.1 mg/kg	88.5	49.4	106	
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	0.1 mg/kg	80.9	53.2	128	
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3699217)									
EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	0.1 mg/kg	81.3	54.4	128	
EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	0.1 mg/kg	67.0	45.5	130	
EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	0.1 mg/kg	95.3	51.7	135	
EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	0.1 mg/kg	70.6	60.0	130	
EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	0.1 mg/kg	71.2	56.8	131	
EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	0.1 mg/kg	74.2	50.0	141	
EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	74.5	68.5	131	
EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	0.1 mg/kg	75.8	50.8	141	
EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	0.1 mg/kg	64.9	40.8	126	
EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	0.1 mg/kg	87.2	57.4	139	
EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	0.1 mg/kg	75.2	38.9	137	
EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	0.1 mg/kg	73.4	48.7	129	
EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	0.1 mg/kg	93.8	49.4	106	
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	0.1 mg/kg	76.7	53.2	128	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	
EG020F: Dissolved Metals by ICP-MS (QCLot: 3699468)									
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.5	89.0	111	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	83.5	111	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	83.2	109	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.7	83.1	107	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.8	84.6	108	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.4	84.3	110	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	103	86.3	112	
EG035F: Dissolved Mercury by FIMS (QCLot: 3699469)									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.9	71.6	116	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3684772)									
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	2.5 µg/L	81.9	50.6	119	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	2.5 µg/L	71.4	44.2	117	
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	2.5 µg/L	86.4	53.7	119	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3684772) - continued									
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	2.5 µg/L	84.1	47.7	117	
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	2.5 µg/L	91.1	52.5	117	
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	2.5 µg/L	84.5	46.9	118	
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	2.5 µg/L	85.6	48.0	115	
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	2.5 µg/L	88.8	51.1	119	
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	2.5 µg/L	89.5	48.4	120	
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	2.5 µg/L	90.6	50.1	122	
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	2.5 µg/L	89.4	51.0	118	
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	2.5 µg/L	90.0	48.4	116	
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	2.5 µg/L	89.9	49.3	116	
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	2.5 µg/L	106	47.1	130	
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	2.5 µg/L	76.1	51.6	118	
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	2.5 µg/L	89.6	48.6	122	
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	2.5 µg/L	83.4	49.4	128	
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	2.5 µg/L	72.7	49.1	123	
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	2.5 µg/L	89.2	45.6	126	
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	2.5 µg/L	69.6	52.8	117	
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	2.5 µg/L	87.2	47.1	126	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3684772)									
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	2.5 µg/L	78.6	47.4	133	
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	2.5 µg/L	83.8	46.4	129	
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	2.5 µg/L	11.9	10.0	42.9	
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	2.5 µg/L	81.1	41.7	131	
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	2.5 µg/L	95.8	50.5	122	
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	2.5 µg/L	89.2	52.4	123	
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	2.5 µg/L	90.2	52.0	132	
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	2.5 µg/L	72.5	51.8	133	
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	2.5 µg/L	90.8	52.3	123	
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	2.5 µg/L	101	48.7	122	
EP068: Parathion	56-38-2	2	µg/L	<2.0	2.5 µg/L	91.7	49.5	136	
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	2.5 µg/L	92.6	50.4	123	
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	2.5 µg/L	91.5	50.9	131	
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	2.5 µg/L	89.1	47.5	126	
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	2.5 µg/L	107	46.5	138	
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	2.5 µg/L	92.2	49.2	119	
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	2.5 µg/L	92.2	50.0	126	
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	2.5 µg/L	100	50.0	131	
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	2.5 µg/L	101	41.7	147	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3686552)									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3686552) - continued								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	99.2	66.2	134
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3686552)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	97.0	66.2	132
EP080: BTEXN (QCLot: 3686552)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	103	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	100	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	104	71.7	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	103	72.3	136
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	103	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	97.5	68.3	131

Matrix Spike (MS) Report

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

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699102)							
EM2108857-004	TP02_0.0	EG005T: Arsenic	7440-38-2	50 mg/kg	104	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	101	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	99.0	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	102	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	100	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	98.2	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699104)							
EM2108857-092	TP16_0.0	EG005T: Arsenic	7440-38-2	50 mg/kg	85.6	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	92.0	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	97.0	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	97.3	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	97.7	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	94.5	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699585)							
EM2108857-039	TP06_0.0	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70.0	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3699585) - continued							
EM2108857-039	TP06_0.0	EG005T: Chromium	7440-47-3	50 mg/kg	101	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	93.8	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	106	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3699103)							
EM2108857-004	TP02_0.0	EG035T: Mercury	7439-97-6	0.5 mg/kg	88.8	76.0	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3699105)							
EM2108857-092	TP16_0.0	EG035T: Mercury	7439-97-6	0.5 mg/kg	83.7	76.0	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3699584)							
EM2108857-039	TP06_0.0	EG035T: Mercury	7439-97-6	5 mg/kg	81.2	70.0	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3698842)							
EM2108857-029	TP05_0.0	EG048G: Hexavalent Chromium	18540-29-9	100 mg/kg	# Not Determined	58.0	114
EM2108857-029	TP05_0.0	EG048G: Hexavalent Chromium	18540-29-9	100 mg/kg	# 31.6	58.0	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3696991)							
EM2108857-029	TP05_0.0	EK026SF: Total Cyanide	57-12-5	20 mg/kg	100	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3699795)							
EM2108857-082	TP14_0.0	EK026SF: Total Cyanide	57-12-5	20 mg/kg	74.2	70.0	130
EK040T: Fluoride Total (QCLot: 3696953)							
EM2108857-029	TP05_0.0	EK040T: Fluoride	16984-48-8	400 mg/kg	102	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3694471)							
EM2108857-029	TP05_0.0	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	116	59.6	152
EP068A: Organochlorine Pesticides (OC) (QCLot: 3695714)							
EM2108857-004	TP02_0.0	EP068: gamma-BHC	58-89-9	0.5 mg/kg	89.7	51.4	139
		EP068: Heptachlor	76-44-8	0.5 mg/kg	86.8	49.1	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	96.2	38.4	135
		EP068: Dieldrin	60-57-1	0.5 mg/kg	95.4	58.4	136
		EP068: Endrin	72-20-8	0.5 mg/kg	110	33.0	146
		EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	63.1	20.0	133
EP068A: Organochlorine Pesticides (OC) (QCLot: 3696360)							
EM2108857-100	QC5_130521	EP068: gamma-BHC	58-89-9	0.5 mg/kg	80.2	51.4	139
		EP068: Heptachlor	76-44-8	0.5 mg/kg	93.0	49.1	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	104	38.4	135
		EP068: Dieldrin	60-57-1	0.5 mg/kg	104	58.4	136
		EP068: Endrin	72-20-8	0.5 mg/kg	128	33.0	146



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3696360) - continued							
EM2108857-100	QC5_130521	EP068: 4.4'-DDT	50-29-3	0.5 mg/kg	34.7	20.0	133
EP068A: Organochlorine Pesticides (OC) (QCLot: 3698058)							
ES2119599-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	100	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	84.4	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	99.2	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	92.9	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	86.7	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	82.0	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3695714)							
EM2108857-004	TP02_0.0	EP068: Diazinon	333-41-5	0.5 mg/kg	115	65.1	135
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	95.9	56.3	127
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	98.0	55.0	133
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	90.4	55.1	133
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	72.9	43.8	128
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3696360)							
EM2108857-100	QC5_130521	EP068: Diazinon	333-41-5	0.5 mg/kg	78.0	65.1	135
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	110	56.3	127
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	114	55.0	133
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	78.3	55.1	133
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	93.2	43.8	128
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3698058)							
ES2119599-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	112	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	95.4	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	94.8	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	89.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	76.6	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3684483)							
EM2108857-029	TP05_0.0	EP074-UT: Benzene	71-43-2	2 mg/kg	77.8	53.7	130
		EP074-UT: Toluene	108-88-3	2 mg/kg	74.2	55.1	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3684746)							
EM2108951-013	Anonymous	EP074-UT: Benzene	71-43-2	2 mg/kg	85.1	53.7	130
		EP074-UT: Toluene	108-88-3	2 mg/kg	83.7	55.1	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3686413)							
EM2109073-006	Anonymous	EP074-UT: Benzene	71-43-2	2 mg/kg	110	53.7	130
		EP074-UT: Toluene	108-88-3	2 mg/kg	110	55.1	124
EP074I: Volatile Halogenated Compounds (QCLot: 3684483)							



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074I: Volatile Halogenated Compounds (QCLot: 3684483) - continued							
EM2108857-029	TP05_0.0	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	84.8	38.4	145
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	74.5	48.1	128
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	72.6	55.5	122
EP074I: Volatile Halogenated Compounds (QCLot: 3684746)							
EM2108951-013	Anonymous	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	84.9	38.4	145
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	80.6	48.1	128
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	80.3	55.5	122
EP074I: Volatile Halogenated Compounds (QCLot: 3686413)							
EM2109073-006	Anonymous	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	96.1	38.4	145
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	112	48.1	128
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	106	55.5	122
EP075A: Phenolic Compounds (Halogenated) (QCLot: 3694469)							
EM2108857-066	TP09_0.0	EP075-EM: 2-Chlorophenol	95-57-8	3 mg/kg	67.4	44.0	143
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	79.2	41.5	139
		EP075-EM: Pentachlorophenol	87-86-5	3 mg/kg	104	10.0	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3694469)							
EM2108857-066	TP09_0.0	EP075-EM: Phenol	108-95-2	3 mg/kg	73.3	44.2	134
		EP075-EM: 2-Nitrophenol	88-75-5	3 mg/kg	99.9	34.2	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3694469)							
EM2108857-066	TP09_0.0	EP075-EM: Acenaphthene	83-32-9	3 mg/kg	77.4	42.6	138
		EP075-EM: Pyrene	129-00-0	3 mg/kg	74.2	37.8	152
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3684483)							
EM2108857-029	TP05_0.0	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	59.6	42.3	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3684746)							
EM2108951-013	Anonymous	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	66.0	42.3	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3686413)							
EM2109073-006	Anonymous	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	89.1	42.3	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3694470)							
EM2108857-082	TP14_0.0	EP071-EM: C10 - C14 Fraction	----	840 mg/kg	86.4	71.3	126
		EP071-EM: C15 - C28 Fraction	----	2900 mg/kg	92.1	75.1	123
		EP071-EM: C29 - C36 Fraction	----	1490 mg/kg	89.8	78.1	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3684483)							
EM2108857-029	TP05_0.0	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	58.8	39.9	109
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3684746)							
EM2108951-013	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	63.1	39.9	109



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3686413)							
EM2109073-006	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	86.5	39.9	109
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3694470)							
EM2108857-082	TP14_0.0	EP071-EM: >C10 - C16 Fraction	----	1110 mg/kg	91.9	71.5	130
		EP071-EM: >C16 - C34 Fraction	----	3900 mg/kg	90.1	76.9	119
		EP071-EM: >C34 - C40 Fraction	----	290 mg/kg	77.8	65.3	139
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3695001)							
EP2105656-001	Anonymous	EP202: Mecoprop	93-65-2	0.1 mg/kg	69.5	60.0	140
		EP202: MCPA	94-74-6	0.1 mg/kg	68.9	57.0	143
		EP202: 2.4-D	94-75-7	0.1 mg/kg	72.5	68.0	139
		EP202: Triclopyr	55335-06-3	0.1 mg/kg	70.1	51.0	145
		EP202: 2.4.5-T	93-76-5	0.1 mg/kg	65.8	57.0	142
		EP202: Picloram	1918-02-1	0.1 mg/kg	77.5	49.0	138
		EP202: Clopyralid	1702-17-6	0.1 mg/kg	68.1	49.0	149
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3695026)							
EM2108857-039	TP06_0.0	EP202: Mecoprop	93-65-2	0.1 mg/kg	84.0	60.0	140
		EP202: MCPA	94-74-6	0.1 mg/kg	83.6	57.0	143
		EP202: 2.4-D	94-75-7	0.1 mg/kg	90.0	68.0	139
		EP202: Triclopyr	55335-06-3	0.1 mg/kg	77.5	51.0	145
		EP202: 2.4.5-T	93-76-5	0.1 mg/kg	73.6	57.0	142
		EP202: Picloram	1918-02-1	0.1 mg/kg	67.9	49.0	138
		EP202: Clopyralid	1702-17-6	0.1 mg/kg	77.8	49.0	149
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3699217)							
ES2118463-001	Anonymous	EP202: Mecoprop	93-65-2	0.1 mg/kg	73.1	60.0	140
		EP202: MCPA	94-74-6	0.1 mg/kg	72.4	57.0	143
		EP202: 2.4-D	94-75-7	0.1 mg/kg	78.9	68.0	139
		EP202: Triclopyr	55335-06-3	0.1 mg/kg	82.9	51.0	145
		EP202: 2.4.5-T	93-76-5	0.1 mg/kg	82.7	57.0	142
		EP202: Picloram	1918-02-1	0.1 mg/kg	79.9	49.0	138
		EP202: Clopyralid	1702-17-6	0.1 mg/kg	84.9	49.0	149

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3699468)							
EM2108857-098	QC3_110521	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	93.1	76.6	124
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	94.2	74.6	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	98.1	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	99.2	76.0	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3699468) - continued							
EM2108857-098	QC3_110521	EG020A-F: Lead	7439-92-1	0.2 mg/L	87.8	75.0	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	99.3	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	99.7	75.0	131
EG035F: Dissolved Mercury by FIMS (QCLot: 3699469)							
EM2108857-099	QC4_120521	EG035F: Mercury	7439-97-6	0.01 mg/L	98.4	70.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 3684772)							
EM2109084-005	Anonymous	EP068: gamma-BHC	58-89-9	2.5 µg/L	95.7	47.0	119
		EP068: Heptachlor	76-44-8	2.5 µg/L	90.0	32.0	117
		EP068: Aldrin	309-00-2	2.5 µg/L	95.4	43.0	124
		EP068: Dieldrin	60-57-1	2.5 µg/L	98.0	43.0	124
		EP068: Endrin	72-20-8	2.5 µg/L	107	42.0	128
		EP068: 4,4'-DDT	50-29-3	2.5 µg/L	85.1	26.8	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3684772)							
EM2109084-005	Anonymous	EP068: Diazinon	333-41-5	2.5 µg/L	117	48.0	131
		EP068: Chlorpyrifos-methyl	5598-13-0	2.5 µg/L	98.5	29.6	122
		EP068: Pirimphos-ethyl	23505-41-1	2.5 µg/L	90.5	39.0	119
		EP068: Bromophos-ethyl	4824-78-6	2.5 µg/L	86.4	32.0	118
		EP068: Prothiofos	34643-46-4	2.5 µg/L	73.0	44.0	108
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3686552)							
EM2109228-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	77.4	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3686552)							
EM2109228-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	74.4	34.0	122
EP080: BTEXN (QCLot: 3686552)							
EM2109228-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	95.5	56.3	133
		EP080: Toluene	108-88-3	20 µg/L	91.0	60.4	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2108857	Page	: 1 of 16
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY	Telephone	: +6138549 9645
Project	: 60591699	Date Samples Received	: 14-May-2021
Site	: Kentbruck EES	Issue Date	: 01-Jun-2021
Sampler	: BE	No. of samples received	: 103
Order number	: 60591699 5.0	No. of samples analysed	: 103

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Phenanthrene	85-01-8	104 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Anthracene	120-12-7	110 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Fluoranthene	206-44-0	110 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Pyrene	129-00-0	110 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Benz(a)anthracene	56-55-3	108 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Chrysene	218-01-9	104 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	96.5 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Benzo(a)pyrene	50-32-8	97.3 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Indeno(1.2.3.cd)pyrene	193-39-5	79.1 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Dibenz(a,h)anthracene	53-70-3	87.9 %	0% - 50%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM2109501--013	Anonymous	Benzo(g,h,i)perylene	191-24-2	71.2 %	0% - 20%	RPD exceeds LOR based limits
Matrix Spike (MS) Recoveries							
EG048: Hexavalent Chromium (Alkaline Digest)	EM2108857--029	TP05_0.0	Hexavalent Chromium	18540-29-9	31.6 %	58.0-114%	Recovery less than lower data quality objective

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Soil Glass Jar - Unpreserved							
TP01_0.2, TP03_0.5, TP05_1.0	TP02_0.0, TP04_0.0,	27-May-2021	25-May-2021	2	----	----	----
Soil Glass Jar - Unpreserved							
TP07_0.0,	TP08_0.0	27-May-2021	26-May-2021	1	----	----	----
Soil Glass Jar - Unpreserved							
TP09_0.5		28-May-2021	26-May-2021	2	----	----	----
Soil Glass Jar - Unpreserved							
TP06_0.0		31-May-2021	26-May-2021	5	----	----	----
Soil Glass Jar - Unpreserved							
TP13_0.0, TP15_0.0,	TP14_0.5, TP16_0.0	28-May-2021	27-May-2021	1	----	----	----



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved (EA001) TP03_0.0, TP05_0.0	11-May-2021	18-May-2021	18-May-2021	✓	18-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EA001) TP09_0.0	12-May-2021	19-May-2021	19-May-2021	✓	19-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EA001) TP14_0.0	13-May-2021	19-May-2021	20-May-2021	✓	19-May-2021	19-May-2021	✓
EA003 :pH (field/fox)							
Snap Lock Bag - frozen (EA003) TP01_0.2, TP01_1.0, TP02_0.5, TP02_1.5, TP02_2.5, TP02_3.5, TP03_0.0, TP03_1.0, TP03_2.0, TP04_0.5, TP04_1.5, TP04_2.5, TP04_3.5, TP04_4.5, TP05_0.0, TP05_1.0, TP05_2.0, TP05_3.0, TP05_4.0	11-May-2021	24-May-2021	04-Feb-2024	✓	24-May-2021	22-Aug-2021	✓
Snap Lock Bag - frozen (EA003)							



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis				
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation		
EA003 :pH (field/fox) - Continued									
TP06_0.0, TP06_1.0, TP06_2.0, TP07_0.5, TP07_1.5, TP07_2.5, TP07_3.5, TP07_4.5, TP08_0.0, TP08_1.0, TP08_2.0, TP08_3.0, TP08_4.0, TP08_5.0, TP09_0.5, TP09_1.5, TP09_2.5, TP09_3.5, TP09_4.5,	TP06_0.5, TP06_1.5, TP07_0.0, TP07_1.0, TP07_2.0, TP07_3.0, TP07_4.0, TP07_5.0, TP08_0.5, TP08_1.5, TP08_2.5, TP08_3.5, TP08_4.5, TP09_0.0, TP09_1.0, TP09_2.0, TP09_3.0, TP09_4.0, TP09_5.0	12-May-2021	24-May-2021	05-Feb-2024	✓	24-May-2021	22-Aug-2021	✓	
Snap Lock Bag - frozen (EA003)									
TP13_0.0, TP13_1.0, TP13_2.0, TP14_0.5, TP14_1.5, TP15_0.0, TP15_1.0, TP15_2.0, TP16_0.5, TP16_1.5,	TP13_0.5, TP13_1.5, TP14_0.0, TP14_1.0, TP14_2.0, TP15_0.5, TP15_1.5, TP16_0.0, TP16_1.0, TP16_2.0	13-May-2021	24-May-2021	06-Feb-2024	✓	24-May-2021	22-Aug-2021	✓	



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) TP01_0.2, TP02_0.5, TP03_0.5, TP04_0.5, TP05_1.0, TP02_0.0, TP03_0.0, TP04_0.0, TP05_0.0, QC1_110521	11-May-2021	----	----	----	24-May-2021	25-May-2021	✓
Soil Glass Jar - Unpreserved (EA055) TP06_0.5, TP07_0.5, TP09_0.0, TP07_0.0, TP08_0.0, TP09_0.5	12-May-2021	----	----	----	24-May-2021	26-May-2021	✓
Soil Glass Jar - Unpreserved (EA055) TP06_0.0	12-May-2021	----	----	----	26-May-2021	26-May-2021	✓
Soil Glass Jar - Unpreserved (EA055) TP13_0.0, TP14_0.0, TP15_0.0, TP16_0.0, TP13_0.5, TP14_0.5, TP15_0.5, QC5_130521	13-May-2021	----	----	----	24-May-2021	27-May-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) TP01_0.2, TP02_0.5, TP03_0.5, TP04_0.5, TP05_1.0, TP02_0.0, TP03_0.0, TP04_0.0, TP05_0.0, QC1_110521	11-May-2021	26-May-2021	07-Nov-2021	✓	26-May-2021	07-Nov-2021	✓
Soil Glass Jar - Unpreserved (EG005T) TP06_0.5, TP07_0.5, TP09_0.0, TP07_0.0, TP08_0.0, TP09_0.5	12-May-2021	26-May-2021	08-Nov-2021	✓	26-May-2021	08-Nov-2021	✓
Soil Glass Jar - Unpreserved (EG005T) TP06_0.0	12-May-2021	26-May-2021	08-Nov-2021	✓	27-May-2021	08-Nov-2021	✓
Soil Glass Jar - Unpreserved (EG005T) TP13_0.0, TP14_0.0, TP15_0.0, TP16_0.0, TP13_0.5, TP14_0.5, TP15_0.5, QC5_130521	13-May-2021	26-May-2021	09-Nov-2021	✓	26-May-2021	09-Nov-2021	✓



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) TP01_0.2, TP02_0.5, TP03_0.5, TP04_0.5, TP05_1.0, TP02_0.0, TP03_0.0, TP04_0.0, TP05_0.0, QC1_110521	11-May-2021	26-May-2021	08-Jun-2021	✓	27-May-2021	08-Jun-2021	✓
Soil Glass Jar - Unpreserved (EG035T) TP06_0.5, TP07_0.5, TP09_0.0, TP07_0.0, TP08_0.0, TP09_0.5	12-May-2021	26-May-2021	09-Jun-2021	✓	27-May-2021	09-Jun-2021	✓
Soil Glass Jar - Unpreserved (EG035T) TP06_0.0	12-May-2021	26-May-2021	09-Jun-2021	✓	28-May-2021	09-Jun-2021	✓
Soil Glass Jar - Unpreserved (EG035T) TP13_0.0, TP14_0.0, TP15_0.0, TP16_0.0, TP13_0.5, TP14_0.5, TP15_0.5, QC5_130521	13-May-2021	26-May-2021	10-Jun-2021	✓	27-May-2021	10-Jun-2021	✓
EG048: Hexavalent Chromium (Alkaline Digest)							
Soil Glass Jar - Unpreserved (EG048G) TP03_0.0, TP05_0.0	11-May-2021	26-May-2021	08-Jun-2021	✓	26-May-2021	02-Jun-2021	✓
Soil Glass Jar - Unpreserved (EG048G) TP09_0.0	12-May-2021	26-May-2021	09-Jun-2021	✓	26-May-2021	02-Jun-2021	✓
Soil Glass Jar - Unpreserved (EG048G) TP14_0.0	13-May-2021	26-May-2021	10-Jun-2021	✓	26-May-2021	02-Jun-2021	✓
EK026SF: Total CN by Segmented Flow Analyser							
Soil Glass Jar - Unpreserved (EK026SF) TP03_0.0, TP05_0.0	11-May-2021	25-May-2021	25-May-2021	✓	26-May-2021	08-Jun-2021	✓
Soil Glass Jar - Unpreserved (EK026SF) TP09_0.0	12-May-2021	26-May-2021	26-May-2021	✓	27-May-2021	09-Jun-2021	✓
Soil Glass Jar - Unpreserved (EK026SF) TP14_0.0	13-May-2021	26-May-2021	27-May-2021	✓	27-May-2021	09-Jun-2021	✓
EK040T: Fluoride Total							
Soil Glass Jar - Unpreserved (EK040T) TP03_0.0, TP05_0.0	11-May-2021	26-May-2021	08-Jun-2021	✓	28-May-2021	08-Jun-2021	✓
Soil Glass Jar - Unpreserved (EK040T) TP09_0.0	12-May-2021	26-May-2021	09-Jun-2021	✓	28-May-2021	09-Jun-2021	✓
Soil Glass Jar - Unpreserved (EK040T) TP14_0.0	13-May-2021	26-May-2021	10-Jun-2021	✓	28-May-2021	10-Jun-2021	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP066-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP066-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) TP01_0.2, TP02_0.5, TP04_0.0, TP05_1.0, TP02_0.0, TP03_0.5, TP04_0.5, QC1_110521	11-May-2021	25-May-2021	25-May-2021	✓	25-May-2021	04-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP068) TP06_0.5, TP07_0.5, TP09_0.5, TP07_0.0, TP08_0.0	12-May-2021	25-May-2021	26-May-2021	✓	25-May-2021	04-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP068) TP06_0.0	12-May-2021	26-May-2021	26-May-2021	✓	26-May-2021	05-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP068) TP13_0.0, TP14_0.5, TP15_0.5, QC5_130521, TP13_0.5, TP15_0.0, TP16_0.0	13-May-2021	25-May-2021	27-May-2021	✓	25-May-2021	04-Jul-2021	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) TP01_0.2, TP02_0.5, TP04_0.0, TP05_1.0, TP02_0.0, TP03_0.5, TP04_0.5, QC1_110521	11-May-2021	25-May-2021	25-May-2021	✓	25-May-2021	04-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP068) TP06_0.5, TP07_0.5, TP09_0.5, TP07_0.0, TP08_0.0	12-May-2021	25-May-2021	26-May-2021	✓	25-May-2021	04-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP068) TP06_0.0	12-May-2021	26-May-2021	26-May-2021	✓	26-May-2021	05-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP068) TP13_0.0, TP14_0.5, TP15_0.5, QC5_130521, TP13_0.5, TP15_0.0, TP16_0.0	13-May-2021	25-May-2021	27-May-2021	✓	25-May-2021	04-Jul-2021	✓



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074-UT) TP03_0.0, TP05_0.0	11-May-2021	18-May-2021	18-May-2021	✓	18-May-2021	18-May-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP09_0.0	12-May-2021	19-May-2021	19-May-2021	✓	19-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP14_0.0	13-May-2021	19-May-2021	20-May-2021	✓	20-May-2021	20-May-2021	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074-UT) TP03_0.0, TP05_0.0	11-May-2021	18-May-2021	18-May-2021	✓	18-May-2021	18-May-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP09_0.0	12-May-2021	19-May-2021	19-May-2021	✓	19-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP14_0.0	13-May-2021	19-May-2021	20-May-2021	✓	20-May-2021	20-May-2021	✓
EP074I: Volatile Halogenated Compounds							
Soil Glass Jar - Unpreserved (EP074-UT) TP03_0.0, TP05_0.0	11-May-2021	18-May-2021	18-May-2021	✓	18-May-2021	18-May-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP09_0.0	12-May-2021	19-May-2021	19-May-2021	✓	19-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP14_0.0	13-May-2021	19-May-2021	20-May-2021	✓	20-May-2021	20-May-2021	✓
EP075A: Phenolic Compounds (Halogenated)							
Soil Glass Jar - Unpreserved (EP075-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓
EP075A: Phenolic Compounds (Non-halogenated)							
Soil Glass Jar - Unpreserved (EP075-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075I: Organochlorine Pesticides							
Soil Glass Jar - Unpreserved (EP075-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP075-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074-UT) TP03_0.0, TP05_0.0	11-May-2021	18-May-2021	18-May-2021	✓	18-May-2021	18-May-2021	✓
Soil Glass Jar - Unpreserved (EP071-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP09_0.0	12-May-2021	19-May-2021	19-May-2021	✓	19-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EP071-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP14_0.0	13-May-2021	19-May-2021	20-May-2021	✓	20-May-2021	20-May-2021	✓
Soil Glass Jar - Unpreserved (EP071-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP074-UT) TP03_0.0, TP05_0.0	11-May-2021	18-May-2021	18-May-2021	✓	18-May-2021	18-May-2021	✓
Soil Glass Jar - Unpreserved (EP071-EM) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP09_0.0	12-May-2021	19-May-2021	19-May-2021	✓	19-May-2021	19-May-2021	✓
Soil Glass Jar - Unpreserved (EP071-EM) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✓	26-May-2021	03-Jul-2021	✓
Soil Glass Jar - Unpreserved (EP074-UT) TP14_0.0	13-May-2021	19-May-2021	20-May-2021	✓	20-May-2021	20-May-2021	✓
Soil Glass Jar - Unpreserved (EP071-EM) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✓	26-May-2021	03-Jul-2021	✓



Matrix: **SOIL** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
Soil Glass Jar - Unpreserved (EP202) TP01_0.2, TP03_0.5, TP05_1.0	TP02_0.0, TP04_0.0,	11-May-2021	27-May-2021	25-May-2021	✘	27-May-2021	06-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP202) TP07_0.0,	TP08_0.0	12-May-2021	27-May-2021	26-May-2021	✘	27-May-2021	06-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP202) TP09_0.5		12-May-2021	28-May-2021	26-May-2021	✘	28-May-2021	07-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP202) TP06_0.0		12-May-2021	31-May-2021	26-May-2021	✘	31-May-2021	10-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP202) TP13_0.0, TP15_0.0,	TP14_0.5, TP16_0.0	13-May-2021	28-May-2021	27-May-2021	✘	28-May-2021	07-Jul-2021	✔

Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC3_110521		11-May-2021	----	----	----	26-May-2021	07-Nov-2021	✔
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC4_120521		12-May-2021	----	----	----	26-May-2021	08-Nov-2021	✔
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC3_110521		11-May-2021	----	----	----	26-May-2021	08-Jun-2021	✔
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC4_120521		12-May-2021	----	----	----	26-May-2021	09-Jun-2021	✔
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068) QC3_110521		11-May-2021	18-May-2021	18-May-2021	✔	21-May-2021	27-Jun-2021	✔
Amber Glass Bottle - Unpreserved (EP068) QC4_120521		12-May-2021	19-May-2021	19-May-2021	✔	21-May-2021	28-Jun-2021	✔
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068) QC3_110521		11-May-2021	18-May-2021	18-May-2021	✔	21-May-2021	27-Jun-2021	✔
Amber Glass Bottle - Unpreserved (EP068) QC4_120521		12-May-2021	19-May-2021	19-May-2021	✔	21-May-2021	28-Jun-2021	✔
EP080/071: Total Petroleum Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP080) QC8_130521, QC10_130521	QC9_130521,	13-May-2021	21-May-2021	27-May-2021	✔	21-May-2021	27-May-2021	✔

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Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber VOC Vial - Sulfuric Acid (EP080) QC8_130521, QC10_130521	QC9_130521,	13-May-2021	21-May-2021	27-May-2021	✓	21-May-2021	27-May-2021	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) QC8_130521, QC10_130521	QC9_130521,	13-May-2021	21-May-2021	27-May-2021	✓	21-May-2021	27-May-2021	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	3	24	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH field/fox	EA003	10	96	10.42	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	7	28.57	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	5	39	12.82	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	25	12.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	25	12.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	4	18	22.22	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	20	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	3	18	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	20	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL** Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	3	18	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	20	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	3	18	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER** Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
pH field/fox	EA003	SOIL	In house: Referenced to Ahern et al 1998 - determined on a 1:5 soil/water extract designed to simulate field measured pH and pH after the extract has been oxidised with peroxide.
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511 / ISO 14403. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3).
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).



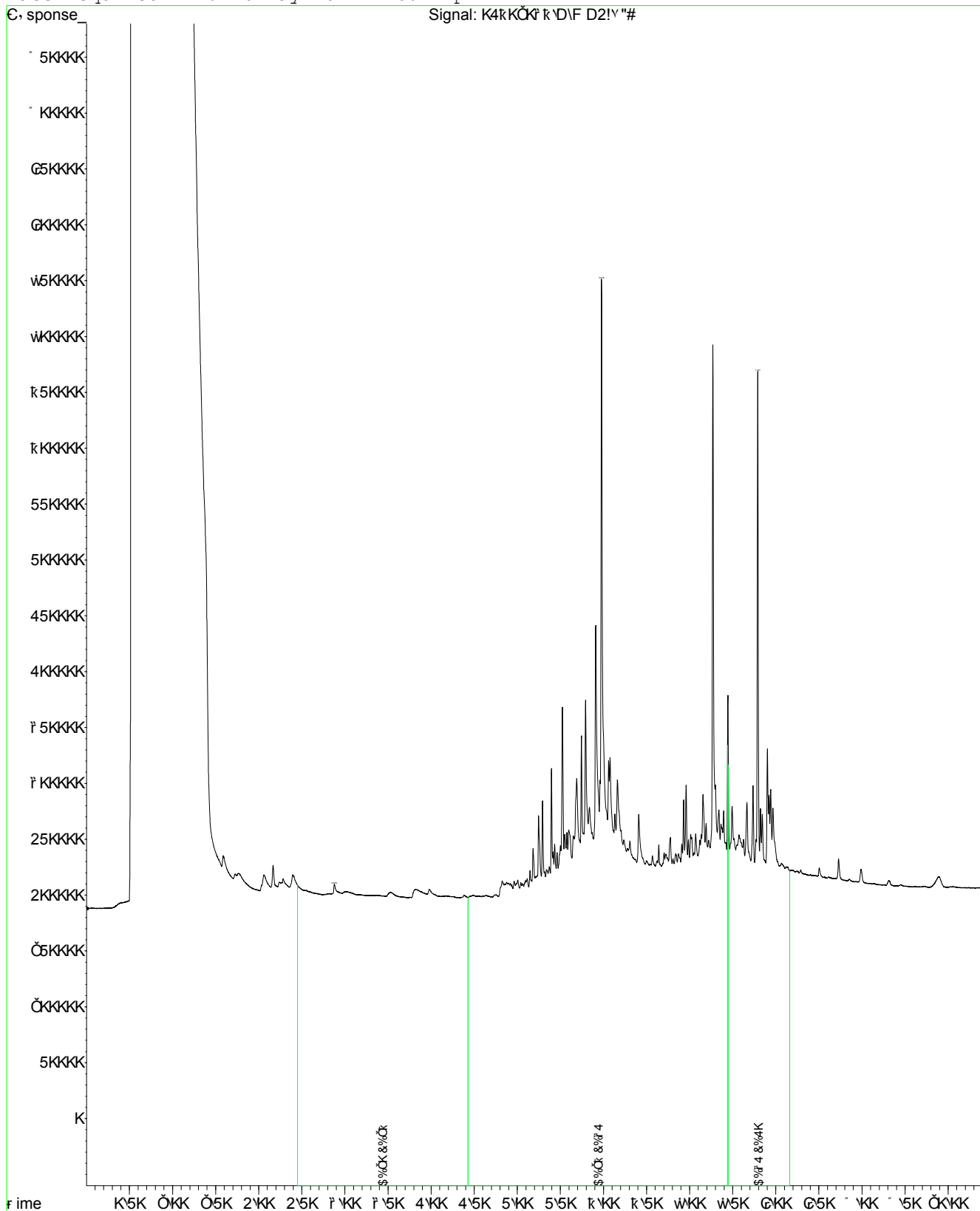
Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM Schedule B(3).
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	SOIL	In house: LCMS (Electrospray in negative mode). Residues of acid herbicides are extracted from soil samples under the alkaline condition. An aliquot of the alkaline aqueous phase is taken and acidified before a SPE cleanup. After eluting off from the SPE cartridge, residues of acid herbicides are dissolved in HPLC mobile phase prior to instrument analysis.
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Drying only	EN020D	SOIL	In house

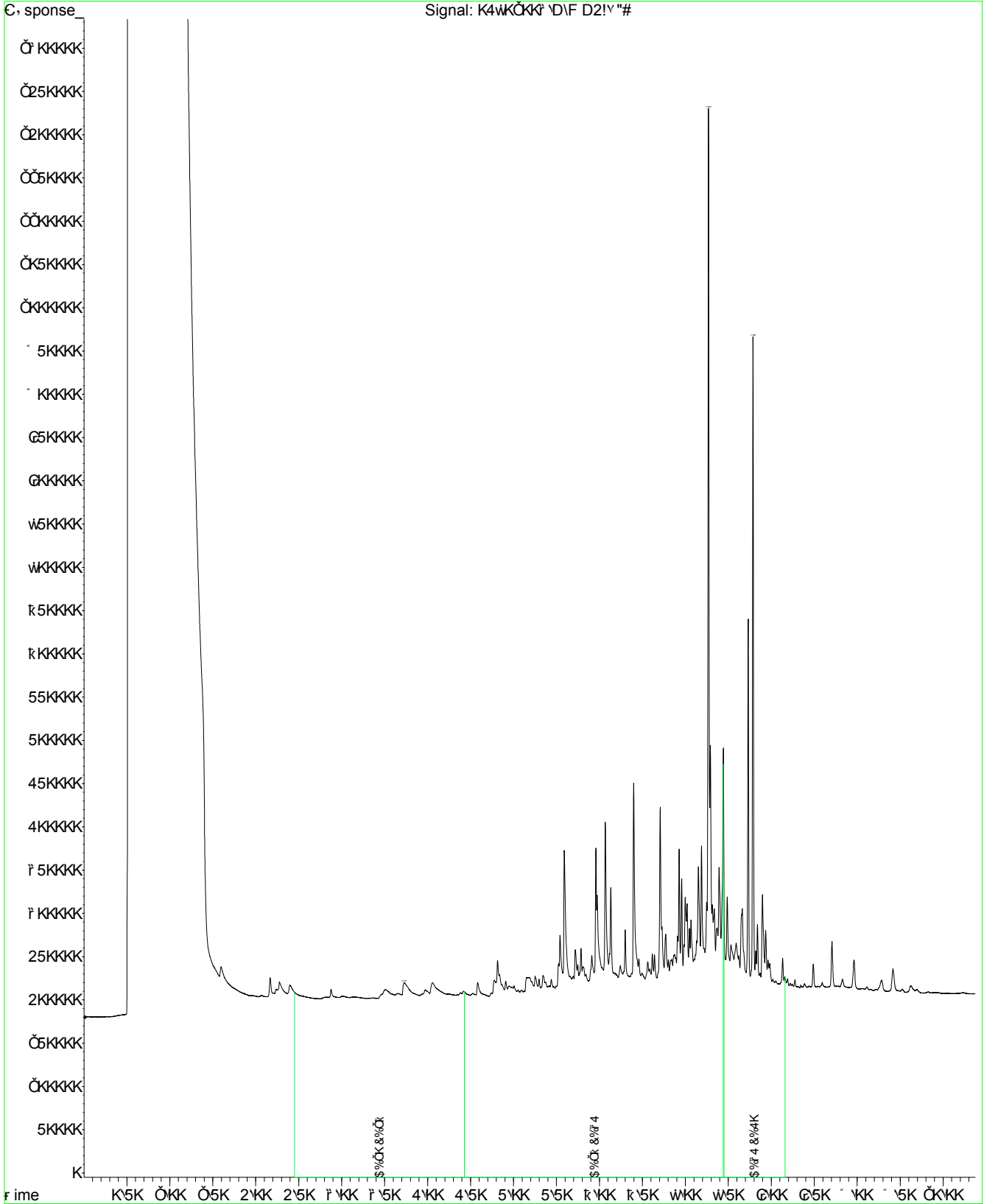


<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Extraction for Phenoxy Acid Herbicides in Soils.	EP202-PR	SOIL	In-House: Alkaline extract followed by SPE clean up of acidified portion of the sample extract.
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

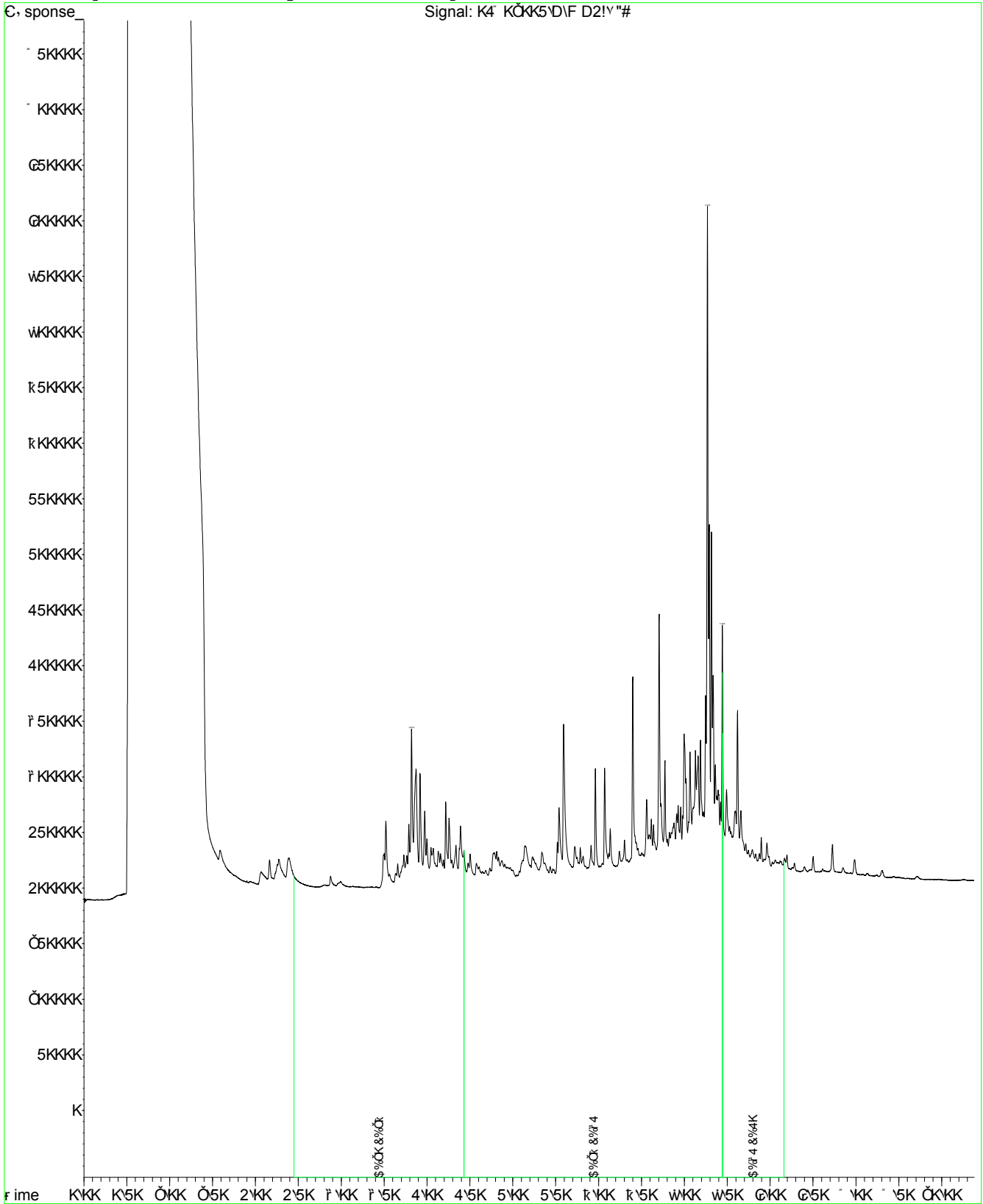
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 Data File : 04601036.D
 Laboratory Number: EM2108857-013
 Sample ID : TP03_0.0
 Date Acquired : 26 May 2021 6:41 pm



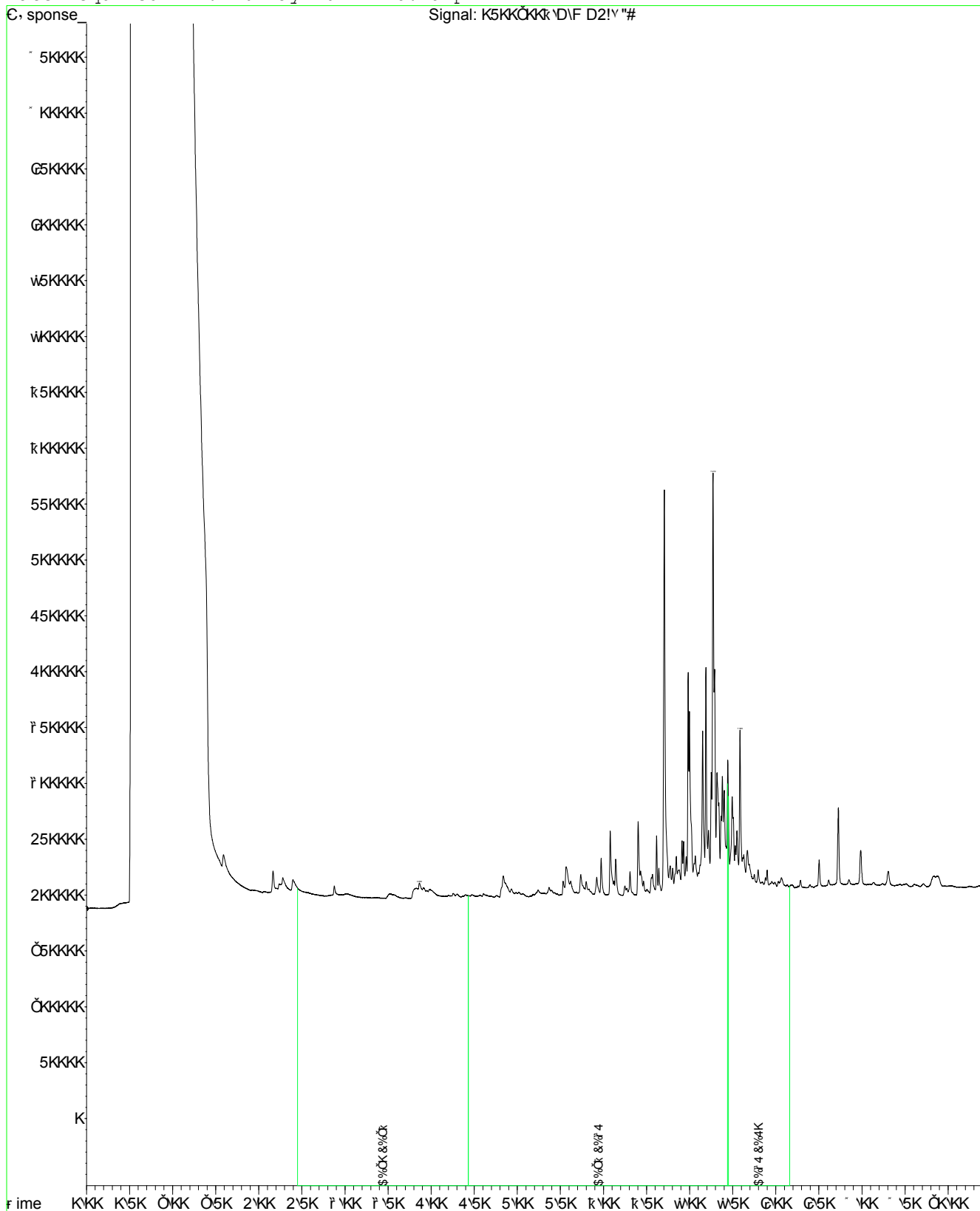
Fraction Scheme : NEPM Draft HIL
Data File : 04701003.D
Laboratory Number: EM2108857-029
Sample ID : TP05_0.0
Date Acquired : 26 May 2021 7:39 pm



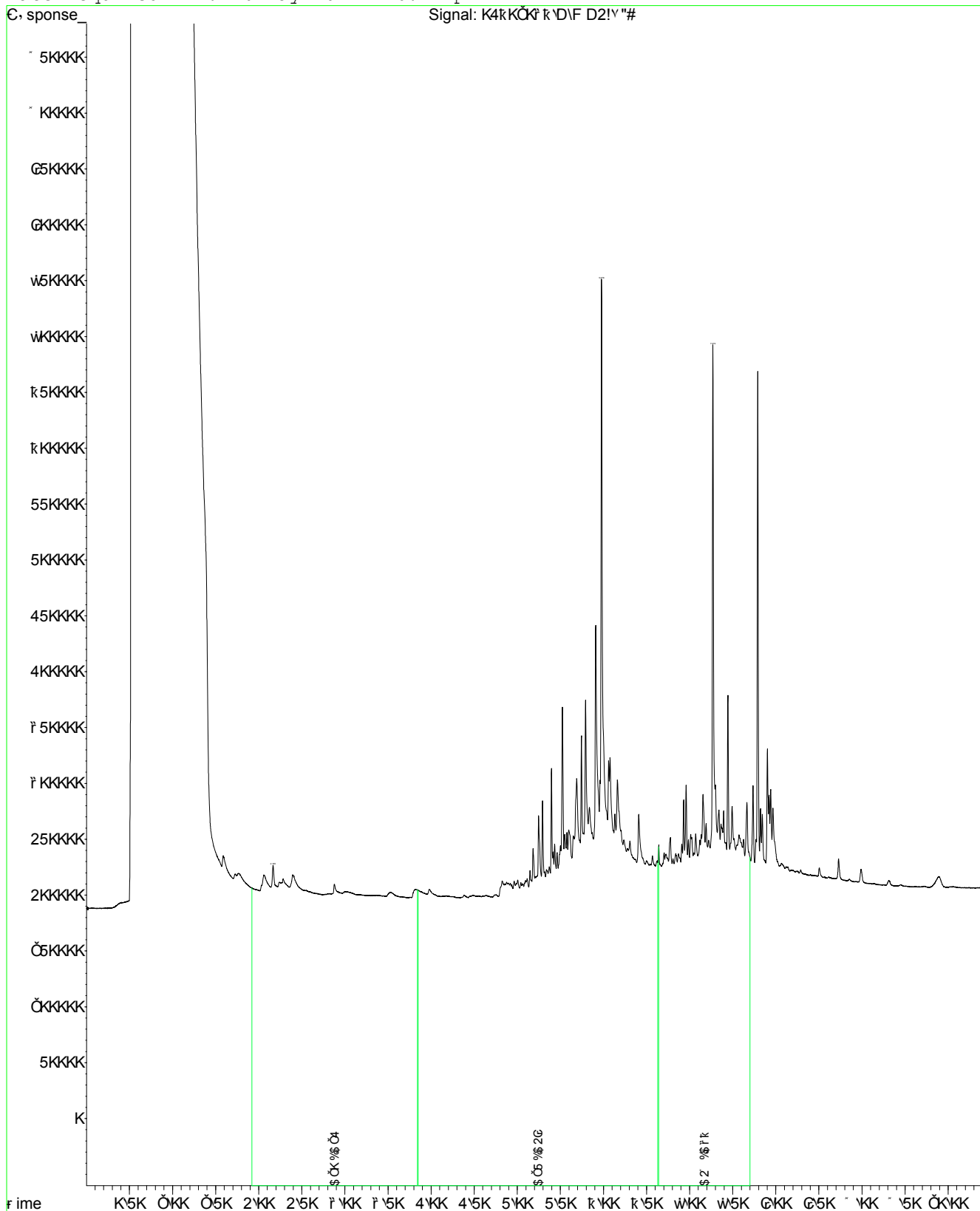
Fraction Scheme : NEPM Draft HIL
Data File : 04901005.D
Laboratory Number: EM2108857-066
Sample ID : TP09_0.0
Date Acquired : 26 May 2021 8:12 pm



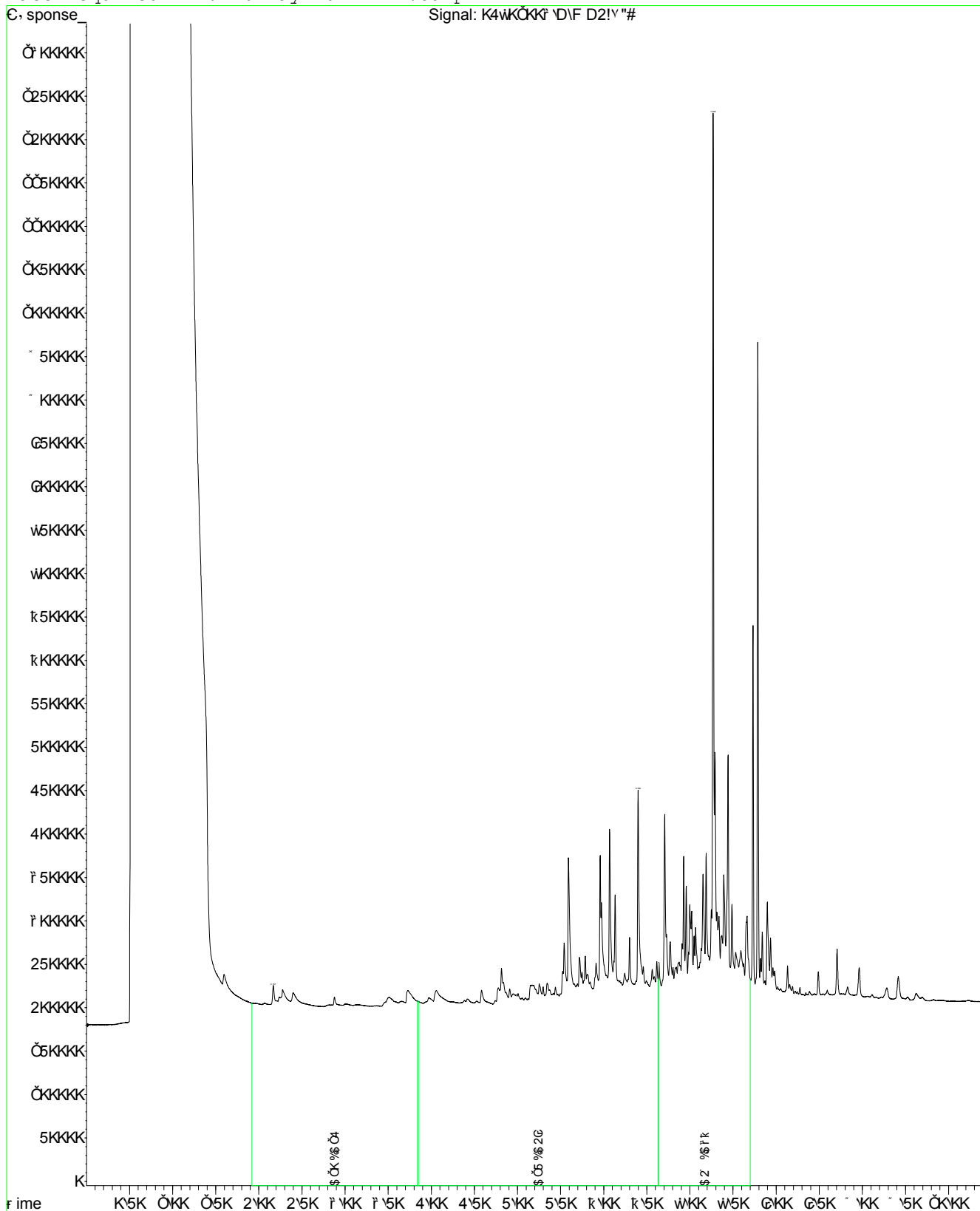
Fraction Scheme : NEPM Draft HIL
Data File : 05001006.D
Laboratory Number: EM2108857-082
Sample ID : TP14_0.0
Date Acquired : 26 May 2021 8:29 pm



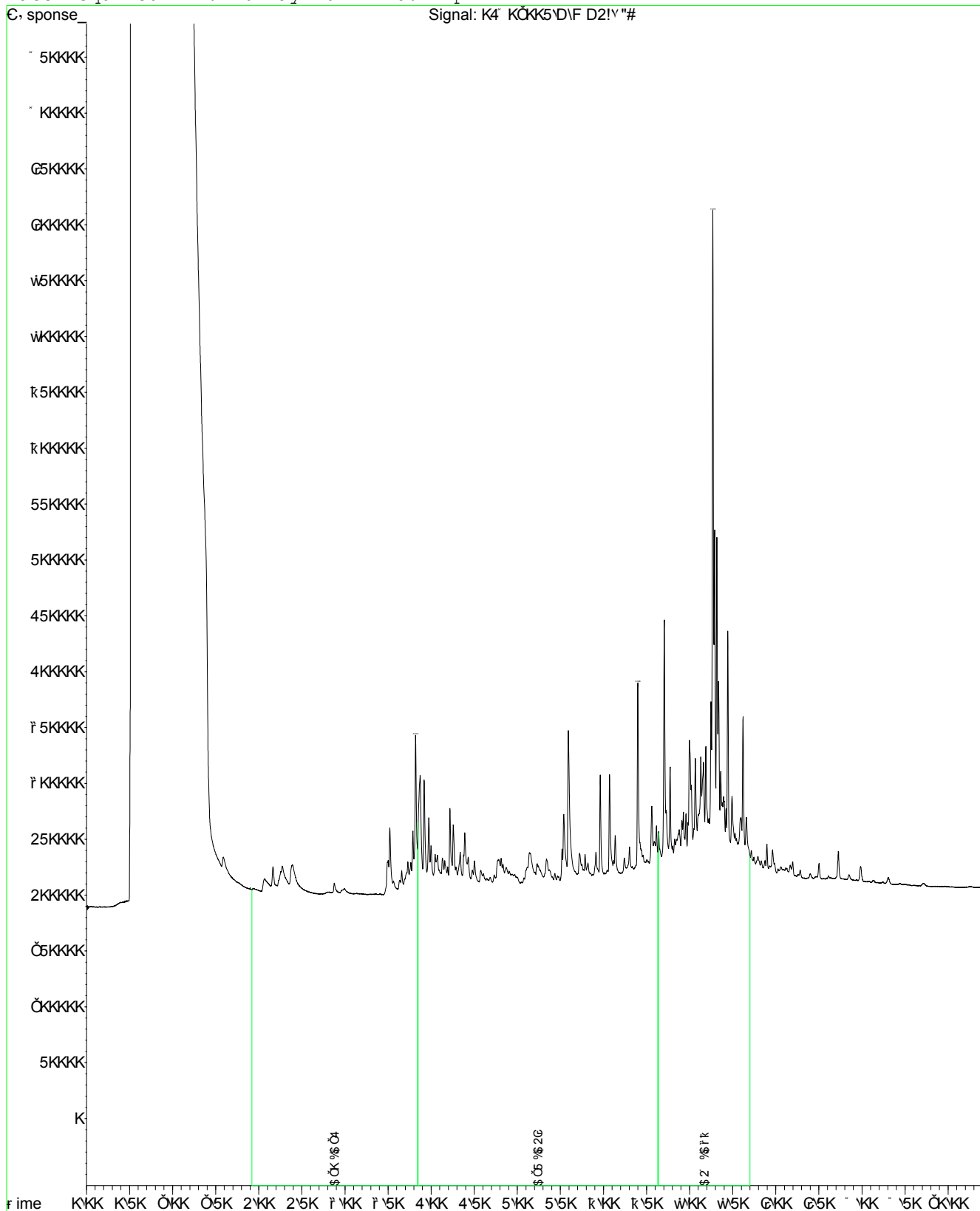
Fraction Scheme : Standard
 Data File : 04601036.D
 Laboratory Number: EM2108857-013
 Sample ID : TP03_0.0
 Date Acquired : 26 May 2021 6:41 pm



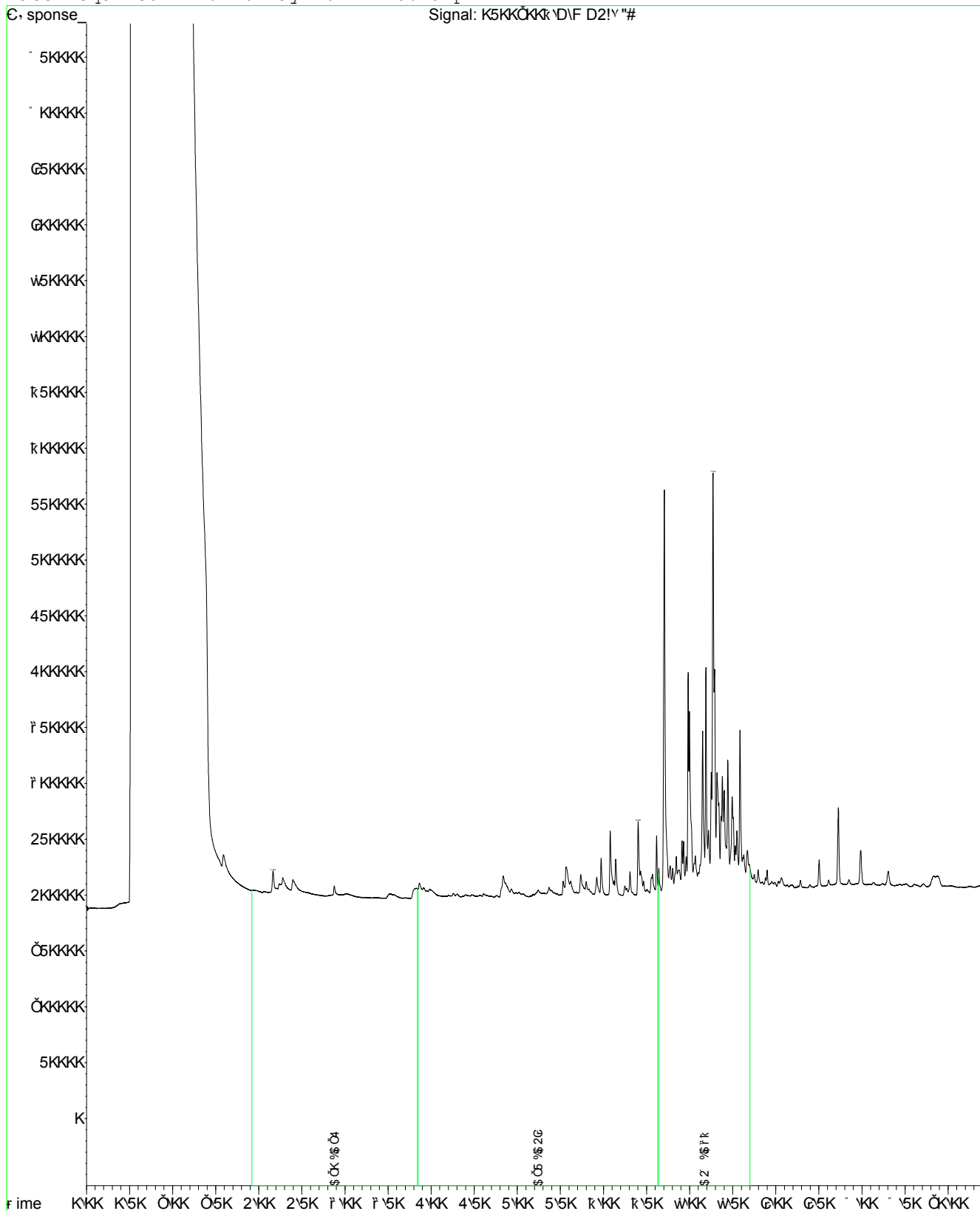
Fraction Scheme : Standard
 Data File : 04701003.D
 Laboratory Number: EM2108857-029
 Sample ID : TP05_0.0
 Date Acquired : 26 May 2021 7:39 pm



Fraction Scheme : Standard
Data File : 04901005.D
Laboratory Number: EM2108857-066
Sample ID : TP09_0.0
Date Acquired : 26 May 2021 8:12 pm



Fraction Scheme : Standard
Data File : 05001006.D
Laboratory Number: EM2108857-082
Sample ID : TP14_0.0
Date Acquired : 26 May 2021 8:29 pm



ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLER: <i>VE</i>		Destination Laboratory <i>Credis</i>	
PROJECT MANAGER (PM): SK		SITE: Kentbruck EES		MOBILE: <i>0413596202</i>		PHONE:	
PROJECT NUMBER & TASK COI: 60591699		P.O. NO.: EN/096/16		EMAIL REPORT TO: <i>sara.kennedy@aecom.com</i>			
RESULTS REQUIRED (Date): <i>standard</i>		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
COOLER SEAL (circle appropriate)							
Intact: Yes No N/A							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	<i>QC02-110521</i>	<i>S</i>	<i>11/5/21</i>		<i>JAR</i>	<i>1</i>	<i>X</i>
	<i>QC06-130521</i>	<i>S</i>	<i>13/5/21</i>		<i>JAR</i>	<i>1</i>	<i>X</i>
RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT	
Name: <i>Ron Caplain</i>	Date: <i>4/5/21</i>	Name: <i>Candice Kennedy</i>	Date: <i>14/5/21</i>	Name:	Date:	Con' Note No:	
Of: <i>AECOM</i>	Time:	Of: <i>Credis</i>	Time: <i>5:21 PM</i>	Time:	Time:	Transport Co:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar							

795433
L. Burgess ET

3.0
27
Cramer

RE: [EXTERNAL] Eurofins Sample Receipt Advice - Report 795433 : Site KENTBRUCK EES (60591699)

Epstein, Benjamin <Benjamin.Epstein@aecom.com>

Mon 17/05/2021 3:12 PM

To: #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>

Cc: Kennedy, Sara <Sara.Kennedy@aecom.com>

Hi Eurofins,

Can I please get a clarification on my sample receipt? It has a cross against 'Appropriately preserved sample containers have been used'. What exactly was the non-compliance on the jars or method of preservation?

Can I please get the following analysis for these samples:

8 Metals

Organochlorine pesticides

Organophosphate pesticides

795433
a/s EF
17/5/21.

Can you also please add my email to receive the results?

Thanks

Benjamin Epstein

Environmental Scientist

M +61431825309

Benjamin.Epstein@aecom.com**AECOM**

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008

T +61386706800

www.aecom.com

Please consider the environment before printing this email.

From: EnviroSampleVic@eurofins.com <EnviroSampleVic@eurofins.com>**Sent:** Friday, 14 May 2021 9:37 PM**To:** Kennedy, Sara <Sara.Kennedy@aecom.com>**Cc:** Cooper, Natalie <Natalie.Cooper@aecom.com>**Subject:** [EXTERNAL] Eurofins Sample Receipt Advice - Report 795433 : Site KENTBRUCK EES (60591699)

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

LUKE BURGESS

Sample Receipt

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name: AECOM Aust Pty Ltd Melbourne
Contact name: Sara Kennedy
Project name: KENTBRUCK EES
Project ID: 60591699
Turnaround time: 5 Day
Date/Time received: May 17, 2021 3:12 PM
Eurofins reference: 795433

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 2.7 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Sara Kennedy - sara.kennedy@aecom.com.

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Order No.: EN/096/16
Report #: 795433
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: May 17, 2021 3:12 PM
Due: May 24, 2021
Priority: 5 Day
Contact Name: Sara Kennedy

Project Name: KENTBRUCK EES
Project ID: 60591699

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Organochlorine Pesticides	Organophosphorus Pesticides	Metals M8	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	QC02_110521	May 11, 2021		Soil	M21-My29081	X	X	X	X
2	QC06_130521	May 11, 2021		Soil	M21-My29082	X	X	X	X
Test Counts						3	3	2	2

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection and proficiency testing scheme providers
reports.

Attention: **Sara Kennedy**

Report **795433-S**
Project name **KENTBRUCK EES**
Project ID **60591699/5**
Received Date **May 17, 2021**

Client Sample ID			QC02_110521	QC06_130521
Sample Matrix			Soil	Soil
Eurofins Sample No.			M21-My29081	M21-My29082
Date Sampled			May 11, 2021	May 11, 2021
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	0.1	mg/kg	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	93	141
Tetrachloro-m-xylene (surr.)	1	%	139	143
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2

Client Sample ID			QC02_110521	QC06_130521
Sample Matrix			Soil	Soil
Eurofins Sample No.			M21-My29081	M21-My29082
Date Sampled			May 11, 2021	May 11, 2021
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	102	86
Heavy Metals				
Arsenic	2	mg/kg	< 2	9.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	27
Copper	5	mg/kg	5.4	< 5
Lead	5	mg/kg	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	5.5
Zinc	5	mg/kg	< 5	< 5
% Moisture				
	1	%	22	19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	May 17, 2021	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	May 17, 2021	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	May 17, 2021	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	May 17, 2021	14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
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NATA # 1261 Site # 25079

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	AECOM Aust Pty Ltd Melbourne	Order No.:	EN/096/16	Received:	May 17, 2021 3:12 PM
Address:	Collins Square, Tower 2, Level 11, 727 Collins Street Docklands VIC 3008	Report #:	795433	Due:	May 24, 2021
Project Name:	KENTBRUCK EES	Phone:	03 9653 1234	Priority:	5 Day
Project ID:	60591699	Fax:	03 9654 7117	Contact Name:	Sara Kennedy

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Organochlorine Pesticides	Organophosphorus Pesticides	Metals M8	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	QC02_110521	May 11, 2021		Soil	M21-My29081	X	X	X	X
2	QC06_130521	May 11, 2021		Soil	M21-My29082	X	X	X	X
Test Counts						3	3	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2		0.2	Pass	
Pyrazophos	mg/kg	< 0.2		0.2	Pass	
Ronnel	mg/kg	< 0.2		0.2	Pass	
Terbufos	mg/kg	< 0.2		0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2		0.2	Pass	
Tokuthion	mg/kg	< 0.2		0.2	Pass	
Trichloronate	mg/kg	< 0.2		0.2	Pass	
Method Blank						
Heavy Metals						
Arsenic	mg/kg	< 2		2	Pass	
Cadmium	mg/kg	< 0.4		0.4	Pass	
Chromium	mg/kg	< 5		5	Pass	
Copper	mg/kg	< 5		5	Pass	
Lead	mg/kg	< 5		5	Pass	
Mercury	mg/kg	< 0.1		0.1	Pass	
Nickel	mg/kg	< 5		5	Pass	
Zinc	mg/kg	< 5		5	Pass	
LCS - % Recovery						
Organochlorine Pesticides						
Chlordanes - Total	%	78		70-130	Pass	
4.4'-DDD	%	81		70-130	Pass	
4.4'-DDE	%	97		70-130	Pass	
4.4'-DDT	%	83		70-130	Pass	
a-BHC	%	87		70-130	Pass	
Aldrin	%	93		70-130	Pass	
b-BHC	%	83		70-130	Pass	
d-BHC	%	87		70-130	Pass	
Dieldrin	%	96		70-130	Pass	
Endosulfan I	%	96		70-130	Pass	
Endosulfan II	%	79		70-130	Pass	
Endosulfan sulphate	%	85		70-130	Pass	
Endrin	%	87		70-130	Pass	
Endrin aldehyde	%	94		70-130	Pass	
Endrin ketone	%	75		70-130	Pass	
g-BHC (Lindane)	%	107		70-130	Pass	
Heptachlor	%	73		70-130	Pass	
Heptachlor epoxide	%	72		70-130	Pass	
Hexachlorobenzene	%	81		70-130	Pass	
Methoxychlor	%	75		70-130	Pass	
LCS - % Recovery						
Organophosphorus Pesticides						
Diazinon	%	95		70-130	Pass	
Dimethoate	%	87		70-130	Pass	
Ethion	%	80		70-130	Pass	
Fenitrothion	%	110		70-130	Pass	
Methyl parathion	%	104		70-130	Pass	
Mevinphos	%	82		70-130	Pass	
LCS - % Recovery						
Heavy Metals						
Arsenic	%	103		80-120	Pass	
Cadmium	%	96		80-120	Pass	
Chromium	%	107		80-120	Pass	
Copper	%	105		80-120	Pass	
Lead	%	106		80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury			%	104			80-120	Pass	
Nickel			%	101			80-120	Pass	
Zinc			%	103			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M21-My29898	NCP	%	104			70-130	Pass	
4.4'-DDD	M21-My29898	NCP	%	83			70-130	Pass	
4.4'-DDE	M21-My29898	NCP	%	104			70-130	Pass	
4.4'-DDT	M21-My29898	NCP	%	85			70-130	Pass	
a-BHC	M21-My29898	NCP	%	84			70-130	Pass	
Aldrin	M21-My29898	NCP	%	103			70-130	Pass	
b-BHC	M21-My29898	NCP	%	90			70-130	Pass	
d-BHC	M21-My29898	NCP	%	73			70-130	Pass	
Dieldrin	M21-My29898	NCP	%	87			70-130	Pass	
Endosulfan I	M21-My29898	NCP	%	122			70-130	Pass	
Endosulfan II	M21-My29898	NCP	%	81			70-130	Pass	
Endosulfan sulphate	M21-My29898	NCP	%	88			70-130	Pass	
Endrin	M21-My29898	NCP	%	92			70-130	Pass	
Endrin aldehyde	M21-My29898	NCP	%	103			70-130	Pass	
Endrin ketone	M21-My29898	NCP	%	94			70-130	Pass	
g-BHC (Lindane)	M21-My29898	NCP	%	98			70-130	Pass	
Heptachlor	M21-My29898	NCP	%	78			70-130	Pass	
Heptachlor epoxide	M21-My29898	NCP	%	88			70-130	Pass	
Hexachlorobenzene	M21-My29898	NCP	%	82			70-130	Pass	
Methoxychlor	M21-My29898	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	M21-My24962	NCP	%	130			70-130	Pass	
Dimethoate	M21-My24962	NCP	%	87			70-130	Pass	
Ethion	M21-My24962	NCP	%	105			70-130	Pass	
Fenitrothion	M21-My24962	NCP	%	130			70-130	Pass	
Methyl parathion	M21-My24962	NCP	%	105			70-130	Pass	
Mevinphos	M21-My24962	NCP	%	74			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M21-My29183	NCP	%	95			75-125	Pass	
Cadmium	M21-My29183	NCP	%	96			75-125	Pass	
Chromium	M21-My29183	NCP	%	99			75-125	Pass	
Copper	M21-My29183	NCP	%	96			75-125	Pass	
Lead	M21-My29183	NCP	%	99			75-125	Pass	
Mercury	M21-My29183	NCP	%	102			75-125	Pass	
Nickel	M21-My29183	NCP	%	92			75-125	Pass	
Zinc	M21-My29183	NCP	%	98			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M21-My29897	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
b-BHC	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
γ-BHC (Lindane)	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M21-My29897	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M21-My29897	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	M21-My29897	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfotiothion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	M21-My29897	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	M21-My29897	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M21-My29897	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M21-My29182	NCP	mg/kg	12	15	23	30%	Pass
Cadmium	M21-My29182	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M21-My29182	NCP	mg/kg	8.5	10	21	30%	Pass
Copper	M21-My29182	NCP	mg/kg	11	12	9.0	30%	Pass
Lead	M21-My29182	NCP	mg/kg	57	66	13	30%	Pass
Mercury	M21-My29182	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	M21-My29182	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	M21-My29182	NCP	mg/kg	7.7	6.5	16	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	M21-My29360	NCP	%	9.9	11	14	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised by:

Emily Daos	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Rebatch

Client / Client code: AECOMAU

Project: 60591699

Project Manager: Sara Kennedy, Ben Epstein

Date /time sample rec: Friday, 14 May 2021

Date/time Instructions rec: 8/06/2021 13:33

Due date: Tuesday, 15 June 2021

Due date surcharge:

CS Contact:

Additional Information:

Please email Rebatches Brisbane

New Lab ID	Sample information						Number of Containers	Analysis							Shortest Holding time expiry		
	Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container		Standard			Leach						
								EA033, TOC (EP003)	SPOCAS								
1	TP01 0.2	11/05/2021 0:00	EM2108857	1	Samples in EB	Bag	1	X									
2	TP01 0.5	11/05/2021 0:00	EM2108857	2	Samples in EB	Bag	1	X									
3	TP02 0.5	11/05/2021 0:00	EM2108857	5	Samples in EB	Bag	1	X									
4	TP02 1.0	11/05/2021 0:00	EM2108857	6	Samples in EB	Bag	1	X									
5	TP05 0.0	11/05/2021 0:00	EM2108857	29	Samples in EB	Bag	1	X									
6	TP05 1.5	11/05/2021 0:00	EM2108857	32	Samples in EB	Bag	1	X									
7	TP05 2.5	11/05/2021 0:00	EM2108857	34	Samples in EB	Bag	1	X	X								
8	TP06 0.5	12/05/2021 0:00	EM2108857	40	Samples in EB	Bag	1	X									
9	TP06 1.5	12/05/2021 0:00	EM2108857	42	Samples in EB	Bag	1	X									
10	TP07 0.0	12/05/2021 0:00	EM2108857	44	Samples in EB	Bag	1	X	X								
11	TP07 1.0	12/05/2021 0:00	EM2108857	46	Samples in EB	Bag	1	X									
12	TP07 4.5	12/05/2021 0:00	EM2108857	53	Samples in EB	Bag	1	X									
13	TP08 1.0	12/05/2021 0:00	EM2108857	57	Samples in EB	Bag	1	X									
14	TP08 3.5	12/05/2021 0:00	EM2108857	62	Samples in EB	Bag	1	X									
15	TP09 0.5	12/05/2021 0:00	EM2108857	67	Samples in EB	Bag	1	X									
16	TP09 3.0	12/05/2021 0:00	EM2108857	72	Samples in EB	Bag	1	X									
17	TP13 0.0	13/05/2021 0:00	EM2108857	77	Samples in EB	Bag	1	X									
18	TP13 2.0	13/05/2021 0:00	EM2108857	81	Samples in EB	Bag	1	X									
19	TP14 0.0	13/05/2021 0:00	EM2108857	82	Samples in EB	Bag	1	X									
20	TP14 1.0	13/05/2021 0:00	EM2108857	84	Samples in EB	Bag	1	X									
21	TP15 0.0	13/05/2021 0:00	EM2108857	87	Samples in EB	Bag	1	X									
22	TP16 0.0	13/05/2021 0:00	EM2108857	92	Samples in EB	Bag	1	X									
23	TP16 1.0	13/05/2021 0:00	EM2108857	94	Samples in EB	Bag	1	X									
TOTAL							23										

Environmental Division
Brisbane
Work Order Reference
EB2116038



Telephone + 61-7-3243 7222

JBotw
9/6/2021 8:10



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2116038**

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: SARA KENNEDY	Contact	: Carsten Emrich
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: sara.kennedy@aecom.com	E-mail	: carsten.emrich@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: 60591699	Page	: 1 of 3
Order number	: ----	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Kentbruck EES		
Sampler	: BE		

Dates

Date Samples Received	: 09-Jun-2021 08:13	Issue Date	: 09-Jun-2021
Client Requested Due Date	: 16-Jun-2021	Scheduled Reporting Date	: 16-Jun-2021

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	: REBATCH	No. of samples received / analysed	: 23 / 23

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- This is a rebatch of EM2108857.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA029 SPOCAS	SOIL - EA033 Chromium Suite for Acid Sulphate Soils	SOIL - EP003 Total Organic Carbon (TOC) in Soil
EB2116038-001	11-May-2021 00:00	TP01_0.2		✓	✓
EB2116038-002	11-May-2021 00:00	TP01_0.5		✓	✓
EB2116038-003	11-May-2021 00:00	TP02_0.5		✓	✓
EB2116038-004	11-May-2021 00:00	TP02_1.0		✓	✓
EB2116038-005	11-May-2021 00:00	TP05_0.0		✓	✓
EB2116038-006	11-May-2021 00:00	TP05_1.5		✓	✓
EB2116038-007	11-May-2021 00:00	TP05_2.5	✓	✓	✓
EB2116038-008	12-May-2021 00:00	TP06_0.5		✓	✓
EB2116038-009	12-May-2021 00:00	TP06_1.5		✓	✓
EB2116038-010	12-May-2021 00:00	TP07_0.0	✓	✓	✓
EB2116038-011	12-May-2021 00:00	TP07_1.0		✓	✓
EB2116038-012	12-May-2021 00:00	TP07_4.5		✓	✓
EB2116038-013	12-May-2021 00:00	TP08_1.0		✓	✓
EB2116038-014	12-May-2021 00:00	TP08_3.5		✓	✓
EB2116038-015	12-May-2021 00:00	TP09_0.5		✓	✓
EB2116038-016	12-May-2021 00:00	TP09_3.0		✓	✓
EB2116038-017	13-May-2021 00:00	TP13_0.0		✓	✓
EB2116038-018	13-May-2021 00:00	TP13_2.0		✓	✓
EB2116038-019	13-May-2021 00:00	TP14_0.0		✓	✓
EB2116038-020	13-May-2021 00:00	TP14_1.0		✓	✓
EB2116038-021	13-May-2021 00:00	TP15_0.0		✓	✓
EB2116038-022	13-May-2021 00:00	TP16_0.0		✓	✓
EB2116038-023	13-May-2021 00:00	TP16_1.0		✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EP003: Total Organic Carbon							
TP01_0.2	Pulp Bag	08-Jun-2021	08-Jun-2021	09-Jun-2021	✗	----	----
TP01_0.5	Pulp Bag	08-Jun-2021	08-Jun-2021	09-Jun-2021	✗	----	----
TP02_0.5	Pulp Bag	08-Jun-2021	08-Jun-2021	09-Jun-2021	✗	----	----
TP02_1.0	Pulp Bag	08-Jun-2021	08-Jun-2021	09-Jun-2021	✗	----	----
TP05_0.0	Pulp Bag	08-Jun-2021	08-Jun-2021	09-Jun-2021	✗	----	----
TP05_1.5	Pulp Bag	08-Jun-2021	08-Jun-2021	09-Jun-2021	✗	----	----

CERTIFICATE OF ANALYSIS

Work Order : **EB2116038**
Client : **AECOM Australia Pty Ltd**
Contact : SARA KENNEDY
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60591699
Order number : 60591699
C-O-C number : ----
Sampler : BE
Site : Kentbruck EES
Quote number : EN/096/18
No. of samples received : 23
No. of samples analysed : 23

Page : 1 of 8
Laboratory : Environmental Division Brisbane
Contact : Carsten Emrich
Address : 2 Byth Street Stafford QLD Australia 4053

Telephone : +61 7 3552 8616
Date Samples Received : 09-Jun-2021 08:13
Date Analysis Commenced : 14-Jun-2021
Issue Date : 16-Jun-2021 15:19



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.2	TP01_0.5	TP02_0.5	TP02_1.0	TP05_0.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	11-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EB2116038-001	EB2116038-002	EB2116038-003	EB2116038-004	EB2116038-005	
				Result	Result	Result	Result	Result	
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	8.0	8.7	8.5	8.2	3.1	
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	<2	<2	67	
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	<0.02	<0.02	0.11	
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.011	0.014	0.010	0.010	0.008	
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10	
EA033-C: Acid Neutralising Capacity									
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	1.06	11.0	0.76	0.41	----	
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	211	2200	152	82	----	
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	0.34	3.52	0.24	0.13	----	
EA033-D: Retained Acidity									
KCl Extractable Sulfur (23Ce)	----	0.02	% S	----	----	----	----	<0.02	
HCl Extractable Sulfur (20Be)	----	0.02	% S	----	----	----	----	<0.02	
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	----	----	----	----	<0.02	
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	----	----	----	<10	
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	----	----	----	----	<0.02	
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5	
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	0.12	
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	72	
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	5	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	0.12	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	72	
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	<1	<1	5	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	1.80	0.98	1.26	0.17	7.54	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_1.5	TP05_2.5	TP06_0.5	TP06_1.5	TP07_0.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EB2116038-006	EB2116038-007	EB2116038-008	EB2116038-009	EB2116038-010	
				Result	Result	Result	Result	Result	
EA029-A: pH Measurements									
pH KCl (23A)	----	0.1	pH Unit	----	5.3	----	----	4.2	
pH OX (23B)	----	0.1	pH Unit	----	4.2	----	----	3.5	
EA029-B: Acidity Trail									
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	13	----	----	115	
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	46	----	----	437	
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	32	----	----	321	
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	0.022	----	----	0.185	
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	0.073	----	----	0.700	
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	0.052	----	----	0.515	
EA029-C: Sulfur Trail									
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	----	----	<0.020	
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	----	----	0.156	
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	----	----	0.156	
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	----	----	98	
EA029-D: Calcium Values									
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	----	----	0.255	
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	----	----	0.255	
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	----	----	<0.020	
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	----	----	<10	
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	----	----	<0.020	
EA029-E: Magnesium Values									
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	----	----	0.027	
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	----	----	0.027	
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	----	----	<0.020	
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	----	----	<10	
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	----	----	<0.020	
EA029-G: Retained Acidity									
HCl Extractable Sulfur (20Be)	----	0.020	% S	----	----	----	----	0.033	
Net Acid Soluble Sulfur (20Je)	----	0.020	% S	----	----	----	----	0.066	
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	----	----	----	31	
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.020	% pyrite S	----	----	----	----	0.049	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_1.5	TP05_2.5	TP06_0.5	TP06_1.5	TP07_0.0
Sampling date / time				11-May-2021 00:00	11-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EB2116038-006	EB2116038-007	EB2116038-008	EB2116038-009	EB2116038-010	
				Result	Result	Result	Result	Result	
EA029-H: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	----	1.5	----	----	1.5	
Net Acidity (sulfur units)	----	0.02	% S	----	0.02	----	----	0.39	
Net Acidity (acidity units)	----	10	mole H+ / t	----	13	----	----	244	
Liming Rate	----	1	kg CaCO3/t	----	1	----	----	18	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	0.02	----	----	0.39	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	13	----	----	244	
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	1	----	----	18	
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	5.9	5.3	5.7	4.3	4.2	
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	<2	13	<2	104	115	
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	0.02	<0.02	0.17	0.18	
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.007	0.013	0.013	0.020	0.025	
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	12	16	
EA033-D: Retained Acidity									
KCl Extractable Sulfur (23Ce)	----	0.02	% S	----	----	----	<0.02	<0.02	
HCl Extractable Sulfur (20Be)	----	0.02	% S	----	----	----	<0.02	0.03	
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	----	----	----	<0.02	0.06	
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	----	----	<10	31	
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	----	----	----	<0.02	0.05	
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5	
Net Acidity (sulfur units)	----	0.02	% S	<0.02	0.03	<0.02	0.19	0.26	
Net Acidity (acidity units)	----	10	mole H+ / t	<10	22	<10	116	162	
Liming Rate	----	1	kg CaCO3/t	<1	2	<1	9	12	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	0.03	<0.02	0.19	0.26	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	22	<10	116	162	
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	2	<1	9	12	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	0.08	0.34	0.18	2.39	8.14	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_1.0	TP07_4.5	TP08_1.0	TP08_3.5	TP09_0.5
Sampling date / time				12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	12-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EB2116038-011	EB2116038-012	EB2116038-013	EB2116038-014	EB2116038-015	
				Result	Result	Result	Result	Result	
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	3.5	5.8	5.0	4.3	5.8	
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	189	9	10	112	5	
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.30	<0.02	<0.02	0.18	<0.02	
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	1.22	0.069	0.023	0.013	0.016	
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	764	43	15	<10	10	
EA033-D: Retained Acidity									
KCl Extractable Sulfur (23Ce)	----	0.02	% S	0.57	----	----	0.04	----	
HCl Extractable Sulfur (20Be)	----	0.02	% S	0.58	----	----	0.04	----	
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	----	<0.02	----	
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	<10	----	
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	----	<0.02	----	
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5	
Net Acidity (sulfur units)	----	0.02	% S	1.54	0.08	0.04	0.20	0.02	
Net Acidity (acidity units)	----	10	mole H+ / t	960	52	25	123	15	
Liming Rate	----	1	kg CaCO3/t	72	4	2	9	1	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	1.54	0.08	0.04	0.20	0.02	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	960	52	25	123	15	
Liming Rate excluding ANC	----	1	kg CaCO3/t	72	4	2	9	1	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	7.54	0.42	0.36	0.34	1.01	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP09_3.0	TP13_0.0	TP13_2.0	TP14_0.0	TP14_1.0
Sampling date / time				12-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	
Compound	CAS Number	LOR	Unit	EB2116038-016	EB2116038-017	EB2116038-018	EB2116038-019	EB2116038-020	
				Result	Result	Result	Result	Result	
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	5.1	4.9	5.5	5.2	6.2	
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	24	37	9	21	<2	
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.04	0.06	<0.02	0.03	<0.02	
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.013	0.030	0.145	0.008	0.009	
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	19	90	<10	<10	
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5	
Net Acidity (sulfur units)	----	0.02	% S	0.05	0.09	0.16	0.04	<0.02	
Net Acidity (acidity units)	----	10	mole H+ / t	32	56	100	26	<10	
Liming Rate	----	1	kg CaCO3/t	2	4	7	2	<1	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.05	0.09	0.16	0.04	<0.02	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	32	56	100	26	<10	
Liming Rate excluding ANC	----	1	kg CaCO3/t	2	4	7	2	<1	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	1.04	4.97	1.11	3.39	0.28	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP15_0.0	TP16_0.0	TP16_1.0	----	----
Sampling date / time				13-May-2021 00:00	13-May-2021 00:00	13-May-2021 00:00	----	----	
Compound	CAS Number	LOR	Unit	EB2116038-021	EB2116038-022	EB2116038-023	-----	-----	
				Result	Result	Result	----	----	
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	5.0	5.0	5.3	----	----	
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	24	15	10	----	----	
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.04	0.02	<0.02	----	----	
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.008	0.009	----	----	
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	----	----	
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	----	----	
Net Acidity (sulfur units)	----	0.02	% S	0.04	0.03	0.02	----	----	
Net Acidity (acidity units)	----	10	mole H+ / t	24	20	16	----	----	
Liming Rate	----	1	kg CaCO3/t	2	2	1	----	----	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.04	0.03	0.02	----	----	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	24	20	16	----	----	
Liming Rate excluding ANC	----	1	kg CaCO3/t	2	2	1	----	----	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	3.41	1.95	0.21	----	----	

QUALITY CONTROL REPORT

Work Order	: EB2116038	Page	: 1 of 7
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: SARA KENNEDY	Contact	: Carsten Emrich
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: 60591699	Date Samples Received	: 09-Jun-2021
Order number	: 60591699	Date Analysis Commenced	: 14-Jun-2021
C-O-C number	: ----	Issue Date	: 16-Jun-2021
Sampler	: BE		
Site	: Kentbruck EES		
Quote number	: EN/096/18		
No. of samples received	: 23		
No. of samples analysed	: 23		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA029-A: pH Measurements (QC Lot: 3734301)									
EB2116038-007	TP05_2.5	EA029: pH KCl (23A)	----	0.1	pH Unit	5.3	5.3	0.0	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	4.2	4.2	0.0	0% - 20%
EA029-B: Acidity Trail (QC Lot: 3734301)									
EB2116038-007	TP05_2.5	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.022	<0.020	7.7	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.073	0.072	1.9	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	0.052	0.053	3.1	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	13	12	15.2	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	46	45	0.0	0% - 20%
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	32	33	3.1	0% - 50%
EA029-C: Sulfur Trail (QC Lot: 3734301)									
EB2116038-007	TP05_2.5	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA029-D: Calcium Values (QC Lot: 3734301)									
EB2116038-007	TP05_2.5	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	<0.020	0.0	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	<0.020	0.0	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.0	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA029-E: Magnesium Values (QC Lot: 3734301)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA029-E: Magnesium Values (QC Lot: 3734301) - continued									
EB2116038-007	TP05_2.5	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.0	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.0	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.0	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA029-H: Acid Base Accounting (QC Lot: 3734301)									
EB2116038-007	TP05_2.5	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.0	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	0.02	<0.02	0.0	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.02	<0.02	0.0	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	1	<1	0.0	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	1	<1	0.0	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	13	12	15.2	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	13	12	15.2	No Limit
EA033-A: Actual Acidity (QC Lot: 3734300)									
EB2116011-001	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	9.4	9.5	0.0	0% - 20%
EB2116038-008	TP06_0.5	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	3	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	5.7	5.7	0.0	0% - 20%
EA033-A: Actual Acidity (QC Lot: 3734302)									
EB2116038-018	TP13_2.0	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	9	10	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	5.5	5.4	0.0	0% - 20%
EM2110806-003	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	7.3	6.8	7.3	0% - 20%
EA033-B: Potential Acidity (QC Lot: 3734300)									
EB2116011-001	Anonymous	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.023	0.018	26.6	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	15	11	26.6	No Limit
EB2116038-008	TP06_0.5	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.013	0.011	19.9	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA033-B: Potential Acidity (QC Lot: 3734302)									
EB2116038-018	TP13_2.0	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.145	0.156	7.3	0% - 20%
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	90	97	7.3	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA033-B: Potential Acidity (QC Lot: 3734302) - continued									
EM2110806-003	Anonymous	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.010	0.011	0.0	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA033-C: Acid Neutralising Capacity (QC Lot: 3734300)									
EB2116011-001	Anonymous	EA033: Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	0.54	0.49	9.6	0% - 20%
		EA033: sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	0.17	0.16	9.6	0% - 50%
		EA033: acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	108	98	9.6	0% - 50%
EA033-C: Acid Neutralising Capacity (QC Lot: 3734302)									
EM2110806-003	Anonymous	EA033: Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	0.42	0.41	0.0	0% - 20%
		EA033: sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	0.13	0.13	0.0	0% - 50%
		EA033: acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	84	83	1.6	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 3733762)									
EB2116038-001	TP01_0.2	EP003: Total Organic Carbon	----	0.02	%	1.80	1.74	3.1	0% - 20%
EB2116038-011	TP07_1.0	EP003: Total Organic Carbon	----	0.02	%	7.54	8.14	7.6	0% - 20%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 3733763)									
EB2116038-021	TP15_0.0	EP003: Total Organic Carbon	----	0.02	%	3.41	3.55	4.1	0% - 20%



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

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

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	
EA029-A: pH Measurements (QCLot: 3734301)									
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.4 pH Unit	99.1	70.0	130	
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.2 pH Unit	107	70.0	130	
EA029-B: Acidity Trail (QCLot: 3734301)									
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	15 mole H+ / t	102	70.0	130	
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	27.5 mole H+ / t	114	70.0	130	
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----	
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----	
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----	
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----	
EA029-C: Sulfur Trail (QCLot: 3734301)									
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.04779 % S	84.2	70.0	130	
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.20322 % S	88.2	70.0	130	
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----	
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----	
EA029-D: Calcium Values (QCLot: 3734301)									
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.14152 % Ca	108	70.0	130	
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.19926 % Ca	99.5	70.0	130	
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----	
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----	
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----	
EA029-E: Magnesium Values (QCLot: 3734301)									
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.213 % Mg	71.8	70.0	130	
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.22344 % Mg	99.1	70.0	130	
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----	
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----	
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----	
EA029-G: Retained Acidity (QCLot: 3734301)									
EA029: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.020	----	----	----	----	
EA029: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----	
EA029: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.020	----	----	----	----	
EA029: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.020	0.279 % S	95.7	70.0	130	
EA029-H: Acid Base Accounting (QCLot: 3734301)									
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Acceptable Limits (%)	
					Concentration	LCS	Low	High
EA029-H: Acid Base Accounting (QCLot: 3734301) - continued								
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EA033-A: Actual Acidity (QCLot: 3734300)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.4 pH Unit	99.6	91.0	107
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	15 mole H+ / t	97.7	70.0	124
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-A: Actual Acidity (QCLot: 3734302)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.4 pH Unit	99.4	91.0	107
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	15 mole H+ / t	107	70.0	124
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 3734300)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.155 % S	83.5	77.0	121
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-B: Potential Acidity (QCLot: 3734302)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.155 % S	80.5	77.0	121
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-C: Acid Neutralising Capacity (QCLot: 3734300)								
EA033: Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	<0.01	10 % CaCO3	102	91.0	112
EA033: acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	<0.01	----	----	----	----
EA033-C: Acid Neutralising Capacity (QCLot: 3734302)								
EA033: Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	<0.01	10 % CaCO3	97.8	91.0	112
EA033: acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	<0.01	----	----	----	----
EA033-D: Retained Acidity (QCLot: 3734300)								
EA033: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	----	----	----
EA033: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.02	0.04779 % S	84.2	70.0	128
EA033: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.02	0.279 % S	95.7	70.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 3733762)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	8.16 %	101	70.0	130
				<0.02	0.2 %	96.6	70.0	130



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
					LCS	Low	High	
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 3733763)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	4.16 %	97.0	70.0	130
				<0.02	0.48 %	97.2	70.0	130

Matrix Spike (MS) Report

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

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2116038	Page	: 1 of 8
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: SARA KENNEDY	Telephone	: +61 7 3552 8616
Project	: 60591699	Date Samples Received	: 09-Jun-2021
Site	: Kentbruck EES	Issue Date	: 16-Jun-2021
Sampler	: BE	No. of samples received	: 23
Order number	: 60591699	No. of samples analysed	: 23

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**



Outliers : Analysis Holding Time Compliance

Matrix: SOIL

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis			
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
EP003: Total Organic Carbon (TOC) in Soil							
Pulp Bag TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5	TP01_0.5, TP02_1.0, TP05_1.5	14-Jun-2021	08-Jun-2021	6	14-Jun-2021	08-Jun-2021	6
Pulp Bag TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0	TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	14-Jun-2021	09-Jun-2021	5	14-Jun-2021	09-Jun-2021	5
Pulp Bag TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0	TP13_2.0, TP14_1.0, TP16_0.0	14-Jun-2021	10-Jun-2021	4	14-Jun-2021	10-Jun-2021	4

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA029-A: pH Measurements							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
EA029-B: Acidity Trail							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA029-C: Sulfur Trail							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
EA029-D: Calcium Values							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
EA029-E: Magnesium Values							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
EA029-F: Excess Acid Neutralising Capacity							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
EA029-G: Retained Acidity							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
EA029-H: Acid Base Accounting							
80* dried soil (EA029) TP05_2.5	11-May-2021	15-Jun-2021	04-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA029) TP07_0.0	12-May-2021	15-Jun-2021	05-Feb-2024	✓	15-Jun-2021	13-Sep-2021	✓



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA033-A: Actual Acidity								
80* dried soil (EA033) TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5 TP01_0.5, TP02_1.0, TP05_1.5	11-May-2021	15-Jun-2021	11-May-2022	✓	15-Jun-2021	13-Sep-2021	✓	
80* dried soil (EA033) TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0 TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	12-May-2021	15-Jun-2021	12-May-2022	✓	15-Jun-2021	13-Sep-2021	✓	
80* dried soil (EA033) TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0 TP13_2.0, TP14_1.0, TP16_0.0	13-May-2021	15-Jun-2021	13-May-2022	✓	15-Jun-2021	13-Sep-2021	✓	
EA033-B: Potential Acidity								
80* dried soil (EA033) TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5 TP01_0.5, TP02_1.0, TP05_1.5	11-May-2021	15-Jun-2021	11-May-2022	✓	15-Jun-2021	13-Sep-2021	✓	
80* dried soil (EA033) TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0 TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	12-May-2021	15-Jun-2021	12-May-2022	✓	15-Jun-2021	13-Sep-2021	✓	
80* dried soil (EA033) TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0 TP13_2.0, TP14_1.0, TP16_0.0	13-May-2021	15-Jun-2021	13-May-2022	✓	15-Jun-2021	13-Sep-2021	✓	



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA033-C: Acid Neutralising Capacity								
80* dried soil (EA033) TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5	TP01_0.5, TP02_1.0, TP05_1.5	11-May-2021	15-Jun-2021	11-May-2022	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA033) TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0	TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	12-May-2021	15-Jun-2021	12-May-2022	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA033) TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0	TP13_2.0, TP14_1.0, TP16_0.0	13-May-2021	15-Jun-2021	13-May-2022	✓	15-Jun-2021	13-Sep-2021	✓
EA033-D: Retained Acidity								
80* dried soil (EA033) TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5	TP01_0.5, TP02_1.0, TP05_1.5	11-May-2021	15-Jun-2021	11-May-2022	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA033) TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0	TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	12-May-2021	15-Jun-2021	12-May-2022	✓	15-Jun-2021	13-Sep-2021	✓
80* dried soil (EA033) TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0	TP13_2.0, TP14_1.0, TP16_0.0	13-May-2021	15-Jun-2021	13-May-2022	✓	15-Jun-2021	13-Sep-2021	✓



Matrix: SOIL

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-E: Acid Base Accounting							
80* dried soil (EA033) TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5 TP01_0.5, TP02_1.0, TP05_1.5	11-May-2021	15-Jun-2021	11-May-2022	✔	15-Jun-2021	13-Sep-2021	✔
80* dried soil (EA033) TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0 TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	12-May-2021	15-Jun-2021	12-May-2022	✔	15-Jun-2021	13-Sep-2021	✔
80* dried soil (EA033) TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0 TP13_2.0, TP14_1.0, TP16_0.0	13-May-2021	15-Jun-2021	13-May-2022	✔	15-Jun-2021	13-Sep-2021	✔
EP003: Total Organic Carbon (TOC) in Soil							
Pulp Bag (EP003) TP01_0.2, TP02_0.5, TP05_0.0, TP05_2.5 TP01_0.5, TP02_1.0, TP05_1.5	11-May-2021	14-Jun-2021	08-Jun-2021	✘	14-Jun-2021	08-Jun-2021	✘
Pulp Bag (EP003) TP06_0.5, TP07_0.0, TP07_4.5, TP08_3.5, TP09_3.0 TP06_1.5, TP07_1.0, TP08_1.0, TP09_0.5	12-May-2021	14-Jun-2021	09-Jun-2021	✘	14-Jun-2021	09-Jun-2021	✘
Pulp Bag (EP003) TP13_0.0, TP14_0.0, TP15_0.0, TP16_1.0 TP13_2.0, TP14_1.0, TP16_0.0	13-May-2021	14-Jun-2021	10-Jun-2021	✘	14-Jun-2021	10-Jun-2021	✘



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	10	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	3	24	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	4	24	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	24	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO ₂) is automatically measured by infra-red detector.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
Dry and Pulverise (up to 100g)	GEO30	SOIL	#

Rebatch

Environmental Division
Melbourne
Work Order Reference
EM2110826

CS Contact:
Additional Information:

Client / Client code: AECOMAU
Project: 60591699
Project Manager: Sara Kennedy, Ben Epstein
Date /time sample rec: Friday, 14 May 2021
Date/time Instructions rec: 8/06/2021 13:33
Due date: Thursday, 10 June 2021
Due date surcharge: 2 day TAT - approved



Telephone : + 61-3-8549 9600

URGENT

New Lab ID	Sample information							Analysis								Shortest Holding time expiry			
	Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container	Number of Containers	Standard				Leach							
								SVTPH-SG											
1	TP14_0.0	13/05/2021 0:00	EM2108857	82	Extract	Jar	1	X											
2	TP03_0.0	11/05/2021 0:00	EM2108857	13	Extract	Jar	1	X											
3	TP09_0.0	12/05/2021 0:00	EM2108857	66	Extract	Jar	1	X											
4	TP05_0.0	11/05/2021 0:00	EM2108857	29	Extract	Jar	1	X											
TOTAL							4												

Niki Papastergiou

From: Epstein, Benjamin <Benjamin.Epstein@aecom.com>
Sent: Tuesday, 8 June 2021 11:27 AM
To: Peter Ravlic
Cc: Kennedy, Sara
Subject: [EXTERNAL] - 60591699 Kentbruck additional analysis
Attachments: 60591699_Kentbruck_CRS_TOC_silica gel analysis.xlsx

Follow Up Flag: Follow up
Flag Status: Flagged

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Pete,

Can I please request extra analysis on the attached samples from lab report **EM2108857**? Looking to get CRS and TOC on some as well as silica gel clean up on others.

Is it possible to get this all done on 48hr TAT? I know it's late notice but that's how we roll right?

Thanks

Benjamin Epstein
Environmental Scientist
M +61431825309
Benjamin.Epstein@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61386706800
www.aecom.com

Please consider the environment before printing this email.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2110826

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: sara.kennedy@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60591699	Page	: 1 of 2
Order number	: 60591699 5.0	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 14-May-2021 10:20	Issue Date	: 09-Jun-2021
Client Requested Due Date	: 10-Jun-2021	Scheduled Reporting Date	: 10-Jun-2021

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 4 / 4

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM2108857.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

CERTIFICATE OF ANALYSIS

Work Order : **EM2110826**
Client : **AECOM Australia Pty Ltd**
Contact : SARA KENNEDY
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60591699
Order number : 60591699 5.0
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : EN/096/18
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 2
Laboratory : Environmental Division Melbourne
Contact : Peter Ravlic
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 14-May-2021 10:20
Date Analysis Commenced : 24-May-2021
Issue Date : 10-Jun-2021 13:10



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting
 ø = ALS is not NATA accredited for these tests.
 ~ = Indicates an estimated value.

- This is a rebatch of EM2108857.

Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP14_0.0	TP03_0.0	TP09_0.0	TP05_0.0	----
Sampling date / time				13-May-2021 00:00	11-May-2021 00:00	12-May-2021 00:00	11-May-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2110826-001	EM2110826-002	EM2110826-003	EM2110826-004	-----
				Result	Result	Result	Result	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----

QUALITY CONTROL REPORT

Work Order	: EM2110826	Page	: 1 of 3
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60591699	Date Samples Received	: 14-May-2021
Order number	: 60591699 5.0	Date Analysis Commenced	: 24-May-2021
C-O-C number	: ----	Issue Date	: 10-Jun-2021
Sampler	: ----		
Site	: ----		
Quote number	: EN/096/18		
No. of samples received	: 4		
No. of samples analysed	: 4		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**



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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
					Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit					LCS	Low
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 3725733)									
EP071-SVSG: C10 - C14 Fraction	----	50	mg/kg	<50	840 mg/kg	97.4	49.2	133	
EP071-SVSG: C15 - C28 Fraction	----	100	mg/kg	<100	2900 mg/kg	105	68.4	129	
EP071-SVSG: C29 - C36 Fraction	----	100	mg/kg	<100	1490 mg/kg	102	66.7	133	
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 3725733)									
EP071-SVSG: >C10 - C16 Fraction	----	50	mg/kg	<50	1110 mg/kg	94.6	57.6	124	
EP071-SVSG: >C16 - C34 Fraction	----	100	mg/kg	<100	3900 mg/kg	104	66.9	134	
EP071-SVSG: >C34 - C40 Fraction	----	100	mg/kg	<100	290 mg/kg	92.0	50.0	129	

Matrix Spike (MS) Report

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

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2110826	Page	: 1 of 4
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: SARA KENNEDY	Telephone	: +6138549 9645
Project	: 60591699	Date Samples Received	: 14-May-2021
Site	: ----	Issue Date	: 10-Jun-2021
Sampler	: ----	No. of samples received	: 4
Order number	: 60591699 5.0	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**



Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Soil Glass Jar - Unpreserved (EP071-SVSG) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✔	09-Jun-2021	03-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP071-SVSG) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✔	09-Jun-2021	03-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP071-SVSG) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✔	09-Jun-2021	03-Jul-2021	✔
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Soil Glass Jar - Unpreserved (EP071-SVSG) TP03_0.0, TP05_0.0	11-May-2021	24-May-2021	25-May-2021	✔	09-Jun-2021	03-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP071-SVSG) TP09_0.0	12-May-2021	24-May-2021	26-May-2021	✔	09-Jun-2021	03-Jul-2021	✔
Soil Glass Jar - Unpreserved (EP071-SVSG) TP14_0.0	13-May-2021	24-May-2021	27-May-2021	✔	09-Jun-2021	03-Jul-2021	✔



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✘ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	4	0.00	10.00	✘	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	4	25.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	4	25.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	4	0.00	5.00	✘	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	SOIL	In house: Referenced to USEPA SW 846 - 8015. Sample extracts are cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).

<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CERTIFICATE OF ANALYSIS

Work Order : **EM2107935**
Client : **AECOM Australia Pty Ltd**
Contact : **MARK WAKEMAN**
Address : **COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004**
Telephone : ----
Project : 60591699
Order number : 60591699/4.0
C-O-C number : ----
Sampler : BREANA McCARTNEY
Site : Kentbruck EES
Quote number : EN/096/18
No. of samples received : 21
No. of samples analysed : 21

Page : 1 of 32
Laboratory : Environmental Division Melbourne
Contact : Peter Ravlic
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +6138549 9645
Date Samples Received : 03-May-2021 10:50
Date Analysis Commenced : 04-May-2021
Issue Date : 10-May-2021 16:16



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- ED037-P: EM2107935 #14 Alkalinity has been analysed by manual method ED037.
- EG020-F : EM2107929 #1 Poor matrix spike recovery for dissolved metal due to sample matrix. Confirmed by re-preparation and re-analysis.
- EG020-T : EM2107935 #21 results for total Zinc have been confirmed by re-digestion and re-analysis.
- EA015H: EM2107935 #13-15: TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Ionic Balance out of acceptable limits for sample #13 and 14 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time				28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005	
				Result	Result	Result	Result	Result	
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L	950	949	702	658	688	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	239	241	353	421	479	
Total Alkalinity as CaCO3	----	1	mg/L	239	241	353	421	479	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	16	16	13	30	18	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	288	296	141	135	107	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	138	130	136	151	165	
Magnesium	7439-95-4	1	mg/L	17	14	11	19	12	
Sodium	7440-23-5	1	mg/L	96	100	58	77	53	
Potassium	7440-09-7	1	mg/L	2	3	1	3	2	
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	0.001	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.002	<0.001	----	<0.001	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	<0.001	----	
Nickel	7440-02-0	0.001	mg/L	0.002	0.002	----	0.006	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	<0.001	----	
Zinc	7440-66-6	0.005	mg/L	0.020	0.018	----	0.018	----	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	----	
EN055: Ionic Balance									
∅ Total Anions	----	0.01	meq/L	13.2	13.5	11.3	12.8	13.0	
∅ Total Cations	----	0.01	meq/L	12.5	12.1	10.2	12.5	11.6	
∅ Ionic Balance	----	0.01	%	2.80	5.60	4.92	1.26	5.65	
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L	----	<1	----	<1	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	----	<0.5	----	<0.5	----	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	<0.5	----	<0.5	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.5	µg/L		----	<0.5	----	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L		----	<0.5	----	<0.5	----
delta-BHC	319-86-8	0.5	µg/L		----	<0.5	----	<0.5	----
Heptachlor	76-44-8	0.5	µg/L		----	<0.5	----	<0.5	----
Aldrin	309-00-2	0.5	µg/L		----	<0.5	----	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		----	<0.5	----	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L		----	<0.5	----	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L		----	<0.5	----	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L		----	<0.5	----	<0.5	----
Dieldrin	60-57-1	0.5	µg/L		----	<0.5	----	<0.5	----
4,4'-DDE	72-55-9	0.5	µg/L		----	<0.5	----	<0.5	----
Endrin	72-20-8	0.5	µg/L		----	<0.5	----	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L		----	<0.5	----	<0.5	----
4,4'-DDD	72-54-8	0.5	µg/L		----	<0.5	----	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L		----	<0.5	----	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		----	<0.5	----	<0.5	----
4,4'-DDT	50-29-3	2.0	µg/L		----	<2.0	----	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L		----	<0.5	----	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L		----	<2.0	----	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L		----	<0.5	----	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		----	<0.5	----	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		----	<0.5	----	<0.5	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		----	<0.5	----	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L		----	<0.5	----	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L		----	<2.0	----	<2.0	----
Dimethoate	60-51-5	0.5	µg/L		----	<0.5	----	<0.5	----
Diazinon	333-41-5	0.5	µg/L		----	<0.5	----	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		----	<0.5	----	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L		----	<2.0	----	<2.0	----
Malathion	121-75-5	0.5	µg/L		----	<0.5	----	<0.5	----
Fenthion	55-38-9	0.5	µg/L		----	<0.5	----	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L		----	<0.5	----	<0.5	----
Parathion	56-38-2	2.0	µg/L		----	<2.0	----	<2.0	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	<0.5	----	<0.5	----	
Chlorfenvinphos	470-90-6	0.5	µg/L	----	<0.5	----	<0.5	----	
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	<0.5	----	<0.5	----	
Fenamiphos	22224-92-6	0.5	µg/L	----	<0.5	----	<0.5	----	
Prothiofos	34643-46-4	0.5	µg/L	----	<0.5	----	<0.5	----	
Ethion	563-12-2	0.5	µg/L	----	<0.5	----	<0.5	----	
Carbophenothion	786-19-6	0.5	µg/L	----	<0.5	----	<0.5	----	
Azinphos Methyl	86-50-0	0.5	µg/L	----	<0.5	----	<0.5	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	<20	----	
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	----	
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	----	
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	<20	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	<20	----	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	----	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	----	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	----	<1	----	
Toluene	108-88-3	2	µg/L	<2	<2	----	<2	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	<2	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	<2	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	<2	----	
^ Total Xylenes	----	2	µg/L	<2	<2	----	<2	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	----	<1	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	----	<5	----	
EP131A: Organochlorine Pesticides									



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
Aldrin	309-00-2	0.010	µg/L	<0.010	----	----	----	----	----
alpha-BHC	319-84-6	0.010	µg/L	<0.010	----	----	----	----	----
beta-BHC	319-85-7	0.010	µg/L	<0.010	----	----	----	----	----
delta-BHC	319-86-8	0.010	µg/L	<0.010	----	----	----	----	----
4.4`-DDD	72-54-8	0.010	µg/L	<0.010	----	----	----	----	----
4.4`-DDE	72-55-9	0.010	µg/L	<0.010	----	----	----	----	----
4.4`-DDT	50-29-3	0.010	µg/L	<0.010	----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.010	µg/L	<0.010	----	----	----	----	----
Dieldrin	60-57-1	0.010	µg/L	<0.010	----	----	----	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L	<0.010	----	----	----	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L	<0.010	----	----	----	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L	<0.010	----	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.010	µg/L	<0.010	----	----	----	----	----
Endrin	72-20-8	0.010	µg/L	<0.010	----	----	----	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L	<0.010	----	----	----	----	----
Endrin ketone	53494-70-5	0.010	µg/L	<0.010	----	----	----	----	----
Heptachlor	76-44-8	0.005	µg/L	<0.005	----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L	<0.010	----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L	<0.010	----	----	----	----	----
gamma-BHC	58-89-9	0.010	µg/L	<0.010	----	----	----	----	----
Methoxychlor	72-43-5	0.010	µg/L	<0.010	----	----	----	----	----
cis-Chlordane	5103-71-9	0.010	µg/L	<0.010	----	----	----	----	----
trans-Chlordane	5103-74-2	0.010	µg/L	<0.010	----	----	----	----	----
^ Total Chlordane (sum)	----	0.010	µg/L	<0.010	----	----	----	----	----
Oxychlordane	27304-13-8	0.010	µg/L	<0.010	----	----	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1016	12674-11-2	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1221	11104-28-2	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1232	11141-16-5	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1242	53469-21-9	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1248	12672-29-6	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1254	11097-69-1	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1260	11096-82-5	0.10	µg/L	<0.10	----	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005
					Result	Result	Result	Result	Result
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	----	<10	----	
2.4-DB	94-82-6	10	µg/L	<10	<10	----	<10	----	
Dicamba	1918-00-9	10	µg/L	<10	<10	----	<10	----	
Mecoprop	93-65-2	10	µg/L	<10	<10	----	<10	----	
MCPA	94-74-6	10	µg/L	<10	<10	----	<10	----	
2.4-DP	120-36-5	10	µg/L	<10	<10	----	<10	----	
2.4-D	94-75-7	10	µg/L	<10	<10	----	<10	----	
Triclopyr	55335-06-3	10	µg/L	<10	<10	----	<10	----	
Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	----	<10	----	
2.4.5-T	93-76-5	10	µg/L	<10	<10	----	<10	----	
MCPB	94-81-5	10	µg/L	<10	<10	----	<10	----	
Picloram	1918-02-1	10	µg/L	<10	<10	----	<10	----	
Clopyralid	1702-17-6	10	µg/L	<10	<10	----	<10	----	
Fluroxypyr	69377-81-7	10	µg/L	<10	<10	----	<10	----	
2.6-D	575-90-6	10	µg/L	<10	<10	----	<10	----	
2.4.6-T	575-89-3	10	µg/L	<10	<10	----	<10	----	
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L	<0.5	----	----	----	----	
Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	----	----	----	----	
Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	----	----	----	----	
Bensulide	741-58-2	0.1	µg/L	<0.1	----	----	----	----	
Bromophos-ethyl	4824-78-6	0.10	µg/L	<0.10	----	----	----	----	
Carbofenthoion	786-19-6	0.02	µg/L	<0.02	----	----	----	----	
Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	----	----	----	----	
Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	----	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	----	----	----	----	
Coumaphos	56-72-4	0.01	µg/L	<0.01	----	----	----	----	
Demeton-O	298-03-3	0.02	µg/L	<0.02	----	----	----	----	
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	----	----	----	----	
Demeton-S	126-75-0	0.02	µg/L	<0.02	----	----	----	----	
Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	----	----	----	----	
Diazinon	333-41-5	0.01	µg/L	<0.01	----	----	----	----	
Dichlorvos	62-73-7	0.20	µg/L	<0.20	----	----	----	----	
Dimethoate	60-51-5	0.02	µg/L	<0.02	----	----	----	----	
Disulfoton	298-04-4	0.05	µg/L	<0.05	----	----	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
EPN	2104-64-5	0.05	µg/L	<0.05	----	----	----	----	----
Ethion	563-12-2	0.02	µg/L	<0.02	----	----	----	----	----
Ethoprophos	13194-48-4	0.01	µg/L	<0.01	----	----	----	----	----
Fenamiphos	22224-92-6	0.01	µg/L	<0.01	----	----	----	----	----
Fenchlorphos (Rannel)	299-84-3	10	µg/L	<10	----	----	----	----	----
Fenitrothion	122-14-5	2	µg/L	<2	----	----	----	----	----
Fensulfothion	115-90-2	0.01	µg/L	<0.01	----	----	----	----	----
Fenthion	55-38-9	0.05	µg/L	<0.05	----	----	----	----	----
Formothion	2540-82-1	20	µg/L	<20	----	----	----	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L	<10	----	----	----	----	----
Malathion	121-75-5	0.02	µg/L	<0.02	----	----	----	----	----
Methidathion	950-37-8	0.1	µg/L	<0.1	----	----	----	----	----
Mevinphos	7786-34-7	0.02	µg/L	<0.02	----	----	----	----	----
Monocrotophos	6923-22-4	0.02	µg/L	<0.02	----	----	----	----	----
Naftalofos	1491-41-4	1.0	µg/L	<1.0	----	----	----	----	----
Omethoate	1113-02-6	0.01	µg/L	<0.01	----	----	----	----	----
Parathion	56-38-2	0.2	µg/L	<0.2	----	----	----	----	----
Parathion-methyl	298-00-0	0.5	µg/L	<0.5	----	----	----	----	----
Phorate	298-02-2	0.1	µg/L	<0.1	----	----	----	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	----	----	----	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	----	----	----	----	----
Profenofos	41198-08-7	0.01	µg/L	<0.01	----	----	----	----	----
Prothiofos	34643-46-4	0.1	µg/L	<0.1	----	----	----	----	----
Pyrazophos	13457-18-6	0.1	µg/L	<0.1	----	----	----	----	----
Sulfotep	3689-24-5	0.005	µg/L	<0.005	----	----	----	----	----
Sulprofos	35400-43-2	0.05	µg/L	<0.05	----	----	----	----	----
Temephos	3383-96-8	0.02	µg/L	<0.02	----	----	----	----	----
Terbufos	13071-79-9	0.01	µg/L	<0.01	----	----	----	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	----	----	----	----	----
Thiometon	640-15-3	0.5	µg/L	<0.5	----	----	----	----	----
Triazophos	24017-47-8	0.005	µg/L	<0.005	----	----	----	----	----
Trichlorfon	52-68-6	0.02	µg/L	<0.02	----	----	----	----	----
Trichloronate	327-98-0	0.5	µg/L	<0.5	----	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%	----	85.0	----	----	71.0	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW04	QC01_28/4/21	MW03	MW02	MW01
Sampling date / time				28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-001	EM2107935-002	EM2107935-003	EM2107935-004	EM2107935-005	
				Result	Result	Result	Result	Result	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	----	78.7	----	71.6	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	----	90.2	----	73.1	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	106	105	----	104	----	
Toluene-D8	2037-26-5	2	%	100	97.5	----	102	----	
4-Bromofluorobenzene	460-00-4	2	%	100	96.9	----	101	----	
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%	90.9	----	----	----	----	
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.10	%	116	----	----	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2,4-Dichlorophenyl Acetic Acid	19719-28-9	10	%	117	99.6	----	111	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time				28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010	
				Result	Result	Result	Result	Result	
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L	----	----	1280	706	911	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	431	361	242	
Total Alkalinity as CaCO3	----	1	mg/L	----	----	431	361	242	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	55	14	13	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	----	----	389	165	242	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	----	----	190	134	127	
Magnesium	7439-95-4	1	mg/L	----	----	22	13	11	
Sodium	7440-23-5	1	mg/L	----	----	147	71	90	
Potassium	7440-09-7	1	mg/L	----	----	3	2	1	
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.017	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.022	----	----	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----	
EN055: Ionic Balance									
∅ Total Anions	----	0.01	meq/L	----	----	20.7	12.2	11.9	
∅ Total Cations	----	0.01	meq/L	----	----	17.8	10.9	11.2	
∅ Ionic Balance	----	0.01	%	----	----	7.71	5.48	3.24	
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L	----	----	<1	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	----	----	<0.5	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	<0.5	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.5	µg/L	----	----		<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	----	----		<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	----	----		<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	----	----		<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	----	----		<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----		<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	----		<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----		<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	----		<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	----	----		<0.5	----	----
4,4'-DDE	72-55-9	0.5	µg/L	----	----		<0.5	----	----
Endrin	72-20-8	0.5	µg/L	----	----		<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----		<0.5	----	----
4,4'-DDD	72-54-8	0.5	µg/L	----	----		<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----		<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----		<0.5	----	----
4,4'-DDT	50-29-3	2.0	µg/L	----	----		<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	----	----		<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	----	----		<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	----		<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----		<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----		<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L	----	----		<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----		<0.5	----	----
Monocrotophos	6923-22-4	2.0	µg/L	----	----		<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	----	----		<0.5	----	----
Diazinon	333-41-5	0.5	µg/L	----	----		<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----		<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	----	----		<2.0	----	----
Malathion	121-75-5	0.5	µg/L	----	----		<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	----	----		<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----		<0.5	----	----
Parathion	56-38-2	2.0	µg/L	----	----		<2.0	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	<0.5	----	----	
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	<0.5	----	----	
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	<0.5	----	----	
Fenamiphos	22224-92-6	0.5	µg/L	----	----	<0.5	----	----	
Prothiofos	34643-46-4	0.5	µg/L	----	----	<0.5	----	----	
Ethion	563-12-2	0.5	µg/L	----	----	<0.5	----	----	
Carbophenothion	786-19-6	0.5	µg/L	----	----	<0.5	----	----	
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	<0.5	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----	
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----	
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----	
EP131A: Organochlorine Pesticides									



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	----	----	----
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	----	----	----
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	----	----	----
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	----	----	----
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	----	----	----
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	----	----	----
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.010	µg/L		<0.010	<0.010	----	----	----
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	----	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	----	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	----	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	----	----	----
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	----	----	----
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	----	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	----	----	----
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	----	----	----
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	----	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	----	----	----
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	----	----	----
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	----	----	----
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	----	----	----
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	----	----	----
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	----	----	----
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1016	12674-11-2	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1221	11104-28-2	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1232	11141-16-5	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1242	53469-21-9	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1248	12672-29-6	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1254	11097-69-1	0.10	µg/L		<0.10	<0.10	----	----	----
Aroclor 1260	11096-82-5	0.10	µg/L		<0.10	<0.10	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	<10	----	----	
2,4-DB	94-82-6	10	µg/L	<10	<10	<10	----	----	
Dicamba	1918-00-9	10	µg/L	<10	<10	<10	----	----	
Mecoprop	93-65-2	10	µg/L	<10	<10	<10	----	----	
MCPA	94-74-6	10	µg/L	<10	<10	<10	----	----	
2,4-DP	120-36-5	10	µg/L	<10	<10	<10	----	----	
2,4-D	94-75-7	10	µg/L	<10	<10	<10	----	----	
Triclopyr	55335-06-3	10	µg/L	<10	<10	<10	----	----	
Silvex (2,4,5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	<10	----	----	
2,4,5-T	93-76-5	10	µg/L	<10	<10	<10	----	----	
MCPB	94-81-5	10	µg/L	<10	<10	<10	----	----	
Picloram	1918-02-1	10	µg/L	<10	<10	<10	----	----	
Clopyralid	1702-17-6	10	µg/L	<10	<10	<10	----	----	
Fluroxypyr	69377-81-7	10	µg/L	<10	<10	<10	----	----	
2,6-D	575-90-6	10	µg/L	<10	<10	<10	----	----	
2,4,6-T	575-89-3	10	µg/L	<10	<10	<10	----	----	
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	----	----	----	
Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	----	----	----	
Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	----	----	----	
Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	----	----	----	
Bromophos-ethyl	4824-78-6	0.10	µg/L	<0.10	<0.10	----	----	----	
Carbofenthoion	786-19-6	0.02	µg/L	<0.02	<0.02	----	----	----	
Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	----	----	----	
Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	----	----	----	
Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	----	----	----	
Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	----	----	----	
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	----	----	----	
Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	----	----	----	
Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	----	----	----	
Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	----	----	----	
Dichlorvos	62-73-7	0.20	µg/L	<0.20	<0.20	----	----	----	
Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	----	----	----	
Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	----	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time					28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	----	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	----	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	----	----	----
Fenchlorphos (Ronnell)	299-84-3	10	µg/L		<10	<10	----	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	----	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	----	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	----	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	----	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	----	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	----	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	----	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	----	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	----	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	----	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	----	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	----	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	----	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	----	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	----	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	----	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	----	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	----	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	----	----	----
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	----	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	----	----	----
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	----	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	----	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	----	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	----	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	----	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	----	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		----	----	80.8	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC03_28/4/21	QC04_28/4/21	MW06	MW05	MW09
Sampling date / time				28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	29-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-006	EM2107935-007	EM2107935-008	EM2107935-009	EM2107935-010	
				Result	Result	Result	Result	Result	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	----	----	73.9	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	----	----	81.6	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	104	105	100	----	----	
Toluene-D8	2037-26-5	2	%	98.4	99.3	95.3	----	----	
4-Bromofluorobenzene	460-00-4	2	%	99.2	102	95.3	----	----	
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%	98.5	104	----	----	----	
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.10	%	113	120	----	----	----	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2,4-Dichlorophenyl Acetic Acid	19719-28-9	10	%	115	104	108	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW07	MW08	MW12	MW10	MW11
Sampling date / time				29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-011	EM2107935-012	EM2107935-013	EM2107935-014	EM2107935-015	
				Result	Result	Result	Result	Result	
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L	1860	962	1540	1320	592	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	661	486	56	172	13	
Total Alkalinity as CaCO3	----	1	mg/L	661	486	56	172	13	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	37	111	35	4	21	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	543	183	204	131	111	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	291	170	26	5	27	
Magnesium	7439-95-4	1	mg/L	20	17	19	7	6	
Sodium	7440-23-5	1	mg/L	205	121	86	70	50	
Potassium	7440-09-7	1	mg/L	2	3	2	2	<1	
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	----	0.003	0.011	0.005	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	----	0.001	0.001	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	----	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	----	0.020	0.016	0.005	0.031	
Lead	7439-92-1	0.001	mg/L	----	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	----	0.011	0.039	0.014	0.039	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	<0.0001	<0.0001	
EN055: Ionic Balance									
∅ Total Anions	----	0.01	meq/L	29.3	17.2	7.60	7.22	3.83	
∅ Total Cations	----	0.01	meq/L	25.1	15.2	6.65	3.92	4.02	
∅ Ionic Balance	----	0.01	%	7.64	6.05	6.66	29.6	2.39	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	----	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	----	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	----	<50	<50	<50	<50	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW07	MW08	MW12	MW10	MW11
Sampling date / time					29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EM2107935-011	EM2107935-012	EM2107935-013	EM2107935-014	EM2107935-015	
				Result	Result	Result	Result	Result	
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	<50	<50	<50	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	----	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	----	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	----	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	----	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	----	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	----	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	----	<100	<100	<100	<100	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	----	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	----	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	----	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	<2	<2	
^ Total Xylenes	----	2	µg/L	----	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	----	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	----	<5	<5	<5	<5	
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
alpha-BHC	319-84-6	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
beta-BHC	319-85-7	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
delta-BHC	319-86-8	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
4.4`-DDD	72-54-8	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
4.4`-DDE	72-55-9	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
4.4`-DDT	50-29-3	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Dieldrin	60-57-1	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
alpha-Endosulfan	959-98-8	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
beta-Endosulfan	33213-65-9	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Endosulfan sulfate	1031-07-8	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
^ Endosulfan (sum)	115-29-7	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW07	MW08	MW12	MW10	MW11
Sampling date / time					29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EM2107935-011	EM2107935-012	EM2107935-013	EM2107935-014	EM2107935-015	
				Result	Result	Result	Result	Result	
EP131A: Organochlorine Pesticides - Continued									
Endrin	72-20-8	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Endrin aldehyde	7421-93-4	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Endrin ketone	53494-70-5	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Heptachlor	76-44-8	0.005	µg/L	----	<0.005	<0.005	<0.005	<0.005	
Heptachlor epoxide	1024-57-3	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
gamma-BHC	58-89-9	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Methoxychlor	72-43-5	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
cis-Chlordane	5103-71-9	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
trans-Chlordane	5103-74-2	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
^ Total Chlordane (sum)	----	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
Oxychlordane	27304-13-8	0.010	µg/L	----	<0.010	<0.010	<0.010	<0.010	
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1016	12674-11-2	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1221	11104-28-2	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1232	11141-16-5	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1242	53469-21-9	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1248	12672-29-6	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1254	11097-69-1	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
Aroclor 1260	11096-82-5	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	----	<10	<10	<10	<10	
2,4-DB	94-82-6	10	µg/L	----	<10	<10	<10	<10	
Dicamba	1918-00-9	10	µg/L	----	<10	<10	<10	<10	
Mecoprop	93-65-2	10	µg/L	----	<10	<10	<10	<10	
MCPA	94-74-6	10	µg/L	----	<10	<10	<10	<10	
2,4-DP	120-36-5	10	µg/L	----	<10	<10	<10	<10	
2,4-D	94-75-7	10	µg/L	----	<10	<10	<10	<10	
Triclopyr	55335-06-3	10	µg/L	----	<10	<10	<10	<10	
Silvex (2,4,5-TP/Fenoprop)	93-72-1	10	µg/L	----	<10	<10	<10	<10	
2,4,5-T	93-76-5	10	µg/L	----	<10	<10	<10	<10	
MCPB	94-81-5	10	µg/L	----	<10	<10	<10	<10	
Picloram	1918-02-1	10	µg/L	----	<10	<10	<10	<10	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW07	MW08	MW12	MW10	MW11
Sampling date / time					29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-011	EM2107935-012	EM2107935-013	EM2107935-014	EM2107935-015
					Result	Result	Result	Result	Result
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued									
Clopyralid	1702-17-6	10	µg/L	----	<10	<10	<10	<10	<10
Fluroxypyr	69377-81-7	10	µg/L	----	<10	<10	<10	<10	<10
2,6-D	575-90-6	10	µg/L	----	<10	<10	<10	<10	<10
2,4,6-T	575-89-3	10	µg/L	----	<10	<10	<10	<10	<10
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L	----	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L	----	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L	----	<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenthiion	786-19-6	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	----	<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L	----	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L	----	<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L	----	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnell)	299-84-3	10	µg/L	----	<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L	----	<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L	----	<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L	----	<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L	----	<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L	----	<0.1	<0.1	<0.1	<0.1	<0.1



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW07	MW08	MW12	MW10	MW11
Sampling date / time				29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-011	EM2107935-012	EM2107935-013	EM2107935-014	EM2107935-015	
				Result	Result	Result	Result	Result	
EP234A: OP Pesticides - Continued									
Mevinphos	7786-34-7	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	
Monocrotophos	6923-22-4	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	
Naftalofos	1491-41-4	1.0	µg/L	----	<1.0	<1.0	<1.0	<1.0	
Omethoate	1113-02-6	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	
Parathion	56-38-2	0.2	µg/L	----	<0.2	<0.2	<0.2	<0.2	
Parathion-methyl	298-00-0	0.5	µg/L	----	<0.5	<0.5	<0.5	<0.5	
Phorate	298-02-2	0.1	µg/L	----	<0.1	<0.1	<0.1	<0.1	
Pirimiphos-ethyl	23505-41-1	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	
Pirimiphos-methyl	29232-93-7	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	
Profenofos	41198-08-7	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	
Prothiofos	34643-46-4	0.1	µg/L	----	<0.1	<0.1	<0.1	<0.1	
Pyrazophos	13457-18-6	0.1	µg/L	----	<0.1	<0.1	<0.1	<0.1	
Sulfotep	3689-24-5	0.005	µg/L	----	<0.005	<0.005	<0.005	<0.005	
Sulprofos	35400-43-2	0.05	µg/L	----	<0.05	<0.05	<0.05	<0.05	
Temephos	3383-96-8	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	
Terbufos	13071-79-9	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	
Tetrachlorvinphos	22248-79-9	0.01	µg/L	----	<0.01	<0.01	<0.01	<0.01	
Thiometon	640-15-3	0.5	µg/L	----	<0.5	<0.5	<0.5	<0.5	
Triazophos	24017-47-8	0.005	µg/L	----	<0.005	<0.005	<0.005	<0.005	
Trichlorfon	52-68-6	0.02	µg/L	----	<0.02	<0.02	<0.02	<0.02	
Trichloronate	327-98-0	0.5	µg/L	----	<0.5	<0.5	<0.5	<0.5	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	----	104	101	107	106	
Toluene-D8	2037-26-5	2	%	----	101	96.6	113	101	
4-Bromofluorobenzene	460-00-4	2	%	----	101	98.1	108	100	
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%	----	107	112	105	108	
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.10	%	----	117	117	111	115	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2,4-Dichlorophenyl Acetic Acid	19719-28-9	10	%	----	114	114	116	118	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05_29/4/21	QC06_29/4/21	QC07_29/4/21	QC08_29/4/21	QC09_30/4/21
Sampling date / time				29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-016	EM2107935-017	EM2107935-018	EM2107935-019	EM2107935-020	
				Result	Result	Result	Result	Result	
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	<0.005	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	<0.0001	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	<50	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	<100	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05_29/4/21	QC06_29/4/21	QC07_29/4/21	QC08_29/4/21	QC09_30/4/21
Sampling date / time					29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EM2107935-016	EM2107935-017	EM2107935-018	EM2107935-019	EM2107935-020
				Result	Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
4.4`-DDE	72-55-9	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Dieldrin	60-57-1	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
^ Endosulfan (sum)	115-29-7	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L	<0.005	<0.005	----	----	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
^ Total Chlordane (sum)	----	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L	<0.010	<0.010	----	----	<0.010	<0.010
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1016	12674-11-2	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1221	11104-28-2	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1232	11141-16-5	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1242	53469-21-9	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1248	12672-29-6	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1254	11097-69-1	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10
Aroclor 1260	11096-82-5	0.10	µg/L	<0.10	<0.10	----	----	<0.10	<0.10



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05_29/4/21	QC06_29/4/21	QC07_29/4/21	QC08_29/4/21	QC09_30/4/21
Sampling date / time				29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-016	EM2107935-017	EM2107935-018	EM2107935-019	EM2107935-020	
				Result	Result	Result	Result	Result	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	----	----	<10	
2,4-DB	94-82-6	10	µg/L	<10	<10	----	----	<10	
Dicamba	1918-00-9	10	µg/L	<10	<10	----	----	<10	
Mecoprop	93-65-2	10	µg/L	<10	<10	----	----	<10	
MCPA	94-74-6	10	µg/L	<10	<10	----	----	<10	
2,4-DP	120-36-5	10	µg/L	<10	<10	----	----	<10	
2,4-D	94-75-7	10	µg/L	<10	<10	----	----	<10	
Triclopyr	55335-06-3	10	µg/L	<10	<10	----	----	<10	
Silvex (2,4,5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	----	----	<10	
2,4,5-T	93-76-5	10	µg/L	<10	<10	----	----	<10	
MCPB	94-81-5	10	µg/L	<10	<10	----	----	<10	
Picloram	1918-02-1	10	µg/L	<10	<10	----	----	<10	
Clopyralid	1702-17-6	10	µg/L	<10	<10	----	----	<10	
Fluroxypyr	69377-81-7	10	µg/L	<10	<10	----	----	<10	
2,6-D	575-90-6	10	µg/L	<10	<10	----	----	<10	
2,4,6-T	575-89-3	10	µg/L	<10	<10	----	----	<10	
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	----	----	<0.1	
Bromophos-ethyl	4824-78-6	0.10	µg/L	<0.10	<0.10	----	----	<0.10	
Carbofenthoion	786-19-6	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	----	----	<0.2	
Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Dichlorvos	62-73-7	0.20	µg/L	<0.20	<0.20	----	----	<0.20	
Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	----	----	<0.05	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05_29/4/21	QC06_29/4/21	QC07_29/4/21	QC08_29/4/21	QC09_30/4/21
Sampling date / time				29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-016	EM2107935-017	EM2107935-018	EM2107935-019	EM2107935-020	
				Result	Result	Result	Result	Result	
EP234A: OP Pesticides - Continued									
EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Fenchlorphos (Ronnell)	299-84-3	10	µg/L	<10	<10	----	----	<10	
Fenitrothion	122-14-5	2	µg/L	<2	<2	----	----	<2	
Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
Formothion	2540-82-1	20	µg/L	<20	<20	----	----	<20	
Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	----	----	<10	
Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	----	----	<0.1	
Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Naftalofos	1491-41-4	1.0	µg/L	<1.0	<1.0	----	----	<1.0	
Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	----	----	<0.2	
Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	----	----	<0.1	
Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	----	----	<0.1	
Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	----	----	<0.1	
Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	----	----	<0.005	
Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	----	----	<0.01	
Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	----	----	<0.005	
Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	102	102	85.9	87.6	99.4	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05_29/4/21	QC06_29/4/21	QC07_29/4/21	QC08_29/4/21	QC09_30/4/21
Sampling date / time				29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	29-Apr-2021 00:00	30-Apr-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2107935-016	EM2107935-017	EM2107935-018	EM2107935-019	EM2107935-020	
				Result	Result	Result	Result	Result	
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	2	%	99.6	99.8	87.6	89.1	96.2	
4-Bromofluorobenzene	460-00-4	2	%	99.0	98.4	95.6	101	95.4	
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%	109	105	----	----	106	
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.10	%	119	114	----	----	113	
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2,4-Dichlorophenyl Acetic Acid	19719-28-9	10	%	104	113	----	----	113	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		QC10_30/4/21	----	----	----	----
		Sampling date / time		30-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2107935-021	-----	-----	-----	-----
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.016	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC10_30/4/21	----	----	----	----
Sampling date / time				30-Apr-2021 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2107935-021	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L	<0.010	----	----	----	----	----
alpha-BHC	319-84-6	0.010	µg/L	<0.010	----	----	----	----	----
beta-BHC	319-85-7	0.010	µg/L	<0.010	----	----	----	----	----
delta-BHC	319-86-8	0.010	µg/L	<0.010	----	----	----	----	----
4,4`-DDD	72-54-8	0.010	µg/L	<0.010	----	----	----	----	----
4,4`-DDE	72-55-9	0.010	µg/L	<0.010	----	----	----	----	----
4,4`-DDT	50-29-3	0.010	µg/L	<0.010	----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.010	µg/L	<0.010	----	----	----	----	----
Dieldrin	60-57-1	0.010	µg/L	<0.010	----	----	----	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L	<0.010	----	----	----	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L	<0.010	----	----	----	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L	<0.010	----	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.010	µg/L	<0.010	----	----	----	----	----
Endrin	72-20-8	0.010	µg/L	<0.010	----	----	----	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L	<0.010	----	----	----	----	----
Endrin ketone	53494-70-5	0.010	µg/L	<0.010	----	----	----	----	----
Heptachlor	76-44-8	0.005	µg/L	<0.005	----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L	<0.010	----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L	<0.010	----	----	----	----	----
gamma-BHC	58-89-9	0.010	µg/L	<0.010	----	----	----	----	----
Methoxychlor	72-43-5	0.010	µg/L	<0.010	----	----	----	----	----
cis-Chlordane	5103-71-9	0.010	µg/L	<0.010	----	----	----	----	----
trans-Chlordane	5103-74-2	0.010	µg/L	<0.010	----	----	----	----	----
^ Total Chlordane (sum)	----	0.010	µg/L	<0.010	----	----	----	----	----
Oxychlordane	27304-13-8	0.010	µg/L	<0.010	----	----	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1016	12674-11-2	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1221	11104-28-2	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1232	11141-16-5	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1242	53469-21-9	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1248	12672-29-6	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1254	11097-69-1	0.10	µg/L	<0.10	----	----	----	----	----
Aroclor 1260	11096-82-5	0.10	µg/L	<0.10	----	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC10_30/4/21	----	----	----	----
Sampling date / time				30-Apr-2021 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2107935-021	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	----	----	----	----	----
2,4-DB	94-82-6	10	µg/L	<10	----	----	----	----	----
Dicamba	1918-00-9	10	µg/L	<10	----	----	----	----	----
Mecoprop	93-65-2	10	µg/L	<10	----	----	----	----	----
MCPA	94-74-6	10	µg/L	<10	----	----	----	----	----
2,4-DP	120-36-5	10	µg/L	<10	----	----	----	----	----
2,4-D	94-75-7	10	µg/L	<10	----	----	----	----	----
Triclopyr	55335-06-3	10	µg/L	<10	----	----	----	----	----
Silvex (2,4,5-TP/Fenoprop)	93-72-1	10	µg/L	<10	----	----	----	----	----
2,4,5-T	93-76-5	10	µg/L	<10	----	----	----	----	----
MCPB	94-81-5	10	µg/L	<10	----	----	----	----	----
Picloram	1918-02-1	10	µg/L	<10	----	----	----	----	----
Clopyralid	1702-17-6	10	µg/L	<10	----	----	----	----	----
Fluroxypyr	69377-81-7	10	µg/L	<10	----	----	----	----	----
2,6-D	575-90-6	10	µg/L	<10	----	----	----	----	----
2,4,6-T	575-89-3	10	µg/L	<10	----	----	----	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L	<0.5	----	----	----	----	----
Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	----	----	----	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	----	----	----	----	----
Bensulide	741-58-2	0.1	µg/L	<0.1	----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L	<0.10	----	----	----	----	----
Carbofenthoion	786-19-6	0.02	µg/L	<0.02	----	----	----	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	----	----	----	----	----
Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	----	----	----	----	----
Coumaphos	56-72-4	0.01	µg/L	<0.01	----	----	----	----	----
Demeton-O	298-03-3	0.02	µg/L	<0.02	----	----	----	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	----	----	----	----	----
Demeton-S	126-75-0	0.02	µg/L	<0.02	----	----	----	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	----	----	----	----	----
Diazinon	333-41-5	0.01	µg/L	<0.01	----	----	----	----	----
Dichlorvos	62-73-7	0.20	µg/L	<0.20	----	----	----	----	----
Dimethoate	60-51-5	0.02	µg/L	<0.02	----	----	----	----	----
Disulfoton	298-04-4	0.05	µg/L	<0.05	----	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC10_30/4/21	----	----	----	----
Sampling date / time				30-Apr-2021 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2107935-021	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
EP234A: OP Pesticides - Continued									
EPN	2104-64-5	0.05	µg/L	<0.05	----	----	----	----	----
Ethion	563-12-2	0.02	µg/L	<0.02	----	----	----	----	----
Ethoprophos	13194-48-4	0.01	µg/L	<0.01	----	----	----	----	----
Fenamiphos	22224-92-6	0.01	µg/L	<0.01	----	----	----	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	----	----	----	----	----
Fenitrothion	122-14-5	2	µg/L	<2	----	----	----	----	----
Fensulfothion	115-90-2	0.01	µg/L	<0.01	----	----	----	----	----
Fenthion	55-38-9	0.05	µg/L	<0.05	----	----	----	----	----
Formothion	2540-82-1	20	µg/L	<20	----	----	----	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L	<10	----	----	----	----	----
Malathion	121-75-5	0.02	µg/L	<0.02	----	----	----	----	----
Methidathion	950-37-8	0.1	µg/L	<0.1	----	----	----	----	----
Mevinphos	7786-34-7	0.02	µg/L	<0.02	----	----	----	----	----
Monocrotophos	6923-22-4	0.02	µg/L	<0.02	----	----	----	----	----
Naftalofos	1491-41-4	1.0	µg/L	<1.0	----	----	----	----	----
Omethoate	1113-02-6	0.01	µg/L	<0.01	----	----	----	----	----
Parathion	56-38-2	0.2	µg/L	<0.2	----	----	----	----	----
Parathion-methyl	298-00-0	0.5	µg/L	<0.5	----	----	----	----	----
Phorate	298-02-2	0.1	µg/L	<0.1	----	----	----	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	----	----	----	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	----	----	----	----	----
Profenofos	41198-08-7	0.01	µg/L	<0.01	----	----	----	----	----
Prothiofos	34643-46-4	0.1	µg/L	<0.1	----	----	----	----	----
Pyrazophos	13457-18-6	0.1	µg/L	<0.1	----	----	----	----	----
Sulfotep	3689-24-5	0.005	µg/L	<0.005	----	----	----	----	----
Sulprofos	35400-43-2	0.05	µg/L	<0.05	----	----	----	----	----
Temephos	3383-96-8	0.02	µg/L	<0.02	----	----	----	----	----
Terbufos	13071-79-9	0.01	µg/L	<0.01	----	----	----	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	----	----	----	----	----
Thiometon	640-15-3	0.5	µg/L	<0.5	----	----	----	----	----
Triazophos	24017-47-8	0.005	µg/L	<0.005	----	----	----	----	----
Trichlorfon	52-68-6	0.02	µg/L	<0.02	----	----	----	----	----
Trichloronate	327-98-0	0.5	µg/L	<0.5	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	104	----	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC10_30/4/21	----	----	----	----
				Sampling date / time	30-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2107935-021	-----	-----	-----	-----
				Result	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	2	%		102	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		98.7	----	----	----	----
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		99.1	----	----	----	----
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.10	%		118	----	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2,4-Dichlorophenyl Acetic Acid	19719-28-9	10	%		108	----	----	----	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	45	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	14	166
EP131T: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	144
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2,4-Dichlorophenyl Acetic Acid	19719-28-9	64	140

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP234A: OP Pesticides

(WATER) EP131B: Polychlorinated Biphenyls (as Aroclors)

(WATER) EP131T: PCB Surrogate

(WATER) EP131A: Organochlorine Pesticides

(WATER) EP131S: OC Pesticide Surrogate

(WATER) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(WATER) EP202S: Phenoxyacetic Acid Herbicide Surrogate

(WATER) EP066: Polychlorinated Biphenyls (PCB)

(WATER) EP066S: PCB Surrogate

(WATER) EP068A: Organochlorine Pesticides (OC)

(WATER) EP068B: Organophosphorus Pesticides (OP)

(WATER) EP068S: Organochlorine Pesticide Surrogate

(WATER) EP068T: Organophosphorus Pesticide Surrogate

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology). Only applies to samples EM2107935 (001, 002, 004, 006, 007, 008, 012, 013, 014, 015, 016, 017, 020, 021).

(WATER) EP080/071: Total Petroleum Hydrocarbons

(WATER) EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions

QUALITY CONTROL REPORT

Work Order	: EM2107935	Page	: 1 of 19
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MARK WAKEMAN	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60591699	Date Samples Received	: 03-May-2021
Order number	: 60591699/4.0	Date Analysis Commenced	: 04-May-2021
C-O-C number	: ----	Issue Date	: 10-May-2021
Sampler	: BREANA McCARTNEY		
Site	: Kentbruck EES		
Quote number	: EN/096/18		
No. of samples received	: 21		
No. of samples analysed	: 21		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	Position	Accreditation Category
Arenie Vijayaratham	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 3657184)									
EM2107843-004	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	4560	4470	2.06	0% - 20%
EM2107904-008	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	<10	0.00	No Limit
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 3658850)									
EM2107843-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	795	731	8.39	0% - 20%
EM2107935-010	MW09	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	911	873	4.26	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 3656686)									
EM2107892-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1100	1100	0.127	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1100	1100	0.127	0% - 20%
EM2107904-008	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	<1	0.00	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	<1	0.00	No Limit
ED037P: Alkalinity by PC Titrator (QC Lot: 3656687)									
EM2107935-011	MW07	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	661	658	0.340	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	661	658	0.340	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3656351)									
EM2107935-001	MW04	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	16	16	0.00	0% - 50%
EM2107904-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	545	550	0.914	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3656353)									
EM2107945-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3656353) - continued									
EM2107935-014	MW10	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	4	4	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 3656352)									
EM2107904-011	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	<1	<1	0.00	No Limit
EM2107904-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	3240	3230	0.174	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 3656354)									
EM2107945-003	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	1120	1120	0.156	0% - 20%
EM2107935-014	MW10	ED045G: Chloride	16887-00-6	1	mg/L	131	130	1.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 3660104)									
EM2107935-003	MW03	ED093F: Calcium	7440-70-2	1	mg/L	136	135	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	11	11	0.00	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	58	58	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit
EM2108007-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	34	34	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	36	36	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	73	72	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.00	No Limit
ED093F: Dissolved Major Cations (QC Lot: 3662369)									
EM2107935-002	QC01_28/4/21	ED093F: Calcium	7440-70-2	1	mg/L	130	130	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	14	14	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	100	98	1.89	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
ET2102033-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	106	106	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	89	90	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	194	193	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	39	39	0.00	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 3662522)									
EM2107930-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	8250	8320	0.881	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	289	291	0.585	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4820	4840	0.430	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	390	392	0.686	0% - 20%
EM2107964-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	2	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	49	50	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3662367)									
ET2102008-012	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	<0.001	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3662367) - continued									
ET2102008-012	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	<0.001	67.7	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.024	0.008	102	No Limit
EM2107935-001	MW04	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.020	0.018	7.05	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3662523)									
EM2107929-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.009	0.008	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.027	0.027	0.00	No Limit
EM2107939-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.017	0.016	0.00	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.047	0.044	5.95	0% - 20%
EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.080	0.076	5.68	0% - 50%		
EG020T: Total Metals by ICP-MS (QC Lot: 3663765)									
EM2107462-010	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.008	0.007	16.1	No Limit
EM2107945-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.014	0.013	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.007	0.0	No Limit
EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.022	0.021	7.3	No Limit		



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EG035F: Dissolved Mercury by FIMS (QC Lot: 3662368)										
EM2107935-001	MW04	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
ET2102033-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EG035F: Dissolved Mercury by FIMS (QC Lot: 3662524)										
EM2107935-006	QC03_28/4/21	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EM2107939-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3662433)										
EM2107462-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EM2107985-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3655757)										
EM2107857-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM2107893-034	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3658443)										
EM2107935-001	MW04	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM2107935-016	QC05_29/4/21	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3655757)										
EM2107857-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM2107893-034	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3658443)										
EM2107935-001	MW04	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM2107935-016	QC05_29/4/21	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EP080: BTEXN (QC Lot: 3655757)										
EM2107857-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	7	7	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EM2107893-034	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
EM2107893-034	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EP080: BTEXN (QC Lot: 3658443)										
EM2107935-001	MW04	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 3658443) - continued									
EM2107935-001	MW04	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM2107935-016	QC05_29/4/21	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 3660577)									
EM2107935-001	MW04	EP202-SL: 4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4-DB	94-82-6	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Dicamba	1918-00-9	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Mecoprop	93-65-2	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: MCPA	94-74-6	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4-DP	120-36-5	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4-D	94-75-7	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Triclopyr	55335-06-3	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4.5-T	93-76-5	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: MCPB	94-81-5	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Picloram	1918-02-1	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Clopyralid	1702-17-6	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Fluroxypyr	69377-81-7	10	µg/L	<10	<10	0.00	No Limit
EM2107935-016	QC05_29/4/21	EP202-SL: 4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4-DB	94-82-6	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Dicamba	1918-00-9	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Mecoprop	93-65-2	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: MCPA	94-74-6	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4-DP	120-36-5	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4-D	94-75-7	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Triclopyr	55335-06-3	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: 2.4.5-T	93-76-5	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: MCPB	94-81-5	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Picloram	1918-02-1	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Clopyralid	1702-17-6	10	µg/L	<10	<10	0.00	No Limit
		EP202-SL: Fluroxypyr	69377-81-7	10	µg/L	<10	<10	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 3660578)									
EM2107935-006	QC03_28/4/21	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfthion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenthion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-7 5-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 3660578) - continued									
EM2107935-006	QC03_28/4/21	EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EM2107935-021	QC10_30/4/21	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenthothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit		
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit		
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit		



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 3660578) - continued									
EM2107935-021	QC10_30/4/21	EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnell)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 3660579)									
EM2107935-006	QC03_28/4/21	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
EM2107935-021	QC10_30/4/21	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit



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

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

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 3657184)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.8	91.0	110
				<10	293 mg/L	93.8	91.0	110
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 3658850)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	91.0	110
				<10	293 mg/L	93.2	91.0	110
ED037P: Alkalinity by PC Titrator (QCLot: 3656686)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	85.0	116
ED037P: Alkalinity by PC Titrator (QCLot: 3656687)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	102	85.0	116
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3656351)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	99.9	85.8	117
				<1	500 mg/L	107	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3656353)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	98.6	85.8	117
				<1	500 mg/L	104	80.0	120
ED045G: Chloride by Discrete Analyser (QCLot: 3656352)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	92.7	85.0	115
				<1	1000 mg/L	91.2	85.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 3656354)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	94.2	85.0	115
				<1	1000 mg/L	93.0	85.0	122
ED093F: Dissolved Major Cations (QCLot: 3660104)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	104	88.2	117
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	101	85.6	114
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	99.8	90.0	114
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	101	82.8	115
ED093F: Dissolved Major Cations (QCLot: 3662369)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	104	88.2	117
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	112	85.6	114
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90.0	114
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	100	82.8	115
ED093F: Dissolved Major Cations (QCLot: 3662522)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	107	88.2	117



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
ED093F: Dissolved Major Cations (QCLot: 3662522) - continued									
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	104	85.6	114	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	112	90.0	114	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	108	82.8	115	
EG020F: Dissolved Metals by ICP-MS (QCLot: 3662367)									
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	89.0	111	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	83.5	111	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	83.2	109	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	83.1	107	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	105	84.6	108	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.4	84.3	110	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	86.3	112	
EG020F: Dissolved Metals by ICP-MS (QCLot: 3662523)									
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.6	89.0	111	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.2	83.5	111	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	89.8	83.2	109	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.0	83.1	107	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.9	84.6	108	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.1	84.3	110	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.5	86.3	112	
EG020T: Total Metals by ICP-MS (QCLot: 3663765)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	109	89.2	115	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	86.4	115	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	86.9	112	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	86.9	111	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	106	88.3	112	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	87.9	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	103	86.7	117	
EG035F: Dissolved Mercury by FIMS (QCLot: 3662368)									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.5	71.6	116	
EG035F: Dissolved Mercury by FIMS (QCLot: 3662524)									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.8	71.6	116	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3662433)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.6	73.4	119	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3660567)									
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	84.0	68.9	113	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3660568)									
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	88.1	64.9	107	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3660568) - continued									
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	82.6	58.3	111	
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	82.9	69.0	117	
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	97.9	70.0	112	
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	92.6	68.9	110	
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	83.7	65.2	108	
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	87.2	65.8	109	
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	98.3	67.1	107	
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	92.4	64.1	110	
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	84.8	66.7	112	
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	87.9	63.2	111	
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	87.1	65.2	113	
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	91.9	66.0	112	
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	93.8	65.2	113	
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	94.8	67.3	114	
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	94.3	72.0	122	
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	85.6	66.9	109	
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	96.4	65.2	112	
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	81.4	65.2	112	
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	81.6	63.8	110	
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	77.4	61.1	114	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3660568)									
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	90.2	65.6	114	
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	80.7	63.7	113	
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.2	19.7	48.0	
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	90.8	69.5	110	
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	83.0	71.1	110	
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	90.1	77.0	119	
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	94.0	70.0	124	
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	99.6	68.4	116	
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	86.5	68.6	112	
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	87.3	75.0	119	
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	84.5	67.0	121	
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	93.2	69.0	121	
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	107	71.8	110	
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	92.7	67.5	112	
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	108	64.1	116	
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	83.6	67.8	114	
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	90.8	74.0	120	
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	92.6	66.2	114	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3660568) - continued								
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	98.7	51.6	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3655757)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	86.4	66.2	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3658443)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	99.9	66.2	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3660566)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	65.5	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	89.3	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	92.4	56.0	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3655757)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	86.0	66.2	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3658443)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	96.8	66.2	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3660566)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	73.3	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	93.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	76.1	61.5	121
EP080: BTEXN (QCLot: 3655757)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	82.5	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	89.3	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	86.4	71.7	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	91.8	72.3	136
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	98.9	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	83.8	68.3	131
EP080: BTEXN (QCLot: 3658443)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.1	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	101	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	100	71.7	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	108	72.3	136
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	110	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	87.5	68.3	131
EP131A: Organochlorine Pesticides (QCLot: 3660561)								
EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	1.1 µg/L	88.0	34.0	145
EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	1.1 µg/L	90.1	27.2	131
EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	1.1 µg/L	73.0	28.6	133



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP131A: Organochlorine Pesticides (QCLot: 3660561) - continued									
EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	1.1 µg/L	82.8	36.0	131	
EP131A: 4,4'-DDD	72-54-8	0.01	µg/L	<0.010	1.1 µg/L	97.8	36.0	142	
EP131A: 4,4'-DDE	72-55-9	0.01	µg/L	<0.010	1.1 µg/L	83.2	30.4	112	
EP131A: 4,4'-DDT	50-29-3	0.01	µg/L	<0.010	1.1 µg/L	90.4	29.5	142	
EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	1.1 µg/L	93.6	28.1	122	
EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	1.1 µg/L	93.3	34.0	119	
EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	1.1 µg/L	88.3	31.6	128	
EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	1.1 µg/L	56.6	35.0	159	
EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	1.1 µg/L	89.5	21.5	165	
EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.010	----	----	----	----	
EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	1.1 µg/L	74.5	22.7	123	
EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	1.1 µg/L	90.3	16.3	144	
EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	1.1 µg/L	89.0	33.0	160	
EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	1.1 µg/L	93.2	33.0	117	
EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	1.1 µg/L	92.9	23.6	126	
EP131A: gamma-BHC	58-89-9	0.01	µg/L	<0.010	1.1 µg/L	88.2	28.7	134	
EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	1.1 µg/L	80.2	29.5	150	
EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	1.1 µg/L	92.2	27.0	116	
EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	1.1 µg/L	94.7	31.2	119	
EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.010	----	----	----	----	
EP131A: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.01	µg/L	<0.010	----	----	----	----	
EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 3660562)									
EP131B: Total Polychlorinated biphenyls	----	0.1	µg/L	<0.10	----	----	----	----	
EP131B: Aroclor 1254	11097-69-1	----	µg/L	----	1 µg/L	99.9	51.0	133	
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3660577)									
EP202-SL: 4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	100 µg/L	102	82.0	136	
EP202-SL: 2,4-DB	94-82-6	10	µg/L	<10	100 µg/L	105	65.0	147	
EP202-SL: Dicamba	1918-00-9	10	µg/L	<10	100 µg/L	103	83.0	137	
EP202-SL: Mecoprop	93-65-2	10	µg/L	<10	100 µg/L	99.0	75.0	143	
EP202-SL: MCPA	94-74-6	10	µg/L	<10	100 µg/L	122	76.0	140	
EP202-SL: 2,4-DP	120-36-5	10	µg/L	<10	100 µg/L	107	76.0	144	
EP202-SL: 2,4-D	94-75-7	10	µg/L	<10	100 µg/L	120	77.0	139	
EP202-SL: Triclopyr	55335-06-3	10	µg/L	<10	100 µg/L	100	77.0	141	
EP202-SL: Silvex (2,4,5-TP/Fenoprop)	93-72-1	10	µg/L	<10	100 µg/L	96.7	75.0	143	
EP202-SL: 2,4,5-T	93-76-5	10	µg/L	<10	100 µg/L	97.3	78.0	140	
EP202-SL: MCPB	94-81-5	10	µg/L	<10	100 µg/L	96.3	69.2	139	
EP202-SL: Picloram	1918-02-1	10	µg/L	<10	100 µg/L	103	70.0	144	
EP202-SL: Clopyralid	1702-17-6	10	µg/L	<10	100 µg/L	115	70.0	145	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3660577) - continued									
EP202-SL: Fluroxypyr	69377-81-7	10	µg/L	<10	100 µg/L	106	77.0	145	
EP234A: OP Pesticides (QCLot: 3660578)									
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	85.0	77.0	129	
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	87.0	75.0	135	
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	92.2	70.0	130	
EP234-1: Carbofenthiion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	84.0	70.0	130	
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.4 µg/L	82.8	74.0	134	
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	78.0	70.0	130	
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	90.9	70.0	130	
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	97.0	70.0	130	
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.1 µg/L	79.0	64.0	134	
EP234-1: Demeton-O & Demeton-S	298-03-3/12 6-75-0	0.02	µg/L	<0.02	0.2 µg/L	83.5	79.0	127	
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.1 µg/L	88.0	63.0	135	
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	81.0	70.0	128	
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	118	68.0	138	
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	111	76.0	128	
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	100	75.0	127	
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	83.6	72.0	134	
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	95.2	70.0	130	
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	76.0	70.0	130	
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	79.0	78.0	128	
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	76.0	71.0	135	
EP234-1: Fenchlorphos (Ronnell)	299-84-3	10	µg/L	<10	100 µg/L	111	70.0	130	
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	93.7	64.0	136	
EP234-1: Fensulfotthion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	95.0	79.0	125	
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	78.2	70.0	130	
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	92.5	70.0	130	
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.4 µg/L	97.0	77.0	123	
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	108	75.0	129	
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	112	74.0	130	
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	83.6	69.0	139	
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	84.5	66.0	140	
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	98.8	68.0	136	
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	87.0	70.0	130	
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	72.0	71.0	137	
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	72.0	70.0	130	
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	74.4	70.0	130	
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	74.0	71.0	137	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP234A: OP Pesticides (QCLot: 3660578) - continued								
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	76.6	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	74.0	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	80.0	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	77.0	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	84.0	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	118	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	79.6	63.0	139
EP234A: OP Pesticides (QCLot: 3660579)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	89.1	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	116	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	5 µg/L	79.9	70.0	130
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	82.3	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	124	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	114	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	120	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	105	70.0	130

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
					MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3656351)							
EM2107904-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	100 mg/L	96.2	70.0	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3656353)							
EM2107935-015	MW11	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	100 mg/L	97.5	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 3656352)							
EM2107904-002	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	81.2	70.0	142
ED045G: Chloride by Discrete Analyser (QCLot: 3656354)							
EM2107935-015	MW11	ED045G: Chloride	16887-00-6	400 mg/L	93.8	70.0	142
EG020F: Dissolved Metals by ICP-MS (QCLot: 3662367)							
EM2107935-001	MW04	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	106	76.6	124
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	102	74.6	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	99.4	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	98.4	76.0	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3662367) - continued							
EM2107935-001	MW04	EG020A-F: Lead	7439-92-1	0.2 mg/L	101	75.0	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	101	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	102	75.0	131
EG020F: Dissolved Metals by ICP-MS (QCLot: 3662523)							
EM2107929-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	# 52.8	76.6	124
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	# 24.7	74.6	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	# 41.7	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	# 20.8	76.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	# 15.0	75.0	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	# 37.7	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	# 33.0	75.0	131
EG020T: Total Metals by ICP-MS (QCLot: 3663765)							
EM2107462-010	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	106	82.0	123
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	81.8	123
		EG020A-T: Chromium	7440-47-3	1 mg/L	106	78.9	119
		EG020A-T: Copper	7440-50-8	1 mg/L	100	80.4	118
		EG020A-T: Lead	7439-92-1	1 mg/L	108	80.5	121
		EG020A-T: Nickel	7440-02-0	1 mg/L	103	80.0	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	74.0	120
EG035F: Dissolved Mercury by FIMS (QCLot: 3662368)							
EM2107935-002	QC01_28/4/21	EG035F: Mercury	7439-97-6	0.01 mg/L	93.6	70.0	120
EG035F: Dissolved Mercury by FIMS (QCLot: 3662524)							
EM2107935-007	QC04_28/4/21	EG035F: Mercury	7439-97-6	0.01 mg/L	94.6	70.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3662433)							
EM2107896-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	87.3	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3655757)							
EM2107857-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	90.0	33.9	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3658443)							
EM2107935-002	QC01_28/4/21	EP080: C6 - C9 Fraction	----	280 µg/L	97.8	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3655757)							
EM2107857-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	89.7	34.0	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3658443)							
EM2107935-002	QC01_28/4/21	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	94.0	34.0	122
EP080: BTEXN (QCLot: 3655757)							
EM2107857-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	100	56.3	133



Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Acceptable Limits (%)	
				Low	High		
EP080: BTEXN (QCLot: 3655757) - continued							
EM2107857-002	Anonymous	EP080: Toluene	108-88-3	20 µg/L	102	60.4	132
EP080: BTEXN (QCLot: 3658443)							
EM2107935-002	QC01_28/4/21	EP080: Benzene	71-43-2	20 µg/L	113	56.3	133
		EP080: Toluene	108-88-3	20 µg/L	110	60.4	132
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 3660577)							
EM2107935-001	MW04	EP202-SL: Mecoprop	93-65-2	100 µg/L	89.1	75.0	143
		EP202-SL: MCPA	94-74-6	100 µg/L	88.2	76.0	140
		EP202-SL: 2.4-D	94-75-7	100 µg/L	124	77.0	139
		EP202-SL: Triclopyr	55335-06-3	100 µg/L	96.7	77.0	141
		EP202-SL: 2.4.5-T	93-76-5	100 µg/L	93.3	78.0	140
		EP202-SL: Picloram	1918-02-1	100 µg/L	117	70.0	144
		EP202-SL: Clopyralid	1702-17-6	100 µg/L	106	70.0	145
EP234A: OP Pesticides (QCLot: 3660578)							
EM2107935-006	QC03_28/4/21	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	84.0	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	72.0	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	96.5	70.0	130
		EP234-1: Carbofenthoion	786-19-6	0.2 µg/L	100	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.4 µg/L	106	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	118	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	86.8	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	114	70.0	130
		EP234-1: Demeton-O	298-03-3	0.1 µg/L	88.0	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.2 µg/L	83.0	69.0	129
		EP234-1: Demeton-S	126-75-0	0.1 µg/L	78.0	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	88.0	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	95.0	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	107	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	77.5	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	78.8	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	92.2	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	118	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	96.0	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	105	70.0	130
		EP234-1: Fenchlorphos (Ronnell)	299-84-3	100 µg/L	126	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	86.5	64.0	136
		EP234-1: Fensulfotioin	115-90-2	0.1 µg/L	106	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	88.4	70.0	130



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 3660578) - continued							
EM2107935-006	QC03_28/4/21	EP234-1: Malathion	121-75-5	0.2 µg/L	70.5	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.4 µg/L	93.5	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	104	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	94.0	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	79.8	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	92.8	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	127	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	80.0	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	103	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	72.0	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	75.0	70.0	130
		EP234-1: Sulfofep	3689-24-5	0.05 µg/L	92.0	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	110	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	111	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	# 61.0	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	78.0	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	92.0	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	102	70.0	130
EP234-1: Trichloronate	327-98-0	5 µg/L	76.4	63.0	139		
EP234A: OP Pesticides (QCLot: 3660579)							
EM2107935-006	QC03_28/4/21	EP234-1x: Acephate	30560-19-1	5 µg/L	101	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	126	70.0	130
		EP234-1x: Formothion	2540-82-1	5 µg/L	81.6	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	110	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	71.2	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	118	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	103	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	79.0	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2107935	Page	: 1 of 14
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MARK WAKEMAN	Telephone	: +6138549 9645
Project	: 60591699	Date Samples Received	: 03-May-2021
Site	: Kentbruck EES	Issue Date	: 10-May-2021
Sampler	: BREANA McCARTNEY	No. of samples received	: 21
Order number	: 60591699/4.0	No. of samples analysed	: 21

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Arsenic	7440-38-2	52.8 %	76.6-124%	Recovery less than lower data quality objective
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Cadmium	7440-43-9	24.7 %	74.6-118%	Recovery less than lower data quality objective
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Chromium	7440-47-3	41.7 %	71.0-135%	Recovery less than lower data quality objective
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Copper	7440-50-8	20.8 %	76.0-130%	Recovery less than lower data quality objective
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Lead	7439-92-1	15.0 %	75.0-133%	Recovery less than lower data quality objective
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Nickel	7440-02-0	37.7 %	73.0-131%	Recovery less than lower data quality objective
EG020F: Dissolved Metals by ICP-MS	EM2107929--001	Anonymous	Zinc	7440-66-6	33.0 %	75.0-131%	Recovery less than lower data quality objective
EP234A: OP Pesticides	EM2107935--006	QC03_28/4/21	Terbufos	13071-79-9	61.0 %	70.0-130%	Recovery less than lower data quality objective

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP234A: OP Pesticides						
Amber Glass Bottle - Unpreserved MW04, QC04_28/4/21	QC03_28/4/21,	----	----	----	06-May-2021	05-May-2021 1

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Organochlorine Pesticides (Ultra-trace)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Organochlorine Pesticides (Ultra-trace)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Matrix Spikes (MS) - Continued					
Pesticides by GCMS	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H) MW04, MW03, MW01, MW05	QC01_28/4/21, MW02, MW06,	28-Apr-2021	----	----	----	04-May-2021	05-May-2021	✓
Clear Plastic Bottle - Natural (EA015H) MW09, MW08, MW10	MW07, MW12,	29-Apr-2021	----	----	----	05-May-2021	06-May-2021	✓
Clear Plastic Bottle - Natural (EA015H) MW11		30-Apr-2021	----	----	----	05-May-2021	07-May-2021	✓
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P) MW04, MW03, MW01, MW05	QC01_28/4/21, MW02, MW06,	28-Apr-2021	----	----	----	04-May-2021	12-May-2021	✓
Clear Plastic Bottle - Natural (ED037-P) MW09, MW08, MW10	MW07, MW12,	29-Apr-2021	----	----	----	04-May-2021	13-May-2021	✓
Clear Plastic Bottle - Natural (ED037-P) MW11		30-Apr-2021	----	----	----	04-May-2021	14-May-2021	✓



Matrix: **WATER** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G) MW04, MW03, MW01, MW05	QC01_28/4/21, MW02, MW06,	28-Apr-2021	----	----	----	04-May-2021	26-May-2021	✓
Clear Plastic Bottle - Natural (ED041G) MW09, MW08, MW10	MW07, MW12,	29-Apr-2021	----	----	----	04-May-2021	27-May-2021	✓
Clear Plastic Bottle - Natural (ED041G) MW11		30-Apr-2021	----	----	----	04-May-2021	28-May-2021	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G) MW04, MW03, MW01, MW05	QC01_28/4/21, MW02, MW06,	28-Apr-2021	----	----	----	04-May-2021	26-May-2021	✓
Clear Plastic Bottle - Natural (ED045G) MW09, MW08, MW10	MW07, MW12,	29-Apr-2021	----	----	----	04-May-2021	27-May-2021	✓
Clear Plastic Bottle - Natural (ED045G) MW11		30-Apr-2021	----	----	----	04-May-2021	28-May-2021	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW03, MW05	MW01,	28-Apr-2021	----	----	----	06-May-2021	26-May-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW04, MW02,	QC01_28/4/21, MW06	28-Apr-2021	----	----	----	07-May-2021	26-May-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW09,	MW07	29-Apr-2021	----	----	----	06-May-2021	27-May-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW08, MW10	MW12,	29-Apr-2021	----	----	----	07-May-2021	27-May-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW11		30-Apr-2021	----	----	----	07-May-2021	28-May-2021	✓



Matrix: **WATER** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	----	----	----	06-May-2021	25-Oct-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	----	----	----	06-May-2021	26-Oct-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) MW11,	QC09_30/4/21	30-Apr-2021	----	----	----	06-May-2021	27-Oct-2021	✓
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) QC10_30/4/21		30-Apr-2021	07-May-2021	27-Oct-2021	✓	07-May-2021	27-Oct-2021	✓
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	----	----	----	06-May-2021	26-May-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	----	----	----	06-May-2021	27-May-2021	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) MW11,	QC09_30/4/21	30-Apr-2021	----	----	----	06-May-2021	28-May-2021	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) QC10_30/4/21		30-Apr-2021	----	----	----	06-May-2021	28-May-2021	✓
EP066: Polychlorinated Biphenyls (PCB)								
Amber Glass Bottle - Unpreserved (EP066) QC01_28/4/21, MW06	MW02,	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068) QC01_28/4/21, MW06	MW02,	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068) QC01_28/4/21, MW06	MW02,	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP071) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	05-May-2021	06-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP071) MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	05-May-2021	07-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	06-May-2021	12-May-2021	✓	06-May-2021	12-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC07_29/4/21,	QC08_29/4/21	29-Apr-2021	04-May-2021	13-May-2021	✓	05-May-2021	13-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	06-May-2021	13-May-2021	✓	06-May-2021	13-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	06-May-2021	14-May-2021	✓	06-May-2021	14-May-2021	✓



Matrix: **WATER** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP071)								
MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	05-May-2021	06-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP071)								
MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	05-May-2021	07-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	06-May-2021	12-May-2021	✓	06-May-2021	12-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
QC07_29/4/21,	QC08_29/4/21	29-Apr-2021	04-May-2021	13-May-2021	✓	05-May-2021	13-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	06-May-2021	13-May-2021	✓	06-May-2021	13-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	06-May-2021	14-May-2021	✓	06-May-2021	14-May-2021	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	06-May-2021	12-May-2021	✓	06-May-2021	12-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
QC07_29/4/21,	QC08_29/4/21	29-Apr-2021	04-May-2021	13-May-2021	✓	05-May-2021	13-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	06-May-2021	13-May-2021	✓	06-May-2021	13-May-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	06-May-2021	14-May-2021	✓	06-May-2021	14-May-2021	✓



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP131A: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP131A) MW04, QC04_28/4/21	QC03_28/4/21,	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP131A) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	05-May-2021	06-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP131A) MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	05-May-2021	07-May-2021	✓	07-May-2021	14-Jun-2021	✓
EP131B: Polychlorinated Biphenyls (as Aroclors)								
Amber Glass Bottle - Unpreserved (EP131B) MW04, QC04_28/4/21	QC03_28/4/21,	28-Apr-2021	05-May-2021	05-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP131B) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	05-May-2021	06-May-2021	✓	07-May-2021	14-Jun-2021	✓
Amber Glass Bottle - Unpreserved (EP131B) MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	05-May-2021	07-May-2021	✓	07-May-2021	14-Jun-2021	✓
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
Amber Glass Bottle - Unpreserved (EP202-SL) MW04, MW02, QC04_28/4/21,	QC01_28/4/21, QC03_28/4/21, MW06	28-Apr-2021	----	----	----	05-May-2021	05-May-2021	✓
Amber Glass Bottle - Unpreserved (EP202-SL) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	----	----	----	05-May-2021	06-May-2021	✓
Amber Glass Bottle - Unpreserved (EP202-SL) MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	----	----	----	05-May-2021	07-May-2021	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP234A: OP Pesticides								
Amber Glass Bottle - Unpreserved (EP234-1) MW04, QC04_28/4/21	QC03_28/4/21,	28-Apr-2021	----	----	----	06-May-2021	05-May-2021	✖
Amber Glass Bottle - Unpreserved (EP234-1) MW08, MW10, QC06_29/4/21	MW12, QC05_29/4/21,	29-Apr-2021	----	----	----	06-May-2021	06-May-2021	✔
Amber Glass Bottle - Unpreserved (EP234-1) MW11, QC10_30/4/21	QC09_30/4/21,	30-Apr-2021	----	----	----	06-May-2021	07-May-2021	✔



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	3	26	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	37	10.81	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	6	54	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	11	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	0	11	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	2	14	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	8	25.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	2	26	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	37	5.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	54	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
TRH Volatiles/BTEX	EP080	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	37	5.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	54	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	37	5.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	11	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	0	11	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA seal method 2 017-1-L
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).



Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatle Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/μECD/uECD). This method is compliant with NEPM Schedule B(3)
PCB's (Ultra-trace)	EP131B	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup), 3620 (Florisil), 8081/8082 (GC/μECD/μECD). This method is compliant with NEPM Schedule B(3)
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	WATER	In house: LCMS (Electrospray in negative mode). After adding surrogate and acetic acid, water samples are injected on a C18 column for LC/MS determination.
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction of Liquids (Ultra-trace pesticides.)	ORG14-UTP	WATER	In house: Referenced to USEPA 3510 Samples are extracted into dichloromethane, concentrated and exchanged into an appropriate solvent for GPC and florisil cleanup as required. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.

Page : 14 of 14
Work Order : EM2107935
Client : AECOM Australia Pty Ltd
Project : 60591699



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2107935

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MARK WAKEMAN	Contact	: Peter Ravlic
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: mark.wakeman@aecom.com	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60591699	Page	: 1 of 3
Order number	: 60591699/4.0	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Kentbruck EES		
Sampler	: BREANA McCARTNEY		

Dates

Date Samples Received	: 03-May-2021 10:50	Issue Date	: 04-May-2021
Client Requested Due Date	: 10-May-2021	Scheduled Reporting Date	: 10-May-2021

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 2.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 21 / 21

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Standard level herbicides logged instead of low level herbicides due to limited volume.**
- **Ultra trace OCP, OPP and PCB have not been logged for samples 002, 004 or 008 due to limited volume.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Preliminary results will be available on the scheduled reporting date listed in this report. However the final report with semi-volatile TRH and ultra trace organics analysis will be complete on 14/05/2021.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EP202SL Phenoxyacetic Acid	WATER - NT-01 & 02 Ca, Mg, Na, K, Cl, SO ₄ , Alkalinity	WATER - UTO-10W Ultratrace OC and OP (extended), PCB Pesticides	WATER - W-02 8 Metals	WATER - W-04 TRH/BTEXN	WATER - W-18 TRH(C6 - C9)/BTEXN
EM2107935-001	28-Apr-2021 00:00	MW04	✓	✓	✓	✓	✓	✓	
EM2107935-002	28-Apr-2021 00:00	QC01_28/4/21	✓	✓	✓		✓	✓	
EM2107935-003	28-Apr-2021 00:00	MW03	✓		✓				
EM2107935-004	28-Apr-2021 00:00	MW02	✓	✓	✓		✓	✓	
EM2107935-005	28-Apr-2021 00:00	MW01	✓		✓				
EM2107935-006	28-Apr-2021 00:00	QC03_28/4/21		✓		✓	✓	✓	
EM2107935-007	28-Apr-2021 00:00	QC04_28/4/21		✓		✓	✓	✓	
EM2107935-008	28-Apr-2021 00:00	MW06	✓	✓	✓		✓	✓	
EM2107935-009	28-Apr-2021 00:00	MW05	✓		✓				
EM2107935-010	29-Apr-2021 00:00	MW09	✓		✓				
EM2107935-011	29-Apr-2021 00:00	MW07	✓		✓				
EM2107935-012	29-Apr-2021 00:00	MW08	✓	✓	✓	✓	✓	✓	
EM2107935-013	29-Apr-2021 00:00	MW12	✓	✓	✓	✓	✓	✓	
EM2107935-014	29-Apr-2021 00:00	MW10	✓	✓	✓	✓	✓	✓	
EM2107935-015	30-Apr-2021 00:00	MW11	✓	✓	✓	✓	✓	✓	
EM2107935-016	29-Apr-2021 00:00	QC05_29/4/21		✓		✓	✓	✓	
EM2107935-017	29-Apr-2021 00:00	QC06_29/4/21		✓		✓	✓	✓	
EM2107935-018	29-Apr-2021 00:00	QC07_29/4/21							✓
EM2107935-019	29-Apr-2021 00:00	QC08_29/4/21							✓
EM2107935-020	30-Apr-2021 00:00	QC09_30/4/21		✓		✓	✓	✓	
EM2107935-021	30-Apr-2021 00:00	QC10_30/4/21		✓		✓		✓	

ANZ
FQM - Generic Chain of Custody Form

QAAN(EV)-007-FM1

CONSULTANT: AECOM Australia		ADDRESS/OFFICE: Melbourne		SAMPLER: <i>breang, MLLATHING, RACUM, LAW.</i>		Destination Laboratory ALS	
PROJECT MANAGER (PM): MW <i>WAVE WALKEM AW</i>		SITE: Kenthuck EES		MOBILE: <i>040 248882</i>		PHONE: <i>9</i>	
PROJECT NUMBER & TASK COI 60591699 / <i>1-0</i>		P.O. NO.: EN/06/16		EMAIL REPORT TO: <i>WAVE WALKEM AW @ aecum.com</i>		ANALYSIS REQUIRED (including SUITES (note - suite codes must be listed to attract suite prices))	
RESULTS REQUIRED (Date): <i>Standard TAR.</i>		QUOTE NO.:		W-6 (TRH/BTEXN/Pb)		W-28 (MNA - nitrate, sulfate, methane, ferrous)	
FOR LABORATORY USE ONLY		COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:		W-18 (C6-C9/BTEXN)		W4 - TRH/BTEXN	
COLLECTOR (and appropriate):				MT0-10W Herb/pest		EP202LL phenoxo acid herb	
ANALYST (and appropriate):				FW-2 Diss Metals (8)		Major ions	
SAMPLE IDENTIFICATION:				TDS		TDS	
SAMPLER INFORMATION (note: S = Soil, W=Water)				HOLD			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	CONTAINER INFORMATION	Type / Code	Total bottles
1	MW04	W	28/4/21			2VS, 2AG, P, N	6
2	QC01 - 28/4/21	W				2VS, 2AG, P, N	5
3	MW03		28/4/21			2VS, AG, D, N	5
4	MW02					11	5
5	MW01					11	5
6	QC03 - 28/4/21					2VS, 2AG, P, N	5
7	QC04 - 28/4/21					2VS, 2AG, P, N	6
8	MW06					2VS, AG, P, N	5
9	MW05					2VS, AG, P, N	5
10	MW09		29/4/21			2VS, 2AG, P, N	7
11	MW02					2VS, 2AG, P, N	6
12	MW08					2VS, 2AG, P, N	1
13	MW12					2VS, 2AG, P, N	1
14	MW00					2VS, 2AG, P, N	1
15	MW11		30/4/21			2VS, 2AG, P, N	1
16	QC05 - 29/4/21		29/4/21			2VS, 2AG, N	5
17	QC06 - 29/4/21					11	5
18	QC07 - 29/4/21		11			VS	1

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speedation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solis; B = Unpreserved Bag

Soil Container Codes: Jar = Upper 20 glass jar

Received: *3/5/20* Carfer: *3/5/20*

Forwarded to *Secondary Lab*

Initials & Date *05/05*

Major ions/TDS only

Environmental Division
Melbourne
Work Order Reference
EM2107935

Telephone: + 61-3-9549 9600

Method of Shipment: *ALS*

COG Page *1 of 2*

ANZ
FQM - Generic Chain of Custody Form



CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLE-ER: Bryan D. McCarthy @ aecom, (8M)		Destination Laboratory	
PROJECT MANAGER (PM): MW Mark Walkman		SITE: Kentbrook EES		MOBILE: 0401 288865		EVOFINE	
PROJECT NUMBER & TASK: 60591699 / 4-B		P.O. NO.: 24406440		EMAIL REPORT TO: MARK.WALKMAN@aecom.com		PHONE: 0401 288865	
RESULTS REQUIRED (Date): Standard FAT		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		W-6 (TRH/BTEXN/Pb)			
COOLER SEAL (circle appropriate)		In tact: Yes		W-28 (MNA - nitrate, sulfate, methane, ferrous)			
SAMPLE TEMPERATURE		NO		W-18 (C6-C9/BTEXN)			
CHILLED: Yes		NO		<input checked="" type="checkbox"/> Major ions <input checked="" type="checkbox"/> TDS <input checked="" type="checkbox"/> TRH/BTEXN <input checked="" type="checkbox"/> Dissolved & Metals <input checked="" type="checkbox"/> Herbicides / Pesticides <input checked="" type="checkbox"/> Phenoxy acid herbicides			
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected" Extra volume for QC or trace LORs etc.			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	QCO2_2814/21	W	28/4/21		ZVS, AG, P, N	5	

Please forward to EVOFINE
Dedicated for low amber bottle
quantity.

Please forward to

EVOFINE

17

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT	
Name: Milva	Date: 31/5/21	Name: Peter	Date: 3/5	Name:	Date:	Con. Note No.:	
Of: RS	Time:	Of: PK	Time: 10:50 AM	Time:	Time:	Transport Co.:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cl₂ Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airtight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulfonate Solis; B = Unpreserved Bag;
 Soil Container Codes: Jar = Unpreserved glass jar

COC Page 1 of 1

Australia

Melbourne

6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland

35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch

43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name: AECOM Aust Pty Ltd Melbourne
Contact name: Mark Wakeman
Project name: KENTBRUCK EES
Project ID: 60591699/4.0
Turnaround time: 5 Day
Date/Time received: May 4, 2021 8:30 AM
Eurofins reference: 792485

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 2.1 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Mark Wakeman - mark.wakeman@aecom.com.

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.



Environment Testing

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Order No.:
Report #: 792485
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: May 4, 2021 8:30 AM
Due: May 11, 2021
Priority: 5 Day
Contact Name: Mark Wakeman

Project Name: KENTBRUCK EES
Project ID: 60591699/4.0

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Acid Herbicides	Metals M8 filtered	Suite B14: OCP/OPP	Eurofins Suite B11	BTEX and Naphthalene	Total Recoverable Hydrocarbons	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	QC02_28/4/21	Apr 28, 2021		Water	M21-My05875	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



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Accreditation Number 1261
Site Number 1254

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Arrangement for the mutual recognition of the
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inspection and proficiency testing scheme providers
reports.

Attention: **Mark Wakeman**

Report **792485-W**
Project name **KENTBRUCK EES**
Project ID **60591699/4.0**
Received Date **May 04, 2021**

Client Sample ID	LOR	Unit	QC02_28/4/21
Sample Matrix			Water
Eurofins Sample No.			M21-My05875
Date Sampled			Apr 28, 2021
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4,4'-DDD	0.0002	mg/L	< 0.0002
4,4'-DDE	0.0002	mg/L	< 0.0002
4,4'-DDT	0.0002	mg/L	< 0.0002
a-BHC	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	0.0002
b-BHC	0.0002	mg/L	< 0.0002
d-BHC	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002

Client Sample ID			QC02_28/4/21
Sample Matrix			Water
Eurofins Sample No.			M21-My05875
Date Sampled			Apr 28, 2021
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-BHC (Lindane)	0.0002	mg/L	0.0003
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.001	mg/L	< 0.001
Aldrin and Dieldrin (Total)*	0.0002	mg/L	0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorodate (surr.)	1	%	90
Tetrachloro-m-xylene (surr.)	1	%	143
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.02	mg/L	< 0.02
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.002	mg/L	< 0.002
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002

Client Sample ID			QC02_28/4/21
Sample Matrix			Water
Eurofins Sample No.			M21-My05875
Date Sampled			Apr 28, 2021
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	92
Acid Herbicides			
2.4-D	0.001	mg/L	< 0.002
2.4-DB	0.001	mg/L	< 0.002
2.4.5-T	0.001	mg/L	< 0.002
2.4.5-TP	0.001	mg/L	< 0.002
Actril (loxynil)	0.001	mg/L	< 0.002
Dicamba	0.001	mg/L	< 0.002
Dichlorprop	0.001	mg/L	< 0.002
Dinitro-o-cresol	0.001	mg/L	< 0.002
Dinoseb	0.001	mg/L	< 0.002
MCPA	0.001	mg/L	< 0.002
MCPB	0.001	mg/L	< 0.002
Mecoprop	0.001	mg/L	< 0.002
Warfarin (surr.)	0.001	%	int
Ammonia (as N)			
	0.01	mg/L	0.01
Chloride			
	1	mg/L	270
Nitrate (as N)			
	0.02	mg/L	3.7
Sulphate (as SO4)			
	5	mg/L	15
Total Dissolved Solids Dried at 180°C ± 2°C			
	10	mg/L	960
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	320
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Alkali Metals			
Calcium	0.5	mg/L	150
Magnesium	0.5	mg/L	19
Potassium	0.5	mg/L	2.4
Sodium	0.5	mg/L	110
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002
Zinc (filtered)	0.005	mg/L	0.016

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	May 06, 2021	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	May 06, 2021	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	May 06, 2021	7 Days
BTEX and Naphthalene			
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	May 06, 2021	14 Days
Suite B14: OCP/OPP			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	May 06, 2021	7 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	May 06, 2021	7 Days
Acid Herbicides - Method: LTM-ORG-2180 Phenoxy Acid Herbicides	Melbourne	May 06, 2021	14 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	May 06, 2021	28 Days
Eurofins Suite B11			
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	May 06, 2021	28 Days
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	May 06, 2021	28 Days
Nitrate (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	May 06, 2021	28 Days
Sulphate (as SO4) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	May 06, 2021	28 Days
Alkalinity (speciated) - Method: LTM-INO-4250 Alkalinity by Electrometric Titration	Melbourne	May 06, 2021	14 Days
Alkali Metals - Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES	Melbourne	May 06, 2021	180 Days
Total Dissolved Solids Dried at 180°C ± 2°C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Melbourne	May 06, 2021	7 Days

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 46-48 Banksia Road
 Welshpool WA 6106
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

Newcastle
 4/52 Industrial Drive
 Mayfield East NSW 2304
 PO Box 60 Wickham 2293
 Phone : +61 2 4968 8448
 NATA # 1261 Site # 25079

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name:	AECOM Aust Pty Ltd Melbourne	Order No.:		Received:	May 4, 2021 8:30 AM
Address:	Collins Square, Tower 2, Level 11, 727 Collins Street Docklands VIC 3008	Report #:	792485	Due:	May 11, 2021
Project Name:	KENTBRUCK EES	Phone:	03 9653 1234	Priority:	5 Day
Project ID:	60591699/4.0	Fax:	03 9654 7117	Contact Name:	Mark Wakeman

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Acid Herbicides	Metals M8 filtered	Suite B14: OCP/OPP	Eurofins Suite B11	BTEX and Naphthalene	Total Recoverable Hydrocarbons	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	QC02_28/4/21	Apr 28, 2021		Water	M21-My05875	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4,4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4,4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4,4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-BHC	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-BHC	mg/L	< 0.0002			0.0002	Pass	
d-BHC	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-BHC (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/L	< 0.001			0.001	Pass	
2.4-DB	mg/L	< 0.001			0.001	Pass	
2.4.5-T	mg/L	< 0.001			0.001	Pass	
2.4.5-TP	mg/L	< 0.001			0.001	Pass	
Actril (loxynil)	mg/L	< 0.001			0.001	Pass	
Dicamba	mg/L	< 0.001			0.001	Pass	
Dichlorprop	mg/L	< 0.001			0.001	Pass	
Dinitro-o-cresol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.001			0.001	Pass	
MCPA	mg/L	< 0.001			0.001	Pass	
MCPB	mg/L	< 0.001			0.001	Pass	
Mecoprop	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Magnesium	mg/L	< 0.5		0.5	Pass	
Potassium	mg/L	< 0.5		0.5	Pass	
Sodium	mg/L	< 0.5		0.5	Pass	
Method Blank						
Heavy Metals						
Arsenic (filtered)	mg/L	< 0.001		0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002		0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001		0.001	Pass	
Copper (filtered)	mg/L	< 0.001		0.001	Pass	
Lead (filtered)	mg/L	< 0.001		0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001		0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001		0.001	Pass	
Zinc (filtered)	mg/L	< 0.005		0.005	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	%	71		70-130	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	%	72		70-130	Pass	
LCS - % Recovery						
Organochlorine Pesticides						
Chlordanes - Total	%	72		70-130	Pass	
4.4'-DDD	%	106		70-130	Pass	
4.4'-DDE	%	81		70-130	Pass	
4.4'-DDT	%	83		70-130	Pass	
a-BHC	%	73		70-130	Pass	
Aldrin	%	77		70-130	Pass	
b-BHC	%	102		70-130	Pass	
d-BHC	%	100		70-130	Pass	
Dieldrin	%	110		70-130	Pass	
Endosulfan I	%	81		70-130	Pass	
Endosulfan II	%	95		70-130	Pass	
Endosulfan sulphate	%	80		70-130	Pass	
Endrin	%	88		70-130	Pass	
Endrin aldehyde	%	98		70-130	Pass	
Endrin ketone	%	80		70-130	Pass	
g-BHC (Lindane)	%	116		70-130	Pass	
Heptachlor	%	82		70-130	Pass	
Heptachlor epoxide	%	114		70-130	Pass	
Hexachlorobenzene	%	119		70-130	Pass	
Methoxychlor	%	85		70-130	Pass	
LCS - % Recovery						
Organophosphorus Pesticides						
Diazinon	%	121		70-130	Pass	
Dimethoate	%	97		70-130	Pass	
Ethion	%	98		70-130	Pass	
Fenitrothion	%	93		70-130	Pass	
Methyl parathion	%	99		70-130	Pass	
Mevinphos	%	79		70-130	Pass	
LCS - % Recovery						
Acid Herbicides						
2.4-D	%	115		70-130	Pass	
2.4-DB	%	100		70-130	Pass	
2.4.5-T	%	120		70-130	Pass	

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
2.4.5-TP	%	126	70-130	Pass			
Actril (loxynil)	%	118	70-130	Pass			
Dicamba	%	129	70-130	Pass			
Dichlorprop	%	125	70-130	Pass			
Dinitro-o-cresol	%	116	70-130	Pass			
Dinoseb	%	104	70-130	Pass			
MCPA	%	106	70-130	Pass			
MCPB	%	101	70-130	Pass			
Mecoprop	%	120	70-130	Pass			
LCS - % Recovery							
Ammonia (as N)	%	114	70-130	Pass			
Chloride	%	103	70-130	Pass			
Nitrate (as N)	%	102	70-130	Pass			
Sulphate (as SO4)	%	101	70-130	Pass			
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	83	70-130	Pass			
LCS - % Recovery							
Alkali Metals							
Calcium	%	96	80-120	Pass			
Magnesium	%	107	80-120	Pass			
Potassium	%	91	80-120	Pass			
Sodium	%	106	80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1			
TRH C10-C14	M21-My08767	NCP	%	110	70-130	Pass	
Spike - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1			
TRH >C10-C16	M21-My08767	NCP	%	112	70-130	Pass	
Spike - % Recovery							
Organophosphorus Pesticides				Result 1			
Diazinon	B21-Ap54022	NCP	%	129	70-130	Pass	
Dimethoate	B21-Ap54022	NCP	%	92	70-130	Pass	
Ethion	B21-Ap54022	NCP	%	78	70-130	Pass	
Fenitrothion	B21-Ap54022	NCP	%	103	70-130	Pass	
Methyl parathion	B21-Ap54022	NCP	%	97	70-130	Pass	
Mevinphos	B21-Ap54022	NCP	%	88	70-130	Pass	
Spike - % Recovery							
				Result 1			
Ammonia (as N)	M21-My05950	NCP	%	95	70-130	Pass	
Nitrate (as N)	M21-My05950	NCP	%	99	70-130	Pass	
Spike - % Recovery							
Alkali Metals				Result 1			
Calcium	M21-My07943	NCP	%	114	75-125	Pass	
Magnesium	M21-My07943	NCP	%	105	75-125	Pass	
Potassium	M21-My07943	NCP	%	96	75-125	Pass	
Sodium	M21-My07943	NCP	%	117	75-125	Pass	
Spike - % Recovery							
Heavy Metals				Result 1			
Arsenic (filtered)	M21-My05874	NCP	%	94	75-125	Pass	
Cadmium (filtered)	M21-My05874	NCP	%	90	75-125	Pass	
Chromium (filtered)	M21-My05874	NCP	%	93	75-125	Pass	
Copper (filtered)	M21-My05874	NCP	%	92	75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead (filtered)	M21-My05874	NCP	%	89			75-125	Pass	
Mercury (filtered)	M21-My05874	NCP	%	85			75-125	Pass	
Nickel (filtered)	M21-My05874	NCP	%	94			75-125	Pass	
Zinc (filtered)	M21-My05874	NCP	%	93			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M21-My08766	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M21-My08766	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M21-My08766	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M21-My08766	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M21-My08766	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M21-My08766	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M21-My05875	CP	mg/L	0.01	0.02	17	30%	Pass	
Chloride	M21-My01105	NCP	mg/L	43	46	5.0	30%	Pass	
Nitrate (as N)	M21-My05875	CP	mg/L	3.7	3.7	1.0	30%	Pass	
Sulphate (as SO4)	M21-My05949	NCP	mg/L	1600	1600	1.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	P21-My05321	NCP	mg/L	160	150	4.0	30%	Pass	
Carbonate Alkalinity (as CaCO3)	P21-My05321	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M21-My07943	NCP	mg/L	140	140	3.0	30%	Pass	
Magnesium	M21-My07943	NCP	mg/L	70	68	2.0	30%	Pass	
Potassium	M21-My07943	NCP	mg/L	8.1	8.0	<1	30%	Pass	
Sodium	M21-My07943	NCP	mg/L	79	77	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M21-My05874	NCP	mg/L	0.002	0.002	3.0	30%	Pass	
Cadmium (filtered)	M21-My05874	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M21-My05874	NCP	mg/L	0.002	0.002	8.0	30%	Pass	
Copper (filtered)	M21-My05874	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M21-My05874	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	M21-My05874	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M21-My05874	NCP	mg/L	0.002	0.002	5.0	30%	Pass	
Zinc (filtered)	M21-My05874	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Vivian Wang	Senior Analyst-Volatile (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Appendix G

Data validation report

DATA VALIDATION REPORT

Project number:	60591699	Validation by:	T. Do	Date:	4/06/2021
Client:	Neoen Australia Pty Ltd				
Site:	Kentbruck Green Power Hub				
Matrix type:	Soil (Soil and ASS)	Data verified by:	A. Cremasco	Date:	22/06/2021
Primary samples:	96 (19 for metals/pesticides/ASS, 4 for IWRG/ASS and 73 for ASS only)				
Laboratory:	ALS (primary), Eurofins (secondary)	Technical Discipline Project Manager:	S. Kennedy		
Lab reference:	EM2108857, EM2110826, EB2116038, 795433				

Key Issues: No QA/QC issues were identified in the field or laboratory datasets that could have a material implication to decision-making on the project.

Field Quality Assurance and Quality Control

Sampling personnel	All soil sampling was conducted by Ben Epstein on 11 to 13 May 2021.
Sampling Methodology	Soil samples were collected from excavator and backhoe bucket.
Chain of Custody (COC)	Chain of custody documents completed by Ben Epstein.
Analysis Request	Laboratory analysis request and sample receipt notification reviewed and approved by Ben Epstein.
Field Blank	Field blank samples were collected at a frequency of one per day of sampling (three in total). Field blanks were placed on hold pending the results of the rinsate blank samples. Rinsate blank samples reported concentrations below the LOR, hence the field blank samples were not analysed.
Rinsate Blank	Rinsate blank samples were collected analysed at a frequency of one per day of sampling (three in total) and analysed for 8 metals and OC/OP Pesticides. Concentrations were reported below LOR for all analytes reported. It is noted that only two rinsate blank samples were analysed.
Trip Blank	Trip blanks were collected at a rate of one per esky (three in total) and analysed for TRH(C ₆ -C ₉) and BTEXN. Concentrations were reported below LOR for all analytes reported.
Frequency of field QC	Field duplicate and triplicates (inter-laboratory duplicates) were collected and analysed for 8 metals and OC/OP pesticides at a frequency of one in twenty primary samples (two of each in total). Note that 19 primary samples were collected, hence one extra set of duplicate/triplicate samples were collected. For ASS, two samples were analysed for both CRS and SPOCAS suites to assess laboratory consistency.
Handling and preservation	All samples were received chilled or frozen if analysed for the CRS ASS suite at the laboratory and in appropriate sample containers. Sample receipt temperatures were within the recommended range ($\leq 6^{\circ}\text{C}$) in primary batch EM2108857 (0.7°C) and secondary batch 795433 (2.7°C). Note, batches EB2116038 and EM2110826 were rebatches of EM2108857, hence no temperature has been reported.

Laboratory QA/QC

Tests requested/reported	Samples were analysed and reported as requested by Ben Epstein.
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DATA VALIDATION REPORT

Project number:	60591699	Validation by:	T. Do	Date:	4/06/2021
Client:	Neoen Australia Pty Ltd				
Site:	Kentbruck Green Power Hub				
Matrix type:	Soil (Soil and ASS)	Data verified by:	A. Cremasco	Date:	22/06/2021
Primary samples:	96 (19 for metals/pesticides/ASS, 4 for IWRG/ASS and 73 for ASS only)				
Laboratory:	ALS (primary), Eurofins (secondary)	Technical Discipline Project Manager:	S. Kennedy		
Lab reference:	EM2108857, EM2110826, EB2116038, 795433				

Holding time compliance	<p>Samples were extracted and analysed within recommended holding times with exception of:</p> <ul style="list-style-type: none"> EM2108857: TP01_0.2, TP02_0.0, TP03_0.5, TP04_0.0, TP05_1.0, TP06_0.0, TP07_0.0, TP09_0.5, TP13_0.0, TP14_0.5, TP15_0.0 and TP16_0.0 for Phenoxyacetic Acid Herbicides by LCMS. EB2116038: TP01_0.2, TP01_0.5, TP02_0.5, TP02_1.0, TP05_0.0, TP05_1.5, TP05_2.5, TP06_0.5, TP06_1.5, TP07_0.0, TP07_1.0, TP07_4.5, TP08_1.0, TP08_3.5, TP09_0.5, TP09_3.0, TP13_0.0, TP13_2.0, TP14_0.0, TP14_1.0, TP15_0.0, TP16_0.0 and TP16_1.0 for Total Organic Carbon (TOC). <p>It is noted that the analysis of Phenoxyacetic Acid Herbicides and TOC was requested late, hence the extraction times were exceeded. This is not expected to have material implications for the interpretation of the results.</p>														
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Melbourne) and Eurofins MGT (Melbourne), which are National Association of Testing Authorities (NATA) accredited laboratories for the analyses conducted.														
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of laboratory duplicates and matrix spikes being reported for TRH after silica gel clean up in EM2110826. The lower rate of analysis reflects a lack of sample volume rather than analytical data quality issues and does not affect overall data interpretation.														
Method Blank	Method blank concentrations were not detected above the LOR for all analytes tested.														
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) recoveries were within control limits.														
Laboratory control spike recovery	Laboratory Control Spike (LCS) recoveries were within control limits.														
Matrix spike recovery	<p>The following Matrix Spike (MS) recoveries were below outside control limits and may affect data interpretation although the analyte was not detected above LOR in samples.</p> <table border="1"> <thead> <tr> <th>Lab Report No.</th> <th>Sample ID</th> <th>Analyte</th> <th>Recovery (%)</th> <th>LCL (%)</th> <th>UCL (%)</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>EM2108857</td> <td>TP05_0.0</td> <td>Hexavalent Chromium</td> <td>31.6</td> <td>58</td> <td>114</td> <td>Recovery less than lower control limit</td> </tr> </tbody> </table>	Lab Report No.	Sample ID	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment	EM2108857	TP05_0.0	Hexavalent Chromium	31.6	58	114	Recovery less than lower control limit
Lab Report No.	Sample ID	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment									
EM2108857	TP05_0.0	Hexavalent Chromium	31.6	58	114	Recovery less than lower control limit									
Surrogate spike recovery	Surrogate spike recoveries were within control limits.														

QA/QC Data Evaluation

Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.

DATA VALIDATION REPORT

Project number:	60591699	Validation by:	T. Do	Date:	4/06/2021
Client:	Neoen Australia Pty Ltd				
Site:	Kentbruck Green Power Hub				
Matrix type:	Soil (Soil and ASS)	Data verified by:	A. Cremasco	Date:	22/06/2021
Primary samples:	96 (19 for metals/pesticides/ASS, 4 for IWRG/ASS and 73 for ASS only)				
Laboratory:	ALS (primary), Eurofins (secondary)	Technical Discipline Project Manager:	S. Kennedy		
Lab reference:	EM2108857, EM2110826, EB2116038, 795433				

Limits of reporting	Soil Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted guideline Investigation Levels.
Field duplicate RPDs	<p>RPDs exceeded control limits for the following sample analysis.</p> <ul style="list-style-type: none"> TP05_0.0 and QC1_110521 for copper (33%); TP05_0.0 and QC1_110521 for zinc (46%). <p>NEPM RPD control limits are flagged for RPDs > 30%, however, RPDs can be considered acceptable for all % where the primary and duplicate results are both less than 10 times the laboratory LOR or can be considered acceptable where <50% and the primary and duplicate results are between 10-20 times the laboratory LOR. RPDs that are considered appropriate are represented in grey above.</p>
Field triplicate RPDs	<p>RPDs exceeded control limits for the following sample analysis.</p> <ul style="list-style-type: none"> TP14_0.0 and QC06_130521 for nickel (59%); <p>NEPM RPD control limits are flagged for RPDs > 30%, however, RPDs can be considered acceptable for all % where the primary and duplicate results are both less than 10 times the laboratory LOR or can be considered acceptable where <50% and the primary and duplicate results are between 10-20 times the laboratory LOR. RPDs that are considered appropriate are represented in grey above.</p>

Field RPDs - Contamination
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Duplicates (soil)
Filter: Lab_Report_Number in('EM210

Lab Report Number	EM2108857	EM2108857	EM2108857	EM2108857	EM2108857	EM2108857	795433	EM2108857	795433			
Field ID	TP05_0.0	QC1_110521	RPD	TP14_0.0	QC5_130521	RPD	TP05_0.0	QC02_110521	RPD	TP14_0.0	QC06_130521	RPD
Sampled Date/Time	11/05/2021 15:00	11/05/2021 15:00		13/05/2021 15:00	13/05/2021 15:00		11/05/2021 15:00	11/05/2021 15:00		13/05/2021 15:00	13/05/2021 15:00	

Analyte	Units	LOR												
Metals														
Arsenic	mg/kg	5 : 2 (Interlab)	<5	<5	0	8	10	22	<5	<2	0	8	9.8	20
Cadmium	mg/kg	1 : 0.4 (Interlab)	<1	<1	0	<1	<1	0	<1	<0.4	0	<1	<0.4	0
Copper	mg/kg	5	<5	7	33	<5	<5	0	<5	5.4	8	<5	<5	0
Lead	mg/kg	5	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Nickel	mg/kg	2 : 5 (Interlab)	<2	<2	0	3	3	0	<2	<5	0	3	5.5	59
Zinc	mg/kg	5	<5	8	46	<5	<5	0	<5	<5	0	<5	<5	0
Physico-Chemical Parameters														
Moisture Content	%	0.1 : 1 (Dupe)	20.8	20.9	0	20.9	19.2	8	20.8			20.9		
Organochlorine Pesticides (OC)														
Aldrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Dieldrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Aldrin + Dieldrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
a-BHC	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
b-BHC	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
d-BHC	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
g-BHC (Lindane)	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Chlordane	mg/kg	0.03 : 0.1 (Interlab)	<0.03			<0.03			<0.03	<0.1	0	<0.03	<0.1	0
DDD	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
DDE	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
DDT	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
DDT+DDE+DDD	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan 1	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endosulfan 2	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endosulfan sulfate	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endrin aldehyde	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Heptachlor	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Heptachlor epoxide	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Hexachlorobenzene (HCB)	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Methoxychlor	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Organochlorine pesticides (sum)	mg/kg	0.03 : 0.1 (Interlab)	<0.03			<0.03			<0.03	<0.1	0	<0.03	<0.1	0
Other organochlorine pesticides (s)	mg/kg	0.03 : 0.1 (Interlab)	<0.03			<0.03			<0.03	<0.1	0	<0.03	<0.1	0

*RPDs have only been considered where a concentration is greater than 1 times the LOR.

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 30 (1-10 x LOR); 30 (10-20 x LOR); 30 (> 20 x LOR))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Borehole	TP05		TP07	
Sample Location	TP05	TP05	TP07	TP07
Field ID	TP05_2.5	TP05_0.0	TP07_0.0	TP07_0.0
Sample Depth	2.5	0	0	0
Sample Type	Primary	Primary	Primary	Primary
Sample Code	EB2116038	EB2116038	EB2116038	EB2116038
Sample Date	11/02/2021	11/02/2021	12/05/2021	12/05/2021
Analysis Method	CRS	SPOCAS	CRS	SPOCAS
Description	Sand, moist	Sand, moist	Clayey sand, moist, organic matter present, organic odour	Clayey sand, moist, organic matter present, organic odour

Analyte grouping/Analyte	CAS Number	Unit	Limit of reporting	Action Criteria						
pH (F)		pH Unit	0.1		4.2	4.2	N/A	5.2	5.2	N/A
pH (Fox)		pH Unit	0.1		2.8	2.8	N/A	2	2	N/A
Reaction Rate		-	-		3	3	N/A	4	4	N/A
Actual Acidity										
pH KCl (23A)		pH Unit	0.1		5.3	5.3	0%	4.2	4.2	0%
Titrateable Actual Acidity (23F)		mole H+ / t	2		13	13	0%	115	115	0%
sulfidic - Titrateable Actual Acidity (s-23F)		% pyrite S	0.02		0.022	0.022	0%	0.185	0.185	0%
Acid Base Accounting										
Net Acidity (sulfur units)		% S	0.02		0.03	0.02	40%	0.26	0.39	40%
Net Acidity (acidity units)		mole H+ / t	10		22	13	51%	162	244	40%
Liming Rate		kg CaCO3/t	1		2	1	67%	12	18	40%
Net Acidity excluding ANC (sulfur units)		% S	0.02	0.03	0.03	0.02	40%	0.26	0.39	40%
Net Acidity excluding ANC (acidity units)		mole H+ / t	10	18	22	13	51%	162	244	40%
Liming Rate excluding ANC		kg CaCO3/t	1		2	1	67%	12	18	40%

Notes

- NAA- Net Acidifying Ability
- AASS - Actual Acid Sulfate Soils
- PASS - Potential Acid Sulfate Soils

Field RPDs
Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Duplicates (soil)
Filter: Lab_Report_Number in('EM210

Lab Report Number	EM2108857	EM2108857	EM2108857	EM2108857	EM2108857	EM2108857	795433	EM2108857	795433			
Field ID	TP05_0.0	QC1_110521	RPD	TP14_0.0	QC5_130521	RPD	TP05_0.0	QC02_110521	RPD	TP14_0.0	QC06_130521	RPD
Sampled Date/Time	11/05/2021 15:00	11/05/2021 15:00		13/05/2021 15:00	13/05/2021 15:00		11/05/2021 15:00	11/05/2021 15:00		13/05/2021 15:00	13/05/2021 15:00	

Analyte	Units	LOR												
Metals														
Arsenic	mg/kg	5 : 2 (Interlab)	<5	<5	0	8	10	22	<5	<2	0	8	9.8	20
Cadmium	mg/kg	1 : 0.4 (Interlab)	<1	<1	0	<1	<1	0	<1	<0.4	0	<1	<0.4	0
Copper	mg/kg	5	<5	7	33	<5	<5	0	<5	5.4	8	<5	<5	0
Lead	mg/kg	5	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Nickel	mg/kg	2 : 5 (Interlab)	<2	<2	0	3	3	0	<2	<5	0	3	5.5	59
Zinc	mg/kg	5	<5	8	46	<5	<5	0	<5	<5	0	<5	<5	0
Physico-Chemical Parameters														
Moisture Content	%	0.1 : 1 (Dupe)	20.8	20.9	0	20.9	19.2	8	20.8			20.9		
Organochlorine Pesticides (OC)														
Aldrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Dieldrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Aldrin + Dieldrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
a-BHC	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
b-BHC	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
d-BHC	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
g-BHC (Lindane)	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Chlordane	mg/kg	0.03 : 0.1 (Interlab)	<0.03			<0.03			<0.03	<0.1	0	<0.03	<0.1	0
DDD	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
DDE	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
DDT	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
DDT+DDE+DDD	mg/kg	0.05	<0.05			<0.05			<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan 1	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endosulfan 2	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endosulfan sulfate	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endrin	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Endrin aldehyde	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Heptachlor	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Heptachlor epoxide	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Hexachlorobenzene (HCB)	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Methoxychlor	mg/kg	0.03 : 0.05 (Interlab)	<0.03			<0.03			<0.03	<0.05	0	<0.03	<0.05	0
Organochlorine pesticides (sum)	mg/kg	0.03 : 0.1 (Interlab)	<0.03			<0.03			<0.03	<0.1	0	<0.03	<0.1	0
Other organochlorine pesticides (s)	mg/kg	0.03 : 0.1 (Interlab)	<0.03			<0.03			<0.03	<0.1	0	<0.03	<0.1	0

*RPDs have only been considered where a concentration is greater than 1 times the LOR.

**High RPDs are in bold (Acceptable RPDs for each LOR multiplier range are: 30 (1-10 x LOR); 30 (10-20 x LOR); 30 (> 20 x LOR))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Borehole	TP05		TP07	
Sample Location	TP05	TP05	TP07	TP07
Field ID	TP05_2.5	TP05_0.0	TP07_0.0	TP07_0.0
Sample Depth	2.5	0	0	0
Sample Type	Primary	Primary	Primary	Primary
Sample Code	EB2116038	EB2116038	EB2116038	EB2116038
Sample Date	11/02/2021	11/02/2021	12/05/2021	12/05/2021
Analysis Method	CRS	SPOCAS	CRS	SPOCAS
Description	Sand, moist	Sand, moist	Clayey sand, moist, organic matter present, organic odour	Clayey sand, moist, organic matter present, organic odour

Analyte grouping/Analyte	CAS Number	Unit	Limit of reporting	Action Criteria						
pH (F)		pH Unit	0.1		4.2	4.2	N/A	5.2	5.2	N/A
pH (Fox)		pH Unit	0.1		2.8	2.8	N/A	2	2	N/A
Reaction Rate		-	-		3	3	N/A	4	4	N/A
Actual Acidity										
pH KCl (23A)		pH Unit	0.1		5.3	5.3	0%	4.2	4.2	0%
Titrateable Actual Acidity (23F)		mole H+ / t	2		13	13	0%	115	115	0%
sulfidic - Titrateable Actual Acidity (s-23F)		% pyrite S	0.02		0.022	0.022	0%	0.185	0.185	0%
Acid Base Accounting										
Net Acidity (sulfur units)		% S	0.02		0.03	0.02	40%	0.26	0.39	40%
Net Acidity (acidity units)		mole H+ / t	10		22	13	51%	162	244	40%
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Liming Rate excluding ANC		kg CaCO3/t	1		2	1	67%	12	18	40%

Notes

NAA- Net Acidifying Ability
AASS - Actual Acid Sulfate Soils
PASS - Potential Acid Sulfate Soils

DATA VALIDATION REPORT				
Project number:	60591699	Validation by:	C. Aitken	Date: 23/8/2021
Client:	Neoen Australia Pty Ltd			
Site:	Kentbruck Green Power Hub			
Matrix type:	Water	Data verified by:	B. Epstein	Date: 21/09/2021
Primary samples:	12 groundwater samples			
Laboratory:	ALS (primary), Eurofins (secondary)	Technical Discipline Project Manager:	S. Kennedy	
Lab reference:	EM2107935, 792485			
Key Issues:	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication to decision-making on the project.			
Field Quality Assurance and Quality Control				
Sampling personnel	All groundwater sampling was conducted by B. McCartney on 28, 29 and 30 April 2021.			
Sampling Methodology	All groundwater samples were collected using low-flow purging techniques.			
Chain of Custody (COC)	Chain of custody documents completed by B. McCartney.			
Analysis Request	Laboratory analysis request and sample receipt notification reviewed and approved by B. McCartney.			
Field Blank	Field blank samples were collected at a frequency of one per day of sampling (three in total) and analysed for fungicides, herbicides, dissolved metals TRH/TPH, MAH, BTEXN, organochlorine and organophosphorus pesticides and PCBs. Concentrations were reported below LOR for all analytes.			
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day of sampling (three in total) and analysed for fungicides, herbicides, dissolved metals TRH/TPH, MAH, BTEXN, organochlorine and organophosphorus pesticides and PCBs. Concentrations were reported below LOR for all analytes.			
Trip Blank	Trip blanks were collected at a rate of one per esky (two in total) and analysed for TRH(C ₆ -C ₉), TPH (C ₆ -C ₁₀) and BTEXN. Concentrations were reported below LOR for all analytes reported.			
Frequency of field QC	Field duplicate (intra-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected and analysed for the same suite of analyses as the primary samples. The only exception was the intra-laboratory duplicate for which certain organophosphorus pesticides were not analysed. As there were no detections of these analytes in the primary and triplicate (inter-laboratory duplicate) samples, it is not expected that this will have material implications to decision-making on the project			
Handling and preservation	All samples were received chilled at the laboratory and in appropriate sample containers. Sample receipt temperatures were within the recommended range ($\leq 6^{\circ}\text{C}$) in primary batch EM2107935 (2.7°C) and secondary batch 792485 (2.1°C).			
Laboratory QA/QC				
Tests requested/reported	Samples were analysed and reported as requested by B. McCartney.			

DATA VALIDATION REPORT

Project number:	60591699	Validation by:	C. Aitken	Date:	23/8/2021
Client:	Neoen Australia Pty Ltd				
Site:	Kentbruck Green Power Hub				
Matrix type:	Water	Data verified by:	B. Epstein	Date:	21/09/2021
Primary samples:	12 groundwater samples				
Laboratory:	ALS (primary), Eurofins (secondary)	Technical Discipline	S. Kennedy		
Lab reference:	EM2107935, 792485				
Project Manager:	S. Kennedy				

Holding time compliance	<p>Samples were extracted and analysed within recommended holding times with exception of:</p> <ul style="list-style-type: none"> EM2107935: MW04, QC04_28/04/21, QC03_28/4/21 for Organophosphorus Pesticides which were 1 day overdue. This is not expected to have material implications for the interpretation of the results. 																							
Laboratory Accreditation	<p>The laboratory analysis was conducted by ALS Environmental Pty Ltd (Melbourne) and Eurofins MGT (Melbourne), which are National Association of Testing Authorities (NATA) accredited laboratories for the analyses conducted.</p>																							
Frequency of laboratory QC	<p>The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, with the following exceptions:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Lab Report No.</th> <th rowspan="2">Sample Type</th> <th rowspan="2">Analyte</th> <th colspan="2">Rate %</th> </tr> <tr> <th>Expected</th> <th>Actual</th> </tr> </thead> <tbody> <tr> <td rowspan="10">EM2107935</td> <td rowspan="5">Laboratory Duplicates</td> <td>Organochlorine Pesticides (Ultra-trace)</td> <td rowspan="5">10</td> <td rowspan="10">0</td> </tr> <tr> <td>PCB's (Ultra-trace)</td> </tr> <tr> <td>Pesticides by GCMS</td> </tr> <tr> <td>Polychlorinated Biphenyls (PCB)</td> </tr> <tr> <td>TRH - Semivolatle Fraction</td> </tr> <tr> <td rowspan="5">Matrix Spikes</td> <td>Organochlorine Pesticides (Ultra-trace)</td> <td rowspan="5">5</td> </tr> <tr> <td>PCB's (Ultra-trace)</td> </tr> <tr> <td>Pesticides by GCMS</td> </tr> <tr> <td>Polychlorinated Biphenyls (PCB)</td> </tr> <tr> <td>TRH - Semivolatle Fraction</td> </tr> </tbody> </table>	Lab Report No.	Sample Type	Analyte	Rate %		Expected	Actual	EM2107935	Laboratory Duplicates	Organochlorine Pesticides (Ultra-trace)	10	0	PCB's (Ultra-trace)	Pesticides by GCMS	Polychlorinated Biphenyls (PCB)	TRH - Semivolatle Fraction	Matrix Spikes	Organochlorine Pesticides (Ultra-trace)	5	PCB's (Ultra-trace)	Pesticides by GCMS	Polychlorinated Biphenyls (PCB)	TRH - Semivolatle Fraction
Lab Report No.	Sample Type				Analyte	Rate %																		
		Expected	Actual																					
EM2107935	Laboratory Duplicates	Organochlorine Pesticides (Ultra-trace)	10	0																				
		PCB's (Ultra-trace)																						
		Pesticides by GCMS																						
		Polychlorinated Biphenyls (PCB)																						
		TRH - Semivolatle Fraction																						
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		Pesticides by GCMS																						
		Polychlorinated Biphenyls (PCB)																						
		TRH - Semivolatle Fraction																						
Method Blank	Method blank concentrations were not detected above the LOR for all analytes tested.																							
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) recoveries were within control limits.																							
Laboratory control spike recovery	Laboratory Control Spike (LCS) recoveries were within control limits.																							

DATA VALIDATION REPORT

Project number:	60591699	Validation by:	C. Aitken	Date:	23/8/2021
Client:	Neoen Australia Pty Ltd				
Site:	Kentbruck Green Power Hub				
Matrix type:	Water	Data verified by:	B. Epstein	Date:	21/09/2021
Primary samples:	12 groundwater samples				
Laboratory:	ALS (primary), Eurofins (secondary)	Technical Discipline	S. Kennedy		
Lab reference:	EM2107935, 792485	Project Manager:			

Matrix spike recovery The following Matrix Spike (MS) recoveries were below the control limits for an anonymous sample tested by the laboratory during QC batch testing on EM2107935. These results are reported along with EM2107935 but do not represent an under reporting of analytes in AECOM's samples but may represent matrix interference in the anonymous sample.

Lab Report No.	Analyte	Data	Limits	Comment
EM2107935	Arsenic	52.8%	76.6-124%	Recovery less than lower data quality objective
	Cadmium	24.7%	74.6-118%	
	Chromium	41.7%	71.0-135%	
	Copper	20.8%	76.0-130%	
	Lead	15.0%	75.0-133%	
	Nickel	37.7%	73.0-131%	
	Zinc	33.0%	75.0-131%	
	Terbufos	61.0%	70.0-130%	

Surrogate spike recovery Surrogate spike recoveries were within control limits.

QA/QC Data Evaluation

Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted guideline Investigation Levels.
Field duplicate RPDs	RPDs did not exceed control limits for field duplicates with the exception of Ionic Balance in MW04 and QC01 (67%). See RPD table page 2 for considerations of acceptable RPDs.
Field triplicate RPDs	RPDs did not exceed control limits for field triplicates.

Intra- and Inter-laboratory Duplicates
 Kentbruck Green Power Hub EES
 Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Duplicates (water)
 Filter: Lab_Report_Number

Lab Report Number	EM2107935	EM2107935	EM2107935	792485
Field ID	MW04	QC01_28/4/21	RPD	QC02_28/4/21
Sampled Date/Time	28/04/2021 15:00	28/04/2021 15:00		28/04/2021 15:00

Chemical Group	Chemical Name	Units	EQL						
Physio-Chemical Parameters	Total Dissolved Solids	mg/L	10	950	949	0	950	960	1
Total Petroleum Hydrocarbons	C6-C9 fraction	ug/L	20	<20	<20	0	<20	<20	0
	C10-C14 fraction	ug/L	50	<50	<50	0	<50	<50	0
	C15-C28 fraction	ug/L	100	<100	<100	0	<100	<100	0
	C29-C36 fraction	ug/L	50 : 100 (Interlab)	<50	<50	0	<50	<100	0
	C10-C36 fraction	ug/L	50 : 100 (Interlab)	<50	<50	0	<50	<100	0
Recoverable Hydrocarbons	Total Recoverable C6-C10 fraction	ug/L	20	<20	<20	0	<20	<20	0
	C6-C10 fraction	ug/L	20	<20	<20	0	<20	<20	0
	>C10-C16 fraction	ug/L	100 : 50 (Interlab)	<100	<100	0	<100	<50	0
	>C10-C16 fraction	ug/L	100 : 50 (Interlab)	<100	<100	0	<100	<50	0
	>C16-C34 fraction	ug/L	100	<100	<100	0	<100	<100	0
	>C34-C40 fraction	ug/L	100	<100	<100	0	<100	<100	0
	>C10-C40 fraction	ug/L	100	<100	<100	0	<100	<100	0
Monocyclic Aromatic Hydrocarbons	Benzene	ug/L	1	<1	<1	0	<1	<1	0
	Toluene	ug/L	2 : 1 (Interlab)	<2	<2	0	<2	<1	0
	Ethylbenzene	ug/L	2 : 1 (Interlab)	<2	<2	0	<2	<1	0
	m&p-Xylene	ug/L	2	<2	<2	0	<2	<2	0
	o-Xylene	ug/L	2 : 1 (Interlab)	<2	<2	0	<2	<1	0
	Total Xylene	ug/L	2 : 3 (Interlab)	<2	<2	0	<2	<3	0
	Total BTEX	ug/L	1	<1	<1	0	<1		
Naphthalene	Naphthalene	ug/L	5	<5	<5	0	<5		
Metals	Arsenic (Filtered)	ug/L	1	<1	<1	0	<1	<1	0
	Cadmium (Filtered)	ug/L	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
	Chromium (Filtered)	ug/L	1	2	2	67	2	<1	67
	Copper (Filtered)	ug/L	1	<1	<1	0	<1	<1	0
	Lead (Filtered)	ug/L	1	<1	<1	0	<1	<1	0
	Mercury (Filtered)	ug/L	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel (Filtered)	ug/L	1	2	2	0	2	2	0
	Zinc (Filtered)	ug/L	5	20	18	11	20	16	22
Alkalinity	Bicarbonate	mg/L	1 : 20 (Interlab)	239	241	1	239	320	29
	Hydroxide Alkalinity	mg/L	1	<1	<1	0	<1		
	Total Alkalinity	mg/L	1	239	241	1	239		
Major Ions	Chloride	mg/L	1	288	296	3	288	270	6
	Calcium	mg/L	1 : 0.5 (Interlab)	138	130	6	138	150	8
	Magnesium	mg/L	1 : 0.5 (Interlab)	17	14	19	17	19	11
	Potassium	mg/L	1 : 0.5 (Interlab)	2	3	40	2	2.4	18
	Sodium	mg/L	1 : 0.5 (Interlab)	96	100	4	96	110	14
	Sulfate as Sulfate	mg/L	1 : 5 (Interlab)	16	16	0	16	15	6
	Total Anions	meq/L	0.01	13.2	13.5	2	13.2		
	Total Cations	meq/L	0.01	12.5	12.1	3	12.5		
	Sulfate (as Sulfate)	mg/L	1	16	16	0	16		
Ionic Balance	%	0.01	2.8	5.6	67	2.8			
Organochlorine Pesticides (OC)	Aldrin	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	0.2	181
	Dieldrin	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	a-BHC	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	b-BHC	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	d-BHC	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	g-BHC (Lindane)	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	0.3	187
	Chlordane	ug/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0
	DDD	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	DDE	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	DDT	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	DDT+DDE+DDD	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Endosulfan alpha	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Endosulfan beta	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Endosulfan sulfate	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Endrin	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Endrin aldehyde	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Endrin ketone	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0
	Heptachlor	ug/L	0.005 : 0.2 (Interlab)	<0.005			<0.005	<0.2	0
Heptachlor epoxide	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0	
Hexachlorobenzene	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0	
Methoxychlor	ug/L	0.01 : 0.2 (Interlab)	<0.01			<0.01	<0.2	0	
Organophosphorus Pesticides (OP)	Bolstar (Sulfotriazinone)	ug/L	0.05 : 2 (Interlab)	<0.05			<0.05	<2	0
	Mevinphos (Mevinphos)	ug/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0

Intra- and Inter-laboratory Duplicates
 Kentbruck Green Power Hub EES
 Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Duplicates (water)
 Filter: Lab_Report_Number

Lab Report Number	EM2107935	EM2107935		EM2107935	792485	
Field ID	MW04	QC01_28/4/21	RPD	MW04	QC02_28/4/21	RPD
Sampled Date/Time	28/04/2021 15:00	28/04/2021 15:00		28/04/2021 15:00	28/04/2021 15:00	

	Omethoate	µg/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0	
	Pyrazophos	µg/L	0.1 : 2 (Interlab)	<0.1			<0.1	<2	0	
	Azinphos Me	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Chlorfenvin	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Chlorpyrifos	µg/L	0.02 : 20 (Interlab)	<0.02			<0.02	<20	0	
	Chlorpyrifos	µg/L	0.2 : 2 (Interlab)	<0.2			<0.2	<2	0	
	Coumaphos	µg/L	0.01 : 20 (Interlab)	<0.01			<0.01	<20	0	
	Demeton-O	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Demeton-S	µg/L	0.02 : 20 (Interlab)	<0.02			<0.02	<20	0	
	Diazinon	µg/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0	
	Dichlorvos	µg/L	0.2 : 2 (Interlab)	<0.2			<0.2	<2	0	
	Dimethoate	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Disulfoton	µg/L	0.05 : 2 (Interlab)	<0.05			<0.05	<2	0	
	EPN	µg/L	0.05 : 2 (Interlab)	<0.05			<0.05	<2	0	
	Ethion	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Ethoprop	µg/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0	
	Fenitrothion	µg/L	2	<2			<2	<2	0	
	Fensulfothio	µg/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0	
	Fenthion	µg/L	0.05 : 2 (Interlab)	<0.05			<0.05	<2	0	
	Malathion	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Monocrotoph	µg/L	0.02 : 2 (Interlab)	<0.02			<0.02	<2	0	
	Parathion	µg/L	0.2 : 2 (Interlab)	<0.2			<0.2	<2	0	
	Parathion-m	µg/L	0.5 : 2 (Interlab)	<0.5			<0.5	<2	0	
	Phorate	µg/L	0.1 : 2 (Interlab)	<0.1			<0.1	<2	0	
	Ronnel	µg/L	10 : 2 (Interlab)	<10			<10	<2	0	
	Trichloronat	µg/L	0.5 : 2 (Interlab)	<0.5			<0.5	<2	0	
	Terbufos	µg/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0	
	Tetrachlorvir	µg/L	0.01 : 2 (Interlab)	<0.01			<0.01	<2	0	
osphorus Pesticides (OP)										
	Phenoxyaceti	2,4,5-TP (Si	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		2,6-D	µg/L	10	<10	<10	0	<10		
		4-Chlorophe	µg/L	10	<10	<10	0	<10		
		Clopyralid	µg/L	10	<10	<10	0	<10		
		Dicamba	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		Fluroxypyr	µg/L	10	<10	<10	0	<10		
		Mecoprop	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		Picloram	µg/L	10	<10	<10	0	<10		
		Triclopyr	µg/L	10	<10	<10	0	<10		
etic Acid Herbicides										
	Herbicides	2,4,5-Trichl	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		2,4-Dichlorp	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		2,4-Dichloro	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		4-(2,4-Dichl	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		2-Methyl-4-c	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
		2,4,6-Trichl	µg/L	10	<10	<10	0	<10		
		2-Methyl-4-C	µg/L	10 : 1 (Interlab)	<10	<10	0	<10	<2	0
	Inorganics	Carbonate A	mg/L	1 : 10 (Interlab)	<1	<1	0	<1	<10	0
	Pesticides	Pirimiphos-r	µg/L	0.01 : 20 (Interlab)	<0.01			<0.01	<20	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in

Field RPDs - Groundwater
 Kentbruck Green Power Hub EES
 Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Blanks (water)
 Filter: Lab_Report_Number in('EM2107935')

Lab Report Number	EM2107935	EM2107935	EM2107935	EM2107935	EM2107935
Field ID	QC03_28/4/21	QC05_29/4/21	QC09_30/4/21	QC04_28/4/21	QC06_29/4/21
Sampled Date/Time	28/04/2021 15:00	29/04/2021 15:00	30/04/2021 15:00	28/04/2021 15:00	29/04/2021 15:00
Sample Type	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate

Chemical Group	Chemical Name	Units	EQL					
Alkalinity	Bicarbonate Alkalinity as CaCO3	mg/L	1					
	Hydroxide Alkalinity as CaCO3	mg/L	1					
	Total Alkalinity as CaCO3	mg/L	1					
Fungicides	Fosetyl-al	µg/L	10	<10	<10	<10	<10	<10
Herbicides	2,4,5-Trichlorophenoxy acetic acid	µg/L	10	<10	<10	<10	<10	<10
	2,4-Dichlorprop	µg/L	10	<10	<10	<10	<10	<10
	2,4-Dichlorophenoxy acetic acid	µg/L	10	<10	<10	<10	<10	<10
	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	µg/L	10	<10	<10	<10	<10	<10
	2-Methyl-4-chlorophenoxyacetic acid	µg/L	10	<10	<10	<10	<10	<10
	2,4,6-Trichlorophenoxy acetic acid	µg/L	10	<10	<10	<10	<10	<10
	2-Methyl-4-Chlorophenoxy Butanoic Acid	µg/L	10	<10	<10	<10	<10	<10
Inorganics	Carbonate Alkalinity (as CaCO3)	mg/L	1					
Major Ions	Chloride	mg/L	1					
	Calcium	mg/L	1					
	Magnesium	mg/L	1					
	Potassium	mg/L	1					
	Sodium	mg/L	1					
	Sulfate as SO4	mg/L	1					
	Total Anions	meq/L	0.01					
	Total Cations	meq/L	0.01					
	Sulfate (as SO4-) (Filtered)	mg/L	1					
Ionic Balance	%	0.01						
Metals	Arsenic	µg/L	1					
	Arsenic (Filtered)	µg/L	1	<1	<1	<1	<1	<1
	Cadmium	µg/L	0.1					
	Cadmium (Filtered)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Chromium	µg/L	1					
	Chromium (Filtered)	µg/L	1	<1	<1	<1	<1	<1
	Copper	µg/L	1					
	Copper (Filtered)	µg/L	1	<1	<1	<1	<1	<1
	Lead	µg/L	1					
	Lead (Filtered)	µg/L	1	<1	<1	<1	<1	<1
	Mercury	µg/L	0.1					
	Mercury (Filtered)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nickel	µg/L	1					
	Nickel (Filtered)	µg/L	1	<1	<1	<1	<1	<1
Zinc	µg/L	5						
Zinc (Filtered)	µg/L	5	<5	<5	<5	<5	<5	
Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	<2	<2	<2	<2	<2
	m&p-Xylene	µg/L	2	<2	<2	<2	<2	<2
	o-Xylene	µg/L	2	<2	<2	<2	<2	<2
	Total Xylenes	µg/L	2	<2	<2	<2	<2	<2
	Total BTEX	µg/L	1	<1	<1	<1	<1	<1
Naphthalene	Naphthalene (VOC)	µg/L	5	<5	<5	<5	<5	<5
Organochlorine Pesticides (OC)	Aldrin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Dieldrin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Aldrin + Dieldrin	µg/L	0.5					
	a-BHC	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	b-BHC	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	d-BHC	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	g-BHC (Lindane)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	cis-Chlordane	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	trans-Chlordane	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Chlordane	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DDD	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DDE	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DDT	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	DDT+DDE+DDD	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endosulfan	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endosulfan 1	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endosulfan 2	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endosulfan sulfate	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endrin	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endrin aldehyde	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Endrin ketone	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Heptachlor	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Heptachlor epoxide	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Hexachlorobenzene (HCB)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Methoxychlor	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Oxychlorane	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Organophosphorus Pesticides (OP)	Bolstar (Sulprofos)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Ethyl		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Mevinphos (Phosdrin)		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Omethoate		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pyrazophos		µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos Methyl		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromophos-ethyl		µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbophenothion		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl		µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos		µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton		µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EPN		µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprop		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fenitrothion		µg/L	2	<2	<2	<2	<2	<2
Fensulfothion		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion		µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion		µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Monocrotophos		µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Parathion		µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl		µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phorate		µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pirimphos-ethyl		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos		µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Field RPDs - Groundwater
 Kentbruck Green Power Hub EES
 Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Blanks (water)
 Filter: Lab_Report_Number in('EM2107935')

			Lab Report Number	EM2107935	EM2107935	EM2107935	EM2107935	EM2107935
			Field ID	QC03_28/4/21	QC05_29/4/21	QC09_30/4/21	QC04_28/4/21	QC06_29/4/21
			Sampled_Date/Time	28/04/2021 15:00	29/04/2021 15:00	30/04/2021 15:00	28/04/2021 15:00	29/04/2021 15:00
			Sample Type	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate
	Prothiofos	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ronnel	µg/L	10	<10	<10	<10	<10	<10
	Sulfotepp	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Trichloronate	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Terbufos	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Thiometon	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Tetrachlorvinphos	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Other	Triazophos	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pesticides	Formothion	µg/L	20	<20	<20	<20	<20	<20
	Pirimiphos-methyl	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Temephos	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Trichlorfon	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Pesticides by LCMSMS (Positive)	Bensulide	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Naftalofos	µg/L	1	<1	<1	<1	<1	<1
	Demeton-O & Demeton-S	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenoxyacetic Acid Herbicides	2,4,5-TP (Silvex)	µg/L	10	<10	<10	<10	<10	<10
	2,6-D	µg/L	10	<10	<10	<10	<10	<10
	4-Chlorophenoxy acetic acid	µg/L	10	<10	<10	<10	<10	<10
	Clopyralid	µg/L	10	<10	<10	<10	<10	<10
	Dicamba	µg/L	10	<10	<10	<10	<10	<10
	Fluroxypyr	µg/L	10	<10	<10	<10	<10	<10
	Mecoprop	µg/L	10	<10	<10	<10	<10	<10
	Picloram	µg/L	10	<10	<10	<10	<10	<10
	Triclopyr	µg/L	10	<10	<10	<10	<10	<10
Physio-Chemical Parameters	Total Dissolved Solids	mg/L	10					
Polychlorinated Biphenyls	Polychlorinated Biphenyls	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1016	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1221	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1232	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1242	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1248	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1254	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Arochlor 1260	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Petroleum Hydrocarbons	C6-C9 fraction	µg/L	20	<20	<20	<20	<20	<20
	C10-C14 fraction	µg/L	50	<50	<50	<50	<50	<50
	C15-C28 fraction	µg/L	100	<100	<100	<100	<100	<100
	C29-C36 fraction	µg/L	50	<50	<50	<50	<50	<50
	C10-C36 fraction (sum)	µg/L	50	<50	<50	<50	<50	<50
Total Recoverable Hydrocarbons	C6-C10 fraction	µg/L	20	<20	<20	<20	<20	<20
	C6-C10 fraction (minus BTEX)(F1)	µg/L	20	<20	<20	<20	<20	<20
	>C10-C16 fraction	µg/L	100	<100	<100	<100	<100	<100
	>C10-C16 (minus Naphthalene)(F2)	µg/L	100	<100	<100	<100	<100	<100
	>C16-C34 fraction	µg/L	100	<100	<100	<100	<100	<100
	>C34-C40 fraction	µg/L	100	<100	<100	<100	<100	<100
	>C10-C40 fraction (sum)	µg/L	100	<100	<100	<100	<100	<100
Un-assigned	Acephate	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Field Blanks (water)
 Filter: Lab_Report_Number in('EM2107935')

Lab Report Number	EM2107935	EM2107935	EM2107935
Field ID	QC10_30/4/21	QC07_29/4/21	QC08_29/4/21
Sampled Date/Time	30/04/2021 15:00	29/04/2021 15:00	29/04/2021 15:00
Sample Type	Rinsate	Trip Blank	Trip Blank

Chemical Group	Chemical Name	Units	EQL			
Alkalinity	Bicarbonate Alkalinity as CaCO3	mg/L	1			
	Hydroxide Alkalinity as CaCO3	mg/L	1			
	Total Alkalinity as CaCO3	mg/L	1			
Fungicides	Fosetyl-al	µg/L	10	<10		
Herbicides	2,4,5-Trichlorophenoxy acetic acid	µg/L	10	<10		
	2,4-Dichlorprop	µg/L	10	<10		
	2,4-Dichlorophenoxy acetic acid	µg/L	10	<10		
	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	µg/L	10	<10		
	2-Methyl-4-chlorophenoxyacetic acid	µg/L	10	<10		
	2,4,6-Trichlorophenoxy acetic acid	µg/L	10	<10		
	2-Methyl-4-Chlorophenoxy Butanoic Acid	µg/L	10	<10		
Inorganics	Carbonate Alkalinity (as CaCO3)	mg/L	1			
Major Ions	Chloride	mg/L	1			
	Calcium	mg/L	1			
	Magnesium	mg/L	1			
	Potassium	mg/L	1			
	Sodium	mg/L	1			
	Sulfate as SO4	mg/L	1			
	Total Anions	meq/L	0.01			
	Total Cations	meq/L	0.01			
	Sulfate (as SO4-) (Filtered)	mg/L	1			
Ionic Balance	%	0.01				
Metals	Arsenic	µg/L	1	<1		
	Arsenic (Filtered)	µg/L	1			
	Cadmium	µg/L	0.1	<0.1		
	Cadmium (Filtered)	µg/L	0.1			
	Chromium	µg/L	1	<1		
	Chromium (Filtered)	µg/L	1			
	Copper	µg/L	1	<1		
	Copper (Filtered)	µg/L	1			
	Lead	µg/L	1	<1		
	Lead (Filtered)	µg/L	1			
	Mercury	µg/L	0.1	<0.1		
	Mercury (Filtered)	µg/L	0.1			
	Nickel	µg/L	1	<1		
	Nickel (Filtered)	µg/L	1			
Zinc	µg/L	5	16			
Zinc (Filtered)	µg/L	5				
Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	1	<1	<1	<1
	Toluene	µg/L	2	<2	<2	<2
	Ethylbenzene	µg/L	2	<2	<2	<2
	m&p-Xylene	µg/L	2	<2	<2	<2
	o-Xylene	µg/L	2	<2	<2	<2
	Total Xylenes	µg/L	2	<2	<2	<2
	Total BTEX	µg/L	1	<1	<1	<1
Naphthalene	Naphthalene (VOC)	µg/L	5	<5	<5	<5
Organochlorine Pesticides (OC)	Aldrin	µg/L	0.01	<0.01		
	Dieldrin	µg/L	0.01	<0.01		
	Aldrin + Dieldrin	µg/L	0.5			
	a-BHC	µg/L	0.01	<0.01		
	b-BHC	µg/L	0.01	<0.01		
	d-BHC	µg/L	0.01	<0.01		
	g-BHC (Lindane)	µg/L	0.01	<0.01		
	cis-Chlordane	µg/L	0.01	<0.01		
	trans-Chlordane	µg/L	0.01	<0.01		
	Chlordane	µg/L	0.01	<0.01		
	DDD	µg/L	0.01	<0.01		
	DDE	µg/L	0.01	<0.01		
	DDT	µg/L	0.01	<0.01		
	DDT+DDE+DDD	µg/L	0.01	<0.01		
	Endosulfan	µg/L	0.01	<0.01		
	Endosulfan 1	µg/L	0.01	<0.01		
	Endosulfan 2	µg/L	0.01	<0.01		
	Endosulfan sulfate	µg/L	0.01	<0.01		
	Endrin	µg/L	0.01	<0.01		
	Endrin aldehyde	µg/L	0.01	<0.01		
	Endrin ketone	µg/L	0.01	<0.01		
	Heptachlor	µg/L	0.005	<0.005		
	Heptachlor epoxide	µg/L	0.01	<0.01		
Hexachlorobenzene (HCB)	µg/L	0.01	<0.01			
Methoxychlor	µg/L	0.01	<0.01			
Oxychlordane	µg/L	0.01	<0.01			
Organophosphorus Pesticides (OP)	Bolstar (Sulprofos)	µg/L	0.05	<0.05		
	Azinphos Ethyl	µg/L	0.02	<0.02		
	Mevinphos (Phosdrin)	µg/L	0.02	<0.02		
	Omethoate	µg/L	0.01	<0.01		
	Pyrazophos	µg/L	0.1	<0.1		
	Azinphos Methyl	µg/L	0.02	<0.02		
	Bromophos-ethyl	µg/L	0.1	<0.1		
	Carbophenothion	µg/L	0.02	<0.02		
	Chlorfenvinphos	µg/L	0.02	<0.02		
	Chlorpyrifos	µg/L	0.02	<0.02		
	Chlorpyrifos-methyl	µg/L	0.2	<0.2		
	Coumaphos	µg/L	0.01	<0.01		
	Demeton-O	µg/L	0.02	<0.02		
	Demeton-S	µg/L	0.02	<0.02		
	Demeton-S-methyl	µg/L	0.02	<0.02		
	Diazinon	µg/L	0.01	<0.01		
	Dichlorvos	µg/L	0.2	<0.2		
	Dimethoate	µg/L	0.02	<0.02		
	Disulfoton	µg/L	0.05	<0.05		
	EPN	µg/L	0.05	<0.05		
	Ethion	µg/L	0.02	<0.02		
	Ethoprop	µg/L	0.01	<0.01		
	Fenamiphos	µg/L	0.01	<0.01		
	Fenitrothion	µg/L	2	<2		
	Fensulfothion	µg/L	0.01	<0.01		
	Fenthion	µg/L	0.05	<0.05		
	Malathion	µg/L	0.02	<0.02		
	Methidathion	µg/L	0.1	<0.1		
	Monocrotophos	µg/L	0.02	<0.02		
	Parathion	µg/L	0.2	<0.2		
Parathion-methyl	µg/L	0.5	<0.5			
Phorate	µg/L	0.1	<0.1			
Pirimphos-ethyl	µg/L	0.01	<0.01			
Profenofos	µg/L	0.01	<0.01			

Field RPDs - Groundwater
 Kentbruck Green Power Hub EES
 Neoen Australia Pty Ltd - Kentbruck Green Power Hub

Field Blanks (water)
 Filter: Lab_Report_Number in('EM2107935')

			Lab Report Number	EM2107935	EM2107935	EM2107935
			Field ID	QC10_30/4/21	QC07_29/4/21	QC08_29/4/21
			Sampled_Date/Time	30/04/2021 15:00	29/04/2021 15:00	29/04/2021 15:00
			Sample Type	Rinsate	Trip Blank	Trip Blank
	Prothiofos	µg/L	0.1	<0.1		
	Ronnel	µg/L	10	<10		
	Sulfotepp	µg/L	0.005	<0.005		
	Trichloronate	µg/L	0.5	<0.5		
	Terbufos	µg/L	0.01	<0.01		
	Thiometon	µg/L	0.5	<0.5		
	Tetrachlorvinphos	µg/L	0.01	<0.01		
Other	Triazophos	µg/L	0.005	<0.005		
Pesticides	Formothion	µg/L	20	<20		
	Pirimiphos-methyl	µg/L	0.01	<0.01		
	Temephos	µg/L	0.02	<0.02		
	Trichlorfon	µg/L	0.02	<0.02		
Pesticides by LCMSMS (Positive)	Bensulide	µg/L	0.1	<0.1		
	Naftalofos	µg/L	1	<1		
	Demeton-O & Demeton-S	µg/L	0.02	<0.02		
Phenoxyacetic Acid Herbicides	2,4,5-TP (Silvex)	µg/L	10	<10		
	2,6-D	µg/L	10	<10		
	4-Chlorophenoxy acetic acid	µg/L	10	<10		
	Clopyralid	µg/L	10	<10		
	Dicamba	µg/L	10	<10		
	Fluroxypyr	µg/L	10	<10		
	Mecoprop	µg/L	10	<10		
	Picloram	µg/L	10	<10		
	Triclopyr	µg/L	10	<10		
Physio-Chemical Parameters	Total Dissolved Solids	mg/L	10			
Polychlorinated Biphenyls	Polychlorinated Biphenyls	µg/L	0.1	<0.1		
	Arochlor 1016	µg/L	0.1	<0.1		
	Arochlor 1221	µg/L	0.1	<0.1		
	Arochlor 1232	µg/L	0.1	<0.1		
	Arochlor 1242	µg/L	0.1	<0.1		
	Arochlor 1248	µg/L	0.1	<0.1		
	Arochlor 1254	µg/L	0.1	<0.1		
	Arochlor 1260	µg/L	0.1	<0.1		
Total Petroleum Hydrocarbons	C6-C9 fraction	µg/L	20	<20	<20	<20
	C10-C14 fraction	µg/L	50	<50		
	C15-C28 fraction	µg/L	100	<100		
	C29-C36 fraction	µg/L	50	<50		
	C10-C36 fraction (sum)	µg/L	50	<50		
Total Recoverable Hydrocarbons	C6-C10 fraction	µg/L	20	<20	<20	<20
	C6-C10 fraction (minus BTEX)(F1)	µg/L	20	<20	<20	<20
	>C10-C16 fraction	µg/L	100	<100		
	>C10-C16 (minus Naphthalene)(F2)	µg/L	100	<100		
	>C16-C34 fraction	µg/L	100	<100		
	>C34-C40 fraction	µg/L	100	<100		
	>C10-C40 fraction (sum)	µg/L	100	<100		
Un-assigned	Acephate	µg/L	0.5	<0.5		

Appendix H

AGT (2022) Soil Report



Environmental Investigation and Assessment

Project No: AGTE21362-2

**Project: Kentbruck - Land Contamination and Acid Sulphate Soils
Assessment**



Prepared for:

Client: G.R. Carr

Date: 6th November 2021

Site Description

Locality

The site location is along the Boiler-Swamp Road, Drumborg VIC (refer to Figure 2.1 and Appendix A).

Figure 2.1



Topography

The topography of the site was essentially level.

Geology

The Geovic website (<https://earthresources.vic.gov.au/geology-exploration/maps-reports-data/geovic>) for geological maps show the site is underlain by:

- Newer Volcanic Group

In general, the anticipated subsurface conditions have been encountered during this site investigation and are considered to be consistent with the geological map.

Site Investigation

The site investigation was undertaken on the 20th of October 2021.

The environmental investigation involved the excavation of:

- 3 test pits to a depth of up to 2m.

Ground Profile

Table 3.1 – Summary of Pavement Profile

Material	Depth (m)		
	TP10	TP11	TP12
FILL, Gravelly CLAY	0-0.3		
Silty CLAY	0.3-2.0		
SILT			0-0.15
Sandy SILT		0-0.3	
Silty CLAY		0.3-2.0	0.15-1.5
Gravelly CLAY			1.5-2.0

Groundwater

Seepage was encountered at TP12 at 1.0m depth during the on-site field investigation.

Investigation

In accordance with the client's request, AGT conducted preliminary soil sampling & analysis to assist in determining the contamination status of the soil type at the site (for suitable removal/disposal and/or re-use purposes) in accordance with EPA (waste) and NEPM (Health) regulatory frameworks.

The sampling and testing regime was undertaken in line with the relevant publications, including:

- 'Soil Hazard Categorisation and Management' (IWRG621), June 2009;
- 'Soil Sampling' (IWRG702), June 2009; &
- 'AS4482.1' Guide to the investigation & sampling of sites with potentially contaminated soil, 2005.

On the 20th October 2021, a member of AGT undertook the site/sampling works which were seen to involve:

Test pits were excavated with an excavator taking care to avoid mixing. Samples were taken from the centre of the excavator bucket. All samples were handled with gloves and taken in accordance with standard procedures, namely Australian Standard (AS 4482.1) – Guide to the sampling and investigation of potentially contaminated soil, Part 1: Non-volatile and Semi-volatile compounds. All sample jars were suitably labelled and stored in an appropriate sealed container (chilled esky). Each sample collected was taken to Eurofins (Environmental Division), a NATA accredited laboratory, for the required chemical analysis and accompanied by formal Chain of Custody (COC) documentation.

Samples were tested for organo-chlorine and phosphate pesticides, metals, nitrates, nitrites and ammonia, polychlorinated biphenyls, acid sulfate soil and moisture.

Analysis

Contamination soil analysis results

AGT compared the analytical results with both the Health & Waste standards, namely:

- Health: Schedule B (1) of the National Environmental Protection Measure (NEPM) – 'Guideline on the Investigation Levels for Soil and Groundwater', 2013. Schedule B (1) provides a range of investigation levels for the protection of human health, which are referred as Health Based Investigation Levels (HILs); and
- Waste: EPA Industrial Waste Resource Guidelines - 'Soil Hazard Categorisation and Management' – Publication IWRG621, June 2009.

The full 'Certificate of Analysis' (COA) is appended to this report. A discussion of the analytical results regarding the aforementioned guidelines are outlined below:

NEPM – Health Investigation Levels:

All samples taken at the site were reported to exhibit concentrations within acceptable Health Investigation Levels (HIL's) supporting the future 'Public Open Space' land use of the site (HIL's 'C').

Acid Sulfate Soil Analysis

AGT compared the analytical results with guidance materials for acid sulfate soils namely

- National acid sulfate soils sampling and identification methods manual, Water Quality Australia, June 2018

The results are inconclusive but not indicative of acid sulfate soil



Matt Noonan

Senior Geotechnical, Pavement & Environmental Engineer
CPENG (Civil & Geotechnical); NER; RPEQ
BEng (Geological), Grad Cert (Pavement Technology)
Cert IV (Training & Assessment), BCC, Grad Dip (Div)
mattn@ausgeotest.com.au
0419 349 906

Site Plan



Site Photographs

TP10





TP11





TP12







Engineering Logs



BOREHOLE ENGINEERING LOG

BOREHOLE No:
TP10

PROJECT:	Kentbruck-Land Contamination and Acid Sulphate Soils Assessment	PROJECT No:	AGTE21362
LOCATION:	Drumborg	DATE DRILLED:	20-Oct-21
CLIENT:	G.R. Carr	LOGGED BY:	MG
		REVIEWED BY:	MN

Latitude	-38.20166	Longitude:	141.52801	Drill Rig:		Surface RL:		AHD Level:		Location:	
----------	-----------	------------	-----------	------------	--	-------------	--	------------	--	-----------	--

Depth (m)	Drilling Method	Depth of Unit	Geological Unit	Graphic Log	Classification Symbol	Material Description	Consistency / Strength	Moisture Condition	Weathering	DCP (per 100mm)	SPT	Samples and Tests	Comments Observations	Water
		0.3	Newer Volcanic Group		ML	Gravelly Clayey SILT with some sand and organics: dark brown	F	M						
					CI	Silty CLAY: yellow-brown	St	M						
0.5						dark red-grey								
1.0														
1.5														
2.0														

End of TP10 at 2.00m



BOREHOLE ENGINEERING LOG

BOREHOLE No:
TP11

PROJECT:	Kentbruck-Land Contamination and Acid Sulphate Soils Assessment	PROJECT No:	AGTE21362
LOCATION:	Drumborg	DATE DRILLED:	20-Oct-21
CLIENT:	G.R. Carr	LOGGED BY:	MG
		REVIEWED BY:	MN

Latitude -38.20033 Longitude: 141.46816 Drill Rig: Surface RL: AHD Level: Location:

Depth (m)	Drilling Method	Depth of Unit	Geological Unit	Graphic Log	Classification Symbol	Material Description	Consistency / Strength	Moisture Condition	Weathering	DCP (per 100mm)	SPT	Samples and Tests	Comments Observations	Water
		0.3	Newer Volcanic Group	[Wavy pattern]	ML	Sandy SILT with organics: brown	St	W						
				[Horizontal dashes pattern]	CL	Silty CLAY: yellow-brown	S	W						
0.5														
1.0														
1.5														
2.0		2												

End of TP11 at 2.00m



BOREHOLE ENGINEERING LOG

BOREHOLE No:
TP12

PROJECT:	Kentbruck-Land Contamination and Acid Sulphate Soils Assessment	PROJECT No:	AGTE21362
LOCATION:	Drumborg	DATE DRILLED:	20-Oct-21
CLIENT:	G.R. Carr	LOGGED BY:	MG
		REVIEWED BY:	MN

Latitude -38.20154 Longitude: 141.52852 Drill Rig: Surface RL: AHD Level: Location:

Depth (m)	Drilling Method	Depth of Unit	Geological Unit	Graphic Log	Classification Symbol	Material Description	Consistency / Strength	Moisture Condition	Weathering	DCP (per 100mm)	SPT	Samples and Tests	Comments Observations	Water
		0.15	Newer Volcanic Group	~	ML	SILT trace clay: dark red-brown	S	W						
					CI	Silty CLAY: brown	St	W						
0.5														
1.0													water inflow(trench filled)	
1.5		1.5			CI	Gravelly CLAY(weathered rock): dark red-grey	St	W						
2.0		2												

End of TP12 at 2.00m

Soil descriptions generally follow the "Guide to the Description Identification and Classification of Soils" and the field guides as given in AS1726 - 2017—Geotechnical Site Investigations. When describing the soils the soils are described in terms of the Engineering properties.

Field Testing

DCP	Dynamic Cone Penetrometer (blows per 100mm)
Field CBR	Austrroads DCP vs CBR Figure 5.3
PP	Pocket Penetrometer
SV	Shear Vane
SPT	Standard Penetration Test

Laboratory Testing

MC	Moisture Content
% passing	Material passing through the sieve for the Particle Size Distribution Test
DCP	Dynamic Cone Penetrometer (blows per 100mm)
PL	Plastic Limit
LS	Linear Shrinkage
CBR	California Bearing Ratio
Swell	CBR Swell
OMC	Optimum Moisture Content
MDD	Maximum Dry Density
UCS	Uniaxial Compressive Strength
PLI	Point Load Index

Group symbol, soil name, plasticity

Major Divisions		Group Symbol	Group Name
Coarse Grained Soils More than 65% retained on 0.075mm Sieve	GRAVEL More than 50% of coarse fraction retained on 2.36mm sieve	GW	Well Graded GRAVEL
		GP	Poorly Graded GRAVEL
		GM	Silty GRAVEL
		GC	Clayey GRAVEL
		SAND More than 50% of coarse fraction passes 2.36mm sieve	SW
SP	Poorly Graded SAND		
SM	Silty SAND		
SC	Clayey SAND		
Fine Grained Soils Minimum of 35% passing 0.075mm sieve	SILT and CLAY Liquid limit less than 50%		ML
		CL	CLAY of Low Plasticity
		OL	ORGANIC SILT, ORGANIC CLAY of Low Plasticity
		CI	CLAY of Medium Plasticity
		SILT and CLAY Liquid limit greater than 50%	MH
	CH		CLAY of High Plasticity
	OH		ORGANIC SILT, ORGANIC CLAY of High Plasticity
	PT		PEAT

Note: Silts are below the A Line, Clays are above the A Line

Coefficient of Uniformity $C_u = D_{60} / D_{10}$

D_{60} = diameter that 60% is passing
 D_{10} = diameter that 10% is passing

Coefficient of Curvature $C_c = (D_{30} \times D_{30}) / (D_{10} \times D_{60})$

D_{60} = diameter that 60% is passing
 D_{10} = diameter that 10% is passing
 D_{30} = diameter that 30% is passing

Particle Size Spread:

'Well graded' having good representation of all particle sizes from the largest to the smallest.
 'Poorly Graded' sizes with one or more intermediate poorly represented.

Coarse Grained Descriptor

Name	Particle Size (mm)	Particle Size Descriptor
Gravel	20-63	Coarse
	6-20	Medium
	2.36-6	Fine
Sand	0.6-2.36	Coarse
	0.2-0.6	Medium
	0.075-0.2	Fine

Descriptive terms for material properties

Designation of components	In coarse grained soils				In fine grained soils	
	% Fines	Terminology	% Accessory coarse fraction	Terminology	% Sand/ gravel	Terminology
Minor	≤5	Add 'trace clay/silt' to description, as applicable	≤15	Add 'trace sand/gravel' to description, as applicable	≤15	Use 'trace'
	>5, ≤12	Add 'with clay/silt' to description, as applicable	>15, ≤30	Add 'with sand/gravel' to description, as applicable	>15, ≤30	Add 'with sand/gravel' to description, as applicable
Secondary	>12	Prefix soil name as 'silty' or 'clayey', as applicable	>30	Prefix soil name as 'sandy' or 'gravelly', as applicable	>30	Prefix soil name with 'sandy' or 'gravelly', as applicable

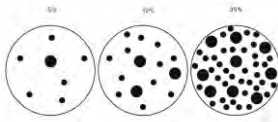


FIGURE 3. DIAGRAM OF VARIOUS PERCENTAGES OF DRAINS

Colour

- The colour of a soil should be described in the 'moist' condition using simple terms, such as the following:
 - black, white, grey, red, brown, orange, yellow, green, blue
- These may be modified as necessary by 'pale', 'dark', or 'mottled'.
- Borderline colours may be described as a combination of these colours (e.g. red-brown).
- Where a soil colour consists of a primary colour with a secondary mottling it should be described in the following fashion:
 - (Primary colour) mottled (secondary colour).
 - Example—grey mottled red-brown clay.
- Where a soil consists of two colours present in roughly equal proportions the colour description should be as follows:
 - Mottled (first colour) and (second colour).
 - Example—mottled brown and red-brown clay.
- A mixture of distinct colours may be described as, for example, mottled red/grey.

Cohesive Strength (Silts and Clays)

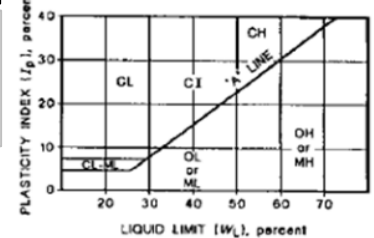
Consistency	Undrained Cohesion (kPa)	Field guide to consistency	SPT	PP	DCP blows/100mm
Very Soft	≤12	Extrudes between the fingers when squeezed in hand	<2	≤25	0-1
Soft	>12 ≤25	Can be moulded by light finger pressure	2-4	25-50	1-2
Firm	>25 ≤50	Can be moulded by strong finger pressure	4-8	50-100	2-3
Stiff	>50 ≤100	Cannot be moulded by fingers, Can be indented by thumb	8-15	100-200	3-7
Very Stiff	>100 ≤200	Can be indented by thumb nail	15-30	200-400	7-12
Hard	>200	Can be indented with difficulty by thumb nail	>400	>400	>12
Friable		Can be easily crumbled or broken into small pieces by hand			

FILL Strength

- The strength of fill should be typically described in terms of the descriptors in cohesive and non cohesive strength. If this is not suitable then it should be described as either;
 - Poorly Compacted (easily excavated with shovel)
 - Well Compacted (effort required to excavate with shovel)

Plasticity

Descriptive Term	Range of Liquid limit (%)	
	Clay	Silt
Of low plasticity	≤35	≤50
Of medium plasticity	>35 ≤50	
Of high plasticity	>50	>50



Moisture

- 'Dry' (D) Cohesive soils; hard and friable or powdery, well dry of plastic limit.
Granular soils; cohesionless and free-running.
- 'Moist' (M) Soil feels cool, darkened in colour.
Cohesive soils can be moulded.
Granular soils tend to cohere.
- 'Wet' (W) Soil feels cool, darkened in colour.
Cohesive soils usually weakened and free water forms on hands when handling.
Granular soils tend to cohere.



Non Cohesive Strength (Sands)

Density	Density Index	Alternative Field Test	SPT	DCP blows/100mm	φ
Very Loose	<15%	Easily push rod in several metres	<4	0-1	<30°
Loose	>15% ≤35%	Easily excavated with shovel	4-10	1-3	30-35°
Medium Dense	>35% ≤ 65%	Difficult to excavate with shovel	10-30	3-18	35-40°
Dense	>65% ≤85%	Pick required to excavate	30-50	18-45	40-45°
Very Dense	>85%	Impenetrable	>50	>45	>45°

Laboratory Testing

Australian Geotechnical Testing Pty Ltd
2/1109 Raglan Parade
Warrnambool
VIC 3280



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: - Matt Noonan

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Project name AGTE21362
Received Date Oct 22, 2021

Client Sample ID			TP10_0.0-0.1	TP10_0.45-0.5	TP10_0.95-1.0	TP10_1.45-1.50
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47908	M21-Oc47909	M21-Oc47910	M21-Oc47911
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	120	139	127	142
Tetrachloro-m-xylene (surr.)	1	%	56	137	144	144
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP10_0.0-0.1	TP10_0.45-0.5	TP10_0.95-1.0	TP10_1.45-1.50
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47908	M21-Oc47909	M21-Oc47910	M21-Oc47911
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	98	105	97	88
Ammonia (as N)						
Ammonia (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)						
Nitrate (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrite (as N)						
Nitrite (as N)	5	mg/kg	< 5	< 5	< 5	< 5
% Moisture						
% Moisture	1	%	12	20	31	33
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	3.2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	340	340	220	330
Copper	5	mg/kg	< 5	< 5	< 5	8.7
Lead	5	mg/kg	21	18	9.4	8.0
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	21	53	100	180
Zinc	5	mg/kg	12	12	15	23
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	-	6.5	-	-
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	-	5.1	-	-
Reaction Ratings**S05	0	-	-	4.0	-	-

Client Sample ID			TP10_1.95-2.0	TP11_0.0-0.1	TP11_0.45-0.5	TP11_0.95-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47912	M21-Oc47913	M21-Oc47914	M21-Oc47915
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	91	122	117	65
Tetrachloro-m-xylene (surr.)	1	%	147	135	142	124
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP10_1.95-2.0	TP11_0.0-0.1	TP11_0.45-0.5	TP11_0.95-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47912	M21-Oc47913	M21-Oc47914	M21-Oc47915
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	90	92	91	92
Ammonia (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrite (as N)	5	mg/kg	< 5	< 5	< 5	< 5
% Moisture	1	%	34	32	35	37
Heavy Metals						
Arsenic	2	mg/kg	2.5	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	390	470	300	330
Copper	5	mg/kg	22	33	20	24
Lead	5	mg/kg	8.9	18	7.8	8.1
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	130	140	85	88
Zinc	5	mg/kg	42	33	21	26
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	-	-	-	6.0
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	-	-	-	5.1
Reaction Ratings**S05	0	-	-	-	-	2.0

Client Sample ID			TP11_1.45-1.50	TP11_1.95-2.0	TP12_0.0-0.1	TP12_0.45-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47916	M21-Oc47917	M21-Oc47918	M21-Oc47919
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP11_1.45-1.50	TP11_1.95-2.0	TP12_0.0-0.1	TP12_0.45-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47916	M21-Oc47917	M21-Oc47918	M21-Oc47919
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	148	141	114	71
Tetrachloro-m-xylene (surr.)	1	%	65	142	108	79
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP11_1.45-1.50	TP11_1.95-2.0	TP12_0.0-0.1	TP12_0.45-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47916	M21-Oc47917	M21-Oc47918	M21-Oc47919
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	79	73	112	59
Ammonia (as N)						
Ammonia (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrite (as N)	5	mg/kg	< 5	< 5	< 5	< 5
% Moisture	1	%	43	44	27	26
Heavy Metals						
Arsenic	2	mg/kg	2.2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	430	450	240	260
Copper	5	mg/kg	45	36	9.9	11
Lead	5	mg/kg	5.3	5.6	11	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	88	89	51	56
Zinc	5	mg/kg	42	52	17	17

Client Sample ID			TP12_0.95-1.0	TP12_1.45-1.50	TP12_1.95-2.0	D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47920	M21-Oc47921	M21-Oc47922	M21-Oc47923
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP12_0.95-1.0	TP12_1.45-1.50	TP12_1.95-2.0	D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47920	M21-Oc47921	M21-Oc47922	M21-Oc47923
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	85	100	79	93
Tetrachloro-m-xylene (surr.)	1	%	98	108	100	110
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	82	78	62	75
Ammonia (as N)						
Ammonia (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)						
Nitrate (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrite (as N)						
Nitrite (as N)	5	mg/kg	< 5	< 5	< 5	< 5
% Moisture						
% Moisture	1	%	30	36	33	31

Client Sample ID			TP12_0.95-1.0	TP12_1.45-1.50	TP12_1.95-2.0	D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Oc47920	M21-Oc47921	M21-Oc47922	M21-Oc47923
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	4.6	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	230	290	450	270
Copper	5	mg/kg	12	15	15	13
Lead	5	mg/kg	8.4	9.6	14	9.0
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	53	65	39	60
Zinc	5	mg/kg	16	22	17	18
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	6.5	-	-	-
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	4.1	-	-	-
Reaction Ratings* ^{S05}	0	-	2.0	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Oct 28, 2021	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)	Melbourne	Oct 28, 2021	14 Days
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Oct 28, 2021	28 Days
Nitrate (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Oct 28, 2021	28 Days
Nitrite (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Oct 28, 2021	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Oct 28, 2021	28 Days
Acid Sulfate Soils Field pH Test - Method: LTM-GEN-7060 Determination of field pH (pHF) and field pH peroxide (pHFOX) tests	Brisbane	Nov 04, 2021	7 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Oct 22, 2021	14 Days

Company Name: Australian Geotechnical Testing Pty Ltd
Address: 2/1109 Raglan Parade
Warrnambool
VIC 3280
Project Name: AGTE21362

Order No.: AGTE21362
Report #: 834411
Phone: 03 4504 5761
Fax:

Received: Oct 22, 2021 10:30 AM
Due: Oct 29, 2021
Priority: 5 Day
Contact Name: - Matt Noonan

Eurofins Analytical Services Manager : Callum McEwan

Sample Detail						Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Acid Herbicides	Acid Sulfate Soils Field pH Test	Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217															
Brisbane Laboratory - NATA # 1261 Site # 20794												X			
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	TP10_0.0-0.1	Oct 20, 2021		Soil	M21-Oc47908	X	X	X	X	X				X	X
2	TP10_0.45-0.5	Oct 20, 2021		Soil	M21-Oc47909	X	X	X	X	X		X		X	X
3	TP10_0.95-1.0	Oct 20, 2021		Soil	M21-Oc47910	X	X	X	X	X				X	X
4	TP10_1.45-1.50	Oct 20, 2021		Soil	M21-Oc47911	X	X	X	X	X				X	X
5	TP10_1.95-2.0	Oct 20, 2021		Soil	M21-Oc47912	X	X	X	X	X				X	X
6	TP11_0.0-0.1	Oct 20, 2021		Soil	M21-Oc47913	X	X	X	X	X				X	X
7	TP11_0.45-0.5	Oct 20, 2021		Soil	M21-Oc47914	X	X	X	X	X				X	X
8	TP11_0.95-1.0	Oct 20, 2021		Soil	M21-Oc47915	X	X	X	X	X		X		X	X
9	TP11_1.45-	Oct 20, 2021		Soil	M21-Oc47916	X	X	X	X	X				X	X

Company Name: Australian Geotechnical Testing Pty Ltd
Address: 2/1109 Raglan Parade
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Received: Oct 22, 2021 10:30 AM
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Contact Name: - Matt Noonan

Eurofins Analytical Services Manager : Callum McEwan

Sample Detail					Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Acid Herbicides	Acid Sulfate Soils Field pH Test	Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X	X	X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794												X		
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
	1.50													
10	TP11_1.95-2.0	Oct 20, 2021		Soil	M21-Oc47917	X	X	X	X	X			X	X
11	TP12_0.0-0.1	Oct 20, 2021		Soil	M21-Oc47918	X	X	X	X	X			X	X
12	TP12_0.45-0.5	Oct 20, 2021		Soil	M21-Oc47919	X	X	X	X	X			X	X
13	TP12_0.95-1.0	Oct 20, 2021		Soil	M21-Oc47920	X	X	X	X	X	X		X	X
14	TP12_1.45-1.50	Oct 20, 2021		Soil	M21-Oc47921	X	X	X	X	X			X	X
15	TP12_1.95-2.0	Oct 20, 2021		Soil	M21-Oc47922	X	X	X	X	X			X	X
16	D	Oct 20, 2021		Soil	M21-Oc47923	X	X	X	X	X			X	X
17	GROUNDWATER SEEPAGE	Oct 20, 2021		Water	M21-Oc47924				X	X	X			
Test Counts					16	16	16	17	17	1	1	3	16	16

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Ammonia (as N)	mg/kg	< 5			5	Pass	
Nitrate (as N)	mg/kg	< 5			5	Pass	
Nitrite (as N)	mg/kg	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	111			70-130	Pass	
4.4'-DDD	%	100			70-130	Pass	
4.4'-DDE	%	98			70-130	Pass	
4.4'-DDT	%	82			70-130	Pass	
a-HCH	%	105			70-130	Pass	
Aldrin	%	114			70-130	Pass	
b-HCH	%	100			70-130	Pass	
d-HCH	%	81			70-130	Pass	
Dieldrin	%	111			70-130	Pass	
Endosulfan I	%	91			70-130	Pass	
Endosulfan II	%	82			70-130	Pass	
Endosulfan sulphate	%	89			70-130	Pass	
Endrin	%	123			70-130	Pass	
Endrin aldehyde	%	99			70-130	Pass	
Endrin ketone	%	78			70-130	Pass	
g-HCH (Lindane)	%	88			70-130	Pass	
Heptachlor	%	123			70-130	Pass	
Heptachlor epoxide	%	99			70-130	Pass	
Hexachlorobenzene	%	94			70-130	Pass	
Methoxychlor	%	99			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	110			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	100			70-130	Pass	
Fenitrothion	%	91			70-130	Pass	
Methyl parathion	%	91			70-130	Pass	
Mevinphos	%	114			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	105			70-130	Pass	
Nitrate (as N)	%	106			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nitrite (as N)				%	105			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	83			80-120	Pass	
Cadmium				%	104			80-120	Pass	
Chromium				%	89			80-120	Pass	
Copper				%	86			80-120	Pass	
Lead				%	91			80-120	Pass	
Mercury				%	108			80-120	Pass	
Nickel				%	83			80-120	Pass	
Zinc				%	81			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Organochlorine Pesticides										
					Result 1					
Chlordanes - Total	M21-Oc43485	NCP	%	101				70-130	Pass	
4.4'-DDD	M21-Oc43485	NCP	%	85				70-130	Pass	
4.4'-DDE	M21-Oc43485	NCP	%	124				70-130	Pass	
4.4'-DDT	M21-Oc43485	NCP	%	87				70-130	Pass	
a-HCH	M21-Oc43485	NCP	%	108				70-130	Pass	
Aldrin	M21-Oc43485	NCP	%	110				70-130	Pass	
b-HCH	M21-Oc43485	NCP	%	99				70-130	Pass	
d-HCH	M21-Oc43485	NCP	%	105				70-130	Pass	
Dieldrin	M21-Oc43485	NCP	%	126				70-130	Pass	
Endosulfan I	M21-Oc43485	NCP	%	98				70-130	Pass	
Endosulfan II	M21-Oc43485	NCP	%	102				70-130	Pass	
Endosulfan sulphate	M21-Oc43485	NCP	%	103				70-130	Pass	
Endrin	M21-Oc43485	NCP	%	99				70-130	Pass	
Endrin aldehyde	M21-Oc43485	NCP	%	105				70-130	Pass	
Endrin ketone	M21-Oc43485	NCP	%	106				70-130	Pass	
g-HCH (Lindane)	M21-Oc43485	NCP	%	99				70-130	Pass	
Heptachlor	M21-Oc43485	NCP	%	97				70-130	Pass	
Heptachlor epoxide	M21-Oc43485	NCP	%	107				70-130	Pass	
Hexachlorobenzene	M21-Oc43485	NCP	%	124				70-130	Pass	
Methoxychlor	M21-Oc43485	NCP	%	78				70-130	Pass	
Spike - % Recovery										
Heavy Metals										
					Result 1					
Cadmium	M21-Oc47908	CP	%	100				75-125	Pass	
Chromium	M21-Oc47908	CP	%	75				75-125	Pass	
Copper	M21-Oc47908	CP	%	75				75-125	Pass	
Lead	M21-Oc47908	CP	%	82				75-125	Pass	
Mercury	M21-Oc47908	CP	%	108				75-125	Pass	
Nickel	M21-Oc47908	CP	%	76				75-125	Pass	
Zinc	M21-Oc47908	CP	%	72				75-125	Fail	Q08
Spike - % Recovery										
Organophosphorus Pesticides										
					Result 1					
Diazinon	M21-Oc47915	CP	%	103				70-130	Pass	
Dimethoate	M21-Oc47915	CP	%	91				70-130	Pass	
Ethion	M21-Oc47915	CP	%	100				70-130	Pass	
Fenitrothion	M21-Oc47915	CP	%	91				70-130	Pass	
Methyl parathion	M21-Oc47915	CP	%	125				70-130	Pass	
Mevinphos	M21-Oc47915	CP	%	91				70-130	Pass	
Spike - % Recovery										
Heavy Metals										
					Result 1					
Arsenic	M21-Oc47917	CP	%	84				75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	M21-Oc47917	CP	%	98			75-125	Pass	
Chromium	M21-Oc47917	CP	%	91			75-125	Pass	
Copper	M21-Oc47917	CP	%	115			75-125	Pass	
Lead	M21-Oc47917	CP	%	105			75-125	Pass	
Mercury	M21-Oc47917	CP	%	101			75-125	Pass	
Nickel	M21-Oc47917	CP	%	108			75-125	Pass	
Zinc	M21-Oc47917	CP	%	89			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M21-Oc47908	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nitrate (as N)	M21-Oc47908	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nitrite (as N)	M21-Oc47908	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M21-Oc47908	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	M21-Oc47908	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M21-Oc47908	CP	mg/kg	340	370	8.0	30%	Pass	
Copper	M21-Oc47908	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M21-Oc47908	CP	mg/kg	21	21	4.0	30%	Pass	
Mercury	M21-Oc47908	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M21-Oc47908	CP	mg/kg	21	22	5.0	30%	Pass	
Zinc	M21-Oc47908	CP	mg/kg	12	13	7.0	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	M21-Oc58214	NCP	pH Units	8.4	8.4	pass	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M21-Oc47914	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M21-Oc47914	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M21-Oc47914	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	M21-Oc47914	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	M21-Oc47914	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	M21-Oc47914	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	M21-Oc47914	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
% Moisture	M21-Oc47916	CP	%	43	42	2.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M21-Oc47916	CP	mg/kg	2.2	2.9	27	30%	Pass
Cadmium	M21-Oc47916	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M21-Oc47916	CP	mg/kg	430	430	1.0	30%	Pass
Copper	M21-Oc47916	CP	mg/kg	45	41	9.0	30%	Pass
Lead	M21-Oc47916	CP	mg/kg	5.3	5.0	4.0	30%	Pass
Mercury	M21-Oc47916	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	M21-Oc47916	CP	mg/kg	88	84	4.0	30%	Pass
Zinc	M21-Oc47916	CP	mg/kg	42	37	11	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M21-Oc47917	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Aldrin	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M21-Oc47917	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M21-Oc47917	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	M21-Oc47917	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	M21-Oc47917	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	M21-Oc47917	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	M21-Oc47917	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M21-Oc47917	CP	mg/kg	< 2	2.3	20	30%	Pass
Cadmium	M21-Oc47917	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M21-Oc47917	CP	mg/kg	450	430	4.0	30%	Pass
Copper	M21-Oc47917	CP	mg/kg	36	39	7.0	30%	Pass
Lead	M21-Oc47917	CP	mg/kg	5.6	5.7	1.0	30%	Pass
Mercury	M21-Oc47917	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	M21-Oc47917	CP	mg/kg	89	81	9.0	30%	Pass
Zinc	M21-Oc47917	CP	mg/kg	52	48	9.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	M21-Oc47918	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nitrate (as N)	M21-Oc47918	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nitrite (as N)	M21-Oc47918	CP	mg/kg	< 5	< 5	<1	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
S05	Field Screen uses the following fizz rating to classify the rate the samples reacted to the peroxide: 1.0; No reaction to slight. 2.0; Moderate reaction. 3.0; Strong reaction with persistent froth. 4.0; Extreme reaction.

Authorised by:

Emily Daos	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Myles Clark	Senior Analyst-SPOCAS (QLD)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Australian Geotechnical Testing Pty Ltd
2/1109 Raglan Parade
Warrnambool
VIC 3280



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: - **Matt Noonan**

Report 834411-W
 Project name AGTE21362
 Received Date Oct 22, 2021

Client Sample ID			GROUNDWATER SEEPAGE
Sample Matrix			Water
Eurofins Sample No.			M21-Oc47924
Date Sampled			Oct 20, 2021
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchloroendate (surr.)	1	%	77
Tetrachloro-m-xylene (surr.)	1	%	85
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002

Client Sample ID			GROUNDWATER SEEPAGE
Sample Matrix			Water
Eurofins Sample No.			M21-Oc47924
Date Sampled			Oct 20, 2021
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	52
Polychlorinated Biphenyls			
Aroclor-1016	0.005	mg/L	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005
Total PCB*	0.005	mg/L	< 0.005
Dibutylchloroendate (surr.)	1	%	77
Tetrachloro-m-xylene (surr.)	1	%	85
Acid Herbicides			
2,4-D	0.001	mg/L	< 0.001
2,4-DB	0.001	mg/L	< 0.001
2,4,5-T	0.001	mg/L	< 0.001
2,4,5-TP	0.001	mg/L	< 0.001
Actril (loxynil)	0.001	mg/L	< 0.001
Dicamba	0.001	mg/L	< 0.001
Dichlorprop	0.001	mg/L	< 0.001
Dinitro-o-cresol	0.001	mg/L	< 0.001
Dinoseb	0.001	mg/L	< 0.001
MCPA	0.001	mg/L	< 0.001

Client Sample ID			GROUNDWATER SEEPAGE
Sample Matrix			Water
Eurofins Sample No.			M21-Oc47924
Date Sampled			Oct 20, 2021
Test/Reference	LOR	Unit	
Acid Herbicides			
MCPB	0.001	mg/L	< 0.001
Mecoprop	0.001	mg/L	< 0.001
Warfarin (surr.)	0.001	%	109

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Oct 27, 2021	7 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)	Melbourne	Oct 27, 2021	7 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)	Melbourne	Oct 27, 2021	7 Days
Acid Herbicides - Method: LTM-ORG-2180 Phenoxy Acid Herbicides	Melbourne	Oct 27, 2021	14 Days

Company Name: Australian Geotechnical Testing Pty Ltd
Address: 2/1109 Raglan Parade
Warrnambool
VIC 3280
Project Name: AGTE21362

Order No.: AGTE21362
Report #: 834411
Phone: 03 4504 5761
Fax:

Received: Oct 22, 2021 10:30 AM
Due: Oct 29, 2021
Priority: 5 Day
Contact Name: - Matt Noonan

Eurofins Analytical Services Manager : Callum McEwan

Sample Detail						Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Acid Herbicides	Acid Sulfate Soils Field pH Test	Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217															
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	TP10_0.0-0.1	Oct 20, 2021		Soil	M21-Oc47908	X	X	X	X	X				X	X
2	TP10_0.45-0.5	Oct 20, 2021		Soil	M21-Oc47909	X	X	X	X	X			X	X	X
3	TP10_0.95-1.0	Oct 20, 2021		Soil	M21-Oc47910	X	X	X	X	X				X	X
4	TP10_1.45-1.50	Oct 20, 2021		Soil	M21-Oc47911	X	X	X	X	X				X	X
5	TP10_1.95-2.0	Oct 20, 2021		Soil	M21-Oc47912	X	X	X	X	X				X	X
6	TP11_0.0-0.1	Oct 20, 2021		Soil	M21-Oc47913	X	X	X	X	X				X	X
7	TP11_0.45-0.5	Oct 20, 2021		Soil	M21-Oc47914	X	X	X	X	X				X	X
8	TP11_0.95-1.0	Oct 20, 2021		Soil	M21-Oc47915	X	X	X	X	X			X	X	X
9	TP11_1.45-	Oct 20, 2021		Soil	M21-Oc47916	X	X	X	X	X				X	X

Company Name: Australian Geotechnical Testing Pty Ltd
Address: 2/1109 Raglan Parade
Warrnambool
VIC 3280
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Sample Detail					Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Acid Herbicides	Acid Sulfate Soils Field pH Test	Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X	X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794											X			
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
	1.50													
10	TP11_1.95-2.0	Oct 20, 2021		Soil	M21-Oc47917	X	X	X	X				X	X
11	TP12_0.0-0.1	Oct 20, 2021		Soil	M21-Oc47918	X	X	X	X				X	X
12	TP12_0.45-0.5	Oct 20, 2021		Soil	M21-Oc47919	X	X	X	X				X	X
13	TP12_0.95-1.0	Oct 20, 2021		Soil	M21-Oc47920	X	X	X	X		X		X	X
14	TP12_1.45-1.50	Oct 20, 2021		Soil	M21-Oc47921	X	X	X	X				X	X
15	TP12_1.95-2.0	Oct 20, 2021		Soil	M21-Oc47922	X	X	X	X				X	X
16	D	Oct 20, 2021		Soil	M21-Oc47923	X	X	X	X				X	X
17	GROUNDWATER SEEPAGE	Oct 20, 2021		Water	M21-Oc47924				X	X				
Test Counts					16	16	16	17	17	1	1	3	16	16

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/L	< 0.001			0.001	Pass	
2.4-DB	mg/L	< 0.001			0.001	Pass	
2.4.5-T	mg/L	< 0.001			0.001	Pass	
2.4.5-TP	mg/L	< 0.001			0.001	Pass	
Actril (loxynil)	mg/L	< 0.001			0.001	Pass	
Dicamba	mg/L	< 0.001			0.001	Pass	
Dichlorprop	mg/L	< 0.001			0.001	Pass	
Dinitro-o-cresol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.001			0.001	Pass	
MCPA	mg/L	< 0.001			0.001	Pass	
MCPB	mg/L	< 0.001			0.001	Pass	
Mecoprop	mg/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4.4'-DDD	%	87			70-130	Pass	
4.4'-DDE	%	78			70-130	Pass	
4.4'-DDT	%	79			70-130	Pass	
a-HCH	%	79			70-130	Pass	
Aldrin	%	71			70-130	Pass	
b-HCH	%	75			70-130	Pass	
d-HCH	%	80			70-130	Pass	
Dieldrin	%	72			70-130	Pass	
Endosulfan I	%	80			70-130	Pass	
Endosulfan II	%	78			70-130	Pass	
Endosulfan sulphate	%	98			70-130	Pass	
Endrin	%	78			70-130	Pass	
Endrin aldehyde	%	88			70-130	Pass	
Endrin ketone	%	87			70-130	Pass	
g-HCH (Lindane)	%	77			70-130	Pass	
Heptachlor	%	107			70-130	Pass	
Heptachlor epoxide	%	84			70-130	Pass	
Hexachlorobenzene	%	84			70-130	Pass	
Methoxychlor	%	71			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organophosphorus Pesticides							
Diazinon	%	75			70-130	Pass	
Dimethoate	%	71			70-130	Pass	
Ethion	%	78			70-130	Pass	
Fenitrothion	%	80			70-130	Pass	
Mevinphos	%	97			70-130	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Emily Daos Analytical Services Manager
Joseph Edouard Senior Analyst-Organic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

QUALITY CONTROL REPORT

Work Order	: EM2121175	Page	: 1 of 8
Client	: AUSTRALIAN GEOTECHNICAL TESTIN	Laboratory	: Environmental Division Melbourne
Contact	: MATT NOONAN	Contact	: Customer Services EM
Address	: 101 NATALIE ROAD BUCCAN 4207	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: AGTE21362	Date Samples Received	: 25-Oct-2021
Order number	: ----	Date Analysis Commenced	: 27-Oct-2021
C-O-C number	: ----	Issue Date	: 18-Nov-2021
Sampler	: ----		
Site	: ----		
Quote number	: EN/333		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3982019)									
EM2121064-009	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	20	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	39	33	16.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	6	6	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	12	0.0	No Limit
EM2121175-001	T	EG005T: Cadmium	7440-43-9	1	mg/kg	1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	240	248	3.3	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	36	44	19.4	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	10	13.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	6	25.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	9	7	22.8	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3984225)									
EM2121149-001	Anonymous	EA055: Moisture Content	----	0.1	%	13.2	12.9	2.6	0% - 50%
EM2121168-002	Anonymous	EA055: Moisture Content	----	0.1	%	21.9	20.8	5.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3982020)									
EM2121064-009	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
EM2121175-001	T	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK055: Ammonia as N (QC Lot: 3984002)									
EM2121104-001	Anonymous	EK055: Ammonia as N	7664-41-7	20	mg/kg	60	60	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 3977225)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 3977225) - continued									
EM2121175-001	T	EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	0.4	123	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 3977226)									
EM2121175-001	T	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	0.7	0.7	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3981550)									
EM2121325-016	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EM2121261-004	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3981550) - continued									
EM2121261-004	Anonymous	EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3981550)									
EM2121325-016	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EM2121261-004	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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 Work Order : EM2121175
 Client : AUSTRALIAN GEOTECHNICAL TESTIN
 Project : AGTE21362



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3981550) - continued									
EM2121261-004	Anonymous	EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit



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

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

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3982019)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	95.0	70.0	130	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	69.9	50.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	107	70.0	130	
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	98.3	70.0	130	
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	90.7	70.0	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	95.1	70.0	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	71.9	70.0	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3982020)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	88.3	70.0	130	
EK055: Ammonia as N (QCLot: 3984002)									
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	25 mg/kg	93.7	83.0	109	
EK057G: Nitrite as N by Discrete Analyser (QCLot: 3977225)									
EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	2.5 mg/kg	106	88.9	113	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 3977226)									
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	106	89.5	119	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3981550)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	71.8	126	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	72.2	125	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	80.1	70.0	124	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	69.1	124	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.6	69.2	125	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.2	66.6	122	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	78.5	68.8	123	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	77.1	67.2	124	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	66.6	66.0	126	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.5	70.2	126	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	77.3	72.1	124	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	77.2	68.0	122	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.0	68.9	124	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	72.1	55.8	130	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	67.9	124	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	72.0	127	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	107	66.3	131	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	62.4	131	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3981550) - continued								
EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	89.0	55.4	130
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	68.8	128
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	87.8	55.5	132
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3981550)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	65.6	127
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	63.0	129
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	71.2	10.0	136
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	74.9	58.3	128
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	69.0	122
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	77.4	68.0	122
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	73.9	59.6	124
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	74.8	63.8	128
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	78.1	71.1	124
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	79.5	67.4	126
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	72.8	57.9	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	78.1	66.2	123
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	73.8	59.8	123
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	65.4	127
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	72.9	52.1	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	65.2	122
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	65.6	63.2	124
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	65.9	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	66.7	43.1	131

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Acceptable Limits (%)	
					MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3982019)							
EM2121149-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	98.0	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.0	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	101	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	102	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	90.5	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	95.9	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	81.7	80.0	120



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery(%) MS	Acceptable Limits (%) Low High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3982020)							
EM2121149-001		Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	103	76.0 116
EK055: Ammonia as N (QCLot: 3984002)							
EM2121104-002		Anonymous	EK055: Ammonia as N	7664-41-7	50 mg/kg	95.3	80.0 110
EP068A: Organochlorine Pesticides (OC) (QCLot: 3981550)							
EM2121175-001		T	EP068: gamma-BHC	58-89-9	0.5 mg/kg	76.6	51.4 139
			EP068: Heptachlor	76-44-8	0.5 mg/kg	69.0	49.1 130
			EP068: Aldrin	309-00-2	0.5 mg/kg	76.4	38.4 135
			EP068: Dieldrin	60-57-1	0.5 mg/kg	79.0	58.4 136
			EP068: Endrin	72-20-8	0.5 mg/kg	77.0	33.0 146
			EP068: 4.4'-DDT	50-29-3	0.5 mg/kg	78.3	20.0 133
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3981550)							
EM2121175-001		T	EP068: Diazinon	333-41-5	0.5 mg/kg	94.8	65.1 135
			EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	69.4	56.3 127
			EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	68.0	55.0 133
			EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	84.8	55.1 133
			EP068: Prothiofos	34643-46-4	0.5 mg/kg	70.4	43.8 128

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2121175	Page	: 1 of 4
Client	: AUSTRALIAN GEOTECHNICAL TESTIN	Laboratory	: Environmental Division Melbourne
Contact	: MATT NOONAN	Telephone	: +61-3-8549 9600
Project	: AGTE21362	Date Samples Received	: 25-Oct-2021
Site	: ----	Issue Date	: 18-Nov-2021
Sampler	: ----	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**



Outliers : Frequency of Quality Control Samples

Matrix: SOIL

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Matrix Spikes (MS)					
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) T	20-Oct-2021	----	----	----	29-Oct-2021	03-Nov-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) T	20-Oct-2021	28-Oct-2021	18-Apr-2022	✓	28-Oct-2021	18-Apr-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) T	20-Oct-2021	28-Oct-2021	17-Nov-2021	✓	29-Oct-2021	17-Nov-2021	✓
EK055: Ammonia as N							
Soil Glass Jar - Unpreserved (EK055) T	20-Oct-2021	----	----	----	29-Oct-2021	17-Nov-2021	✓
EK057G: Nitrite as N by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK057G) T	20-Oct-2021	27-Oct-2021	27-Oct-2021	✓	29-Oct-2021	29-Oct-2021	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK059G) T	20-Oct-2021	27-Oct-2021	17-Nov-2021	✓	29-Oct-2021	29-Oct-2021	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) T	20-Oct-2021	28-Oct-2021	03-Nov-2021	✓	28-Oct-2021	07-Dec-2021	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) T	20-Oct-2021	28-Oct-2021	03-Nov-2021	✓	28-Oct-2021	07-Dec-2021	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Buchi Ammonia	EK055	1	6	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	1	100.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	1	100.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Buchi Ammonia	EK055	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Buchi Ammonia	EK055	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Buchi Ammonia	EK055	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	0	1	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	0	1	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Buchi Ammonia	EK055	SOIL	In house: Referenced to APHA 4500-NH ₃ B&G, H Samples are steam distilled (Buchi) prior to analysis and quantified using titration, FIA or Discrete Analyser.
Nitrite as N - Soluble by Discrete Analyser	EK057G	SOIL	In house: Referenced to APHA 4500-NO ₃ - B. Nitrite in a water extract is determined by direct colourimetry by Discrete Analyser.
Nitrate as N - Soluble by Discrete Analyser	EK058G	SOIL	In house: Referenced to APHA 4500-NO ₃ - F. Nitrate in the 1:5 soil:water extract is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results.
Nitrite and Nitrate as N (NO _x)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Thermo Scientific Method D08727 and NEMI (National Environmental Method Index) Method ID: 9171. This method covers the determination of total oxidised nitrogen (NO _x -N) and nitrate (NO ₃ -N) by calculation, Combined oxidised Nitrogen (NO ₂ +NO ₃) in a water extract is determined by direct colourimetry by Discrete Analyser.
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).

Preparation Methods	Method	Matrix	Method Descriptions
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Appendix I

Downer (2022) Design
Report



Kentbruck Energy Park Transmission Line Basis of Design Report

Rev. A

23 May 2022

Document Preparation and Control

Division:	Downer Utilities Australia Pty Ltd
ABN:	65 075 194 857
Contact:	Nandun Padukkage
Address:	L10 567 Collins St, Melbourne, VIC, 3000
Phone:	0427985167
Email:	Nandun.Padukkage@downergroup.com

Approval

23/05/22	Prepared	Electrical Engineer Civil Engineer	Glen Halliday Islam Seif	GH IS
23/05/22	Checked	Senior Principal Electrical Engineer Principal Engineer – Overhead Lines Team Lead – Civil/Structural Northern Region	Navin Maller Franz Ritky Arthur Bool	NM FR AB
23/05/22	Approved	Design Manager Design Manager	Nandun Padukkage Florent Huot	NP FH

Amendment Record

23/05/22	A	Issued for Client Review	Nandun Padukkage	NP

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1. DEFINITIONS & ABBREVIATIONS

Acronym or Abbreviation	Term
AS	Australian Standards
BOD (BoD)	Basis of Design
GA	General Arrangement
KBTL	Kentbruck Energy Park Transmission Line
kV	Kilo Volt
HV	High Voltage
MW	Megawatt
OH	Overhead
PoC	Point of Connection
SLD	Single Line Diagram
TXL	Transmission Line
UG	Under Ground

2. PROJECT BACKGROUND

Neoen is developing the Kentbruck Energy Hub, a hybrid renewable energy project with the ability to provide affordable, reliable power to consumers. It is understood that the Green Energy Hub is to include a proposed wind farm comprising up to 157 wind turbines and battery storage, with a possibility to also include hydrogen energy storage facilities.

The Kentbruck Green Energy Hub is located in far southwest Victoria, approximately 330km west of Melbourne. The site is around 5km from Nelson and 25km from Portland, as per figure below.



Figure 1. Kentbruck Energy Hub location

Neoen is committed to configuring the project to ensure minimal environmental impacts and to safeguard the local ecology. One of the options for the Kentbruck transmission line (KBTL) connecting the project to the Grid is through underground cabling along an existing dirt road through the Cobboboonee National Park, as per figure below. This low impact solution would ensure minimal disturbance to flora, fauna and the local community.

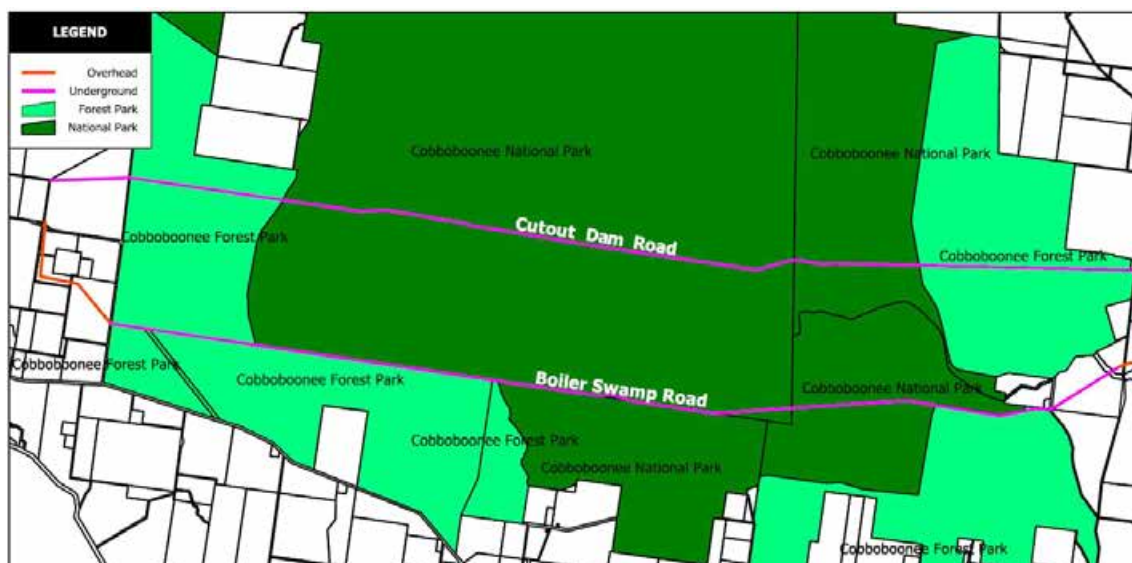


Figure 2. Transmission Line Route Through Cobboboonee Forest Park and Cobboboonee National Park.

Neoen have prepared and shared a Discussion Note presented to DELWP providing a brief of the route and concept envisaged at this stage to connect to AusNet Services Heywood Terminal Station.

The corridor has been identified to contain some constraints as it is proposed to run along the Boiler Swamp Rd corridor through the Cobboboonee National Park and various land owner properties, encountering a number of road and waterway crossings.

It is expected that the connection point to the AusNet network will be an existing unused 275kV bay in Heywood Terminal Station. The suitability of the existing 275kV connection bays to accommodate the connection will be determined at the Application to Connect phase between Neoen and AusNet Services.

	Underground Through Cobboboonee + O/H to Heywood Terminal Station
Underground Line Length (UG)	19km
Overhead Line Length (OH)	8km

Table 1. Transmission Line approximate lengths

In this context Neoen have requested Downer to provide Engineering Services and inputs with regards to the preliminary design, construction methodology, construction footprint and O&M requirements of the overhead and underground sections of the HV transmission line, which is the scope covered in this report.

3. PRINCIPAL PROJECT REQUIREMENTS (PPR)

As this project is at a preliminary stage, with Downer engaged to develop the concept design, no detailed PPR documents detailing this project have been produced. Downer has utilised the following documents in developing the concept design.

- [1] 3092938-01-011_A- Kentbruck EH Development Services - WO-1
- [2] Kentbruck GPH design_knowns & unknowns_20220119
- [3] 21-08-22BiosisKentbruckShapefiles (Boiler Swamp road survey data)*
- [4] Kentbruck EES_Environmental Site Investigation Report_22Sept21_reduced
- [5] AGTE21362-2 Kentbruck
- [6] 60591699_KGPH_APP_X_Surface water_DRAFT_20200507
- [7] Kentbruck_Land.kmz
- [8] 20220118 Kentbruck 129xV162 6.2MW HH149m
- [9] HYTS- 275- EXTENSION-SLD-Model
- [10] Australian standards.
- [11] Any other international standards.

*No survey data available for the last section of Boiler Swamp road (West), ref. KBTL-EL-LAY-00-80-0008.

4. DESIGN OVERVIEW

This BoD presents the concept design for KBTL for the 275kV cable and transmission lines and the 275kV UG/OH transition station which will allow Neoen to progress the project development prior to proceeding with the project Development Application request. This document serves as a communication tool for Downer to communicate these technical parameters to Neoen as well as qualifying design assumptions and exclusions that are part of the concept design.

In line with the Proposal to Neoen [1] is the submission of this BoD as the key milestone of the concept development. To accompany the BoD are preliminary concept drawings listed in Appendix A.

The design shall be broken into three key areas as follows:

- KBTL Underground 275kV Reticulation Design;
- KBTL Overhead 275kV Reticulation Design.
- KBTL UG/OH Transition Station;

5. ELECTRICAL DESIGN

5.1. Electrical Design Scope of Works

The HV electrical system comprise of a 275kV UG cable feeder and OH transmission line from Kentbruck Energy Park 275/33kV substation to AusNet 500/275 kV Heywood substation approximately 25km east of the Kentbruck Energy Park. The OH transmission line will be terminated at a gantry structure associated with an existing spare 275kV bay at the Heywood Terminal Station. Alternatively, Neon is also exploring the connection to Alcoa 220kV substation at Portland.

The present document describes the basis of design for the first option in which 600MW will be transmitted to the Heywood Terminal Station (HYTS) through a combination of 275kV UG and OH transmission line through the Cobboboonee National Park as per layout drawing KBTL-EL-LAY-00-80-0001. This transmission line feeder will comprise of an underground portion of the cable installed from the Energy Park substation to a new UG to OH transition station on the eastern side of the National Park from where the OHL section of the line will connect to Heywood Terminal Station.

The battery limits for the 275kV UG and OH transmission is as follows:

- Termination of the 275kV UG cable to an outdoor cable termination structure at 275/33 kV Energy Park Substation. The scope will include supply and installation of cable and cable termination heads.
- 275kV OH Line strung to the last structure prior to HYTS. The landing span from the structure to the 275kV substation gantry within the terminal station will be done by others.

5.2. Design Inputs

The following is a summary of the key design input references in developing the concept design.

Item No.	Design Input	Comment
1	Location of Energy Park Substation	The 275/33kV Energy Park Substation location is considered as advised by Neoen within the Energy Park (refer layout drawings).
2	Power rating of Energy Park substation	Stage-1 rating has been advised by Neoen as 600 MW.
3	No. of 275kV Connections	Single circuit line with one cable per phase
4	Point of Connection	275kV Connection to the spare 275kV Bay at the Heywood TS.
5	Construction Constraints	Available road width through the national park for construction corridor

Table 2 Design input summary

5.3. KBTL Underground 275kV Cable Feeder

The cable sizing calculations and design of cable route layout and cable trench sections were done based on a single cable per phase solution which formed the basis of Downers concept design.

The minimum balanced three-phase load current considered for the design under the worst-case operating conditions based on NER requirements is as follows:

- 600MW @ 275kV, 0.9pu voltage, 0.93 power factor, resulting in 1,505A.

At this early concept design stage there is no available soil thermal resistivity test reports for the native soil. Therefore, the following values are considered based on previous projects carried out in similar areas:

- Native soil temperature at burial depth: 27°C
- Native soil thermal resistivity: 2.0 K.m/W

It is essential that that the imported bedding sand material shall have a thermal resistivity of less than or equal to 1.2K.m/W required as per good industry practice.

In this design, along with technical requirements, constructability aspects were also assessed and the following cable trench cross section is proposed. Further details of the section can be found in KBTL-EL-SEC-71-80-0001.

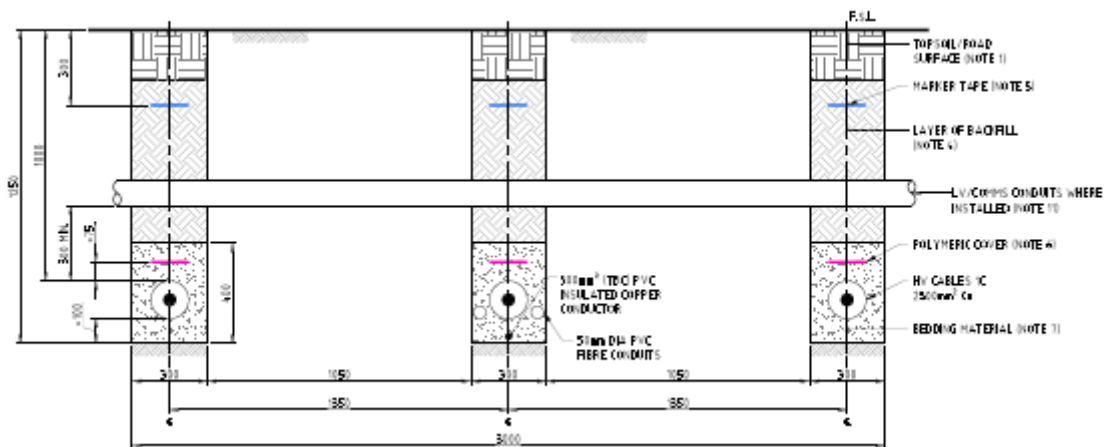


Figure 3: Cable Cross Section

Proposed cable route layouts are attached in Appendix A. The cable route is based on road centre line data provided by Neoen. It was noted that road data is not available for a small section of the Cut-Out Dams road is not available. Where the road data is not available, design assumes the road centre line based on Autodesk imagery for the purposes of the concept design. A survey will need to be undertaken to verify road centre line prior to detailed design.

Proposed cable constructional details can be found in document *KBTL-DOW-DAT-EL-80-80-0001(A) 275kV Cable Datasheet*.

In the absence of specific installation requirements provided by the clients, the design is made based on requirements relevant in AS 4799, AS 6947 and AusNet services guidelines for installation of HV cables (SDM 02-2304) and adopting good industry practice. The installation arrangement shown in Figure 3 is largely dictated by constructability considerations along the roadway. The three single cable trench provides a small construction footprint, which allows the use of a smaller trenching machine and smaller amount of spoil created during installation. As a result, this design required only 400mm thick layer to be removed and replaced with bedding material. The edge-to-edge separation between the three trenches is kept 1000mm to minimise the risk of trench wall collapse during excavation as advised by cable installer Tesmec. This installation is proposed to

be run centrally along the roadway to keep the construction corridor to a minimum thereby reducing the impact of vegetation along the route. Civil and constructability considerations are further discussed in Section 6.

275kV cable sheaths will be cross-bonded regularly along the route. A typical arrangement is described in KBTL-EL-LAY-00-80-0001. Pending detailed design, this cross bonding is estimated at every 800m which will be done at cable joint pits to be installed along the route. This is in line with typical maximum cable lengths available on a single drum.

The cable pit design, proposed in KBTL-EL-SEC-71-80-0003, is based on what was proposed for a similar project and is subject to detailed design and project specific requirements. This concrete pit design is proposed to provide adequate cable restraint during short circuit forces by bedding the cables in suitable bedding material within the pit following jointing and sheath cross-bonding. Cross-bonding will be achieved in an external enclosure pit to the joint pit.

A number of points along the route have been identified with drains and culverts. Currently to reduce disturbance of these waterways, an underling boring solution is proposed to cross cables below the infrastructure. Typical cross section is detailed in KBTL-EL-SEC-71-80-0003. The requirement for this approach is to be determined in detailed design. Additionally, this under boring approach may be used to cross existing LV/communications services, if deemed necessary. The concept design currently assumes the typical installation method can be easily be used.

Near to the underground to overhead transition station, an area subject to flooding has been identified as shown on layout drawing KBTL-EL-LAY-00-80-0009. It is recommended that soil conditions in this area be investigated further as part of detailed design. Should the area not be suitable for construction or installation of the cable, an alternate route will be proposed, subject to landowner consent.

In general, maintenance of the underground cable should be minimal. Periodic inspections of sheath cross bonding pits may need to be considered to check for infiltration of vermin or insects. Underground assets including cable and joints should be maintenance free throughout their respective design life. The cable route should also be inspected for any signs of erosion/deterioration throughout the design life and rectified as required to ensure adequate coverage/protection of the cables and parallel services is maintained.

5.4. KBTL Overhead 275kV Line

Initial overhead line conductor sizing calculations indicate twin Mango (54/3.00 ACSR/GZ) is suitable for the application with considerations for thermal rating and surface field strength requirements.

ACSR/GZ type conductor has been chosen based on AusNet's general preference and that of other utilities.

General assumptions made for conductor thermal rating assessment summarised below.

Parameter	Value
Direct solar radiation intensity (S) (W/m ²)	1000
Diffuse solar radiation intensity (S _{diff}) (W/m ²)	100
Maximum ambient temperature (t _a) (°C)	45
Minimum wind velocity (V) (m/s)	1
Emissivity of conductor - depends on the conductor surface brightness (e)	0.85

Table 3 – OHL conductor sizing parameters

5.5. KBTL 275kV UG/OH Transition Station

A typical underground to overhead transition station has been proposed to indicate proposed footprint for the station. Further details will be determined during detailed design.

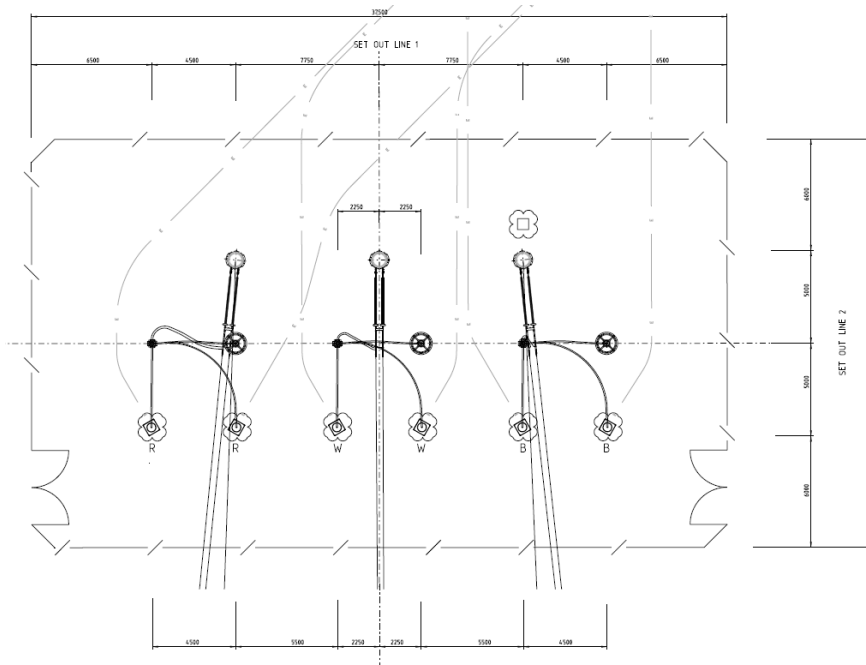




Figure 4 – Typical UG/OH Transition Station (with example photos)

The station will include (but not limited to) the following equipment:

- 275kV Surge Arresters and CVTs
- Terminal Poles
- Outdoor cable termination structures
- Perimeter fence with gates

6. CIVIL DESIGN

The civil design aspects of the project are primarily related to considering the construction corridor requirements for the underground and above ground sections of the proposed high voltage transmission lines.

The underground section is along the existing Boiler Swamp Road alignment through Cobboboonee Forest Park and Cobboboonee National Park which is a distance of approximately 19km. See Figure 2 above.

6.1. Underground Section

The underground section of the transmission line will be installed in excavated trenches. The trenching and cable installation will require a construction corridor that needs to consider constructability through a narrow clearway through the National Park and Forest Park along Boiler Swamp Road which is lined by native vegetation on both sides that needs to be avoided and protected as much as possible. The site photo below shows a section of the constrained Boiler Swamp Road corridor.



Figure 5: Photo of the constrained Boiler Swamp Road corridor

In order to avoid excessive impacts to vegetation, the three underground high voltage cables are proposed to be placed under the existing road as much as possible, as opposed to completely off to the side of the road. The proposed optimal method of trenching and cable laying is by way of an integrated trenching wheel excavator, laying unit box, track mounted carrier unit and cable reel. This method works linearly to excavate, lay and backfill in a single pass operation per cable in the most economical and least invasive way. Since the electrical design requires three cables, and the cables need separation for thermal efficiency reasons, there are proposed to be three individual trenches 0.3m wide and 1.25m deep with 1m space between. This means the construction would occur in three separate runs with the equipment making the linear journey from one end to the other three times.

The depth of the trench is required to allow sufficient cover for traffic loadings and protection of services and also to allow sufficient depth of thermal sand for electrical performance of the cables (refer to the Electrical section of this report). See the typical trench detail in Figure 3 above. The 1m spacing between trenches is required to avoid caving in of adjacent trench walls and backfill material between successive passes.

The option of having a single wide trench (of 1.5m wide) with all three cables was considered however such a trench was not achievable by this method since the trenching machines to carry out this work would be too large and not readily available and the earthworks excavations volumes are larger.

6.1.1. Constructability considerations

Building the trench under the existing road generally poses the least impact on vegetation, however after consultations with the cable installation contractor, Tesmec, it is preferred the three trenches are to be offset to one side of the road centreline, and traverse along under the edge of the existing roadway to allow room for support construction vehicles (e.g. sand supply machinery) and emergency vehicles to pass. Ultimately, a detailed survey would be required for confirmation of the existing road alignment, tree locations and proposed trench positioning, prior to construction, but the nominal proposed trenching and construction corridor is as follows:

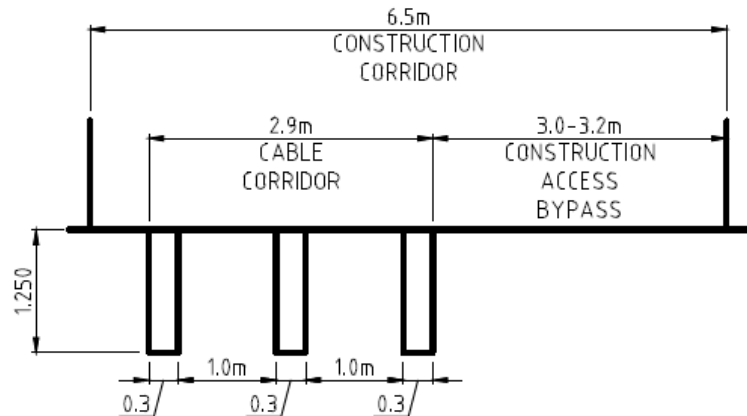


Figure 6: Construction corridor

Other factors to consider are:

- **The excavation method and spoil management.** There are likely to be at least two excavation methods to consider. Geotechnical conditions along the corridor should also be confirmed.
 - Firstly, the method of using an integrated trenching wheel excavator, laying unit box, track mounted carrier unit and cable reel. This is considered a single pass operation where excavation, laying and backfilling can be done in unison in a linear progression. Tesmec, a cable laying contractor we liaised with, describe this as the most feasible option and consider that they would need in the order of 6.5m of space to allow the cable install and bypass vehicle space.

A fully integrated FO drum management, cable binding and laying solution

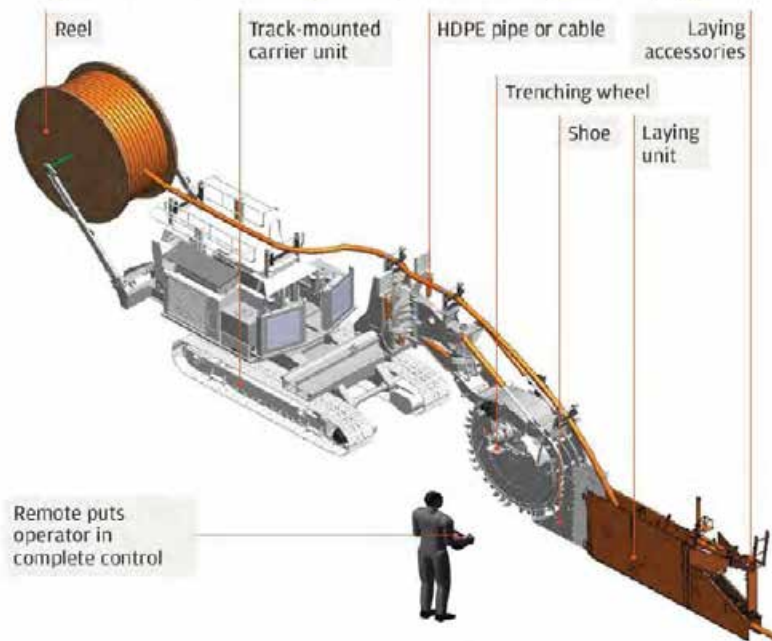


Figure 7: Integrated trenching wheel

- Secondly, the more traditional method of trench excavation with an excavator bucket. This is potentially an option but would be much slower and take up more space and therefore be more costly and more impactful on the site, the program and convenience than purpose-built trenching wheel excavators with cable reel laying equipment as mentioned above. This option also requires more machinery (many trucks) and is a more manually intensive process and not an integrated process. This option would likely need more space than the integrated trenching wheel option.



Figure 8: Traditional excavator

- Chainsaw style trenchers are suited to areas that are not space constrained due to the sheer machinery size and the spoil disposal footprint required. This option is considered not feasible for this operation as a single wide trench and the type and size of machine is not readily available.



Figure 9: Chainsaw trencher

- **Erosion and sediment control (ESC)**

- Suitable measures will be required to manage ESC. This may involve watering for dust management, removing spoil as quick as possible, silt fences, dump trucks with covers among other considerations. In the event of rainfall, methods of dewatering the excavations may also need to be considered.

- **Cable installation and Backfill management**

- The integrated cable installation process proposed allows to re-use the excavated material as backfill. Any minor amounts of excess spoil would be spread and rolled back into the track surface where appropriate to do so. Any excess material that needs to be removed would be taken off-site.
- The timing and methodology of the cable installation and subsequent backfill needs to be carefully considered to ensure the open trench, which is a safety hazard, is managed appropriately. Generally, trenches should be backfilled as soon as possible. For this reason, the integrated cable laying process proposed by Tesmec is considered ideal. The lineal operation allows for backfilling as you go and a single cable could be laid at a rate of approximately 500m per day, with other options far slower.
- The backfill also needs to be controlled and tested to ensure it meets compaction parameters, to ensure the finished surface is robust and trafficable in a way that matches the pre-existing condition.

- **Joint bay installation and Backfill management**

- Due to the constraints within the national park, the joint bays are proposed to be installed after all three runs of cabling are installed. The cables will be laid up to the joint bays, capped and coiled. The joint bays will be installed afterwards. The joint bay installation will be carried out within 6.5m corridor. Any excess material that needs to be removed would be taken off-site.
- The joint bays will be buried underground approximately 500mm from the road surface.

- **Horizontal Directional Drilling**

- Horizontal Direction Drilling (HDD) is performed at river crossing and concrete culvert crossing where the concrete culverts cannot be reinstated. It is anticipated that entry and exit points will be 5-10m away from the concrete culverts and riverbed/terraces. Exact lengths and depth will need to be determined when surveyed data of the of the areas are available. HDD along the

full length is not considered as it will not be possible achieve 600 MW rating with this methodology.

- **Traffic management**

- Traffic management here is concerned about construction traffic but also public accessibility. It is understood that the forest tracks are accessible to the public (walking, riding etc) and so safety needs to be considered which would mean planning track shutdown periods and temporary detours, along with public notifications, barricading and signage. A traffic management plan will be required.
- Construction traffic needs to be considered, including truck management such as managing any two-way vehicle movements within constrained corridors. There will also be different stakeholder traffic (e.g. soil testers, environmental inspectors, consultants, Forestry etc). The proposed 6.5m corridor is considered sufficient to manage expected traffic.

- **Vehicle turnaround locations**

- Related to traffic management is vehicle turnaround facilities. Construction contractors should be further consulted to determine if any vehicle turnaround facilities are required. The integrated trenching wheel excavator option which operates in a single pass operation per cable, is less likely to need turnaround facilities and Tesmec, as one contractor option, advised that they require 6.5m overall corridor. At this stage the assumption is that existing large intersections along Boiler Swamp Road will be satisfactory for turnaround facilities.
- It was also noted that there are no sharp turns along the UG route, vehicle movement around bends will be accommodated within the 6.5m overall corridor.

- **Bushfire management**

- For civil construction, bushfire management should also be considered as part of the traffic management in terms of emergency access and egress for site workers and emergency services personnel and vehicles. It is suggested that the project consult with the Victorian Country Fire Authority (CFA) in conjunction with the relevant Forestry authorities. Turnaround facilities for construction trucks would also be used by the CFA.
- It noted that during season burning of shrubs and bushes there will be limited access through national park. It is envisaged that offsetting the three trenches to one side of the road will provide better operational flexibility.

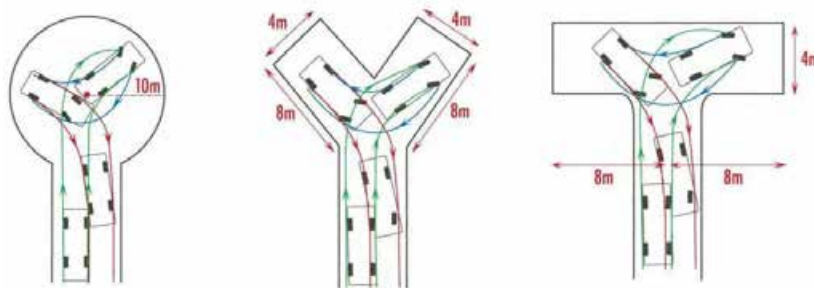


Figure 10: Minimum vehicle turnaround for 8m rural fire trucks (source CFA-BMO-Access-Aug-14.pdf)

6.2. Overhead Section

The overhead section of transmission line is much more straight forward in terms of civil works when compared to the underground section. The civil works for the overhead section is concerned with providing a construction and access corridor to the HV towers.

Once the HV alignment and tower positions was established, the civil effort followed this general procedure:

- Check the tower pole locations vs aerial imagery in Google Maps / QGIS;
- Look for nearby existing roads, tracks and accessways that might be able to be used as full or partial construction access to reach each of the towers;
- Where there were no obvious existing tracks, we have proposed new track construction, either along the OHL corridor under the lines, or from nearby roads and tracks;
- An example of these two scenarios is shown below for access to towers 3 to 6:
 - For the access to the structures 3 to 6, we have assumed the existing track running between the rail line and the property can be used, as per path in blue (below left);
 - Should this access not be permissible, we have considered an alternative solution running through the property as shown below (right):



Figure 11: Access Road Tracks Options – Towers 3-6

The types of track construction are conceptualised as follows:

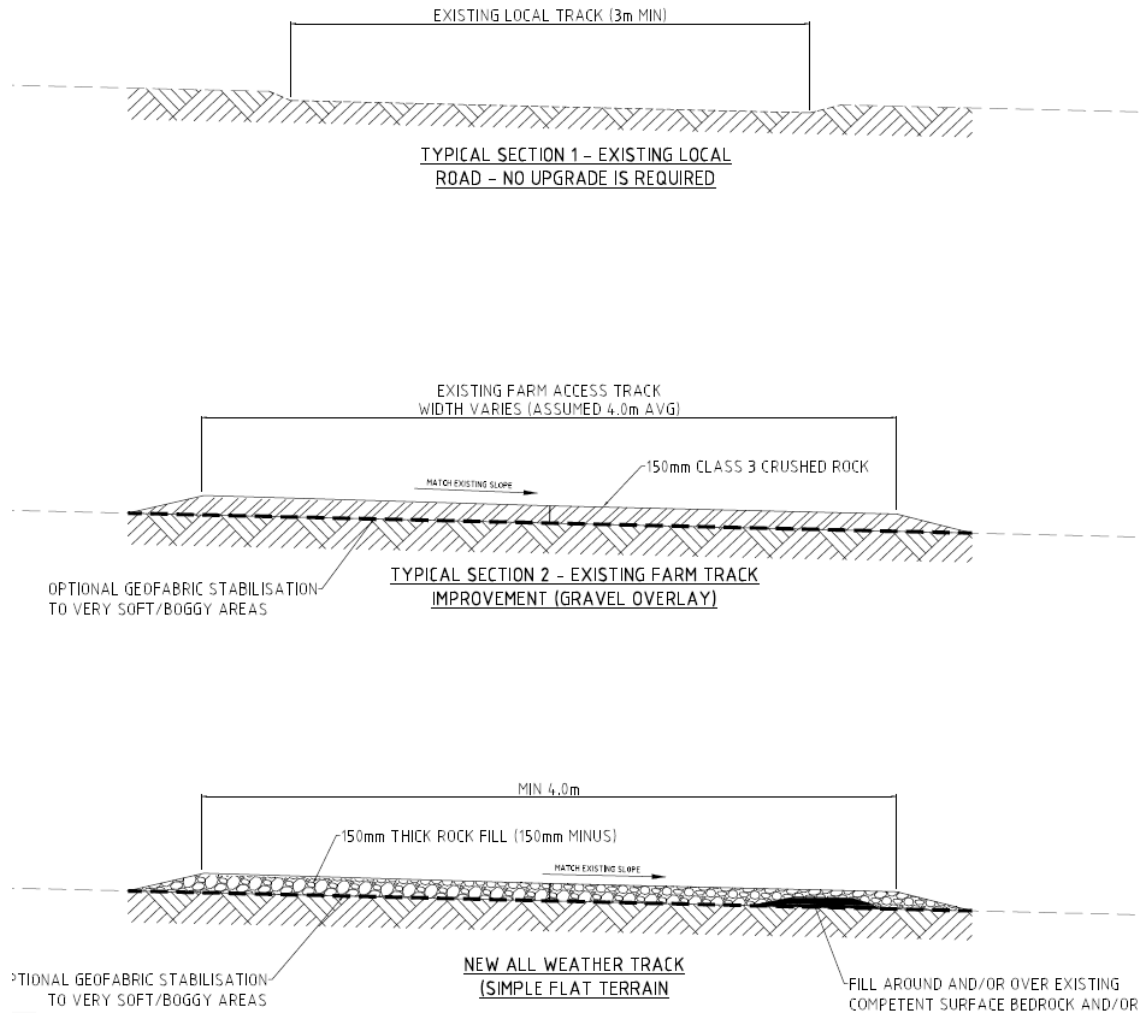


Figure 12: Types of Track Construction

The following aspects have not yet been considered and should be looked at further for any next steps:

- Flooding and impacts on access track alignments.
- Geotechnical data (subgrade conditions).
- Feasibility of proposed track alignment (re-use existing or build new) in terms of landowner consent or use conditions.
- Local authority permits and approval conditions for public road connections.
- Landowner preferences.
- Tower pad sizes for cranes etc.

7. OVERHEAD LINE DESIGN

7.1. General

The 275kV high voltage AC reticulation consists of a single circuit 9.2km overhead line connecting the existing AusNet Heywood Substation and the proposed new UGOH Transition Station.

The proposed 275kV OH line comprises of steel poles. The minimum conductor is identified as twin Mango. Overhead line conductors are protected by a single OPGW with a 48C optical fibres. The overhead line will be designed and detailed as per relevant Australian Standards (AS/NZS 7000, AS3600, AS4100, etc.) and current best practices for high voltage power transmission line design.

During the detail design stage, the Downer transmission line design team will proceed with detail structural modelling and design of proposed transmission line using PLS CADD software and associated other design tools and internal design worksheets. Downer internal design review and verification process will be followed at each phase of the design.

7.2. Line Route

At this stage, the line follows the route defined by the client and shown on the profile drawings. It is assumed that the route corridor specified is available for construction and that there are no impediments to the construction of the line. The line connections at the UGOH Transition Station will be by underground cables via UGOH poles.

Line corridors are all based on principal supplied DA. Deviations at project stage due to latent environmental constraints not contained within the reliance information shall be subject to variations.

7.3. Structural loading and design

The transmission line will be designed and detailed for the standard structural loads and load combinations imposed by current industry standard design practices including the AS/NZS 7000:2016.

All poles will be galvanized steel poles. Poles will have bolted/welded cross arms, with single earth peaks as necessary.

The steel pole-top geometry has been determined based on the required electrical clearances for maintenance. Full-scale testing has not been considered, since the pole design is relatively straightforward and easily verified.

7.4. Route

The conductors selected for the proposed overhead line are ACSR conductors & OPGW with 48C optical fibres.

The conductors were selected based on mechanical capabilities, and sized based on thermal requirements via a PLS-CADD software model based on IEEE 738-2006. The following conditions have been assumed:

- Wind Region A
- Air temperature of 40°C
- Wind speed of 1 m/s at full load
- 1100 W/m² irradiation
- Maximum conductor temperature of 90°C

Live line maintenance is considered, with adequate clearance and fittings provided. Insulation will be long road composite insulators. Creepage length will be for 25mm/kV – Heavy pollution level.

All hardware for the conductors is rated at 70 kN minimum for earth wires and 160 kN on phase conductors.

7.5. Line Profile

The overhead line concept design is based on rough 2.5m interval contours and a maximum conductor operating temperature of 100°C which will comply with ground clearance requirements as per the standards.

Any existing underground services and low voltage power lines along the route will be identified during detailed design stage.

Design assumes no environmental and heritage constraints in the client proposed overhead route and the pole locations does not consider any potential clashing.

The terminal poles will be located in the given line easement taking in to consideration project specific requirements, providing adequate clearances for construction and operation of the proposed 275 kV line. We assume that outages will be provided by the asset owners through the client for the crossing of any other minor lines.

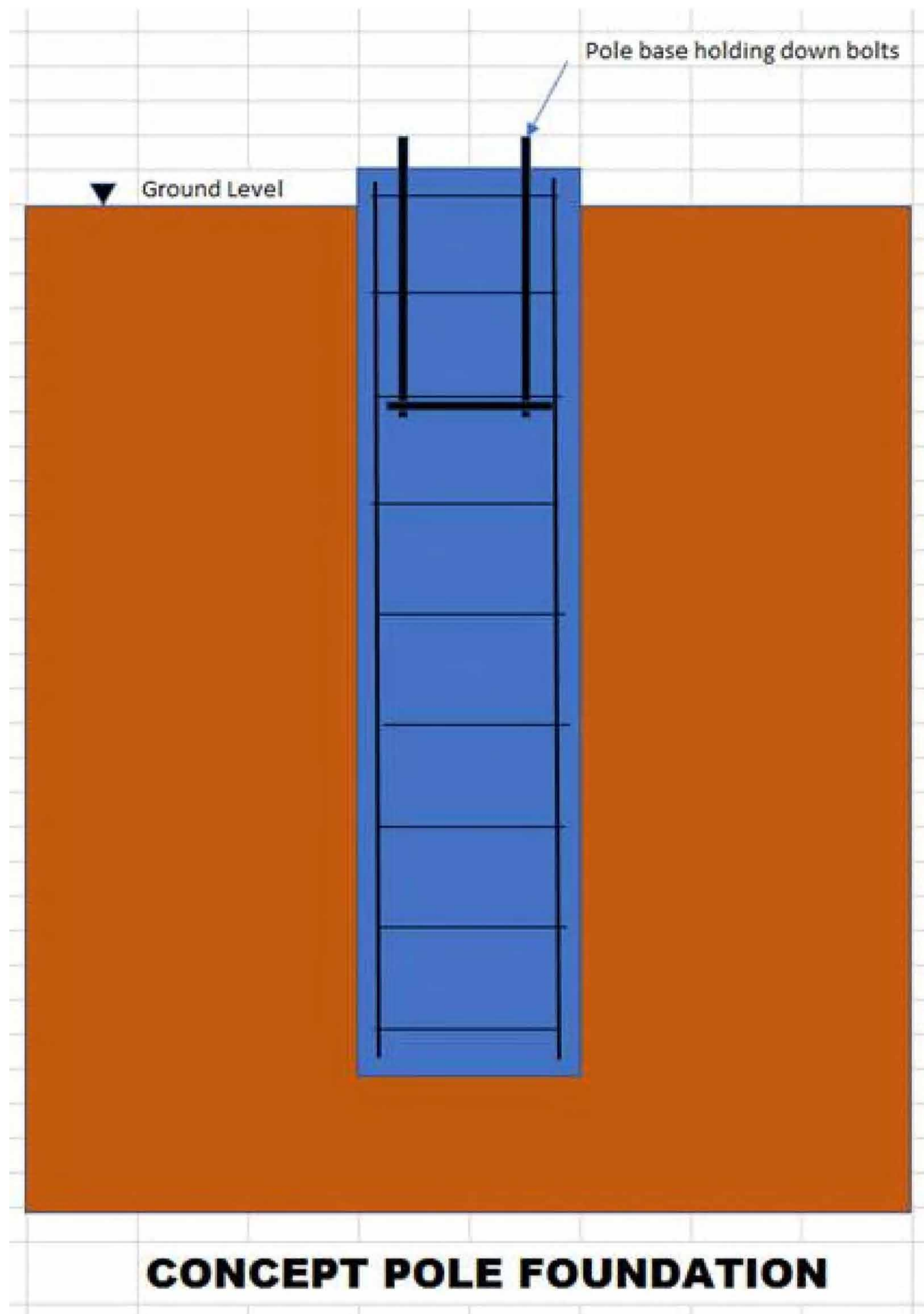
APPENDIX A – LIST OF DELIVERABLES

275 kV Overhead

1. A1_27059.pdf 275 kV Pole Structure
2. A1_27060.pdf 275 kV Foundation
3. KBTL_OH Construction Corridor_Rev 1.kmz
4. KBTL-OH Access tracks_Rev1.kmz
5. Kentbruck 275 kV OH_Downer MAR 2022_Rev1.1.kmz

275 kV Underground

1. KBTL-DOW-DAT-EL-80-80-0001(A) 275kV Cable Datasheet.pdf
2. KBTL-EL-LAY-00-80-0001-[C].pdf Overall 275kV Cable Route Layout
3. KBTL-EL-LAY-00-80-0002-[C].pdf 275 kV Cable Route Layout
4. KBTL-EL-LAY-00-80-0003-[C].pdf 275 kV Cable Route Layout
5. KBTL-EL-LAY-00-80-0004-[C].pdf 275 kV Cable Route Layout
6. KBTL-EL-LAY-00-80-0005-[C].pdf 275 kV Cable Route Layout
7. KBTL-EL-LAY-00-80-0006-[C].pdf 275 kV Cable Route Layout
8. KBTL-EL-LAY-00-80-0007-[C].pdf 275 kV Cable Route Layout
9. KBTL-EL-LAY-00-80-0008-[C].pdf 275 kV Cable Route Layout
10. KBTL-EL-LAY-00-80-0009-[C].pdf 275 kV Cable Route Layout
11. KBTL-EL-SEC-71-80-0001-[C].pdf 275 kV Cable Route Cable Cross Sections and Details
12. KBTL-EL-SEC-71-80-0003-[A].pdf 275 kV Cable Route Cable Joint Bay Detail
13. Kentbruck_Energy_Park_v6.kmz



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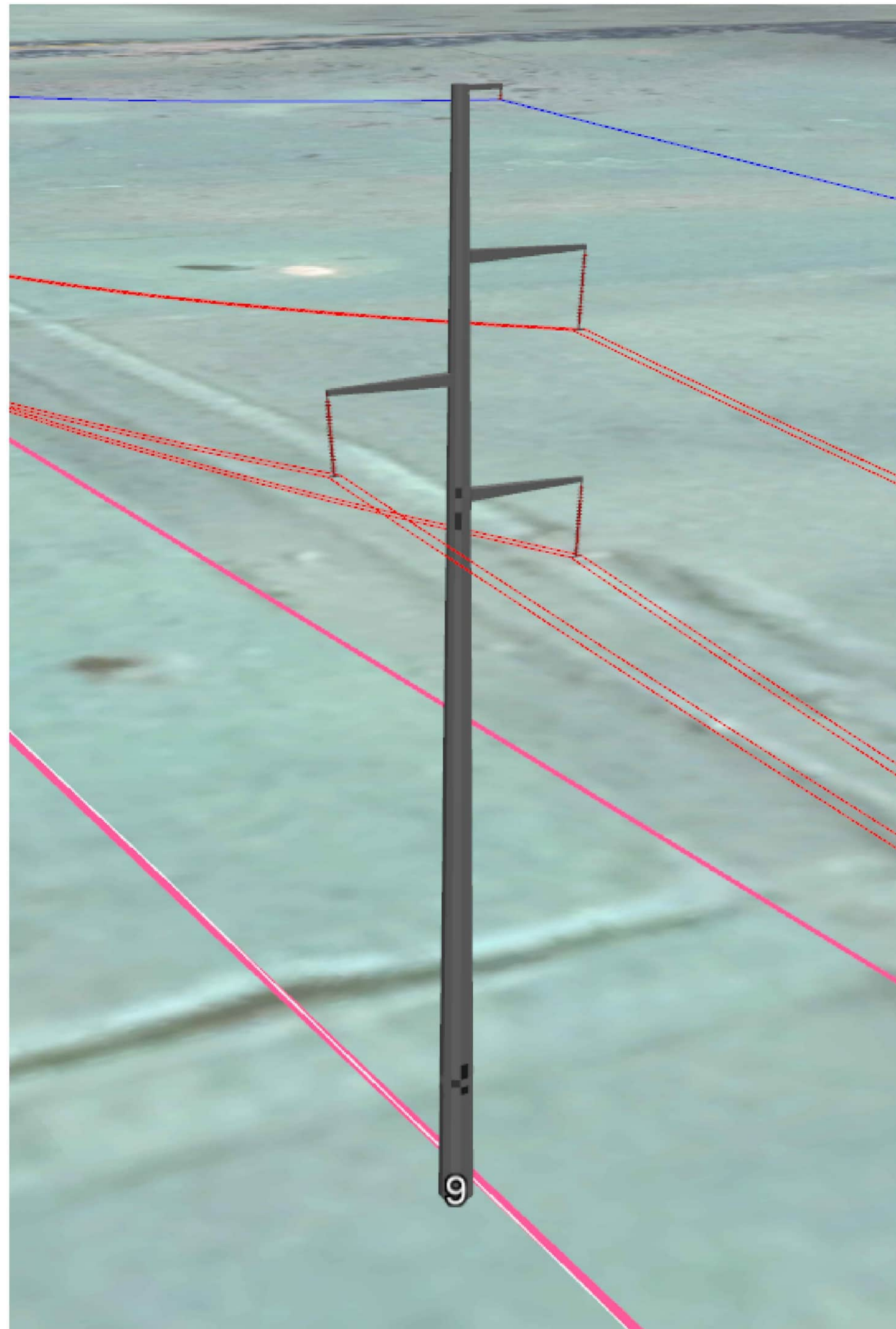
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ABN 53 000 983 700

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APP	GSP	17.03.22
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KENTBRUCK 275kV TXL
FOUNDATION CONCEPT DESIGN

INFORMATION ONLY

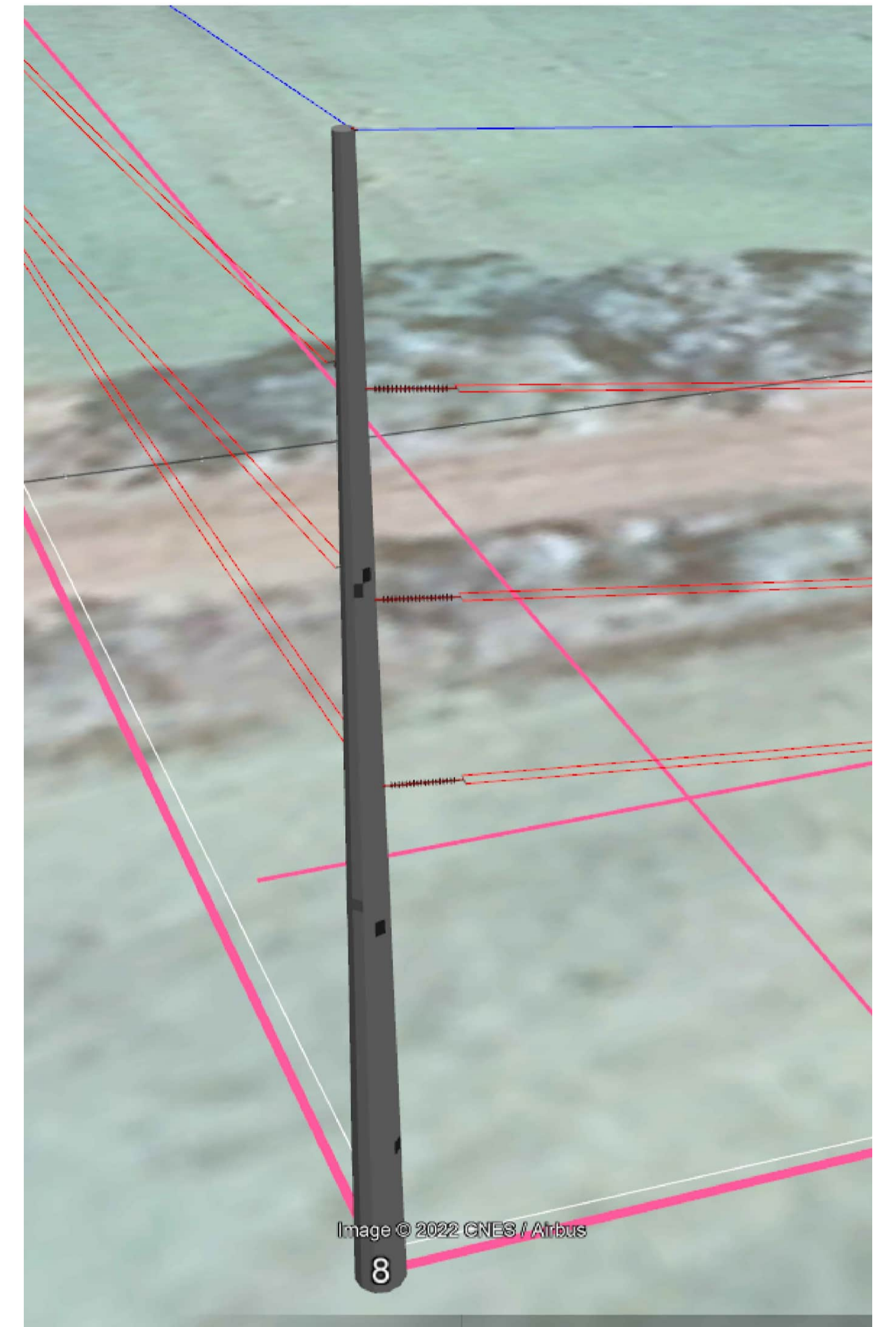
SCALE NTS JOB -
A1-27060 REV



SUSPENSION POLE STRUCTURE
33.6M HEIGHT
19 NO OFF
BASE PLATE AND ANCHOR BOLTS



STRAIN POLE STRUCTURE
36.0M HEIGHT
7 NO OFF
BASE PLATE AND ANCHOR BOLTS



HEAVY STRAIN AND TERMINAL POLE STRUCTURE
34M HEIGHT
5 NO OFF
BASE PLATE AND ANCHOR BOLTS

NOTE:
DESIGNED TO AS:7000-2016 UON.
CONDUCTOR IS TWIN MANGO ACSR.

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KENTBRUCK 275kV TXL
CONCEPT DESIGN

INFORMATION ONLY	
SCALE NTS	JOB -
A1-27059	REV

KENTBRUCK ENERGY PARK TXL

TECHNICAL DATASHEET FOR 275kV CABLE

Document Number: KBTL-DOW-DAT-EL-80-80-0001

Date: 16/03/2022

Cable Types	Quantity (m)
160/275kV (300kV) 1Cx2500mm ² Cu cable	

Function	Position	Name
Prepared by:	Electrical Engineer	Glen Halliday
Review by:	Senior Primary Design Engineer	Navin Maller
Approved by:	Design Manager	Nandun Padukkage

Document Version History			
Rev No.	Date	Document Status	Brief Description of Change(s) from Previous Version
A	29/04/2022	Initial (CONCEPT)	

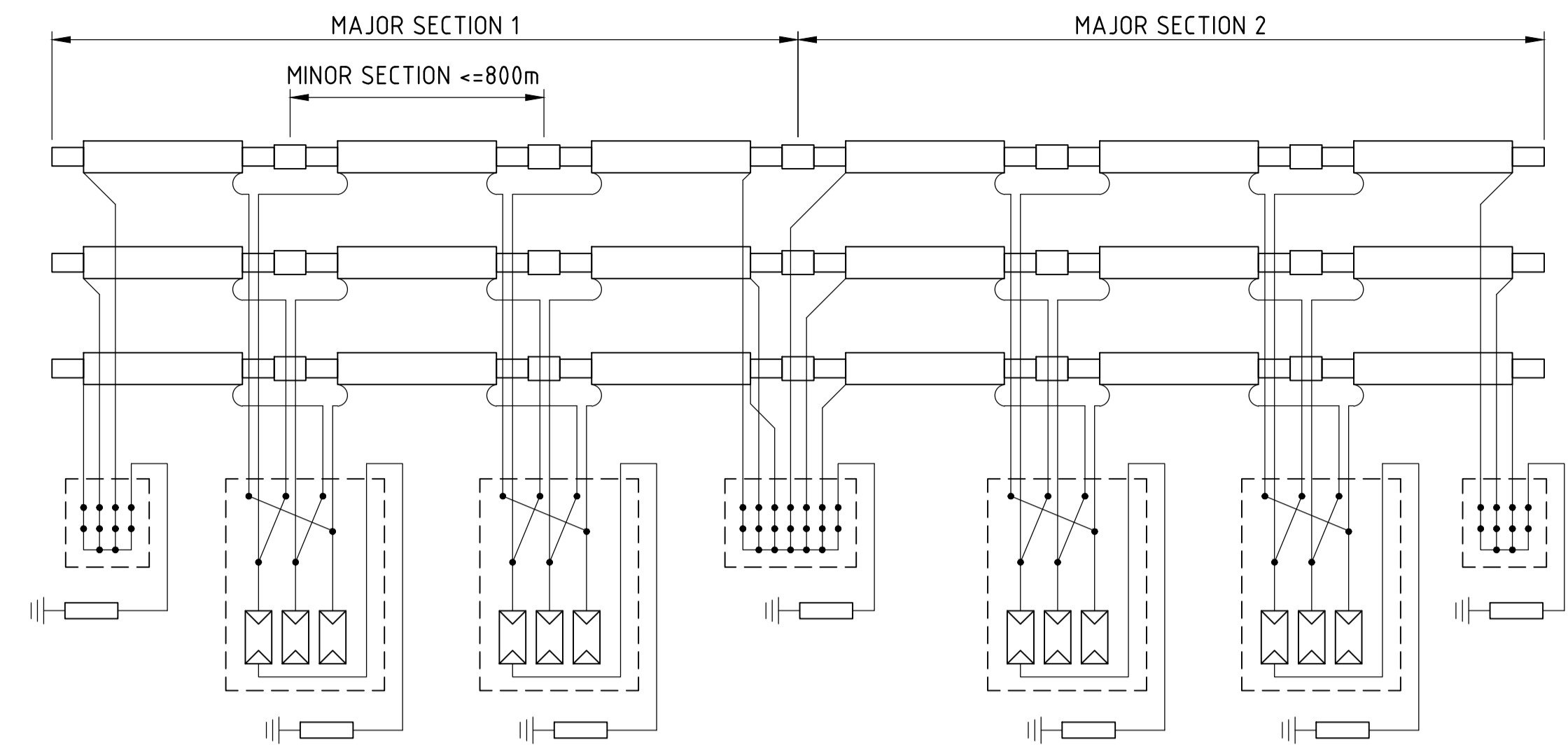
					Document No.	KBTL-DOW-DAT-EL-80-80-0001
					Rev	A
					Date	29-Apr-22
Category	Item	Description	Unit	Technical Requirement	Offered	
01 STANDARD	0	Manufacturer	-	Supplier to advise		
	1	CABLES STANDARD	-	AS/NZS 60840:2006 AS/NZS 1429.2:2009		
	2	CONDUCTORS STANDARD	-	AS/NZS 1125:2001		
	3	INSULATION STANDARD	-	AS/NZS 3808:2000		
	4	ARMOUR STANDARD	-	N/A		
02 SYSTEM	5	NOMINAL VOLTAGE	kVrms	275		
	6	HIGHEST VOLTAGE	kVrms	302.5		
	7	LIGHTNING IMPULSE WITHSTAND VOLTAGE	kVpeak	1050		
	8	POWER FREQUENCY WITHSTAND VOLTAGE	kVrms	460		
	9	FREQUENCY	Hz	50		
	10	SYSTEM EARTHING	-	SOLIDLY EARTHED		
	11	THREE-PHASE SHORT CIRCUIT CURRENT RATING/DURATION OF SYSTEM	kArms/s	40kA/1s (TBC)		
03 VOLTAGE DESIGNATION	12	U0	kVrms	160		
	13	U	kVrms	275		
	14	Um	kVrms	300		
	15	EARTH FAULT DURATION	-	1s		
04 MAXIMUM CONDUCTOR TEMPERATURE	16	MAX CONDUCTOR TEMPERATURE CONTINUOUS	°C	90		
	17	MAX CONDUCTOR TEMPERATURE EMERGENCY	°C	105		
	18	MAX CONDUCTOR TEMPERATURE SHORT CIRCUIT	°C	250		
05 CORES	19	CORE	-	SINGLE-CORE		
06 CONDUCTOR	20	CONDUCTOR MATERIAL	-	Copper		
	21	CONDUCTOR CROSS SECTION AREA	mm ²	2500		
	22	CONDUCTOR FORM (ROUND STRANDED, MILLIKEN)	-	MILLIKEN		
	23	WATER BLOCKING	-	REQUIRED		
	24	DIAMETER	mm	SUPPLIER TO ADVISE		
	25	CONDUCTOR SCREEN	-	REQUIRED, SEMI-CONDUCTIVE		
07 INSULATION	26	INSULATION MATERIAL	-	TREE RETARDENT XLPE		
	27	XLPE PELLET SUPPLIER	-	-		
	28	EXTRUSION	-	TRIPLE EXTRUSION		
	29	CURING	-	DRY		
	30	THICKNESS	mm	TO AS1429.1 TABLE 2.1		
08.1 INNER SCREEN	31	SCREEN CURRENT RATING	kA	SUPPLIER TO ADVISE		
	32	DURATION	s	1		
	32	MATERIAL	-	COPPER		
	33	FORM	-	COPPER WIRE		
	34	THICKNESS/WIRE DIAMETER	mm	SUPPLIER TO ADVISE		
	35	NUMBERS OF WIRE (IF APPLICABLE)	Nos.	SUPPLIER TO ADVISE		
	36	CROSS SECTIONAL AREA	mm ²	SUPPLIER TO ADVISE		
	37	LENGTH OF LAY (IF APPLICABLE)	mm	SUPPLIER TO ADVISE		
	38	CORRUGATION RADIUS - INNER	mm	N/A		
	39	CORRUGATION RADIUS - OUTER	mm	N/A		
08.2 OUTER SCREEN	40	SCREEN CURRENT RATING	kA	SUPPLIER TO ADVISE		
	41	DURATION	s	1		
	42	MATERIAL	-	ALUMINIUM		
	43	FORM	-	CORRUGATED ALUMINIUM AND WELDED		
	44	CROSS SECTIONAL AREA	mm ²	SUPPLIER TO ADVISE		
	45	CORRUGATION RADIUS - INNER	mm	SUPPLIER TO ADVISE		
	46	CORRUGATION RADIUS - OUTER	mm	SUPPLIER TO ADVISE		
09 WATER BLOCKING	47	WATER BLOCKING (PER AS 1429.2)	-	LINEAR AND RADIAL REQUIRED		
10 INNER SHEATH	48	INNER SHEATH MATERIAL	-	5V-90 PVC		
	49	OVERALL DIAMETER	mm	SUPPLIER TO ADVISE		
	50	COLOUR	-	ORANGE		
11 PROTECTIVE COVERINGS	51	INSECT / TERMITE PROTECTION	-	REQUIRED		

	52	ARMOUR	-	NO	
	53	FIBRE OPTIC COMPONENTS	-	NOT REQUIRED	
12 OUTER SHEATH SACRIFICIAL SHEATH	54	MATERIAL	-	HDPE	
	55	METRE MARKING	-	YES	
	56	OVERALL DIAMETER	mm	SUPPLIER TO ADVISE	
	57	COLOUR	-	BLACK	
	58	UV STABILISED	-	YES	
	59	MARKING TO AS/NZS1429 .2 :2009	-	YES	
13 DRUMS	60	MATERIAL	-	METAL	
	61	STANDARD	-	AS 3983/AS 2857	
	62	MARKING TO AS/NZS1429 .2 :2009	-	YES	
	63	CABLES ENDS	-	WATERPROOF CAPPED	
	64	DRUM INNER DIAMETER	mm	SUPPLIER TO ADVISE	
	65	DRUM OUTER DIAMETER	mm	SUPPLIER TO ADVISE	
	66	TOTAL WEIGHT	kg	SUPPLIER TO ADVISE	
	67	DRUM QUANTITY	-	SUPPLIER TO ADVISE	
	68	TOTAL CABLE QUANTITY PER DRUM	m	SUPPLIER TO ADVISE	
	69	TOTAL CABLE LENGTH	m	SUPPLIER TO ADVISE	
14 INSTALLATION	70	MINIMUM BENDING RADIUS DURING INSTALLATION	mm	SUPPLIER TO ADVISE	
	71	MINIMUM BENDING RADII INSTALLED	mm	SUPPLIER TO ADVISE	
	72	MAXIMUM PULLING TENSION CONDUCTOR	N	SUPPLIER TO ADVISE	
	73	MAXIMUM PULLING TENSION OUTER SHEATH	N	SUPPLIER TO ADVISE	
	74	MAXIMUM SIDE WALL PRESSURE	kPa	SUPPLIER TO ADVISE	
	75	INSTALLATION	-	DIRECT BURIED & HDD	
15 ELECTRICAL CHARACTERISTICS	76	MAXIMUM CONDUCTOR DC RESISTANCE @ 20 ⁰ C	ohm/km	SUPPLIER TO ADVISE	
	77	CONDUCTOR AC RESISTANCE @ 50Hz AND 90 ⁰ C FOR FLAT SPACED (REFER ATTACHED SECTIONAL DRAWING)	ohm/km	SUPPLIER TO ADVISE	
	78	CONDUCTOR AC INDUCTANCE @ 50Hz AND 90 ⁰ C FOR FLAT SPACED (REFER ATTACHED SECTIONAL DRAWING)	ohm/km	SUPPLIER TO ADVISE	
	79	CONDUCTOR TO SCREEN CAPACITANCE	uF/km	SUPPLIER TO ADVISE	
	80	ZERO SEQUENCE IMPEDANCE (REFER ATTACHED SECTIONAL DRAWING)	ohm/km	SUPPLIER TO ADVISE	
	81	POSITIVE SEQUENCE IMPEDANCE (REFER ATTACHED SECTIONAL DRAWING)	ohm/km	SUPPLIER TO ADVISE	
Ampacity details	82	STEADY STATE CURRENT CARRYING CAPACITY WHEN INSTALLED AS PER ATTACHED DRAWING	A	SUPPLIER TO ADVISE	
	83	SHART TERM EMERGENCY CURRENT CARRYING CAPACITY AND DURATION WITH FINAL TEMEPRTURE NOT EXCEEDING 105 Deg.C	A and hours	SUPPLIER TO ADVISE	

NOTES

- CABLE SCREENS SHALL BE BONDED AT BOTH ENDS WHICH WILL BE CONFIRMED DURING DETAILED DESIGN.
- THE CABLE SHALL BE TRANPOSED AT EVERY JOINT LOCATION PREFERABLY NOT MORE THAN 800m AND THE CROSS CONNECTIONS OF SCREENS SHALL BE MADE WITH A PHASE ROTATION OPPOSITE TO THAT OF TRANPOSITION SO THAT THE SCREENS ARE EFFECTIVELY STRAIGHT CONNECTED.
- THE CABLE SHALL BE INSTALLED WITH OPTICAL FIBRES FOR USE AS PART OF DISTRIBUTED CABLE TEMPERATURE AND RATING MONITORING SYSTEM. ADDITIONAL FIBRE OPTIC CABLE MAY BE REQUIRED FOR DISTANCE PROTECTION. TBC DETAILED DESIGN.
- WHEN CROSSING EXISTING GAS PIPELINE CABLE SHALL BE INSTALLED THROUGH CONDUITS AT MINIMUM 500mm BELOW THE PIPELINE.
- THE FOLLOWING MINIMUM HORIZONTAL CLEARANCE SHALL BE MAINTAINED WHEN INSTALLED PARALLEL WITH EACH OF THE FOLLOWING EXISTING SERVICE AND WILL BE CONFIRMED THROUGH INDUCTION STUDY IN DETAILED DESIGN.
 - 2000mm FROM TELSTRA CABLE,
 - 2500mm FROM SEWER LINE,
 - 3000mm FROM GAS PIPELINE AND WATER PIPELINE
- CONDUIT SHALL BE HEAVY DUTY, SOLID WALL TO AS/NZS 2053.

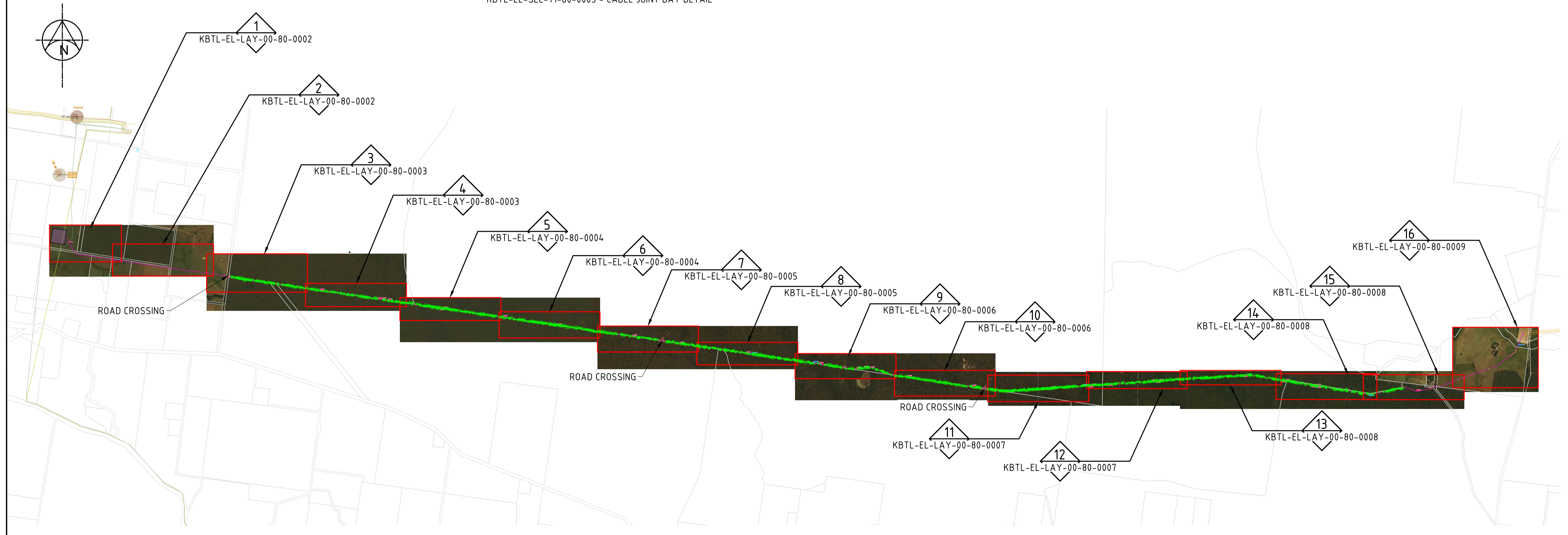
- EITHER DIRECTIONAL OR CONVENTIONAL BORING TECHNIQUES SHALL BE CONSIDERED FOR RURAL WATERWAYS CROSSINGS WITH FOLLOWING ADDITIONAL CONDITIONS:
 - CABLE SHOULD BE LAID A MINIMUM OF 1000mm BELOW THE HARD BED OF THE LOWEST POINT OF THE WATERWAY
 - CONSTRUCTION MUST NOT ERODE OR OTHERWISE DAMAGE THE WATERWAY OR ITS SURROUNDS. TO ACHIEVE THIS WITH BORING TECHNIQUES, THE CABLE SHOULD BE INSTALLED WITH A MINIMUM OF 5000mm (TBC) SEPARATION FROM THE TOP OF THE BATTER EITHER SIDE OF THE DRAIN.
- UNDERGROUND CABLE LINK BOXES SHALL BE PROVIDED AT LOCATIONS MARKED IN THE DRAWING WHICH SHALL BE WATER PROOF, ACCESSIBLE, AND EXPLOSIVE PROOF FOR COMPONENTS FORMING PART OF CABLE BONDING AND EARTHING SYSTEM INCLUDING SURGE ARRESTERS, STAND-OFF INSULATORS AND REMOVABLE LINKS FOR TESTING PURPOSES.
- THE ENTIRE LENGTH OF THE CABLE WILL BE DIVIDED IN MULTIPLE MAJOR SECTIONS EACH COMPRISING OF MINIMUM THREE MINOR SECTIONS WITH METALLIC SCREENS EARTHED SOLIDLY AT EACH MAJOR SECTIONS. THE METALLIC SHEATHS SHALL BE TRANPOSED BETWEEN MINOR SECTIONS AND CONNECTED TO SVLS TO MANAGE VOLTAGE TRANSIENTS AS SHOWN IN DETAIL A. DETAILS OF CROSSING BONDING ARRANGEMENT WILL BE PROVIDED DURING DETAILED DESIGN.
- WHERE THE CABLE SHALL BE INSTALLED IN HEAVY DUTY CONDUITS, THESE SHALL BE OF SOLID WALL COMPLYING TO AS/NZS 2053.
- FOOTPRINT OF JUNCTION & LINK BOX SHOWN INDICATIVELY ONLY. TBC DURING DETAILED DESIGN. REFER TO KBTL-EL-SEC-71-80-0003 FOR TYPICAL J&L BOX SIZING.
- CABLE ROUTE IS BASED ON THE INDICATIVE WF SUBSTATION LOCATION AS ADVISED BY NEOEN.



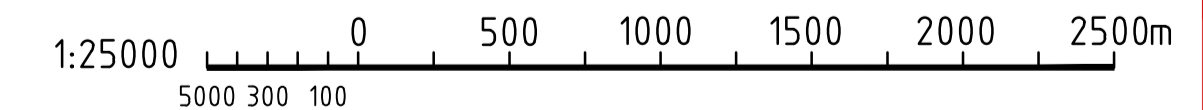
DETAIL A - TYPICAL CROSS BONDED CABLE SYSTEM

REFERENCE DRAWINGS:

- KBTL-EL-SEC-71-80-0001 - CABLE CROSS SECTION AND DETAILS
- KBTL-EL-SEC-71-80-0003 - CABLE JOINT BAY DETAIL



OVERALL 275kV CABLE ROUTE
SCALE 1:25000



CONCEPT
NOT FOR CONSTRUCTION

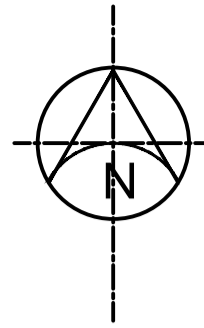
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DRAWING TO BE PRINTED IN COLOUR
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C	UPDATED TRENCH PATH	RR	NM	NP	06/05/2022
B	UPDATED TRENCH PATH	RR	NM	NP	29/04/2022
A	CONCEPT	RR	NM	NP	15/03/2022



CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL			
DRAWN BY: R.RIVERSON	DATE: 15/03/2022	DESIGNED BY: G.HALLIDAY	DATE: 15/03/2022	TITLE: 275KV CABLE & TRANSMISSION LINE SITE WIDE - HV SERVICES OVERALL 275KV CABLE ROUTE LAYOUT	SHEET SIZE: A1
DRG. CHECKED BY: A.MCLELLEND	DATE: 06/05/2022	DES. CHECKED BY: N.MALLER	DATE: 06/05/2022		
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NOTES

- 1. FOOTPRINT OF J&L BOX NOT TO SCALE. REFER KBTL-EL-SEC-71-80-0003 FOR DETAILS.

LEGEND:

- 275kV CABLE ROUTE
- JUNCTION/LINK BOX
- PROPERTY/LOT BOUNDARY LINE

CONT. DETAIL 2
REF: KBTL-EL-LAY- 00-80-0002

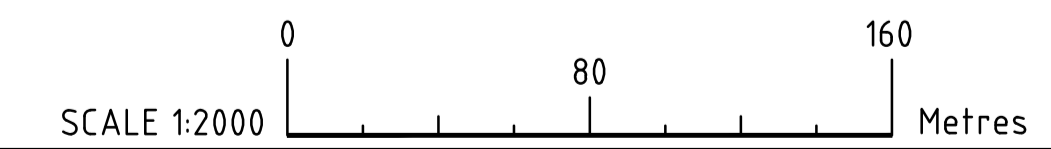
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REF: KBTL-EL-LAY- 00-80-0002



CONT. DETAIL 3
REF: KBTL-EL-LAY- 00-80-0003

DETAIL 2
SCALE: 1:2000 KBTL-EL-LAY- 00-80-0001



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FILE: C:\Users\barp\Documents\3570264\KBTL-EL-LAY-00-80-0002.dwg

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DRAWING TO BE PRINTED IN COLOUR

PLEASE NOTE

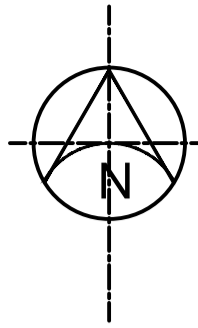
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REV No	REVISION DESCRIPTION	DRAWN BY	CHECKED BY	APPR'D BY	DATE
C	UPDATED TRENCH PATH	RR	NM	NP	06/05/2022
B	UPDATED TRENCH PATH	RR	NM	NP	29/04/2022
A	CONCEPT	RR	NM	NP	15/03/2022



CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL
DRAWN BY: R.RIVIERSON	DATE: 15/03/2022	DESIGNED BY: G.HALLIDAY
DATE: 15/03/2022	DES. CHECKED BY: N.MALLER	DATE: 06/05/2022
DRG. CHECKED BY: A.MCLELLEND	DATE: 06/05/2022	N.MALLER
DATE: 06/05/2022	APPROVED: N.PADUKKAGE	DATE: 06/05/2022
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		SHEET SIZE: A1
		REVISION: C



NOTES

- 1. FOOTPRINT OF J&L BOX NOT TO SCALE. REFER KBTL-EL-SEC-71-80-0003 FOR DETAILS.

LEGEND:

- 275kV CABLE ROUTE
- JUNCTION/LINK BOX
- ROAD CROSSING
- PROPERTY/LOT BOUNDARY LINE

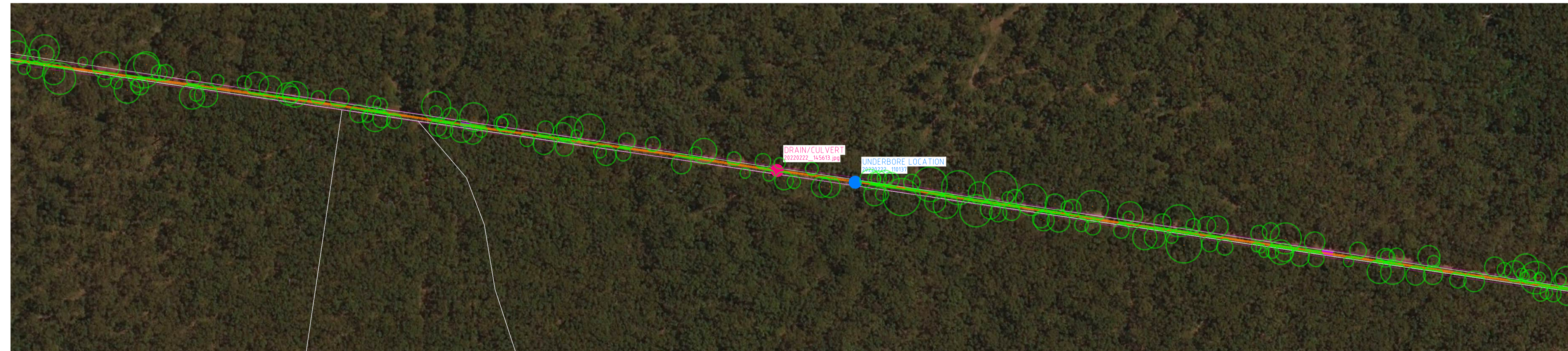
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CONT. DETAIL 8
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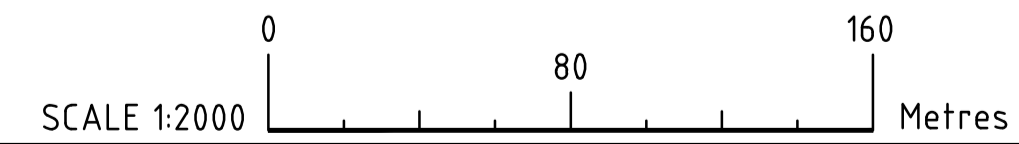
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CONT. DETAIL 7
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CONT. DETAIL 9
REF: KBTL-EL-LAY-00-80-0006

DETAIL
SCALE: 1:2000 KBTL-EL-LAY-00-80-0001



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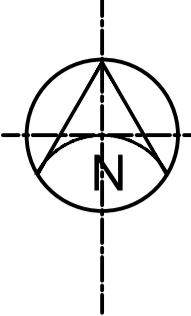


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B	UPDATED TRENCH PATH	RR	NM	NP	29/04/2022
A	CONCEPT	RR	NM	NP	15/03/2022



CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL		
DRAWN BY: R.RIVERSON	DATE: 15/03/2022	DESIGNED BY: G.HALLIDAY	DATE: 15/03/2022	TITLE: 275KV CABLE & TRANSMISSION LINE SITE WIDE - HV SERVICES 275KV CABLE ROUTE LAYOUT
DRG. CHECKED BY: A.MCLELLEND	DATE: 06/05/2022	DES. CHECKED BY: N.MALLER	DATE: 06/05/2022	A1
CAD FILE No: KBTL-EL-LAY-00-80-0005.dwg	APPROVED: N.PADUKKAGE	DATE: 06/05/2022	SCALE: 1:2000	DRAWING No: KBTL-EL-LAY-00-80-0005
				REVISION: C

FILE: C:\Users\bar\p\projects\3570264\KBTL-EL-LAY-00-80-0005.dwg



NOTES
 1. FOOTPRINT OF J&L BOX NOT TO SCALE. REFER KBTL-EL-SEC-71-80-0003 FOR DETAILS.

LEGEND:
 — 275KV CABLE ROUTE
 ■ JUNCTION/LINK BOX
 — ROAD CROSSING
 — PROPERTY/LOT BOUNDARY LINE

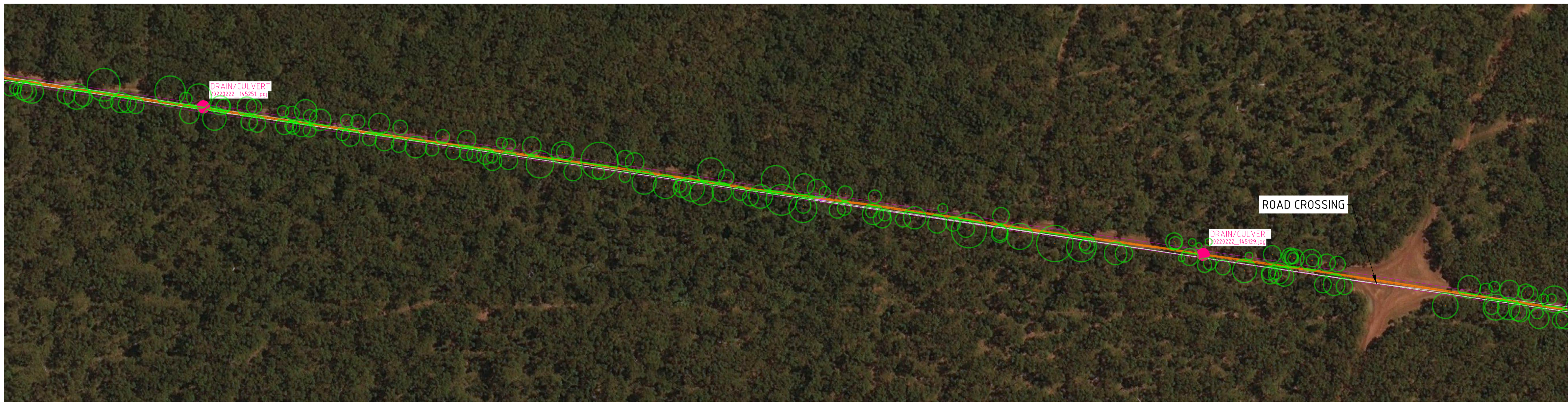
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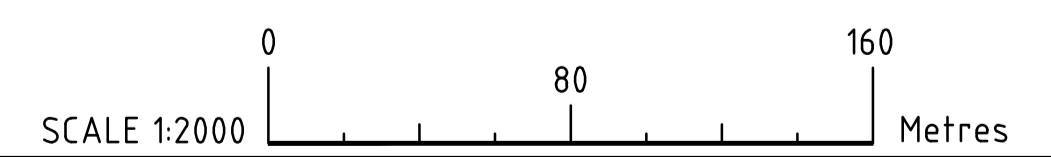
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CONT. DETAIL 9
 REF: KBTL-EL-LAY-00-80-0006



CONT. DETAIL 11
 REF: KBTL-EL-LAY-00-80-0007

DETAIL 10
 SCALE: 1:2000 KBTL-EL-LAY-00-80-0001



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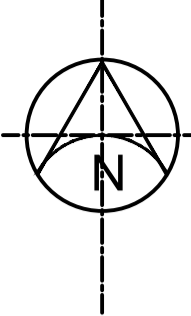
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C	UPDATED TRENCH PATH	RR	NM	NP	06/05/2022
B	UPDATED TRENCH PATH	RR	NM	NP	29/04/2022
A	CONCEPT	RR	NM	NP	15/03/2022



CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL
DRAWN BY: R.RIVERSON	DATE: 15/03/2022	DESIGNED BY: G.HALLIDAY
DATE: 15/03/2022	DES. CHECKED BY: N.MALLER	DATE: 06/05/2022
DRG. CHECKED BY: A.MCLELLEND	DATE: 06/05/2022	
CAD FILE No: KBTL-EL-LAY-00-80-0006.dwg	APPROVED: N.PADUKKAGE	DATE: 06/05/2022
SCALE: 1:2000	DRAWING No: KBTL-EL-LAY-00-80-0006	REVISION: C
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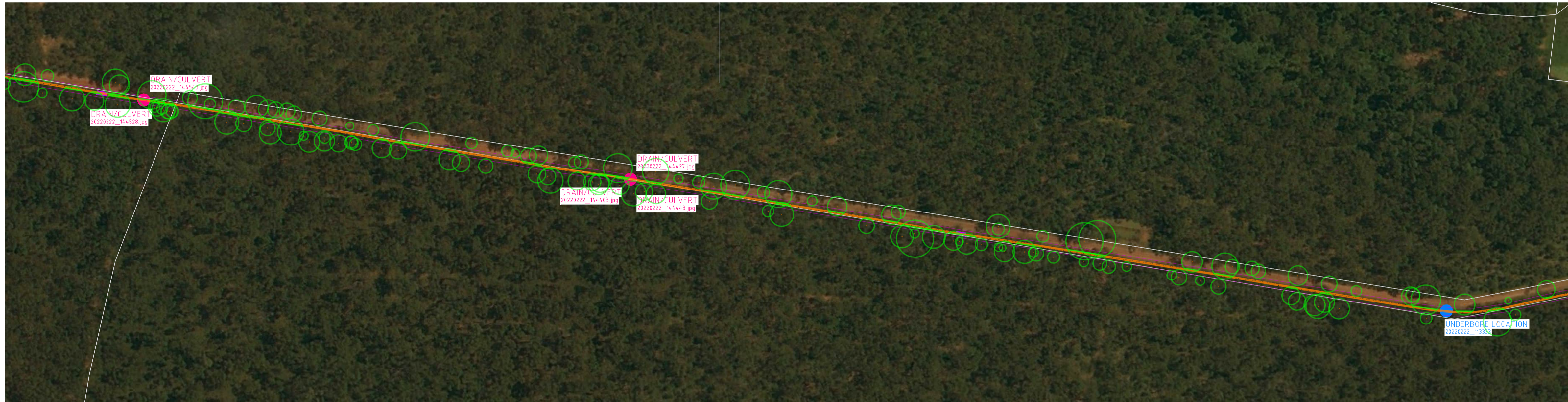
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CONT. DETAIL 14
REF: KBTL-EL-LAY-00-80-0008

DETAIL 13
SCALE: 1:2000 KBTL-EL-LAY-00-80-0001

CONT. DETAIL 13
REF: KBTL-EL-LAY-00-80-0008



NOTES:

- FOOTPRINT OF J&L BOX NOT TO SCALE. REFER KBTL-EL-SEC-71-80-0003 FOR DETAILS.

LEGEND:

- 275kV CABLE ROUTE
- - - - - ALTERNATE ROUTE
- JUNCTION/LINK BOX
- PROPERTY/LOT BOUNDARY LINE
- EXISTING LV/COMMS SERVICE

CONT. DETAIL 15
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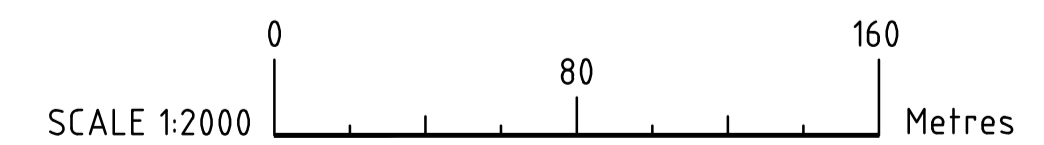
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CONT. DETAIL 16
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DETAIL 15
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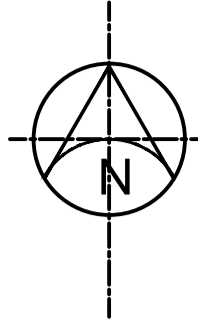
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C	UPDATED TRENCH PATH	RR	NM	NP	06/05/2022
B	UPDATED TRENCH PATH	RR	NM	NP	29/04/2022
A	CONCEPT	RR	NM	NP	15/03/2022



CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL
DRAWN BY: R.RIVIERSON	DATE: 15/03/2022	DESIGNED BY: G.HALLIDAY
DATE: 15/03/2022	DES. CHECKED BY: N.MALLER	DATE: 06/05/2022
DRG. CHECKED BY: A.MCLELLEND	DATE: 06/05/2022	
CAD FILE No: KBTL-EL-LAY-00-80-0008.dwg	APPROVED: N.PADUKKAGE	DATE: 06/05/2022
SCALE: 1:2000	DRAWING No: KBTL-EL-LAY-00-80-0008	REVISION: C
TITLE: 275KV CABLE & TRANSMISSION LINE SITE WIDE - HV SERVICES 275KV CABLE ROUTE LAYOUT		
SHEET SIZE: A1		



NOTES:

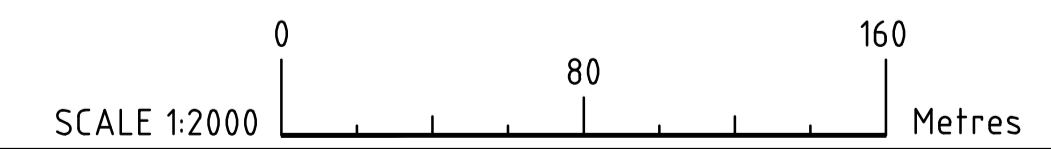
1. FOOTPRINT OF J&L BOX NOT TO SCALE. REFER KBTL-EL-SEC-71-80-0003 FOR DETAILS.
2. HV UG/OH TRANSITION STATION FOOTPRINT 37.5m X 22m BASED ON TYPICAL DESIGN.

LEGEND:

- 275kV CABLE ROUTE
- - - ALTERNATE ROUTE
- JUNCTION/LINK BOX
- PROPERTY/LOT BOUNDARY LINE
- WETLANDS
- EXISTING LV/COMMS SERVICE

CONT. DETAIL 15
REF: KBTL-EL-LAY-00-80-0008

DETAIL 16
SCALE: 1:2000 KBTL-EL-LAY-00-80-0001



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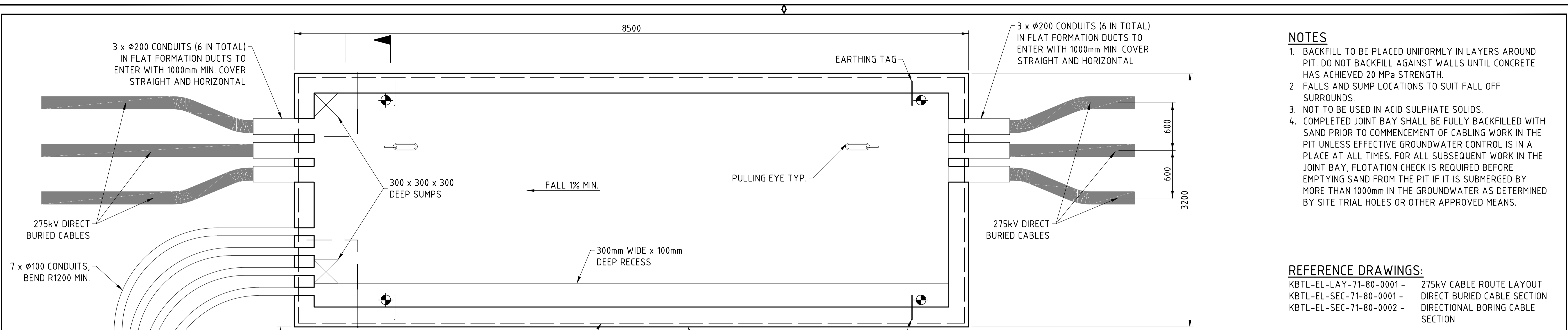


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C	UPDATED TRENCH PATH	RR	NM	NP	06/05/2022
B	UPDATED TRENCH PATH	RR	NM	NP	29/04/2022
A	CONCEPT	RR	NM	NP	15/03/2022



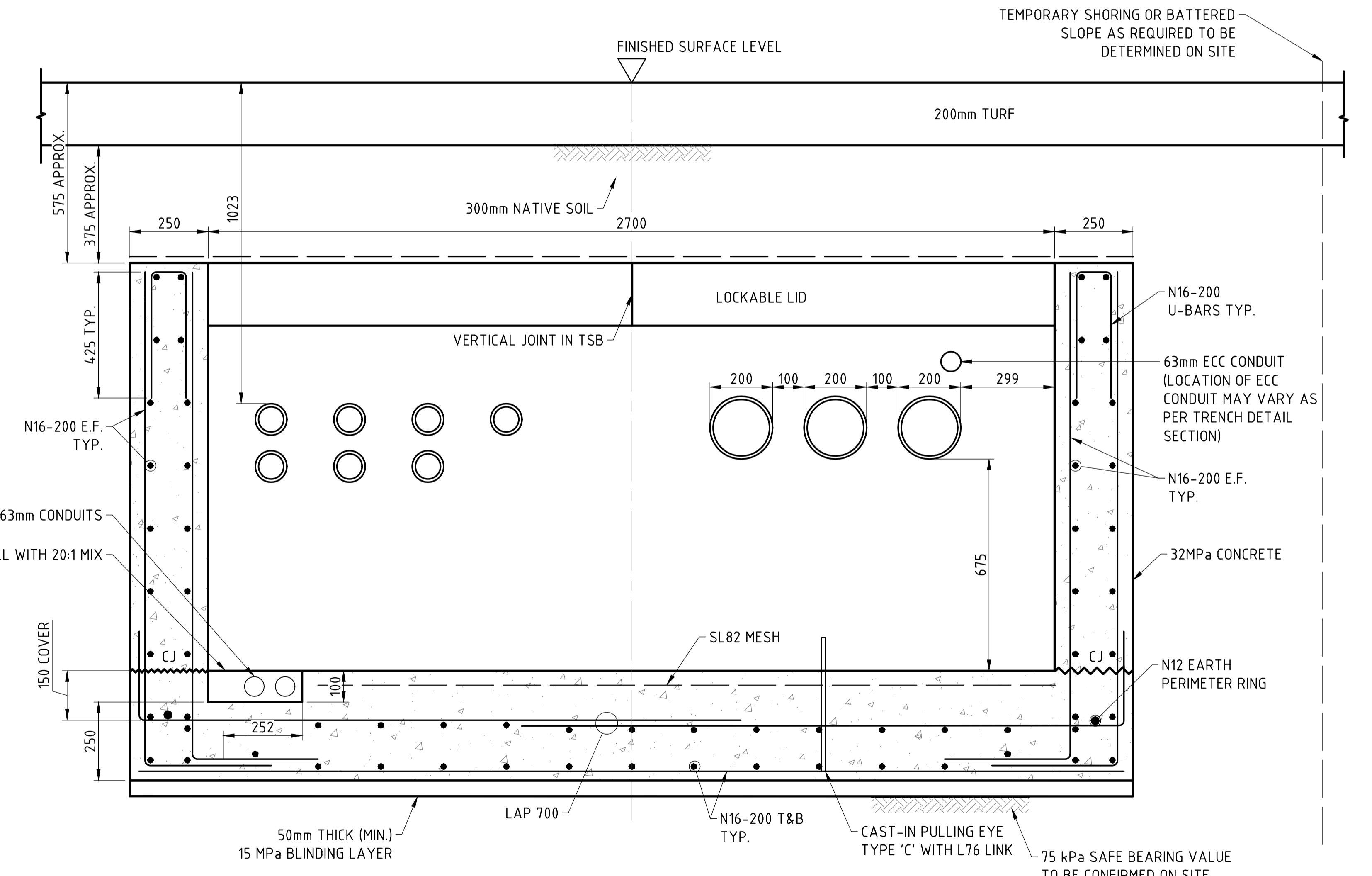
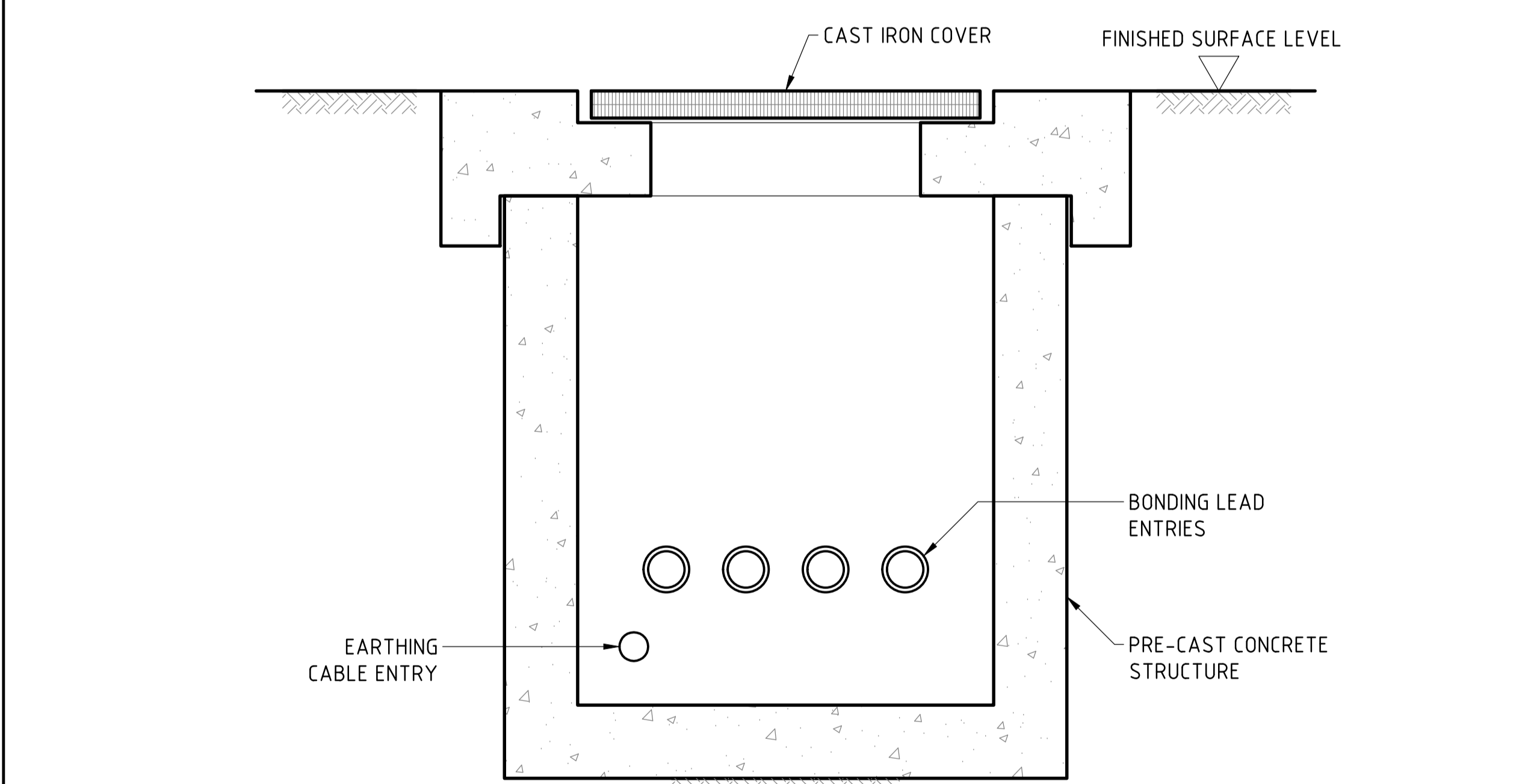
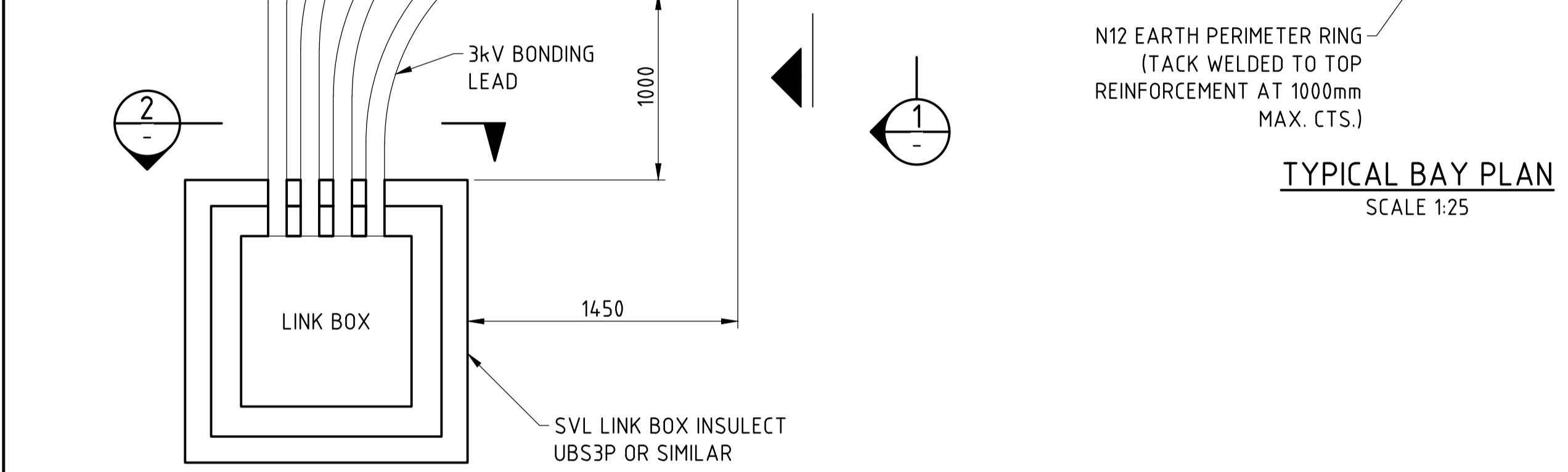
CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL			
DRAWN BY: R.RIVERSON	DATE: 15/03/2022	DESIGNED BY: G.HALLIDAY	DATE: 15/03/2022	TITLE: 275KV CABLE & TRANSMISSION LINE SITE WIDE - HV SERVICES 275KV CABLE ROUTE LAYOUT	SHEET SIZE: A1
DRG. CHECKED BY: A.MCLELLEND	DATE: 06/05/2022	DES. CHECKED BY: N.MALLER	DATE: 06/05/2022		
CAD FILE No: KBTL-EL-LAY-00-80-0009.dwg	APPROVED: N.PADUKKAGE	DATE: 06/05/2022	SCALE: 1:2000	DRAWING No: KBTL-EL-LAY-00-80-0009	REVISION: C

FILE C:\Users\bar\AppData\Local\Temp\157126\KBTL-EL-LAY-00-80-0009.dwg



- NOTES**
- BACKFILL TO BE PLACED UNIFORMLY IN LAYERS AROUND PIT. DO NOT BACKFILL AGAINST WALLS UNTIL CONCRETE HAS ACHIEVED 20 MPa STRENGTH.
 - FALLS AND SUMP LOCATIONS TO SUIT FALL OFF SURROUNDS.
 - NOT TO BE USED IN ACID SULPHATE SOLIDS.
 - COMPLETED JOINT BAY SHALL BE FULLY BACKFILLED WITH SAND PRIOR TO COMMENCEMENT OF CABLING WORK IN THE PIT UNLESS EFFECTIVE GROUNDWATER CONTROL IS IN PLACE AT ALL TIMES. FOR ALL SUBSEQUENT WORK IN THE JOINT BAY, FLOTATION CHECK IS REQUIRED BEFORE EMPTYING SAND FROM THE PIT IF IT IS SUBMERGED BY MORE THAN 1000mm IN THE GROUNDWATER AS DETERMINED BY SITE TRIAL HOLES OR OTHER APPROVED MEANS.

- REFERENCE DRAWINGS:**
- KBTL-EL-LAY-71-80-0001 - 275kV CABLE ROUTE LAYOUT
 - KBTL-EL-SEC-71-80-0001 - DIRECT BURIED CABLE SECTION
 - KBTL-EL-SEC-71-80-0002 - DIRECTIONAL BORING CABLE SECTION



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REV No	CONCEPT	REVISION DESCRIPTION	DRAWN BY	CHECKED BY	APPR'D BY	DATE
A	CONCEPT		RR	NM	NP	25/02/2022

CLIENT: NEOEN	PROJECT NUMBER: 3570264	PROJECT NAME: KENTBRUCK ENERGY PARK TXL
DRAWN BY: R.RIVERSON	DATE: 25/02/2022	DESIGNED BY: G.HALLIDAY
DATE: 25/02/2022	DES. CHECKED BY: N.MALLER	DATE: 25/02/2022
DRG. CHECKED BY: A.MCLELLEND	DATE: 25/02/2022	N.MALLER
DATE: 25/02/2022	APPROVED: N.PADUKKAGE	DATE: 25/02/2022
CAD FILE No: KBTL-EL-SEC-71-80-0003.dwg	APPROVED: N.PADUKKAGE	DATE: 25/02/2022
SCALE: AS SHOWN	DRAWING No: KBTL-EL-SEC-71-80-0003	REVISION: A
TITLE: 275KV CABLE & TRANSMISSION LINE SITE WIDE - HV SERVICES 330KV CABLE ROUTE CABLE JOINT BAY DETAIL		SHEET SIZE: A1

FILE: P:\KENTBRUCK ENERGY PARK TXL\DWG\KBTL-EL-SEC-71-80-0003.dwg

PLOT DATE: 11 March, 2022 - 12:11pm

Appendix J

Preliminary Site Investigation – Alternative Alignments

DRAFT

Preliminary Site Investigation - Alternative Alignments

Kentbruck Green Power Hub Project EES Technical Report

31-Oct-2023
Kentbruck Green Power Hub Project

DRAFT

Preliminary Site Investigation - Alternative Alignments

Kentbruck Green Power Hub Project EES Technical Report

Client: Neoen Australia Pty Ltd

ABN: 31 117 519 570

Prepared by

,

31-Oct-2023

Job No.: 60591699

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Quality Information

Document Preliminary Site Investigation - Alternative Alignments

Ref 60591699

Date 31-Oct-2023

Prepared by Justin Scicluna

Reviewed by Mark Davidson

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	07-Aug-2023	Draft	Mark Davidson Technical Director - Environment	
B	31-Oct-2023	Draft	Mark Davidson Technical Director - Environment	

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Executive Summary

The purpose of this report is to present to Neoen Australia Pty Ltd (Neoen) the results of a preliminary site investigation (PSI) for the alternative transmission alignments associated with the Kentbruck Green Power Hub ('the Project').

This PSI considers alternative transmission alignments 2A and 2B. The site location and study area for this PSI are presented in **Figure F1** and **Figure F2 (Appendix A)**, respectively.

Objectives

The purpose of this PSI is to support the EES by providing information relating to existing conditions within alignment 2A and 2B, likely to be encountered during construction, operation and decommissioning of the Project.

The key objective is:

- To assess soil types and geomorphology in the study area and identify potential locations of contamination and ASS.

Scope and Methodology

The following methodology was adopted for this PSI:

- A preliminary assessment of the potential for ASS in general accordance with the '*Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils*' (Department of Sustainability and Environment, October 2010).
 - The preliminary assessment included a desktop review of publicly available information, including the Australian Soil Resource Information System (ASRIS), geological maps, the Victorian Coastal Acid Sulfate Soils Strategy (DSE, 2009).
- A preliminary assessment of the potential for soil contamination including:
 - A desktop review of current and recent land use, by review of historical aerial photographs (approximately one photo per 10-15 years, 1960s to present).

Summary of PSI Findings

Information obtained from the desktop review of aerial photographs and current and historical site uses suggests the study area has historically been used as agricultural land for grazing of sheep and cattle and silviculture.

The overall potential for contamination within the study area is considered to be limited, however further analysis of soil and groundwater is required to confirm presence or absence of contamination resulting from existing and/or historical land use.

A review of the ASRIS AAASS mapping indicates the potential for ASS occurrence along alignment 2A/2B is considered extremely low probability (with very low confidence). The coastal dune sediments outcropping along the majority of the alignment have been identified to the northwest to be ASS however, and require the development of an ASSMP.

On the basis that the construction of the proposed wind farm would be considered a 'high risk activity' and given that CASS has been identified in the vicinity of the site (within the same geology to the north west of alignment 2A and 2B), and that there are geomorphic indicators of ASS, the CASS BPMG recommends that a detailed soil site assessment for CASS be undertaken.

DRAFT**Abbreviations**

Abbreviation	Definition
AASS	Actual acid sulfate soils
AAASS	Atlas of Australian Acid Sulfate Soils
ACM	Asbestos containing material
AECOM	AECOM Australia Pty Ltd
AHD	Australian Height Datum
ASC	Assessment of Site Contamination
ASRIS	Australian Soil Resource Information System
ASS	Acid sulfate soils
BPMG CASS	Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils
CASS	Coastal acid sulfate soils
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EES	Environment Effects Statement
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ERS	Environment Reference Standard
IWRG	Industrial Waste Resource Guidelines
km	Kilometres
m	Metre
mAHD	Metres relative to Australian Height Datum
Neoen	Neoen Australia Pty Ltd
NEPM	National Environmental Protection Measure
PSI	Preliminary Site Investigation

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1.0 Introduction

1.1 Purpose

The purpose of this report is to present to Neoen Australia Pty Ltd (Neoen) the results of a preliminary site investigation (PSI) for the alternative transmission alignments associated with the Kentbruck Green Power Hub (**‘the Project’**).

This PSI has been developed to support the Project environmental site investigation (AECOM, 2023), which involved the assessment of potential soil and groundwater contamination and acid sulfate soil (ASS) impacts. The environmental site investigation was undertaken to inform the preparation of an Environment Effects Statement (EES) required for the Project.

On 25 August 2019, the Minister issued a decision confirming that an EES is required for the Project due to the potential for significant environmental effects.

The Project was also referred to the Commonwealth Government, on 7 November 2019, and declared a ‘controlled action’, requiring assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Project is proposed to be comprised of wind turbines, associated infrastructure, transmission lines, quarry and groundwater supply. **This PSI considers alternative transmission alignments 2A and 2B.** The site location and study area for this PSI are presented in **Figure F1** and **Figure F2 (Appendix A)**, respectively.

1.2 EES Scoping Requirements

The scoping requirements for the Project were issued by the Victorian Minister for Planning in February 2020 (dated January 2020). These set out the specific matters to be investigated and documented in the EES, in accordance with the Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978.

This assessment considered the following relevant scoping requirements - 4.3 Catchment values and hydrology:

- Key issues:
 - Potential for disturbance of contaminated or acid sulphate soils.
- Existing environment:
 - Characterise soil types and structures in the study area and identify the potential location and disturbance of acid sulphate soils.
- Likely effects:
 - Identify and assess potential effects of the project on soil stability, erosion and the exposure and disposal of contaminants or hazardous soils (e.g. acid sulphate soils). [Soil stability and erosion not addressed as part of this report]
- Mitigation measures:
 - Identify proposed measures to mitigate any potential effects, including any relevant design features or preventative techniques to be employed during construction and operation (main body of this report).
- Performance objectives:
 - Describe contingency measures for responding to unexpected but foreseeable impacts such as disturbance of acid sulphate soils (main body of this report).

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1.3 Objectives

The purpose of this PSI is to support the EES by providing information relating to existing conditions within alignment 2A and 2B, likely to be encountered during construction, operation and decommissioning of the Project.

The key objective is:

- To assess soil types and geomorphology in the study area and identify potential locations of contamination and ASS.

1.4 Project Overview

The Project is located in southwest Victoria and is proposed to comprise a wind farm and associated electrical and operational ancillary facilities, underground and overhead electrical infrastructure within the site, and a transmission line connection to the existing electricity grid. The proposed Project area has a footprint of up to 8,370 hectares (ha), including 8,325 ha for the wind farm site and 45 ha for the transmission line corridor. The Project area extends from approximately three kilometres (km) east of Nelson to the north of Portland. Most of the Project area footprint is located within an active commercial forestry operation, with the remaining footprint on agricultural land.

The proposed wind farm will consist of up to 105 wind turbines. Each turbine is expected to have an indicative maximum hub height of 174 meters (m) and indicative rotor diameter of 190 m with maximum blade tip height of 270 m above ground level and minimum blade tip height of 60 m above ground level. Depending on final turbine selection, each turbine will produce from 4 megawatt (MW) to 8 MW peak power output, to yield a forecast total capacity of approximately 600 MW and annual production of approximately 2,300 gigawatt hour (GWh). The Project includes an onsite electrical substation with capacity of up to 1,000 MW hours of storage. The operational life of the Project is anticipated to be between 25 and 30 years.

Aside from turbines, the Project will include the upgrade and construction of onsite tracks and access to main roads, up to eight lattice tower wind monitoring masts (anemometers) and up to three power collection stations in addition to an operations building. Temporary infrastructure associated with construction of the Project would include a construction compound (with office facilities, parking and toilet facilities), laydown areas, concrete batching plants and an onsite quarry. It is noted that the quarry will be maintained throughout the operational life of the project for road maintenance.

The environmental site investigation (main body of this report) assessed the underground (26.6 km) transmission line from the main wind farm substation to Heywood terminal station (alignment 1B) and a combined underground (18.8 km) and overhead (7.8 km) (alignment 1A). This PSI assesses an alternative 35 km transmission line corridor from the main wind farm substation to a proposed substation at the Heywood-Portland 500 kV transmission line (alignment 2A and 2B). These alignments are presented in **Figure F2 (Appendix A)**.

1.5 Study Area

The study area encompasses the alternative transmission line corridors as described below:

- A 35 km combined overhead (alignment 2A) and underground (alignment 2B) transmission line towards the Heywood-Portland transmission line, plus 100 metre buffer zone.

The buffer zones around each component of the Project are considered adequate to capture existing conditions that may affect and be affected by the proposed Project activities and infrastructure.

The study area buffer zones are included in **Figure F2 (Appendix A)**.

1.6 Scope of Works

The scope of works completed as part of this PSI include:

- Review of existing reports and data (where applicable);
- Collation of study area background and environmental setting information;

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- Desktop review of relevant information;
- Revision of the existing environmental site investigation (main body of this report,) where necessary, including:
 - PSI results;
 - Impact assessment and management measures; and
 - Conclusions.
- Preparation of this PSI report.

1.7 Methodology

The following methodology was adopted for this PSI:

- A preliminary assessment of the potential for ASS in general accordance with the '*Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils*' (Department of Sustainability and Environment, October 2010).
 - The preliminary assessment included a desktop review of publicly available information, including the Australian Soil Resource Information System (ASRIS), geological maps, the Victorian Coastal Acid Sulfate Soils Strategy (DSE, 2009).
- A preliminary assessment of the potential for soil contamination including:
 - A desktop review of current and recent land use, by review of current and historical aerial photographs (approximately one photo per 10-15 years, 1960s to present).

1.8 Assumptions and Limitations

Assumptions and limitations relating to the field investigations for the Project are provided below:

- The desktop assessment was limited to readily available public information and is based on conditions that existed at the time the assessment was completed. Its findings and conclusions may be affected by the passage of time, by man-made events (e.g. construction on or adjacent to the Project area boundary and by new releases of hazardous substances into the environment).
- Historic land use information presented herein is limited to information obtained from a series of aerial photographs taken between 1966 and 2022 (generally one aerial photograph every 10-15 years), sourced from a service provider. Based on the primarily agricultural and forestry land use this approach is considered satisfactory. Short term land use or contamination events (e.g. waste burial) may not necessarily be captured by this assessment.
- As noted by CSIRO, the classification of ASS via the Atlas of Australian Acid Sulfate Soils (AAASS) map is provisional for areas where analytical data was not available. As such, further assessment of ASS conditions may be required.
- Properties that appeared to be used for residential purposes were generally assumed to have a low potential for contamination of soil.
- Information contained in this report should only be used as a guide. The assessment was undertaken to inform contamination (soils and groundwater) and ASS impact assessment for the EES and to develop management measures for potential impacts. Further detailed investigation may be necessary for selected areas (e.g. sampling density does not comply with waste disposal guidelines).
- Where this report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the report. AECOM assumes no liability for any inaccuracies in or omissions to that information.
- Except as otherwise specifically stated in this report, AECOM makes no warranty or representation as to the presence or otherwise of asbestos and/or ACM within the study area. If fill has been imported on to the study area at any time, or if any buildings constructed prior to 1970 have been

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demolished within the study area or materials from such buildings disposed of within the study area, the study area may contain asbestos or ACM.

- The conclusions presented are based solely on the information and findings contained in this report.

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2.0 Regulatory and Policy Framework

Key guidelines and legislation applicable to the works undertaken for this PSI are summarised in the sections below.

2.1 Legislation

2.1.1 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Australian Government's central piece of environmental legislation.

Under the EPBC Act, any activity which is likely to have a significant impact on the environment, or on matters of national environmental significance, requires the approval of the Commonwealth Minister. Under the EPBC Act, 'environment' is defined broadly and includes, but is not limited to, ecosystems and their constituent parts, people and communities, natural and physical resources and the heritage values of places.

National Environment Protection Council Act 1994

The National Environment Protection Council Act 1994 and complementary State and Territory legislation allow the National Environment Protection Council (NEPC) to make National Environment Protection Measures (NEPMs).

The *National Environment Protection (Assessment of Site Contamination) Measure, 1999* (the ASC NEPM), as amended in 2013, provides a nationally consistent approach to the assessment of potentially contaminated sites, to ensure sound environmental management practices by the community which includes regulators, site assessors, environmental auditors, land owners, developers and industry.

In Victoria, the ASC NEPM is mainly implemented through the State policies such as the Environment Reference Standard (ERS) and guidelines described below.

2.1.2 State legislation

Environment Protection Act 2017 (EP Act)

The *Environment Protection Act 2017* provides a legal framework to protect the environment in Victoria, including the protection of air, land and water from pollution. The EP Act also makes provisions with respect to the powers, duties, and functions of the EPA Victoria.

The EP Act:

- Provides the basis for the Environment Reference Standard (ERS). The ERS define the uses and environmental values to be protected in Victoria and the environmental quality objectives needed to protect these environmental values.
- Presents the requirements to manage land and risks to human health and the environment under the General Environmental Duty (GED – section 39 of the Act)
- Requires notification of contamination, that meets the definition of notifiable contamination, to EPA (s40 of the Act).
- Regulates waste discharge activities, industrial waste, noise and pollution through development licence, operating licence, permits, registrations and statutory duties.

2.2 Guidelines

2.2.1 Commonwealth guidelines

Commonwealth guidelines relevant to this PSI include:

- National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM), as amended in 2013;

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- Australian Standard (AS) 4482.1 – 2005: Guide to the investigation and sampling of sites with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds;
- AS 4482.2 – 1999: Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances;
- National acid sulfate soil sampling and identification methods manual, 2018; and
- National acid sulfate soil identification and laboratory methods manual, 2018.

2.2.2 State guidelines

The assessment and management of contaminated land in Victoria is directed by EPA Victoria and guidelines issued by that authority. Guidelines relevant this PSI include:

- Publication 1828.2 Waste disposal categories – characteristics and thresholds (March 2021)
- Publication 1977.1 Guide to the duty to manage contaminated land (October 2022)
- Publication 2010 Potentially contaminated land – a guide for business (July 2021)
- Publication 2008.2 Guide to the duty to notify of contaminated land (October 2022)
- Publication 1834 Civil construction, building and demolition guide (November 2020)
- Publication 2001 Guidance for the cleanup and management of contaminated groundwater (July 2021)
- Documents utilised and referred to as the ‘State of Knowledge’ in accordance with EPA Publication 1994 include:
 - IWRG655.1: *Acid Sulfate Soil and Rock* (July 2009);
 - IWRG701: *Sampling and Analysis of Waters, Wastewaters, Soils and Wastes* (June 2009);
- Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil (October 2010).

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3.0 Preliminary Site Investigation Results

3.1 Site location and topography

The study area is within Glenelg Shire, located approximately 26 km northwest of Portland in southwest Victoria.

The ground elevation along alignment 2A/2B, ranges from approximately 150 m AHD at the proposed terminal station location, to approximately 60 m AHD at the Heywood-Portland transmission line.

3.2 Local geology

Surface geology in the study area predominantly consists of various Quaternary age sediments and extrusive basalts and minor scoria.

A summary of surface geology in the study area is provided in **Table 1** and shown in **Figure F3**, (**Appendix A**).

Table 1 Surface geology of the study area

Study Area Zone	Geological unit	Lithology
Option 2A and 2B	Newer Volcanic basalt (Qn) [minor]	Basalt, tuff and scoria (<i>extrusive lava flow</i>)
	Coastal dune deposits (Qdl1) [predominant]	Silt, sands and clay (<i>beach ridge strandplain</i>)
	Bridgewater Formation (Qxr) [predominant]	Calcareous limestone (<i>calcareous dunes and dune limestone</i>)
	Swamp and lake deposits (Qm1) [very minor]	Silt, clay and peat (<i>still water – swamp marsh deposition</i>)

3.3 Soil Characterisation and Structure

Soil types within the study area vary depending upon geology, landform, stream activity, vegetation, climate and age (i.e. degree of weathering) (Victorian Resources Online, 2024).

Within the study area the following soil types / structures are identified on the Agriculture Victoria - Victorian Resources Online map ([VicSoilMap.pdf \(agriculture.vic.gov.au\)](#) running from west to east (refer to **Figure F4**):

- Sandy soils - (tenosols and rudosols) and texture contrast soils with deep sandy surface horizons (excluding podosols);
- Sandy soils - podsols and texture contrast soils with deep sandy surface horizons; and
- Chromosols – not sodic or strongly acid.

The assessment of soil health and structure relates primarily to agronomy and is not required for the assessment of contamination or ASS. As such, these elements are not considered further in this assessment.

3.4 Existing land use

Review of publicly available information and aerial photographs indicated that existing land uses within the study area include:

- Agriculture (grazing);

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- Plantation and commercial forestry (silviculture); and
- National Park.

Surrounding land uses along alignment 2A/2B include agriculture (primarily grazing), commercial forestry (including the Mount Richmond plantation to the south) and Discovery Bay Coastal Park to the south.

The predominant existing land uses are considered to have a relatively low potential for widespread soil contamination.

3.5 Historic land use

Representative aerial photographs for each decade between 1966 and 2022 covering the entire study area were obtained and reviewed to identify historic land uses. Copies of the aerial photographs maps are provided in **Appendix B**, and findings are summarised in **Table 2** below.

It is noted that image resolution of aerial photographs can vary significantly and as a result, there are uncertainties in interpretation.

Table 2 Areas of significant changes to historical land uses

Section of Site	Change in historical land uses
Alignment 2A / 2B proposed terminal station location to Mount Richmond National Park ~ 17 km	<p>1966: Land consists of cleared paddocks. National parkland evident adjacent to the proposed alignment.</p> <p>1972: Clearing takes place adjacent to Portland-Nelson Road, south of the proposed terminal station location. A small paddock north of Telegraph Road, east of Price Road is cleared. No significant changes elsewhere.</p> <p>1981: Further clearing has occurred adjacent to Portland-Nelson Road, south of the proposed terminal station location. No significant changes elsewhere.</p> <p>1992: Localised agriculture-related developments, but no significant changes noted.</p> <p>2006 - 2022: Plantation planting evident adjacent to Portland-Nelson Road, south of the proposed terminal station location and north of Telegraph Road, east of Price Road.</p>
Alignment 2A / 2B Mount Richmond National Park to Heywood – Portland transmission line ~ 17 km	<p>1966: Land consists of cleared paddocks used for farming and national park.</p> <p>1972 – 1975: National Park south of S Boundary Track cleared. Localised areas of disturbed sand apparent surrounding alignment.</p> <p>1981: Increased farmland evident.</p> <p>1992: Heywood-Portland transmission line built.</p> <p>2010- 2022: Plantations evident along adjacent to Foleys Road, north west of proposed terminal station location along the Heywood-Portland transmission line.</p>

3.6 Acid sulfate soils

In accordance with the CASS BPMG a CASS preliminary hazard assessment has been undertaken. The risk identification process involves a desktop assessment of CASS potential / risk followed for detailed site assessment (where required). The process involves consideration of the proposed activity and identified risk areas.

3.6.1 Risk Activity

As the project will involve the excavation of >1,000m³ of soil and is likely to involve the placement of excavated spoil as fill (from the tower excavations) the project would be considered a 'high risk activity' in accordance with the CASS BPMG.

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3.6.2 CASS Risk Area

CASS Mapping

A review of the Victorian Coastal Acid Sulfate Soil (VCASS) maps for Nelson and Portland (CASS Map 1 Far South-West Coast) was undertaken. The VCASS maps indicates the study area (alignment option 2A and 2B) is unlikely to contain CASS. Refer to **Plate 1** below (site extending east of Nelson towards Cape Bridgewater).



Plate 1 Map 1 Far South-West Coast – Prospective Land: land that has the potential to contain CASS (Adapted from Department of Primary Industries, 2006)

A review of the ASRIS AAASS mapping indicates the potential for ASS occurrence along alignment 2A/2B is considered extremely low probability (with very low confidence) (refer to **Table 3**). A map of the study area overlaying the ASRIS ASS classification is presented in **Figure F4 (Appendix A)**.

Table 3 Atlas of Australian Acid Sulfate Soils Mapping Classification

Code	Classification	Description
Cq(p4)	Extremely Low Probability of Occurrence	Area with extremely low probability of ASS occurrence (<1 % chance) in Kandosols, Tenosols, Podosols, Kurosols and Rudosols (generally within upper one metre in wet/riparian areas), with potential ASS (PASS). The PASS classification is noted to be provisional, as analytical data was not available when the map was prepared, and the classifier has little knowledge or experience with ASS.

It is noted that the coastal dune sediments outcropping along the majority of the alignment have been identified to the northwest to be ASS and require the development of an ASSMP.

Geomorphic Indicators

Geomorphic indicators of ASS as listed in the CASS BPMG, include geological factors, elevation, recent history and site observations. Indicators considered as part of this desktop review have been summarised below:

- **Sediment age:** The coastal dune sediments (Qd1), which potentially make up a large portion of the geological footprint beneath the study area are Holocene in age, as are the swamp and lake deposits (Qm1). Sediments from the Holocene have an increased potential to be an ASS.

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- Elevation: The surface elevation within the study area exceeds 50 mAHD and is therefore above the likely location of CASS (<10 mAHD).
- Sediments of marine origin: Sedimentary deposits present within the study area are not of marine origin which may provide a source of sulfates for ASS formation.
- Coastal wetlands or swamps, coastal dunes: Dunes are present along the majority of the option 2 alignment and may therefore present an increased risk of ASS formation. It is noted that the mapped alignment borders a calcarenite dune deposit which would not be an ASS. Based on aerial photography the Quaternary aged dune deposits in the vicinity of Mount Richmond, appear to include a high volume of small water bodies which may be indicative of swampy land.
- Salt tolerant vegetation (mangroves, rushes, etc): There is no data readily available to assess whether swamp or salt tolerant vegetation is present within the project area.
- Sulfidic minerals: The geology of the study area would not be expected to contain elevated concentrations of sulfidic minerals.
- Older estuarine sediments: No Pleistocene aged estuarine sediments, that have been maintained in anaerobic conditions are present in the study area.

3.6.3 ASS Summary

On the basis that the construction of the proposed wind farm would be considered a 'high risk activity' and given that CASS has been identified in the vicinity of the site (within the same geology to the north west of option 2A and 2B) and there are geomorphic indicators of ASS, the CASS BPMG recommends that a detailed soil site assessment for CASS be undertaken.

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4.0 Conclusion

4.1.1 Contamination

Information obtained from the desktop review of aerial photographs and current and historical site uses suggests the study area relating to alignment options 2A and 2B has historically been used as agricultural land for grazing of sheep and cattle and silviculture.

Agricultural land uses (grazing or forestry) are generally considered to represent a low risk of contamination but may include point sources such as burial of wastes and sheep dips or broad acre contamination sources such as fertiliser, herbicide or pesticide usage.

Broad acre application of fertilisers, pesticides or herbicides, may result in contamination of soil and groundwater, although in general, the potential impact to the environment associated with the Project is considered to be low.

The overall potential for contamination within the study area is considered to be low, however further analysis of soil and groundwater is required to confirm presence or absence of contamination resulting from existing and/or historical land use.

4.1.2 ASS

VCASS mapping indicates that alignment options 2A and 2B are unlikely to intersect a CASS risk area, as Prospective Land (areas where there is a potential or prospect of encountering sulfidic material or sulfuric material) is generally limited to within 3 km of the coastline.

A review of the ASRIS AAASS mapping indicates the potential for ASS occurrence along alignment 2A/2B is considered extremely low probability (with very low confidence).

Data collected from similar geological conditions to the northwest of the site indicates that there is the potential for CASS to be present within the coastal dune sediments, which are present along the majority of the alignment.

Based on a preliminary hazard assessment for CASS it is recommended that a detailed site soil assessment be undertaken to further assess whether ASS is present within alignment option 2A and 2B.

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5.0 References

AECOM, 2023. *Environmental Site Investigation - Kentbruck Green Power Hub Project EES Technical Report*. AECOM Australia Pty. Ltd.

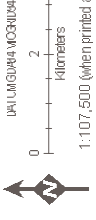
DSE, 2009. *Victorian Coastal Acid Sulfate Soils Strategy*, Victorian Government Department of Sustainability and Environment, July 2009.

DSE, 2010. *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils*, Victorian Government Department of Sustainability and Environment, October 2010.

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Appendix A

Figures

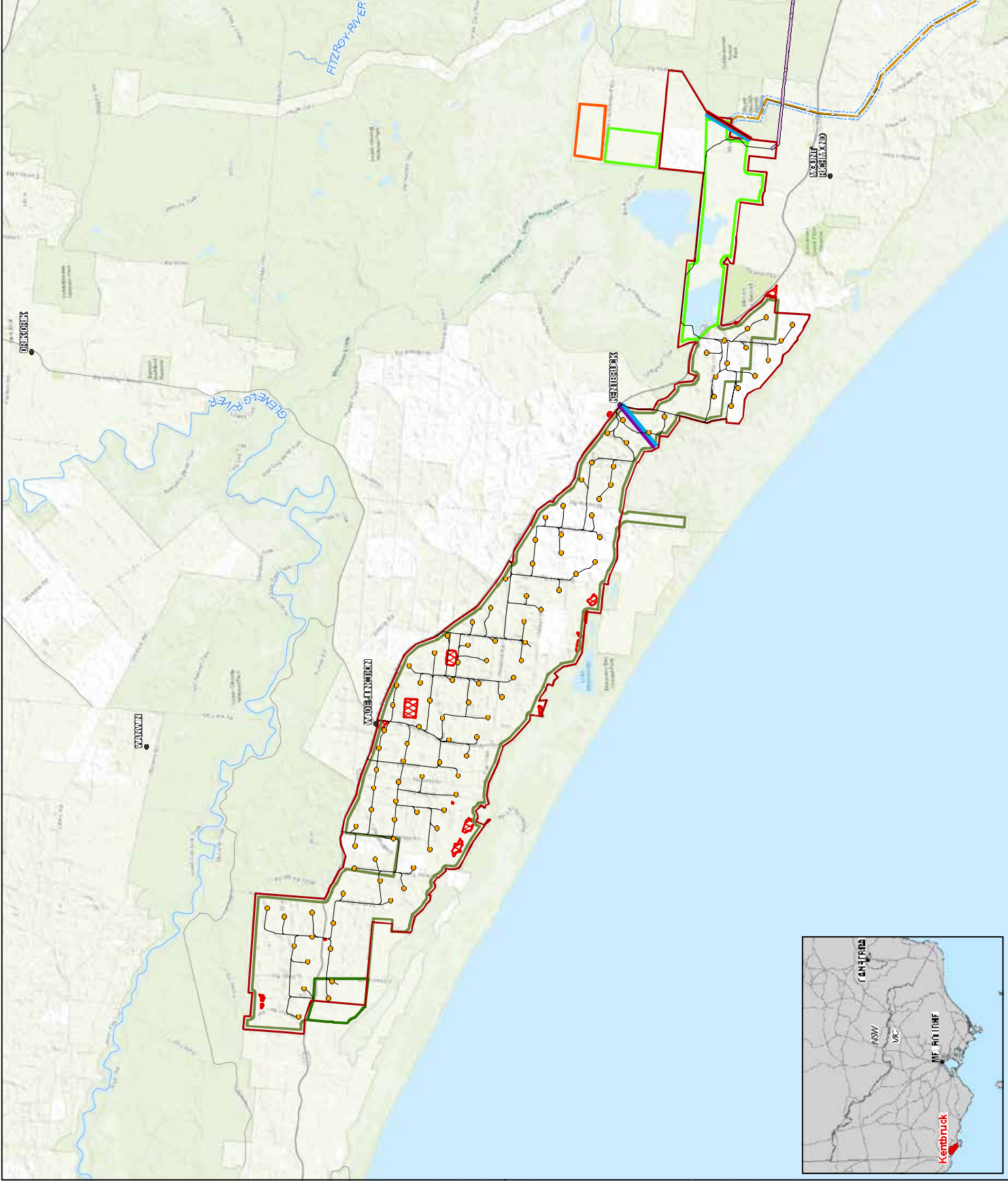


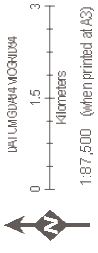
Legend

- Wind Farm Site Boundary
- Transmission Line (Underground)
- Transmission Line (Overhead)
- Turbine Location
- Turbine Location (Proposed)
- Wind Turbine
- Wind Turbine (Proposed)
- Kentbruck, Willmill Road, Nelson VIC 3292
- Richmond Park, Mount Richmond VIC 3305
- Johnson Road, Nelson, VIC 3292
- Settlements and Villages in the Vicinity
- 100m Alignment Buffer
- 100m Alignment Buffer

Aid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES

ASSESSMENT LOCATIONS	
PROJECT #:	RD01188
CREATED BY:	JB
LAST MODIFIED:	mmwhp:31/10/2023
VERSION:	1



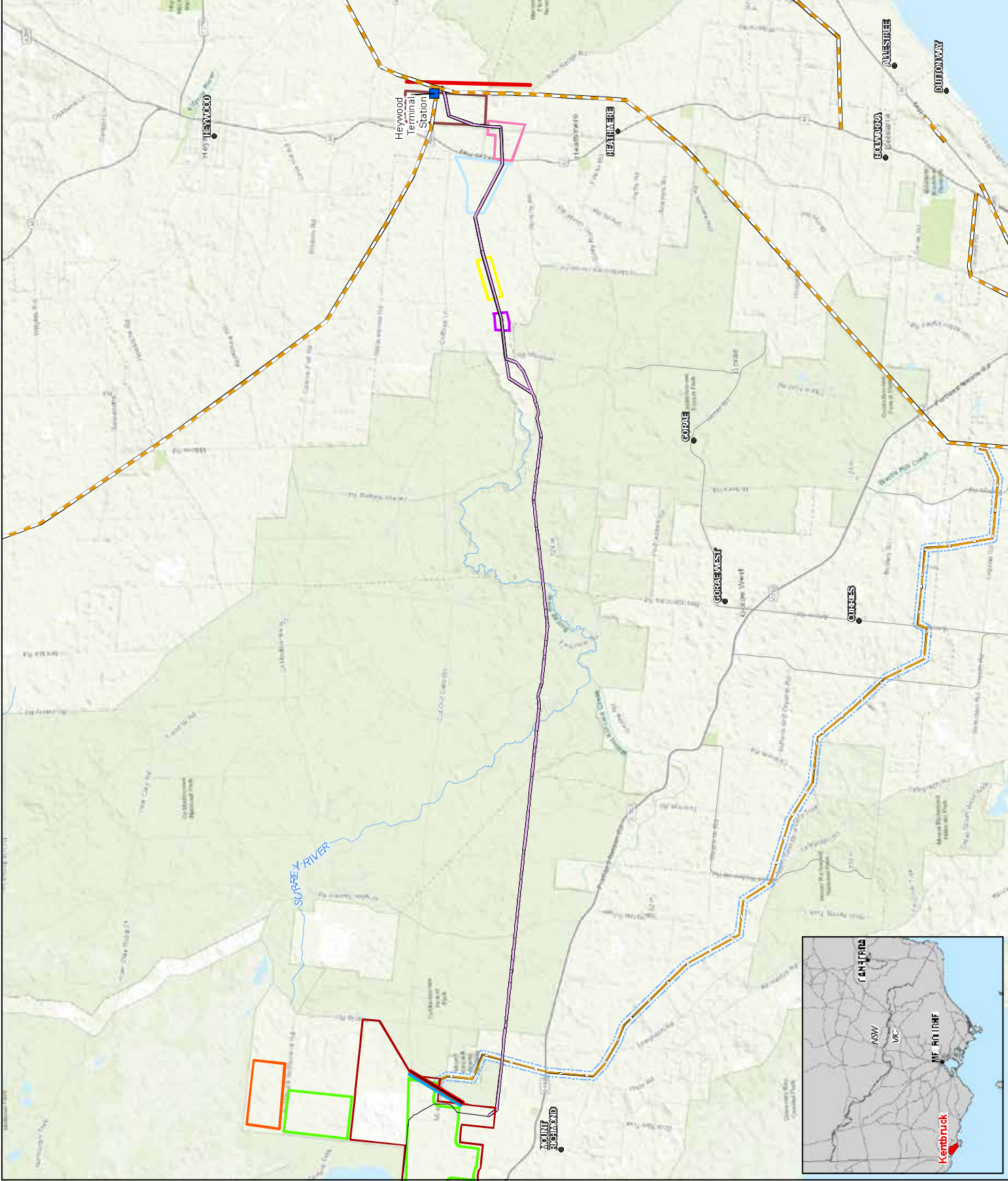


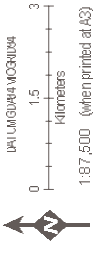
Legend

- Wind Farm Site Boundary
- Transmission Line (Underground)
- Transmission Line (Overhead)
- Existing Terminal Station
- 110kV Distribution Line
- 220kV Distribution Line
- 500kV Transmission Line
- 59 Browns Lane Heywood, VIC 3304
- Richmond Park, Mount Richmond VIC 3305
- 305 Coffeys Lane Heathmere, VIC 3305
- 1235 Princes Highway Heathmere, VIC 3305
- Meaghers Road Heathmere, VIC 3305
- Coffeys Lane Heathmere, VIC 3305
- 1235 Princes Highway Heathmere, VIC 3305
- Existing 500 kV transmission line
- 100m Alignment Buffer

Aid Sulfate Soils and Contamination Assessment
 Kentbruck Green Power Hub EES

ASSESSMENT LOCATIONS	
PROJECT #:	8001088
CREATED BY:	JB
LAST MODIFIED:	mmmmmm:31/10/2023
VERSION:	1





Legend

- Wind Farm Site Boundary
 - Existing Terminal Station
 - 200m Alignment Buffer
 - 100m Alignment Buffer
 - 50m
 - 10m
 - Watercourses
- Geology**
- Nh: Neogene (Miocene), Marine calcarenite, marl, silt
 - Qa1: Quaternary (Holocene) Fluvial alluvium, gravel, sand, silt
 - Qa2: Quaternary (Holocene) Aeolian dune deposits
 - Qd1: Quaternary (Holocene) Deposited dune sand
 - Qm1: Quaternary (Holocene) Marine dune deposits
 - Qns: Quaternary (Holocene), Extrusive: scoria
 - Qxr: Quaternary (Pleistocene), Aeolian, dune deposits: calcarenite

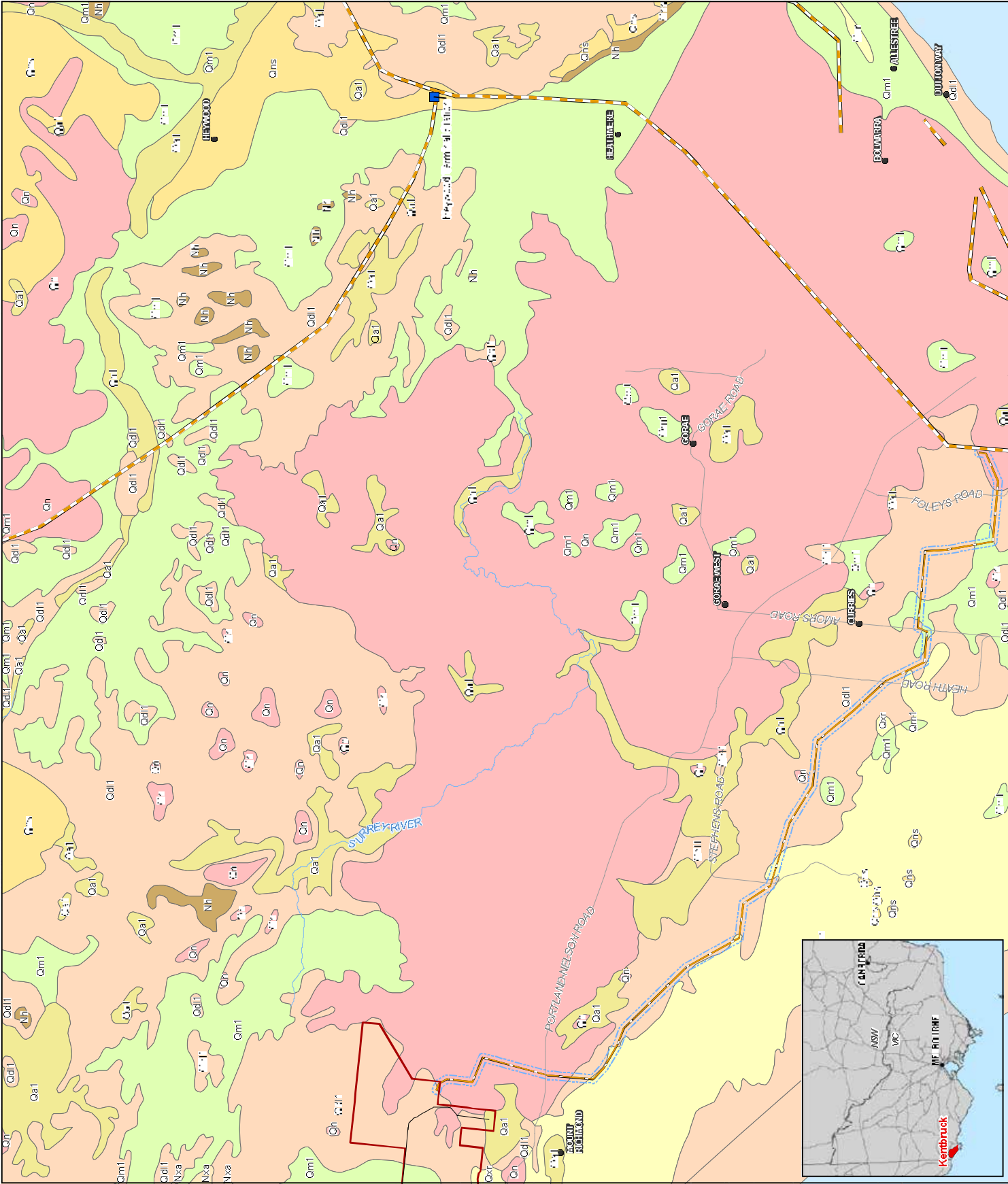
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9. AECOM shall not be responsible for any errors, omissions, or inaccuracies in the information displayed in this map and any person using it does so at their own risk.
10. AECOM shall not be responsible for any errors, omissions, or inaccuracies in the information displayed in this map and any person using it does so at their own risk.

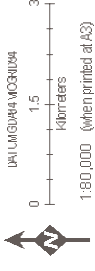
Aid Sulfate Soil and Contamination Assessment
Kentbruck Green Power Hub EES

GEOLOGY

PROJECT #:	8001088
CREATED BY:	JB
LAST MODIFIED:	mmwhp:3/10/2023
VERSION:	1

Figure 14h





Legend

- Wind Farm Site Boundary
- Transmission Line (Underground)
- 200m Alignment Buffer
- 100m Alignment Buffer
- 10m Alignment Buffer
- Watercourse

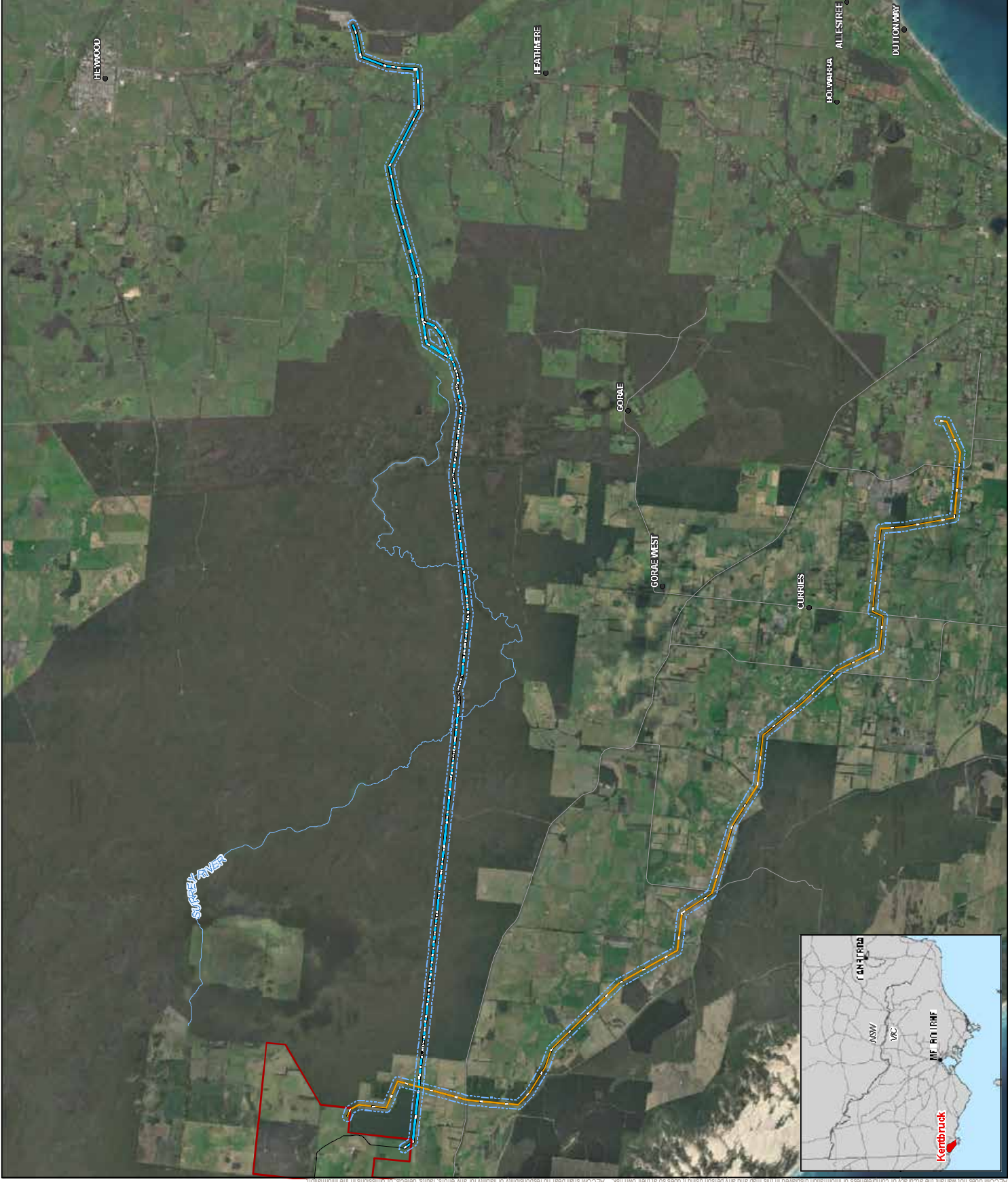
1. Site Specific Assessment (SSA) Report
 2. Environmental Impact Assessment (EIA) Report
 3. Environmental Impact Assessment (EIA) Report
 4. Environmental Impact Assessment (EIA) Report
 5. Environmental Impact Assessment (EIA) Report
 6. Environmental Impact Assessment (EIA) Report
 7. Environmental Impact Assessment (EIA) Report
 8. Environmental Impact Assessment (EIA) Report
 9. Environmental Impact Assessment (EIA) Report
 10. Environmental Impact Assessment (EIA) Report

Aid Sulfate Soils and Contamination Assessment

Kentbruck Green Power Hub EES

HISTORICAL IMAGERY 2018

PROJECT #:	8001088	Figure
CREATED BY:	JB	Fig 1
LAST MODIFIED:	mm/dd/yyyy: 3/17/2023	
VERSION:	1	



DRAFT

Appendix B

Lotsearch Aerials



LOTSEARCH
LOTSEARCH AERIALS

Date: 21 Jul 2023

Reference: LS046015 EA

Address: Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292

Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



Aerial Imagery 2017

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



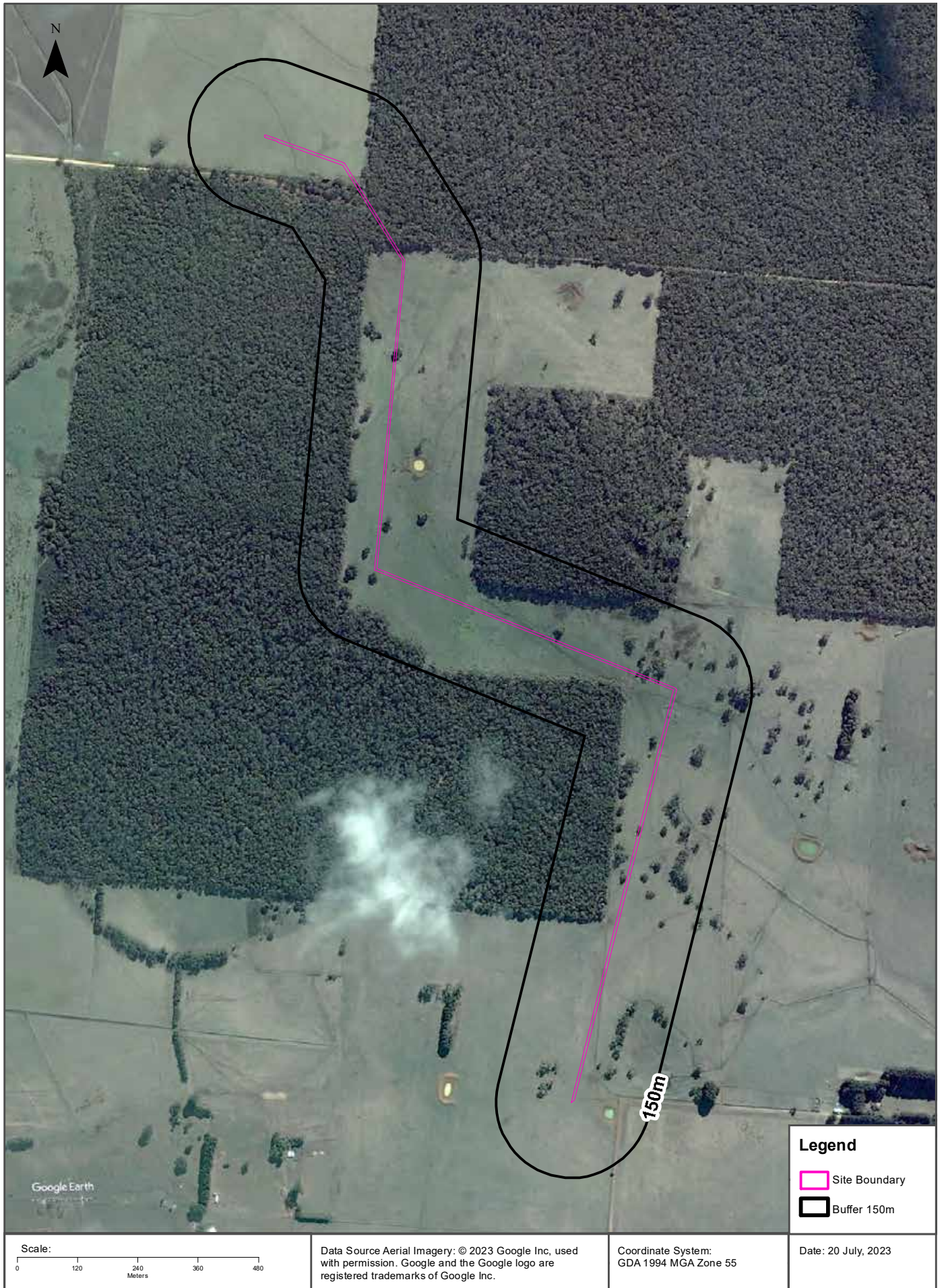
Aerial Imagery 2012

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



Aerial Imagery 2006

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



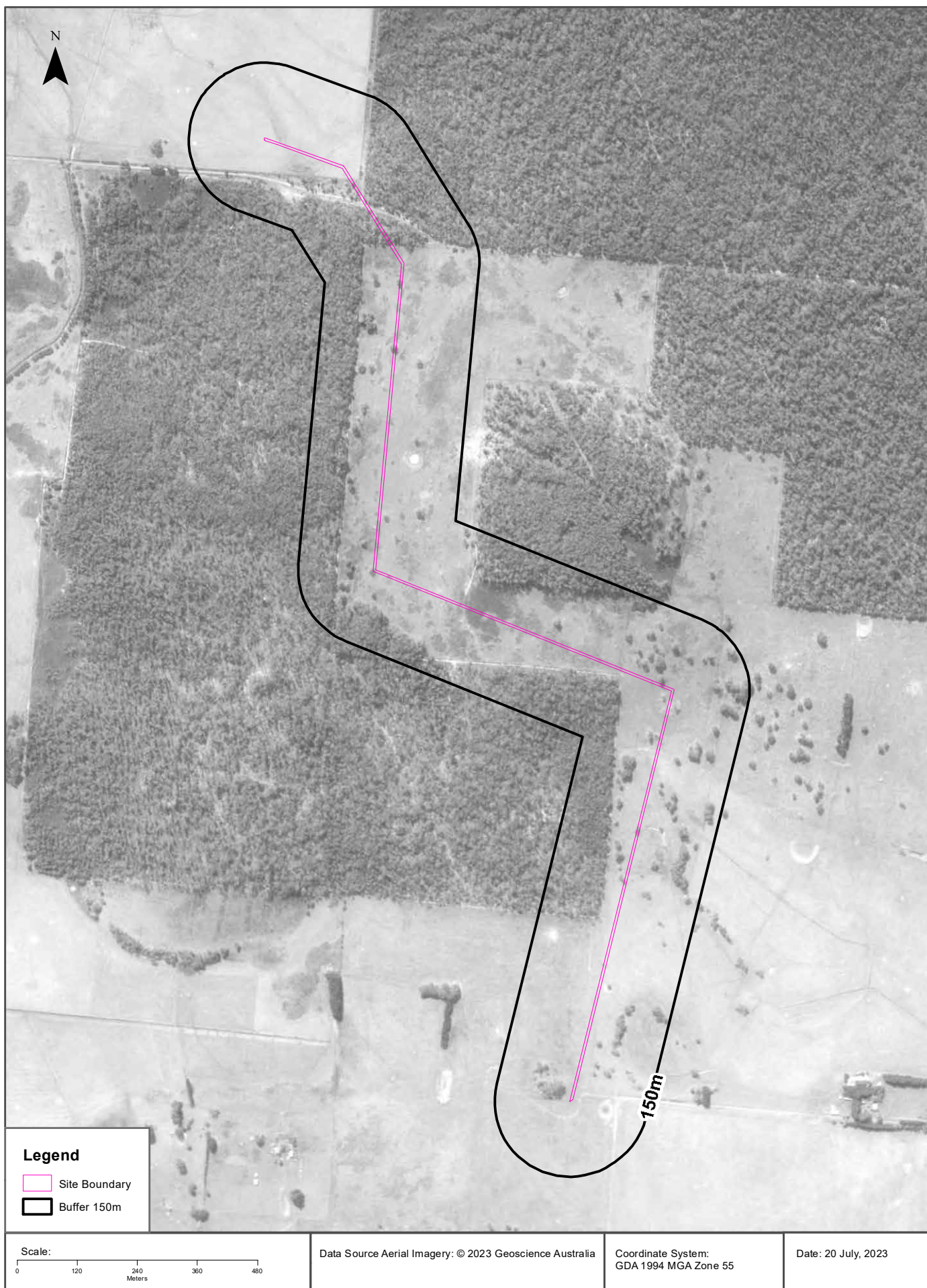
Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



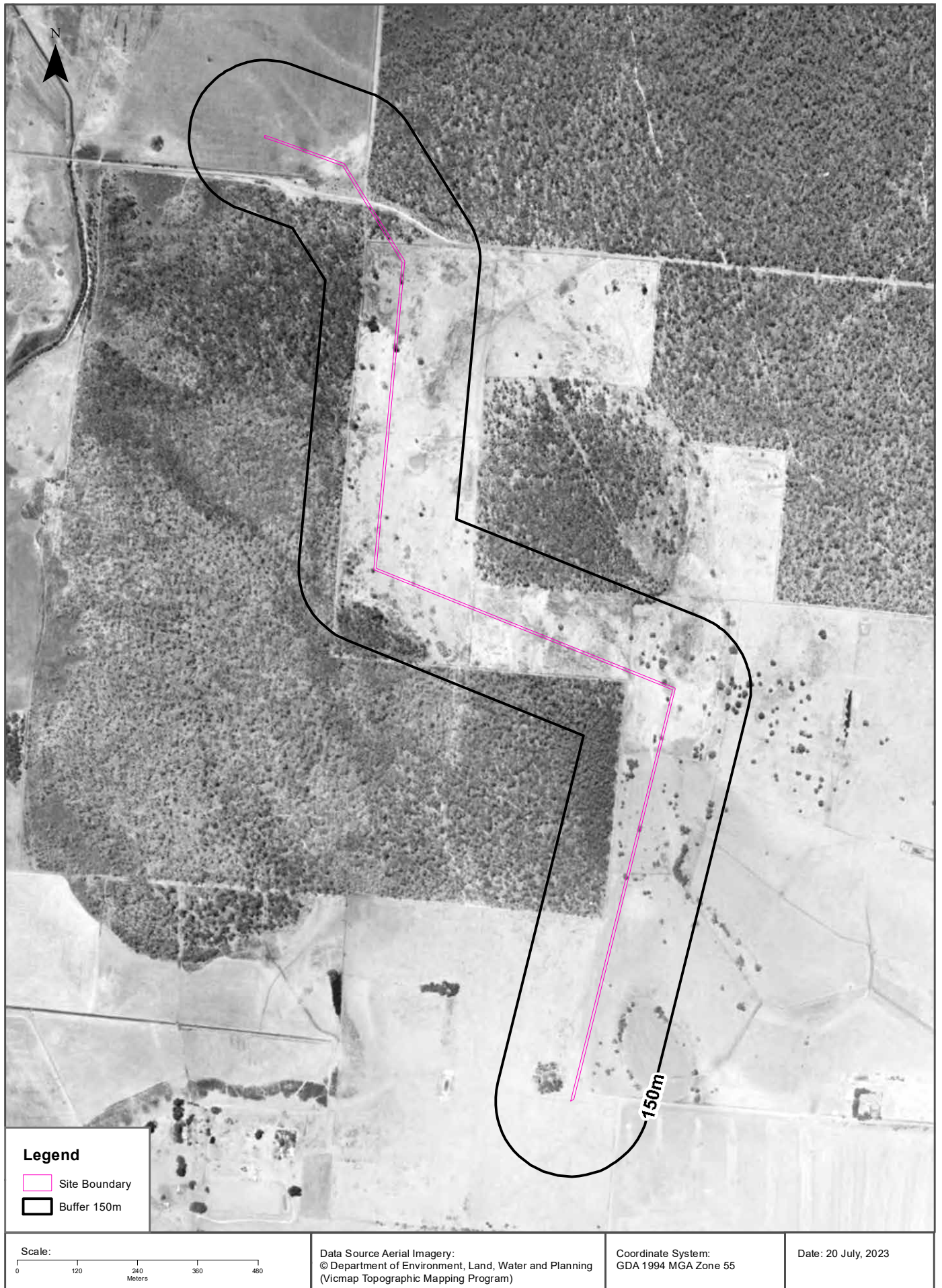
Aerial Imagery 1981

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



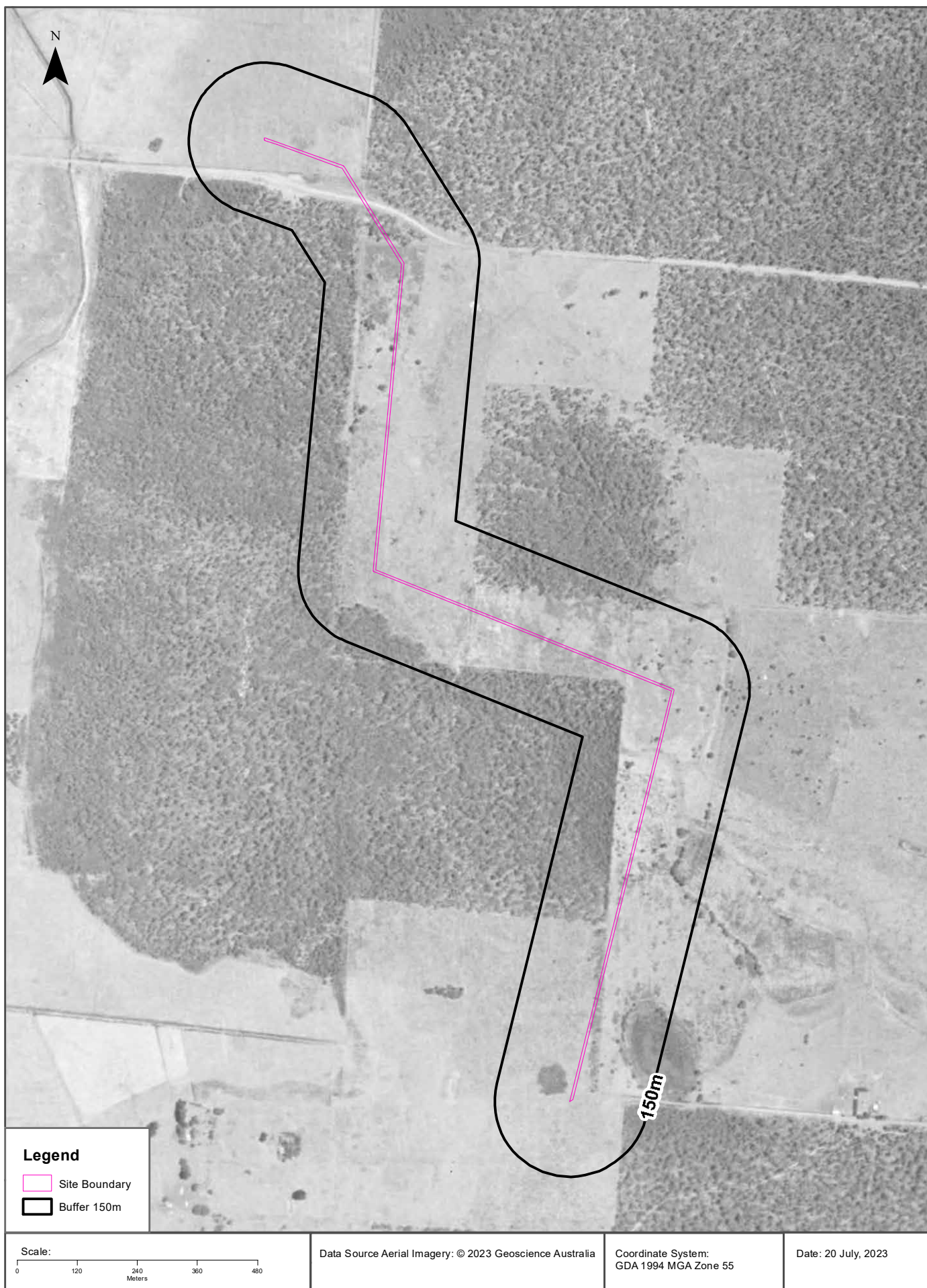
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



Legend

- Site Boundary
- Buffer 150m

Scale: 0 120 240 360 480 Meters

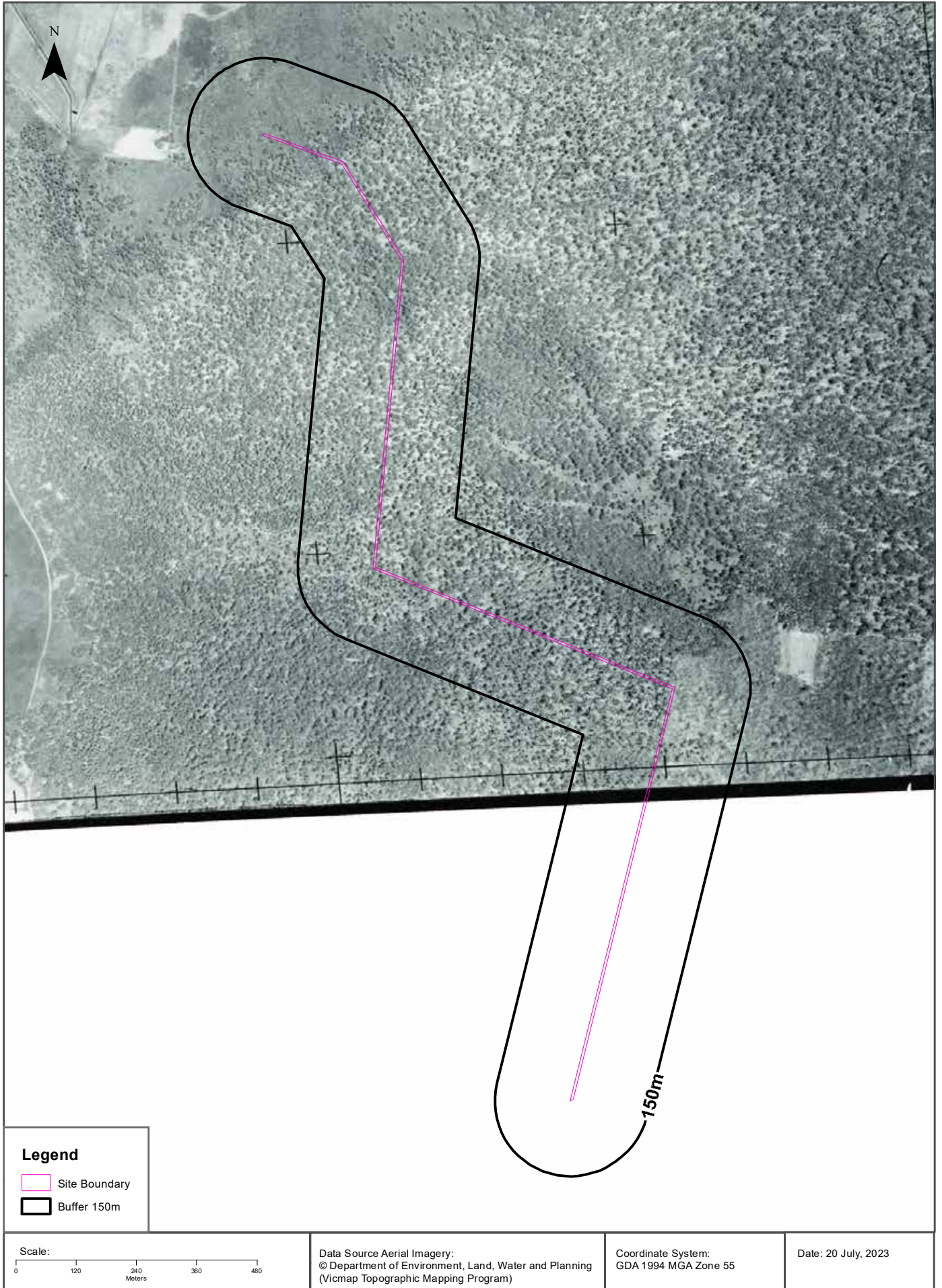
Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System: GDA 1994 MGA Zone 55

Date: 20 July, 2023

Aerial Imagery 1947

Kentbruck Option 2a/B Alignment (Part 1 of 9), Nelson, VIC 3292



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LOTSEARCH
LOTSEARCH AERIALS

Date: 21 Jul 2023

Reference: LS046033 EA

**Address: Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson,
VIC 3292**

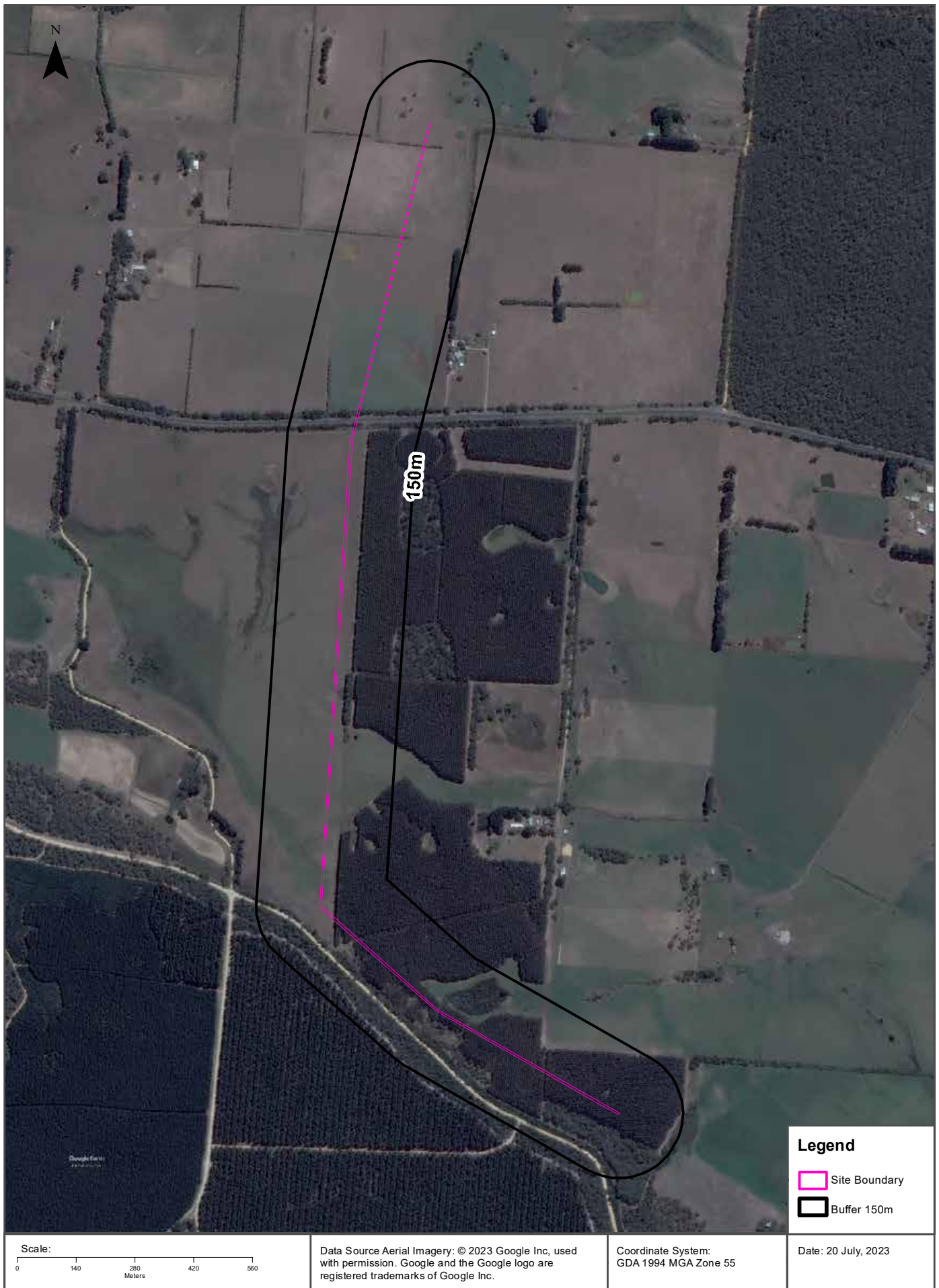
Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



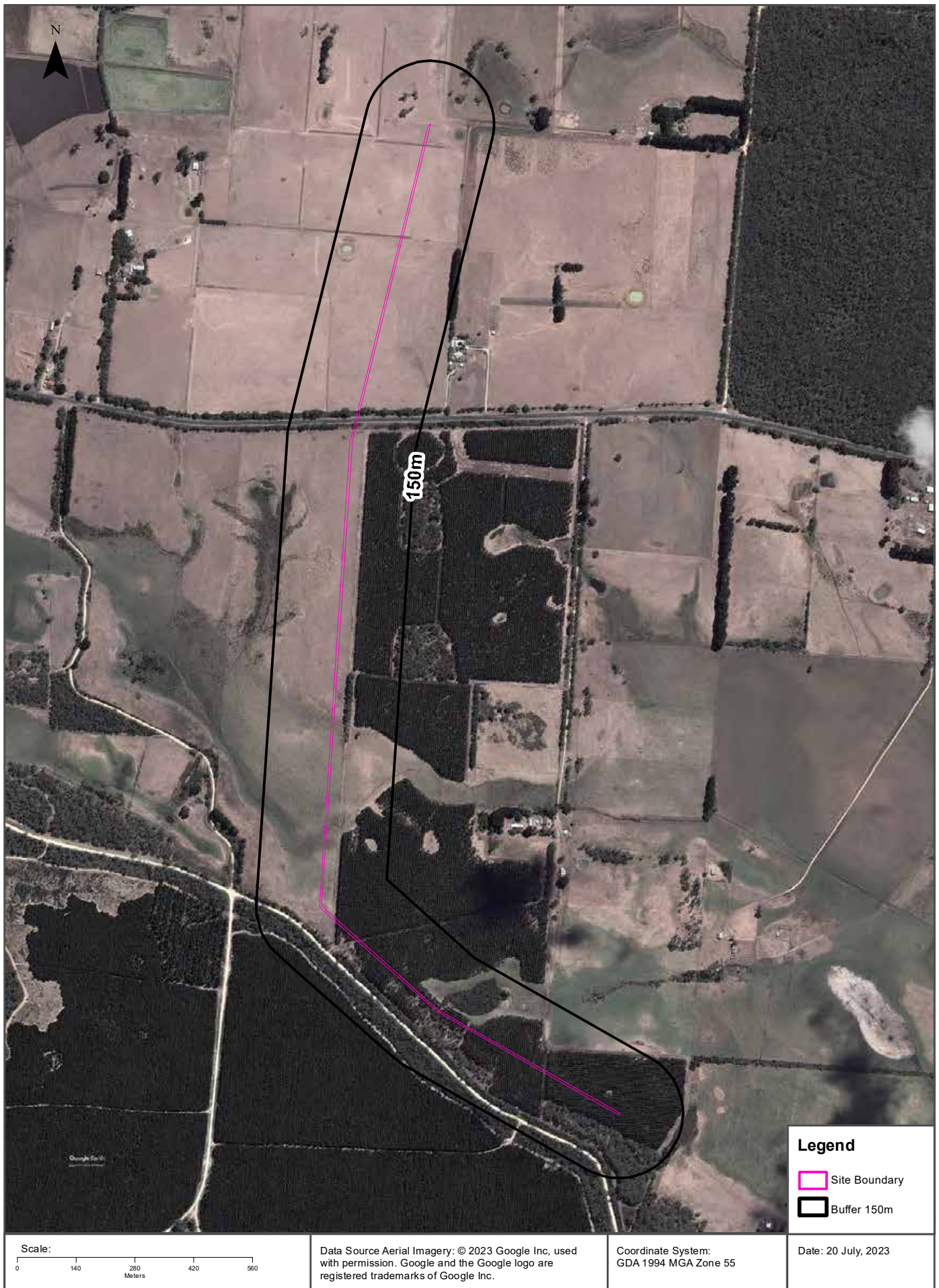
Aerial Imagery 2017

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



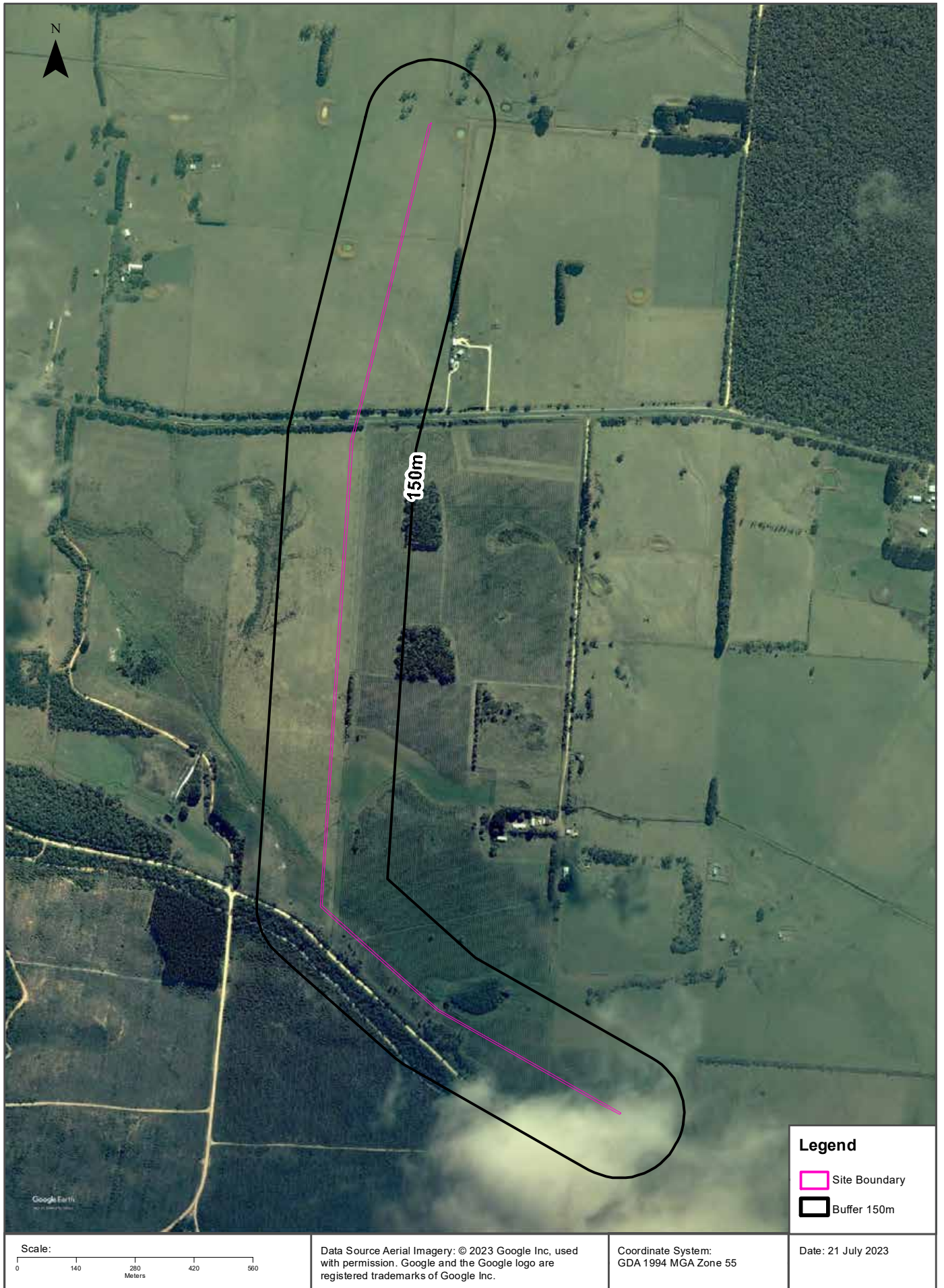
Aerial Imagery 2012

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



Aerial Imagery 2006

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



Aerial Imagery 1992

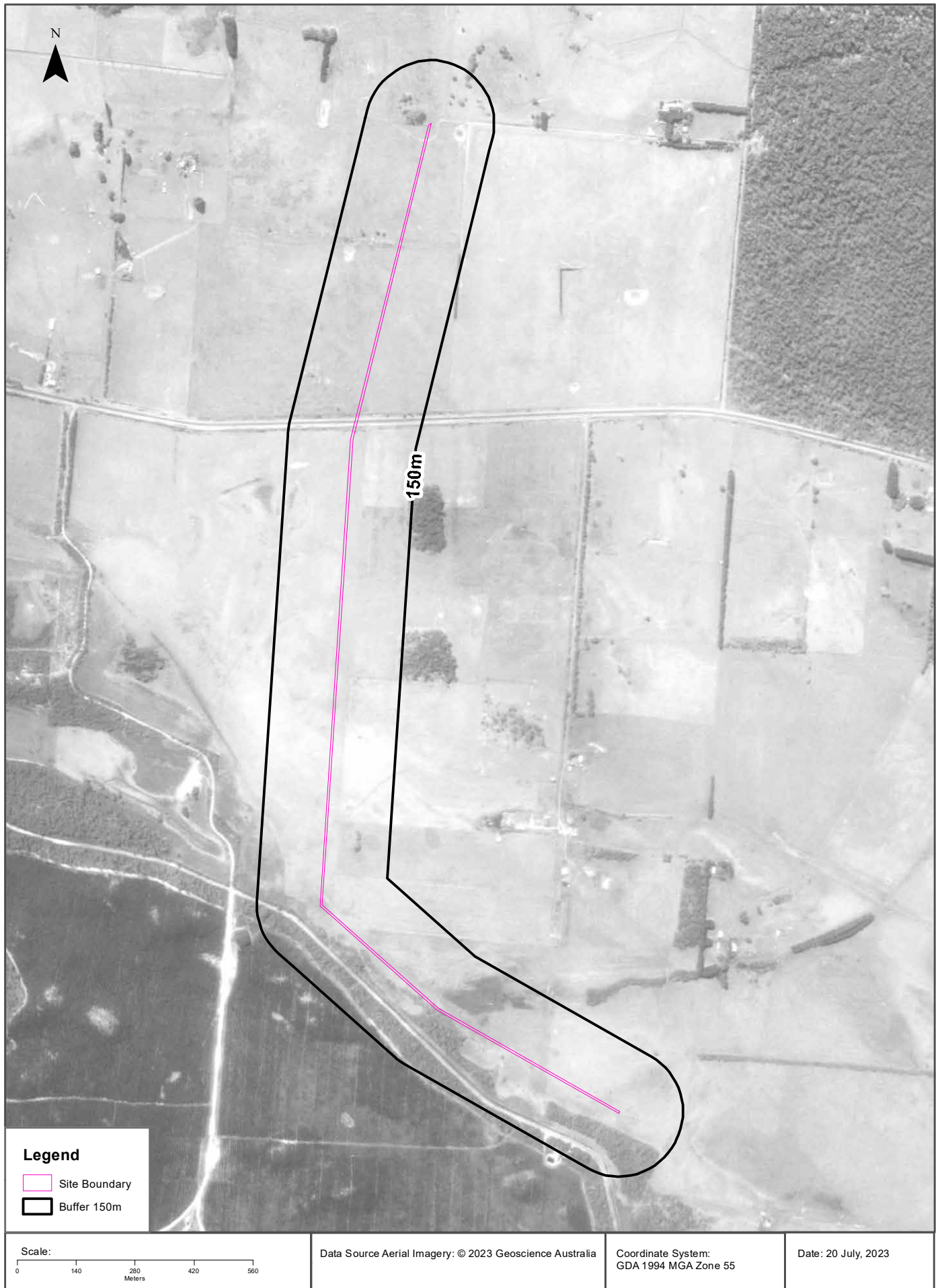
Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



<p>Scale:</p>	<p>Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)</p>	<p>Coordinate System: GDA 1994 MGA Zone 55</p>	<p>Date: 20 July, 2023</p>
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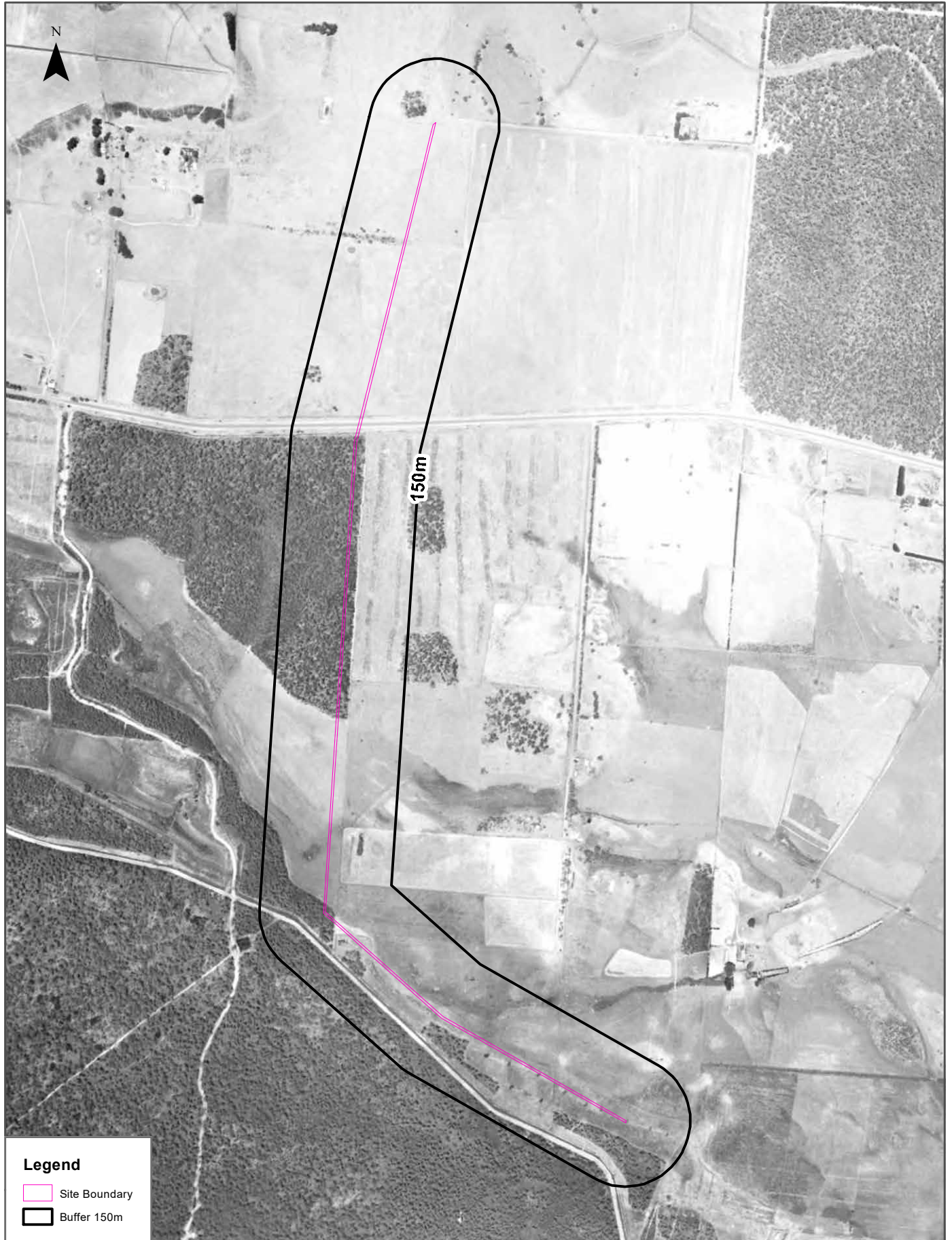
Aerial Imagery 1981

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



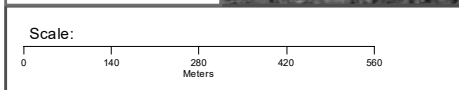
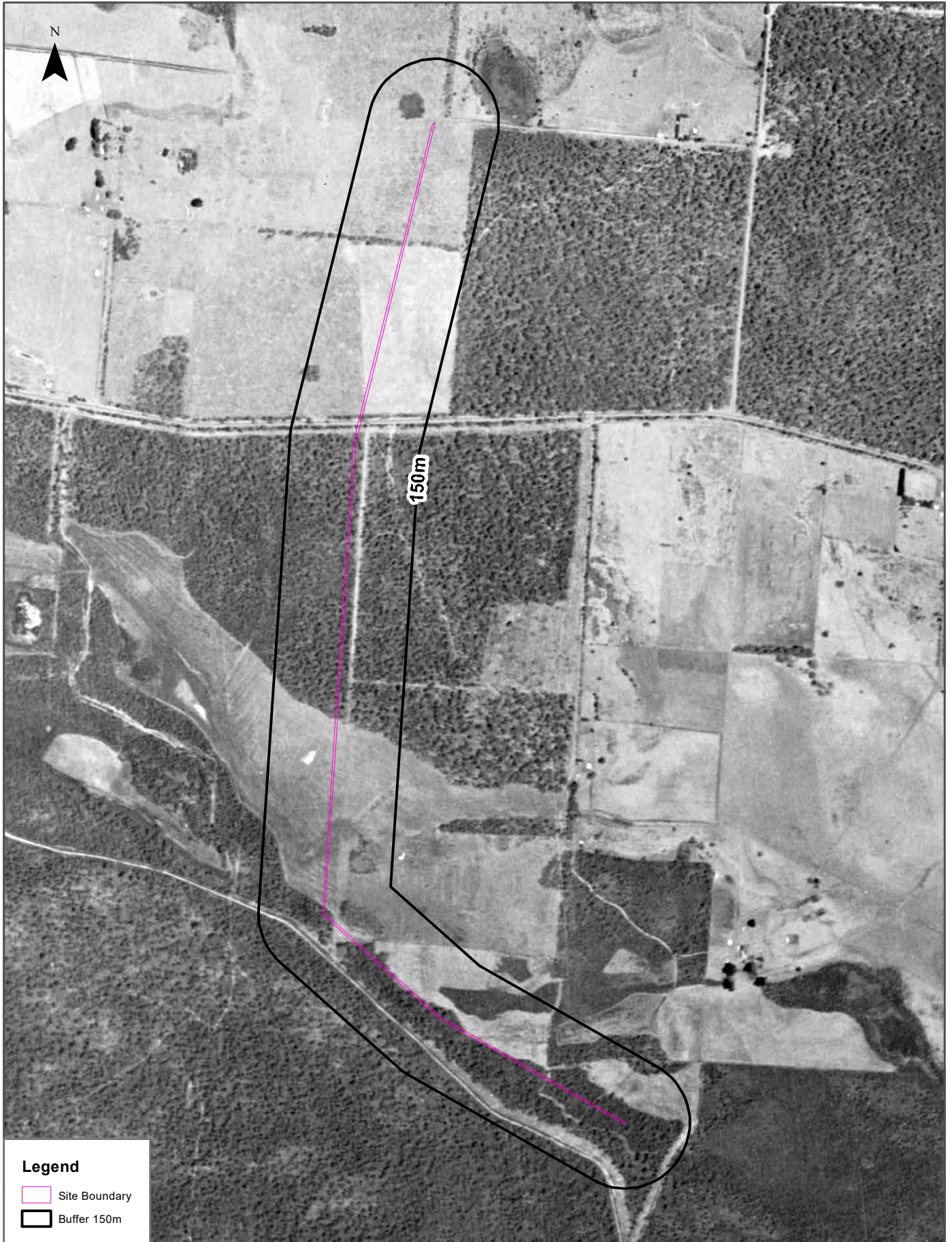
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



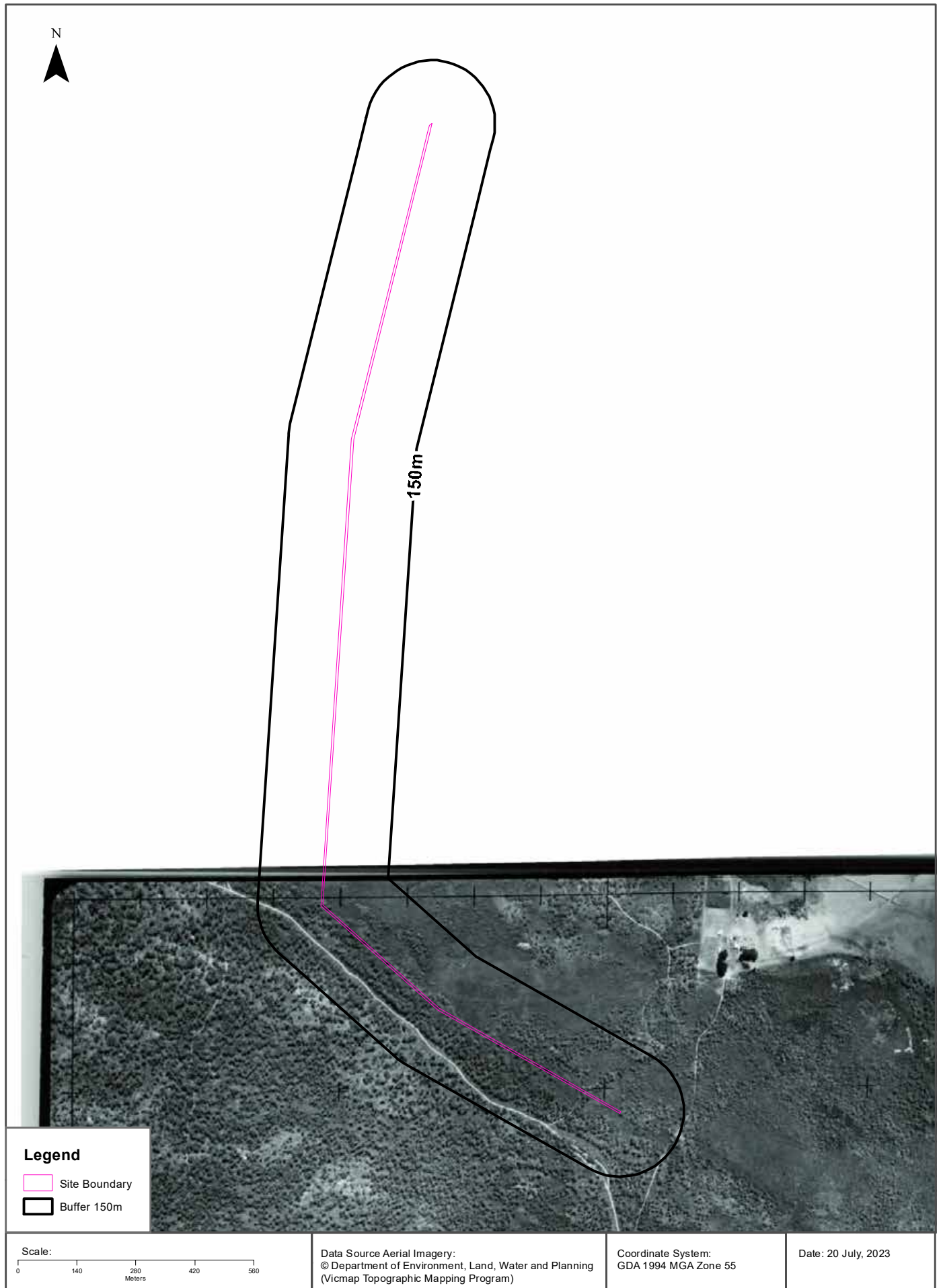
Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July, 2023

Aerial Imagery 1947

Kentbruck Option 2a/B Alignment (Part 2 of 9), Nelson, VIC 3292



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 - (c) releases each Third Party Content Supplier from any claim it may have otherwise had in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms.
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LOTSEARCH
LOTSEARCH AERIALS

Date: 21 Jul 2023

Reference: LS046034 EA

**Address: Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC
3292**

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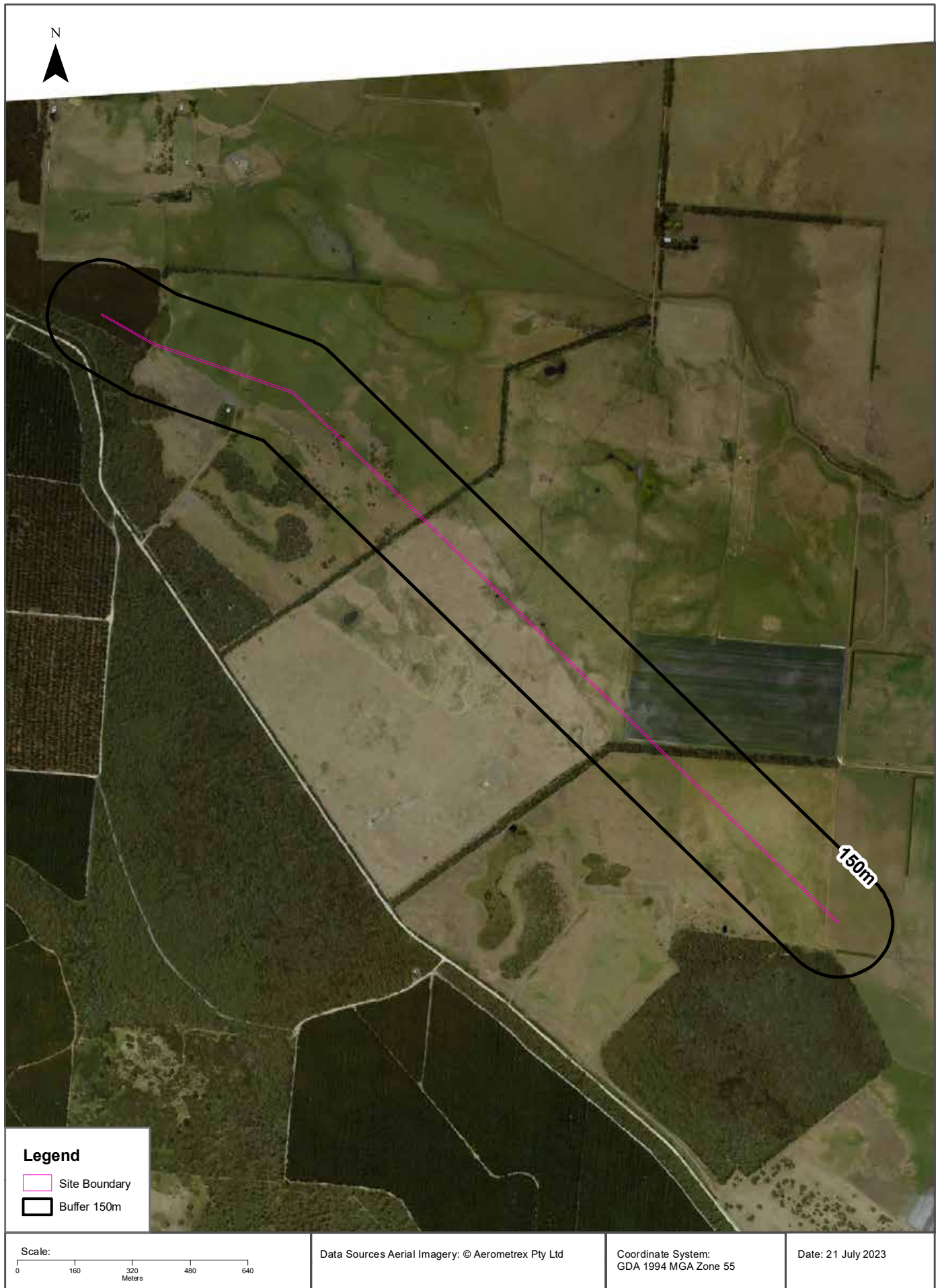
Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



<p>Scale:</p>	<p>Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.</p>	<p>Coordinate System: GDA 1994 MGA Zone 55</p>	<p>Date: 20 July, 2023</p>
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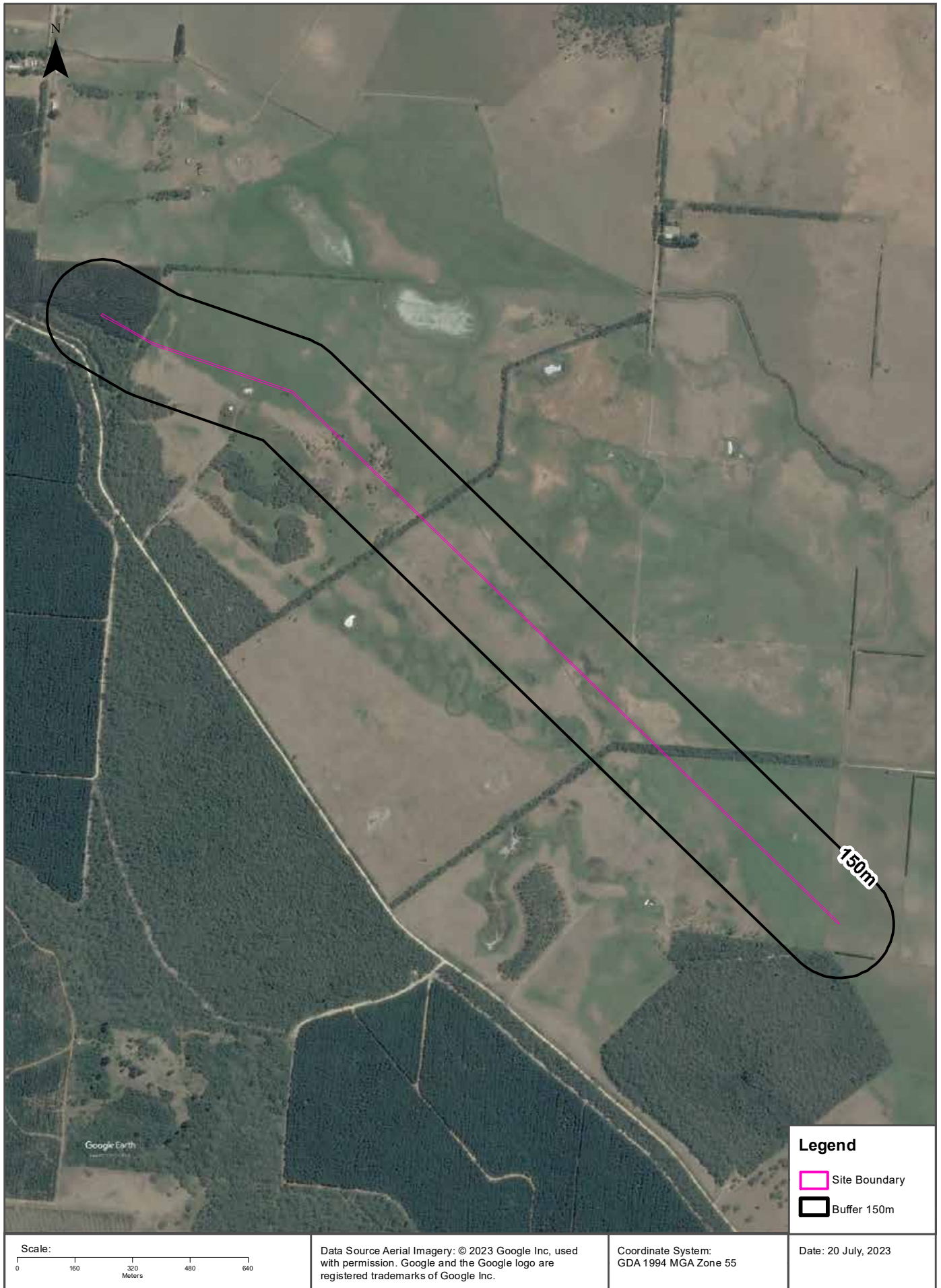
Aerial Imagery 2018

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



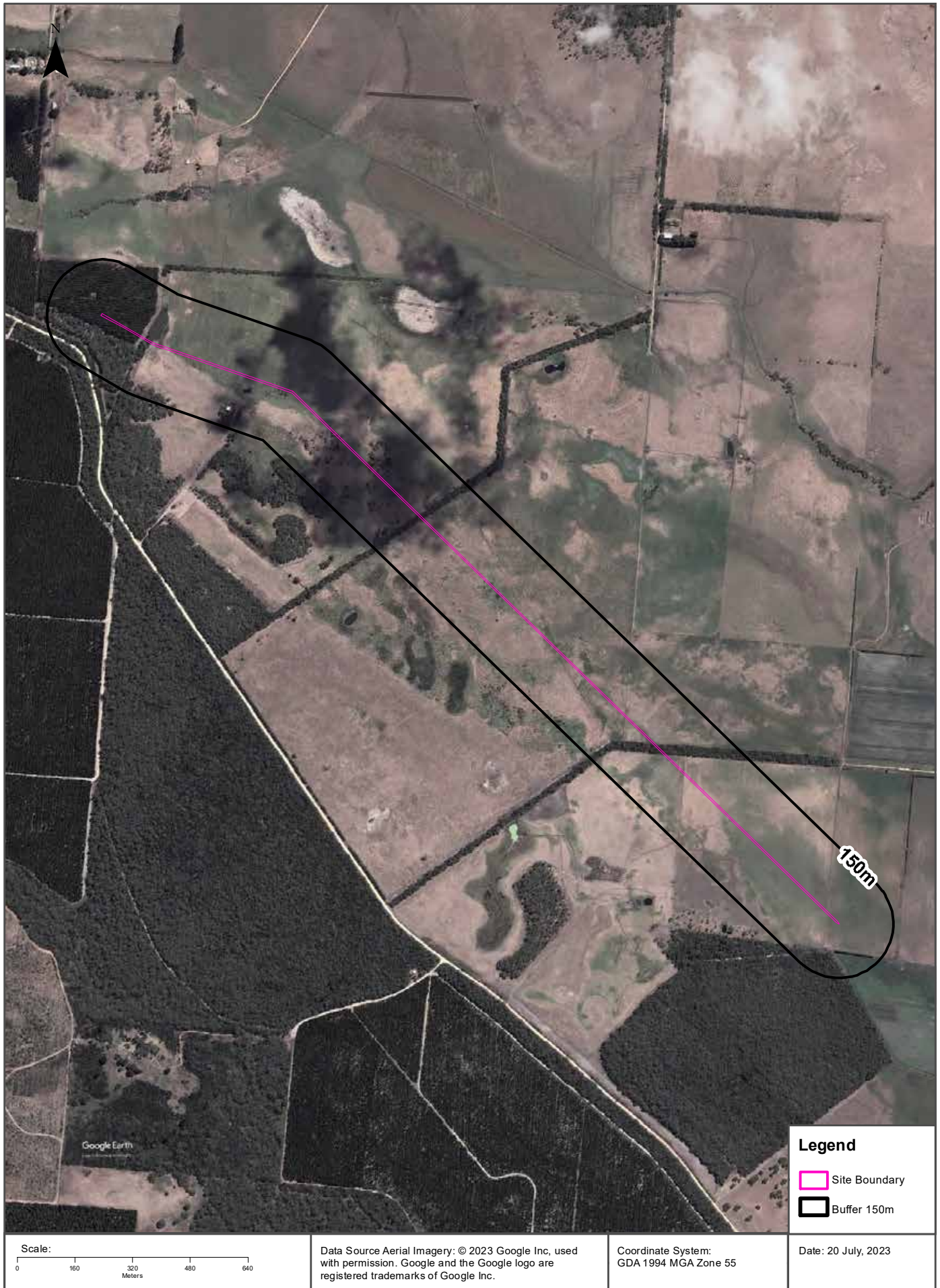
Aerial Imagery 2014

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



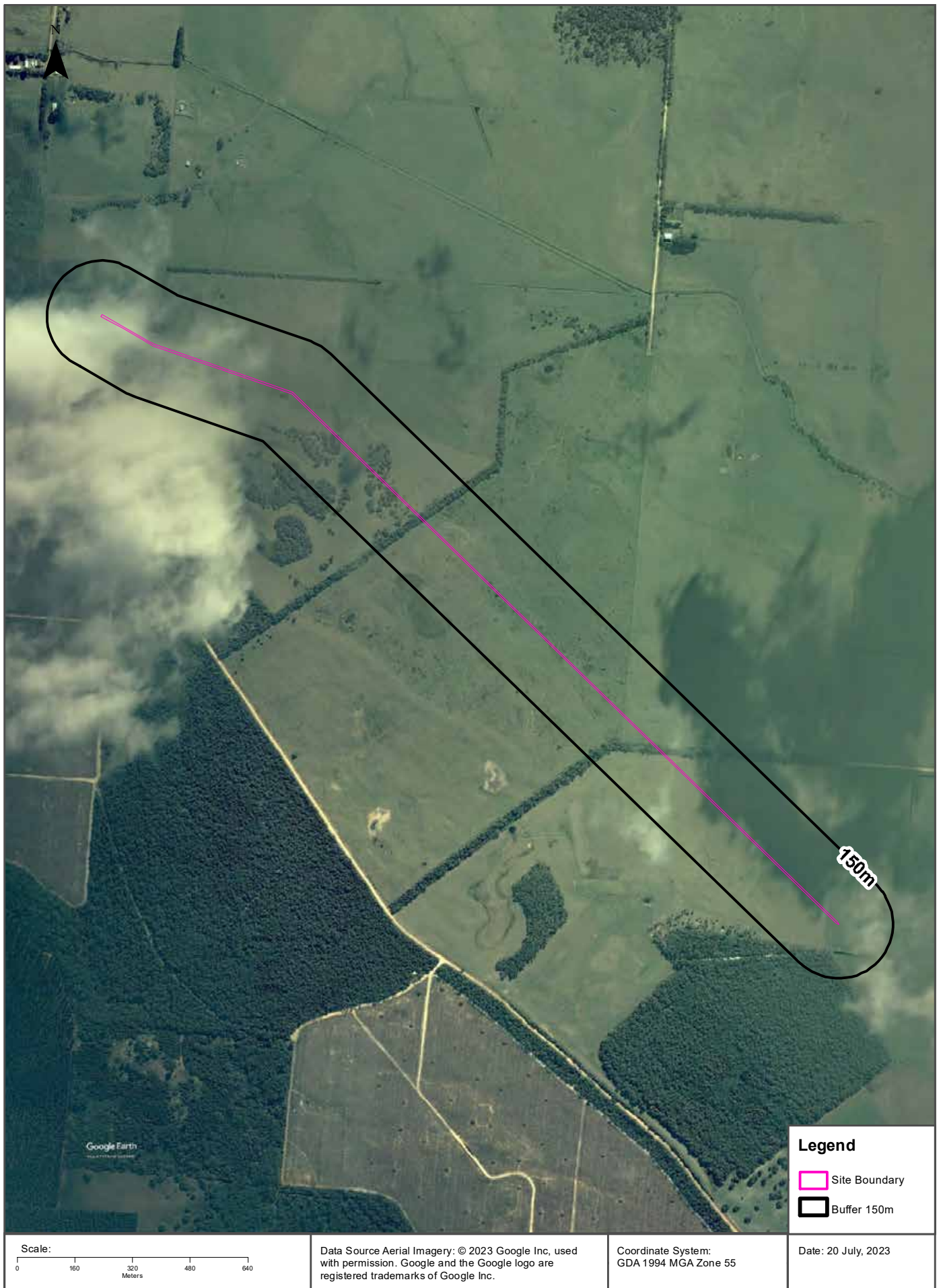
Aerial Imagery 2012

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



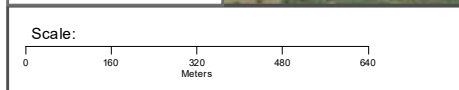
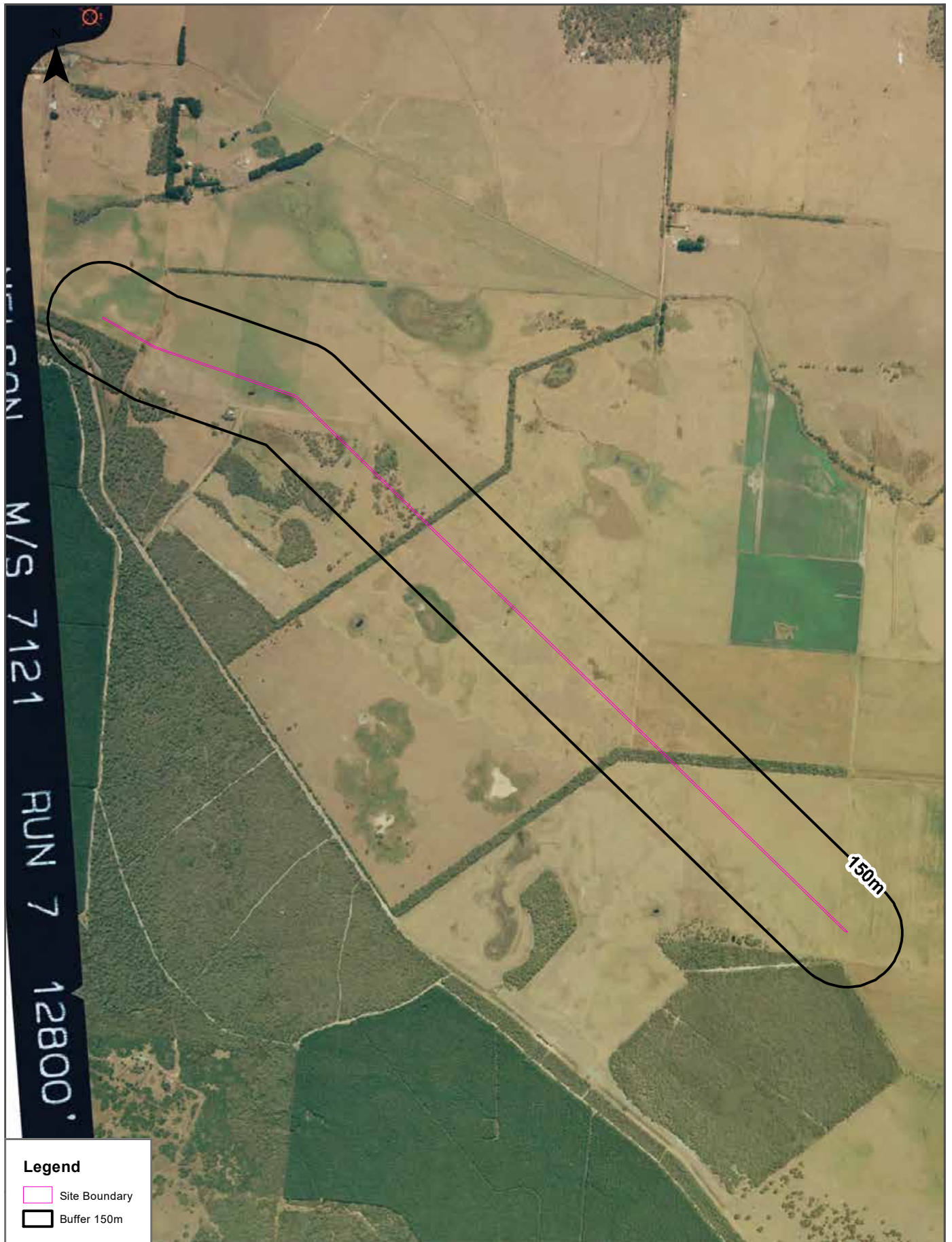
Aerial Imagery 2006

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



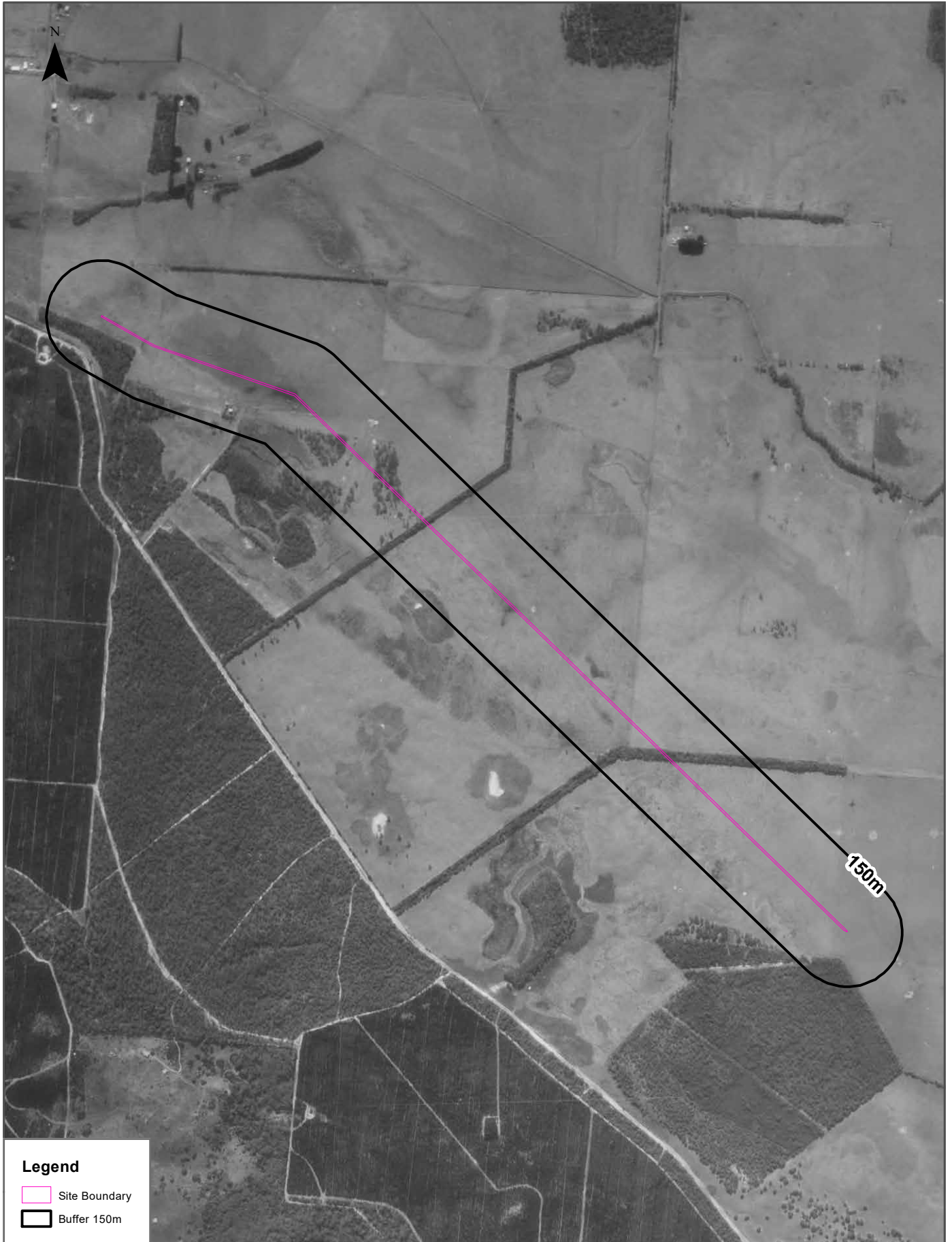
Data Source Aerial Imagery:
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(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55



Date: 20 July, 2023

Aerial Imagery 1981

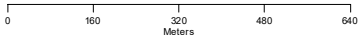
Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m

Scale:



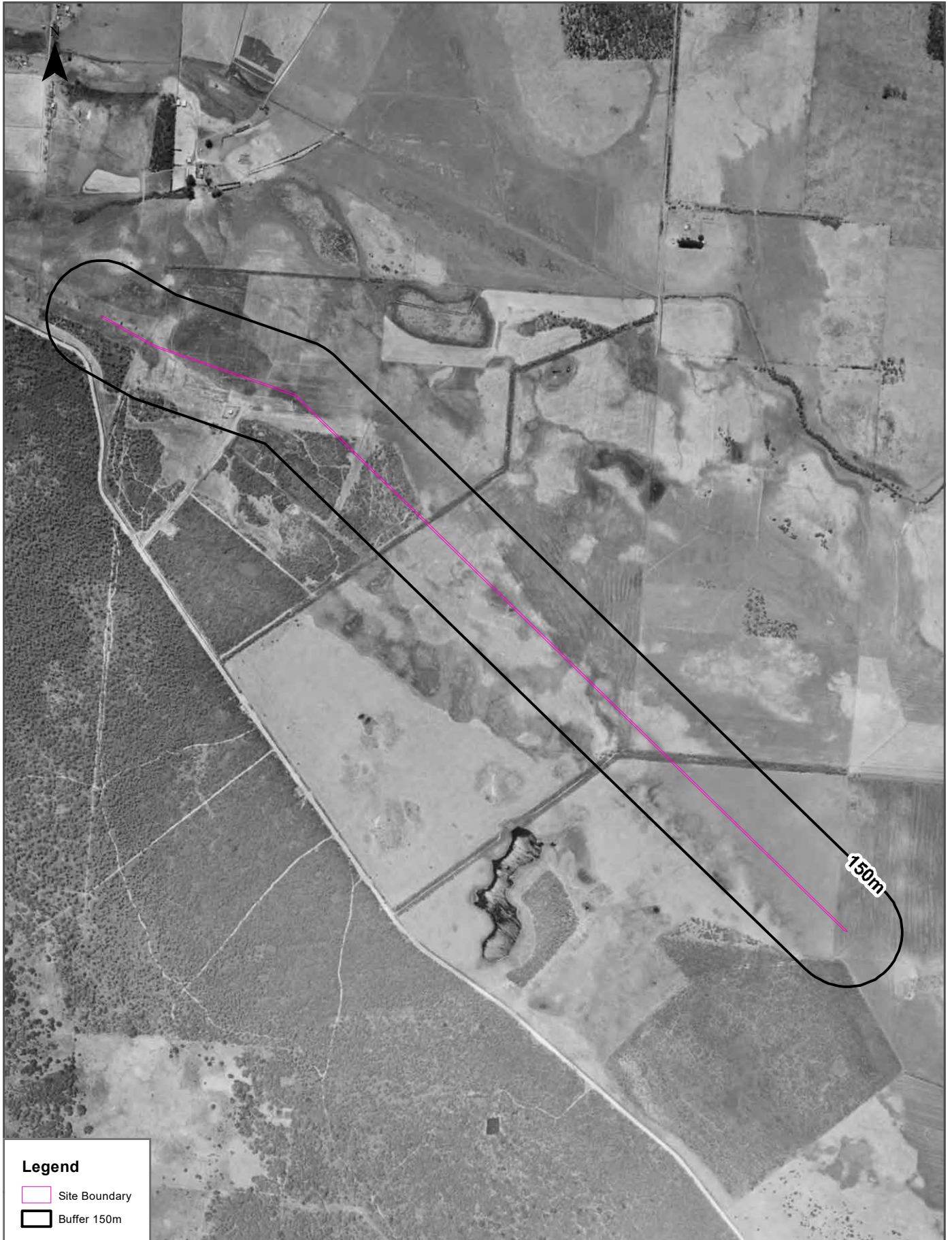
Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System:
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Date: 20 July, 2023

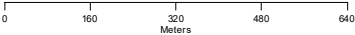
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m

Scale: 

0 160 320 480 640
Meters

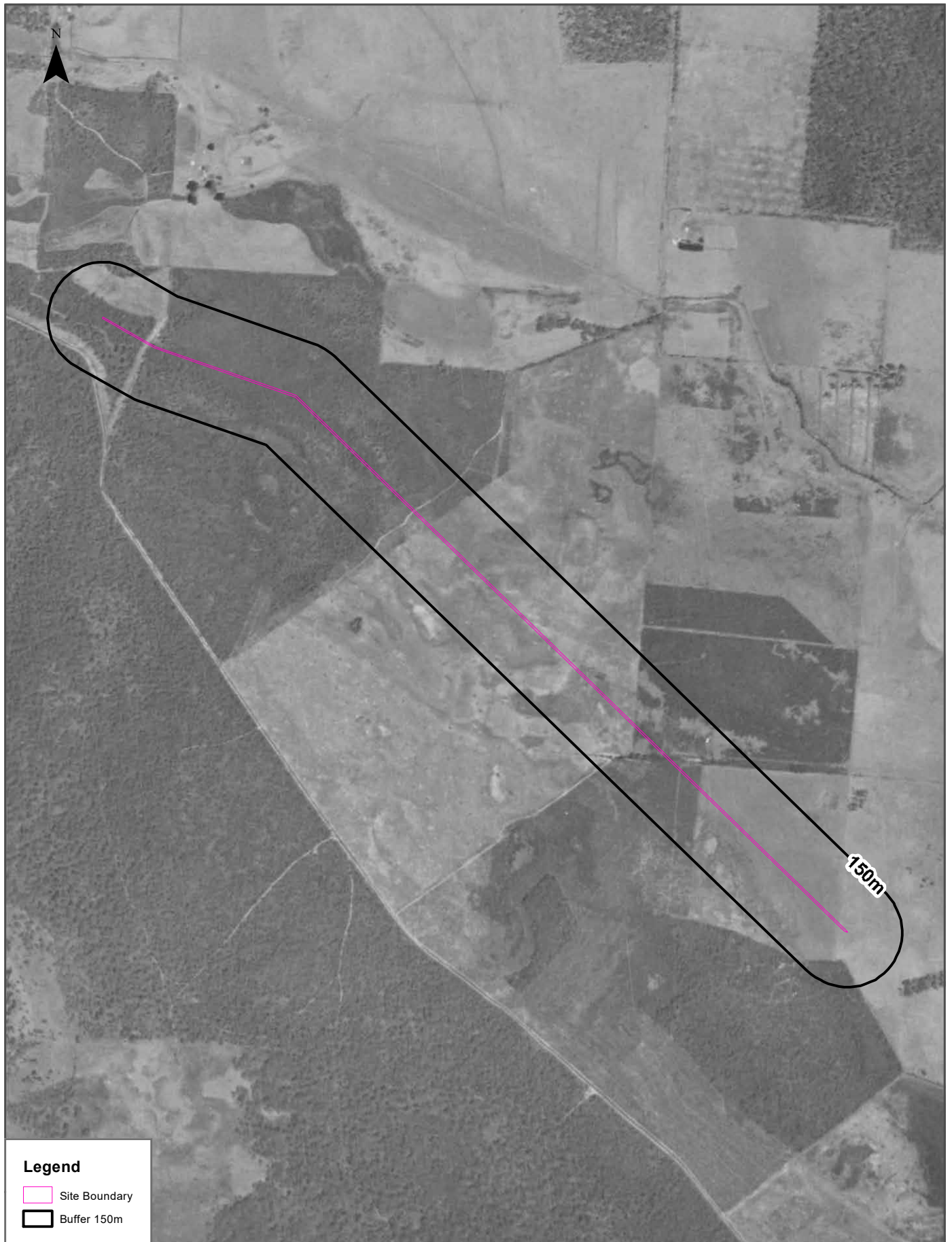
Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July, 2023

Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



Legend

- Site Boundary
- Buffer 150m

Scale: 0 160 320 480 640 Meters

Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System: GDA 1994 MGA Zone 55

Date: 20 July, 2023

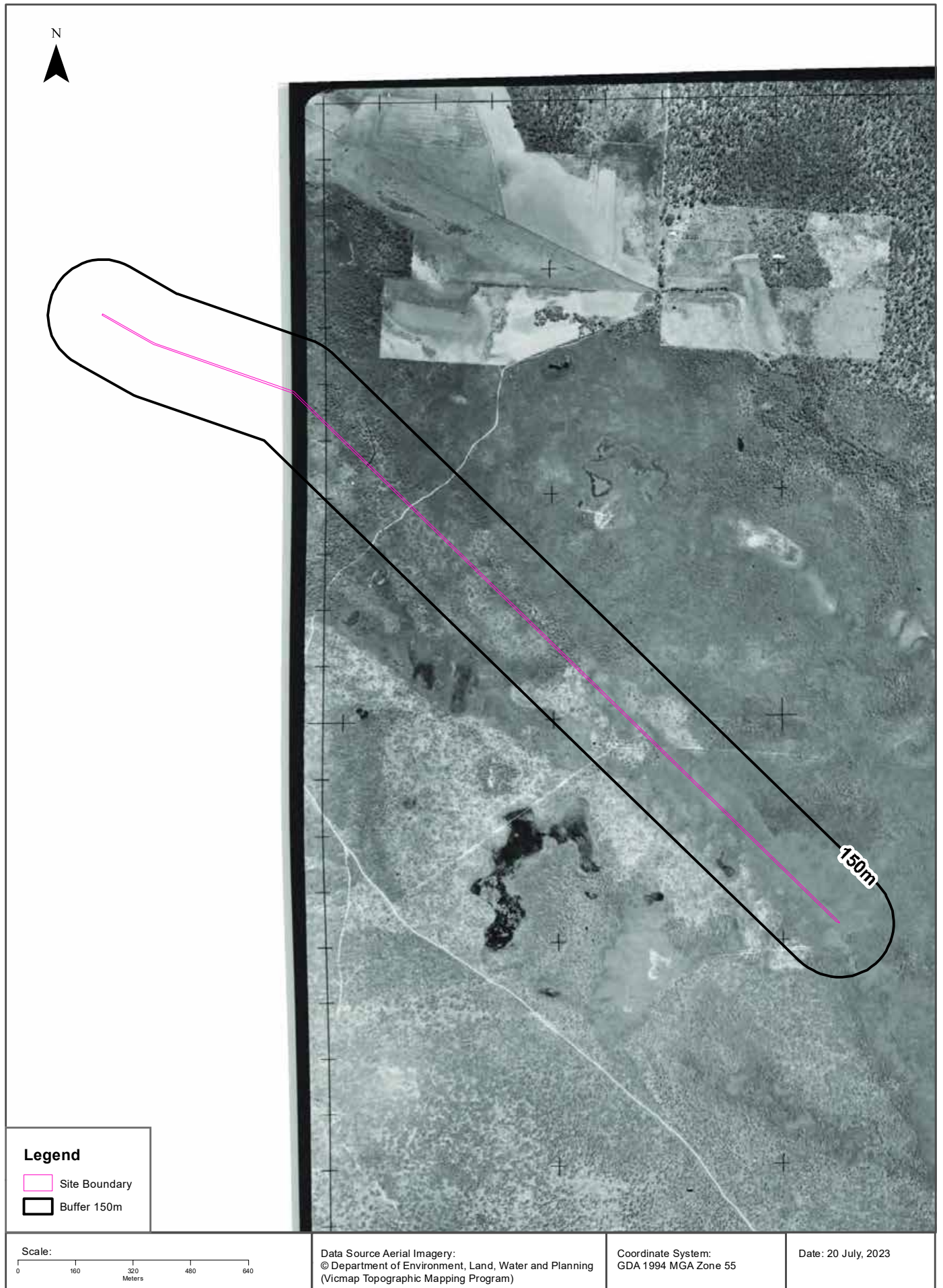
Aerial Imagery 1947

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



Aerial Imagery 1947

Kentbruck Option 2a/B Alignment (Part 3 of 9), Nelson, VIC 3292



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 - (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
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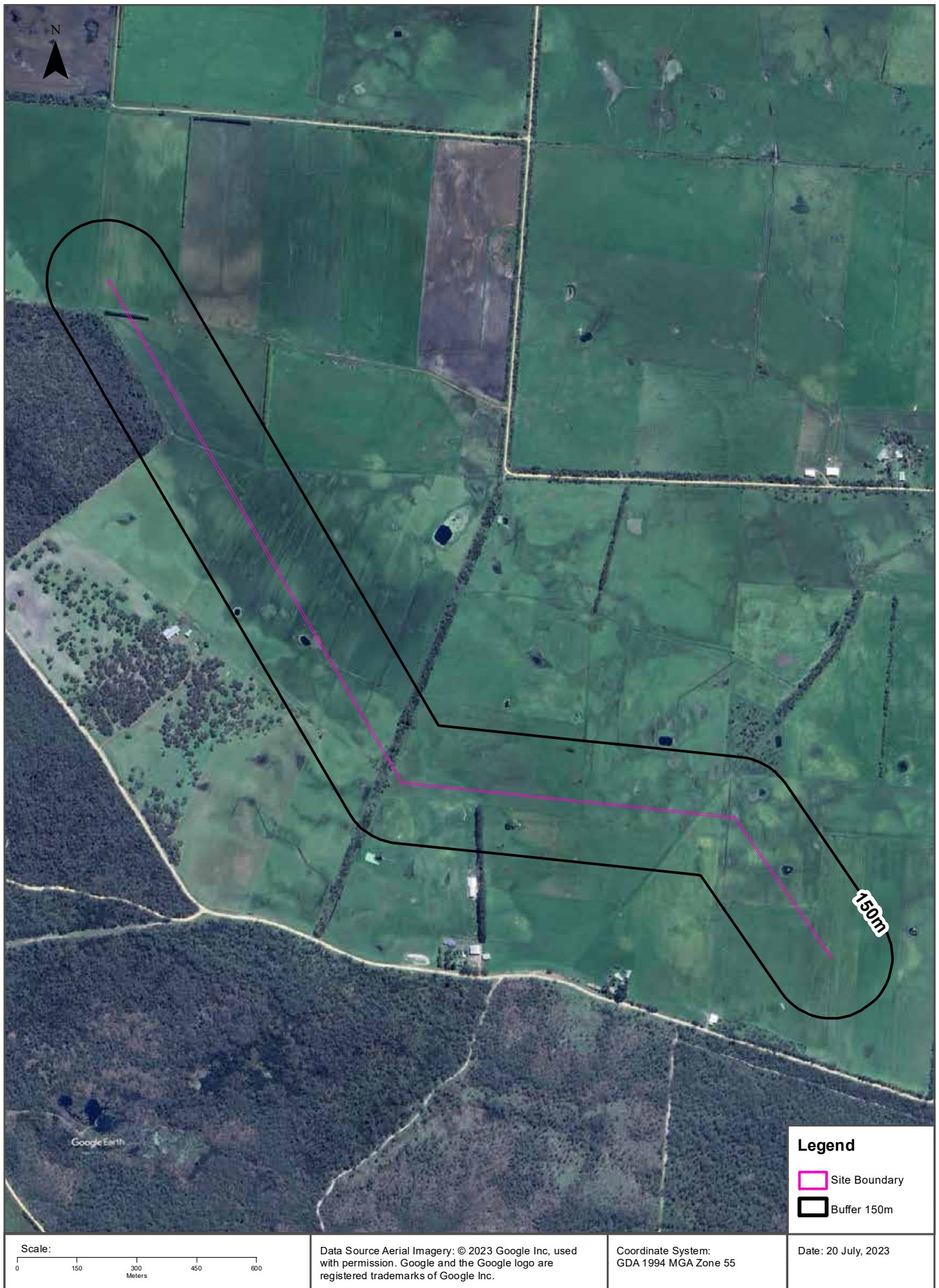
Date: 21 Jul 2023

Reference: LS046035 EA

Address: Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292

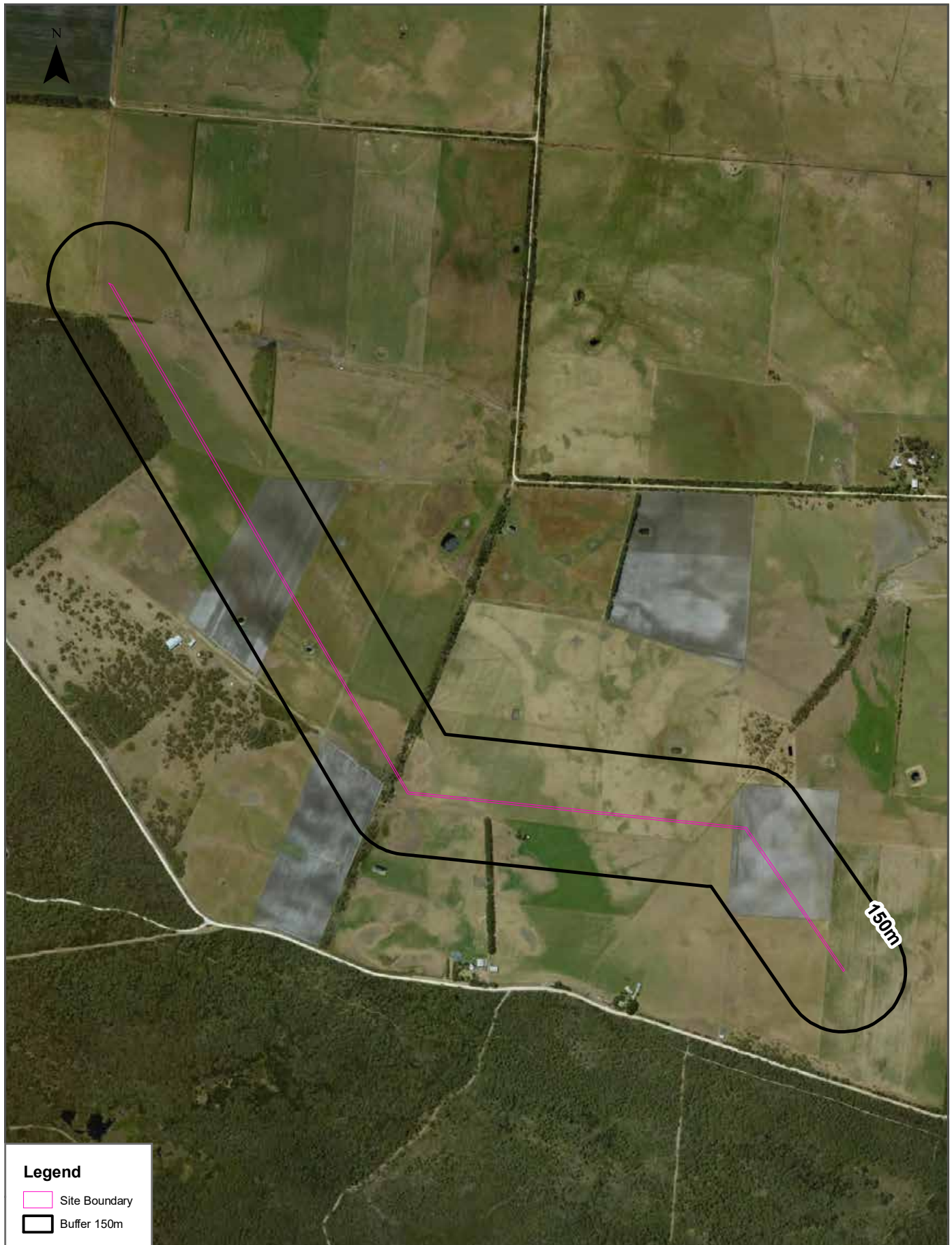
Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292





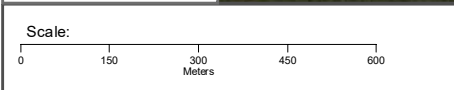
Aerial Imagery 2018

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m



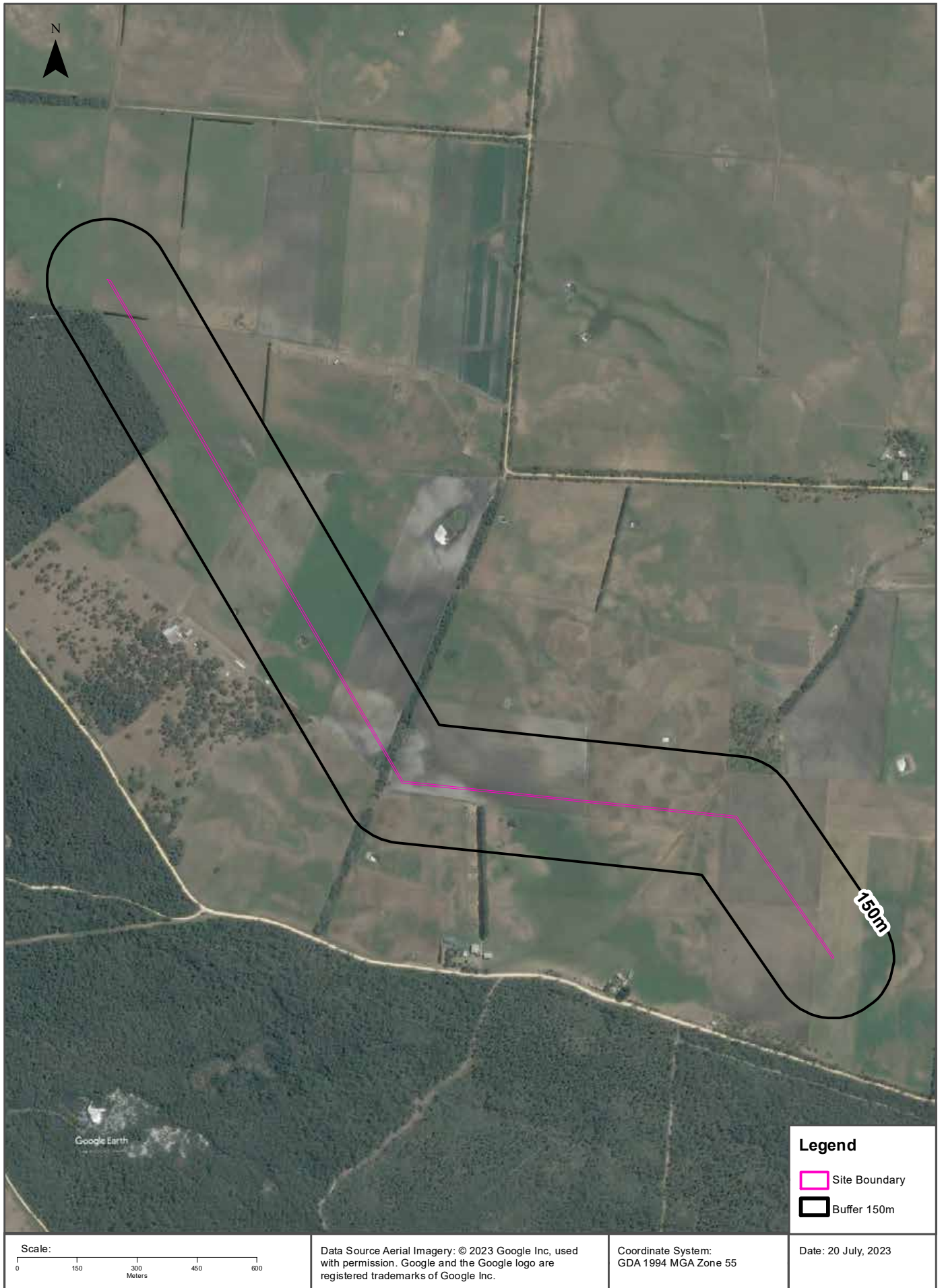
Data Sources Aerial Imagery: © Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

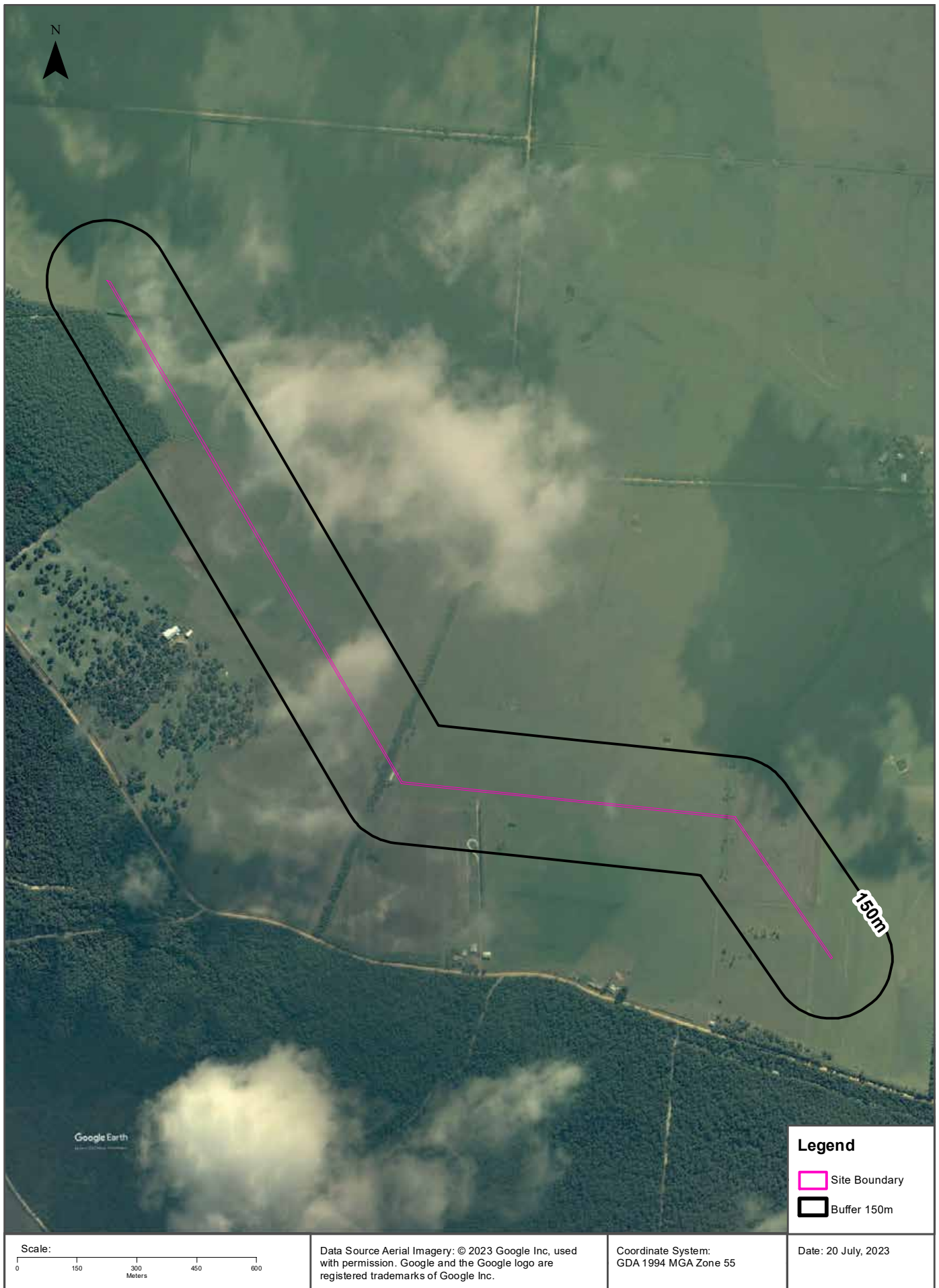
Aerial Imagery 2014

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



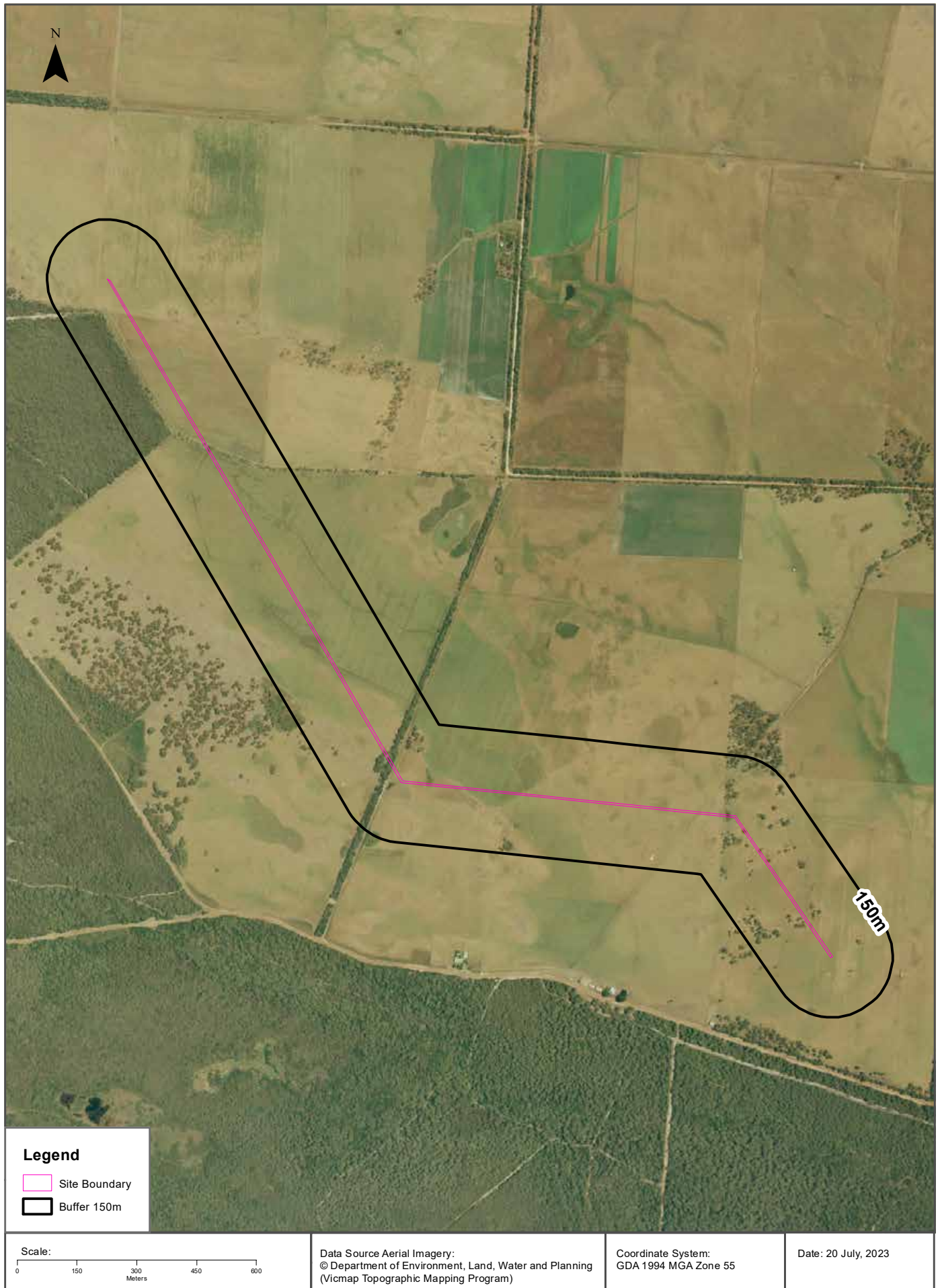
Aerial Imagery 2006

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



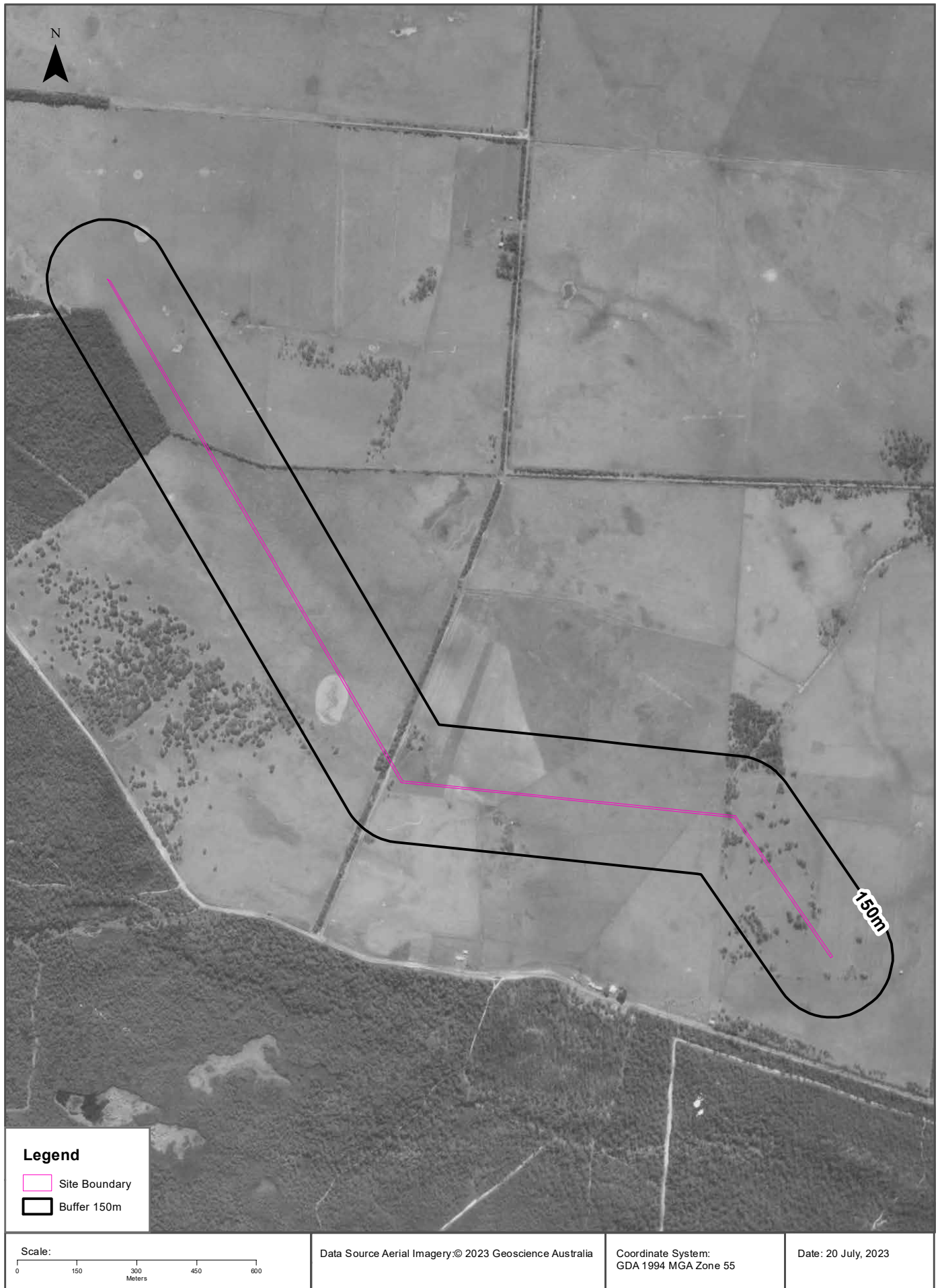
Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



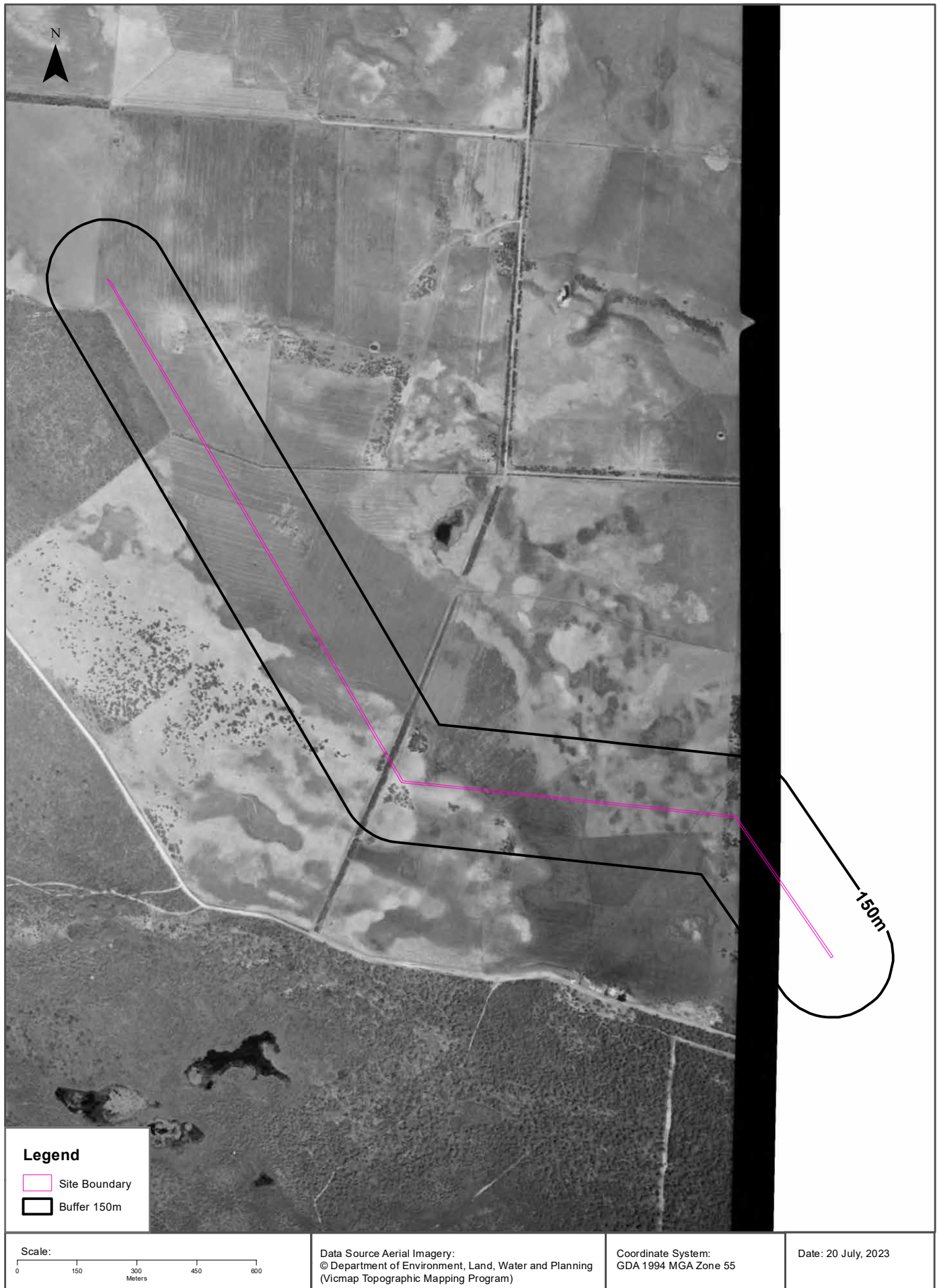
Aerial Imagery 1981

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



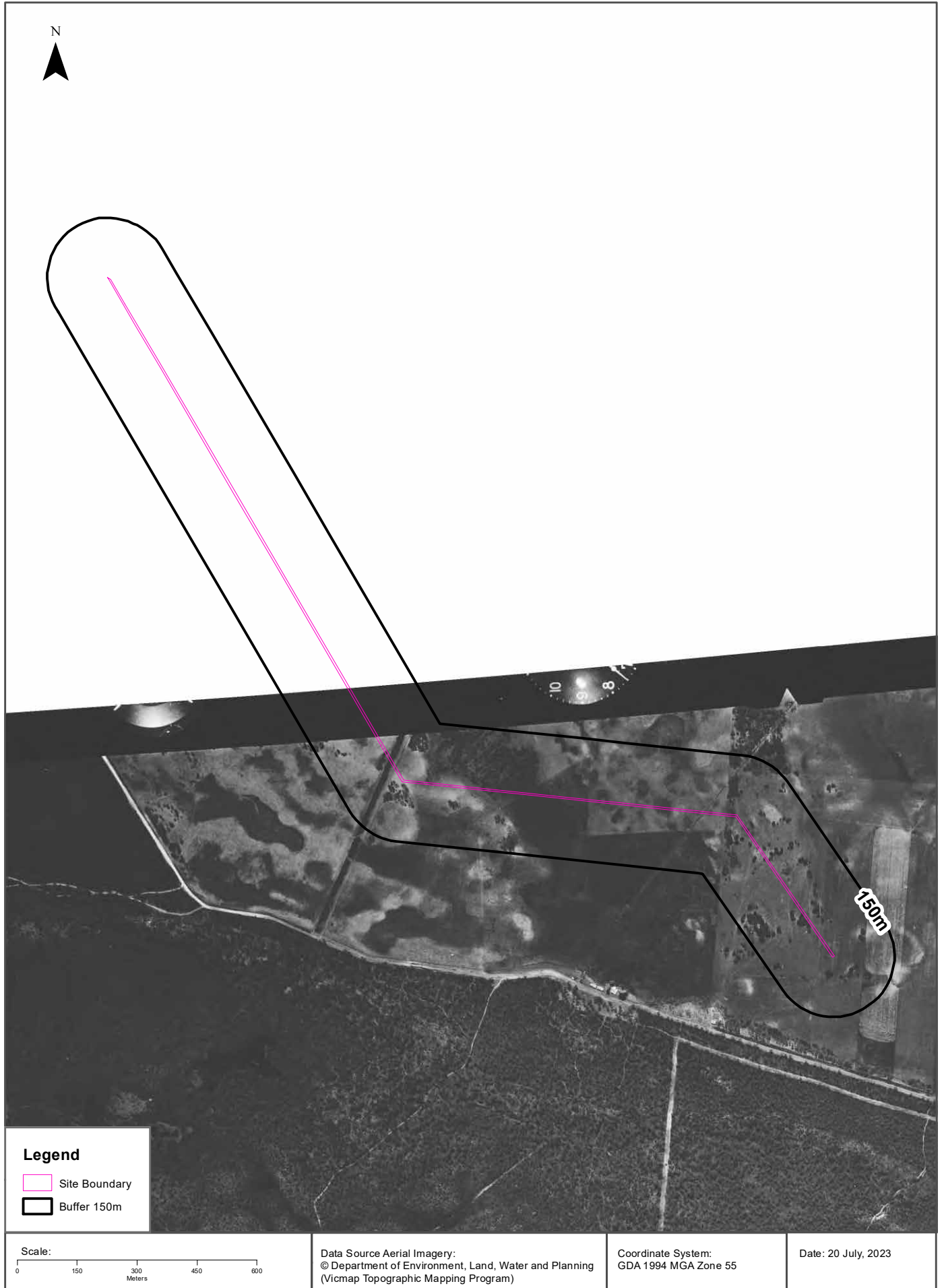
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



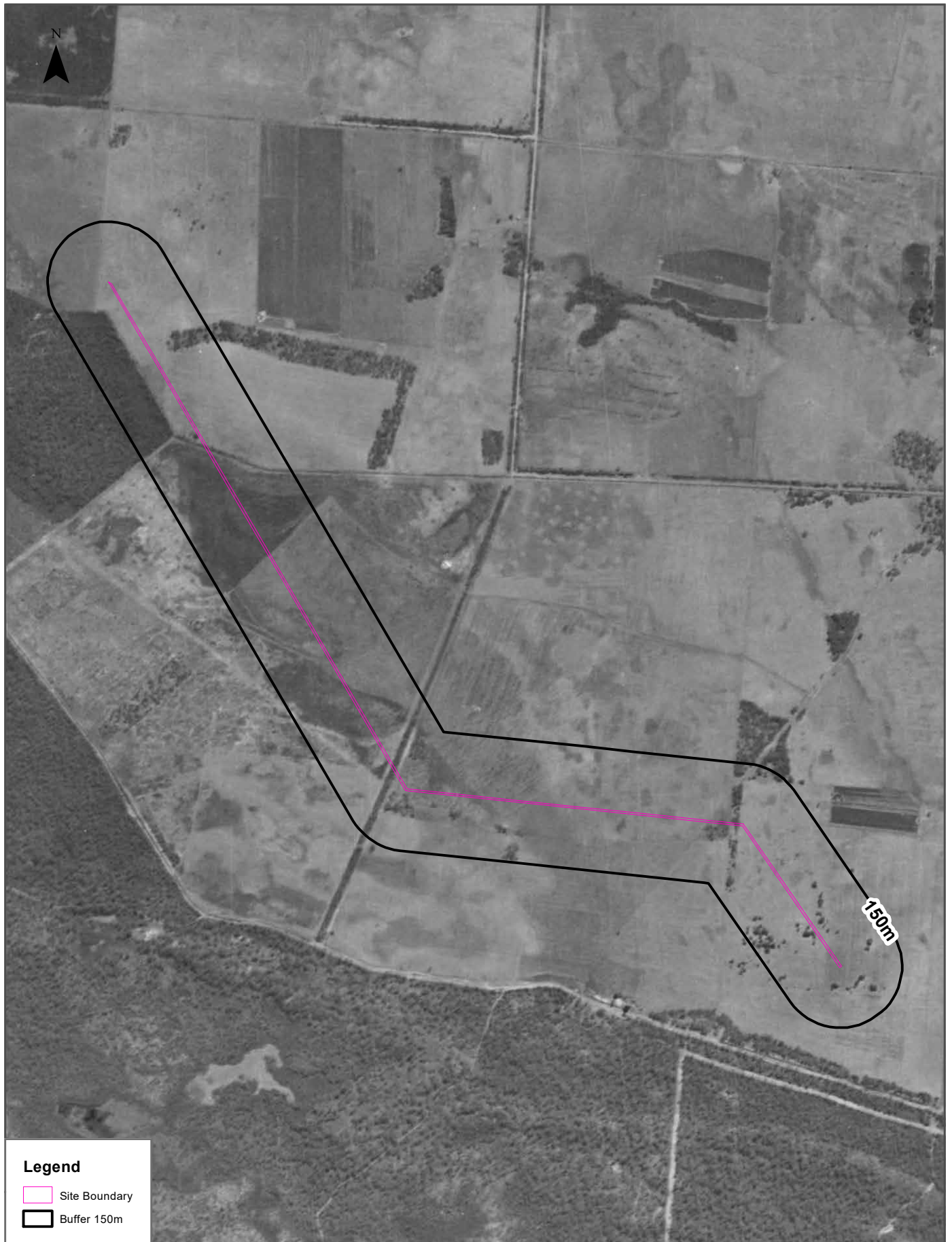
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



Legend

- Site Boundary
- Buffer 150m

Scale:
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Meters

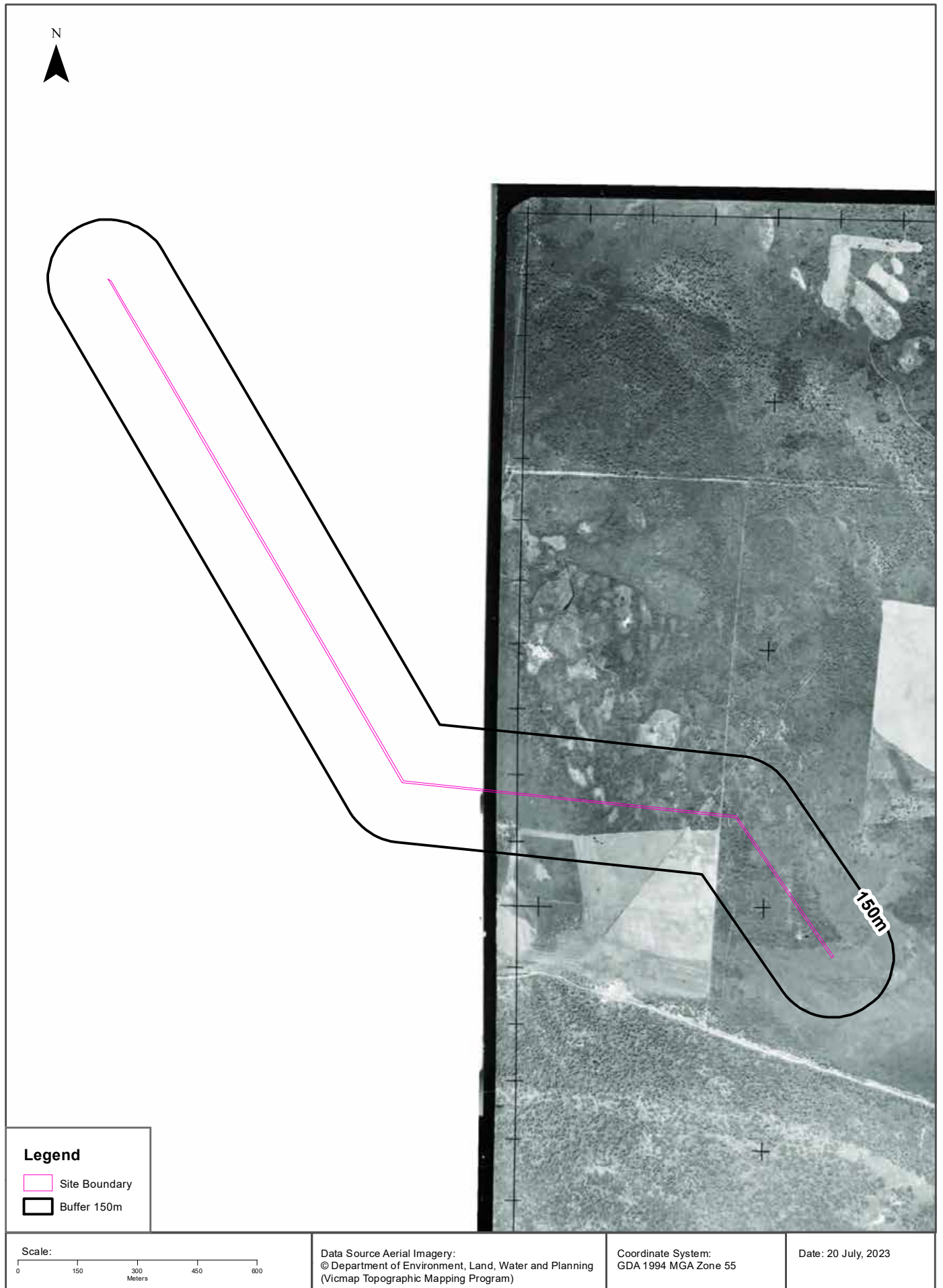
Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July, 2023

Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



Aerial Imagery 1947

Kentbruck Option 2a/B Alignment (Part 4 of 9), Nelson, VIC 3292



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LOTSEARCH AERIALS

Date: 21 Jul 2023

Reference: LS046036EA

Address: Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292

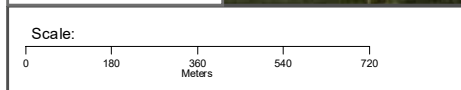
Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



Aerial Imagery 2018

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



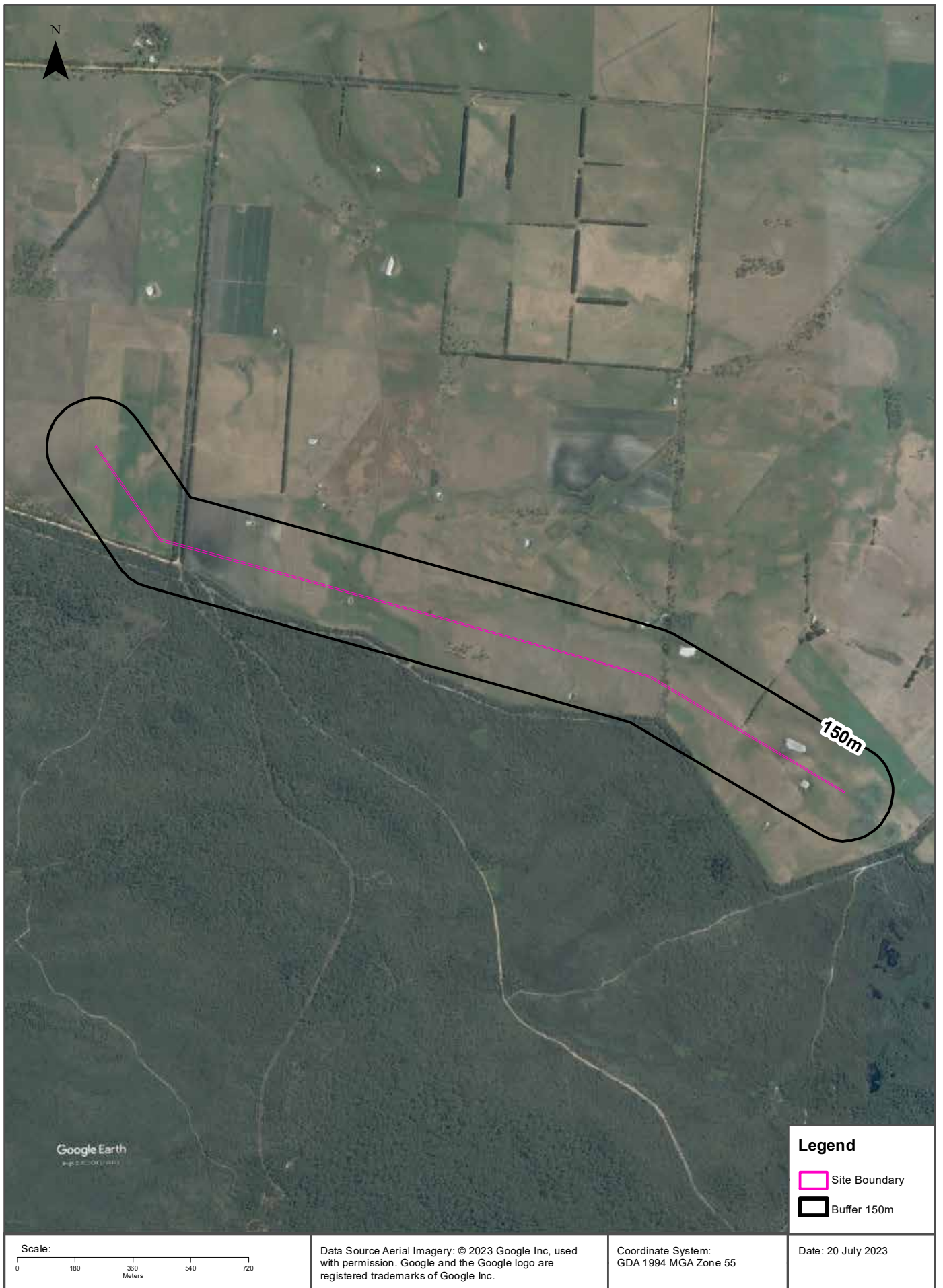
Data Sources Aerial Imagery: © Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

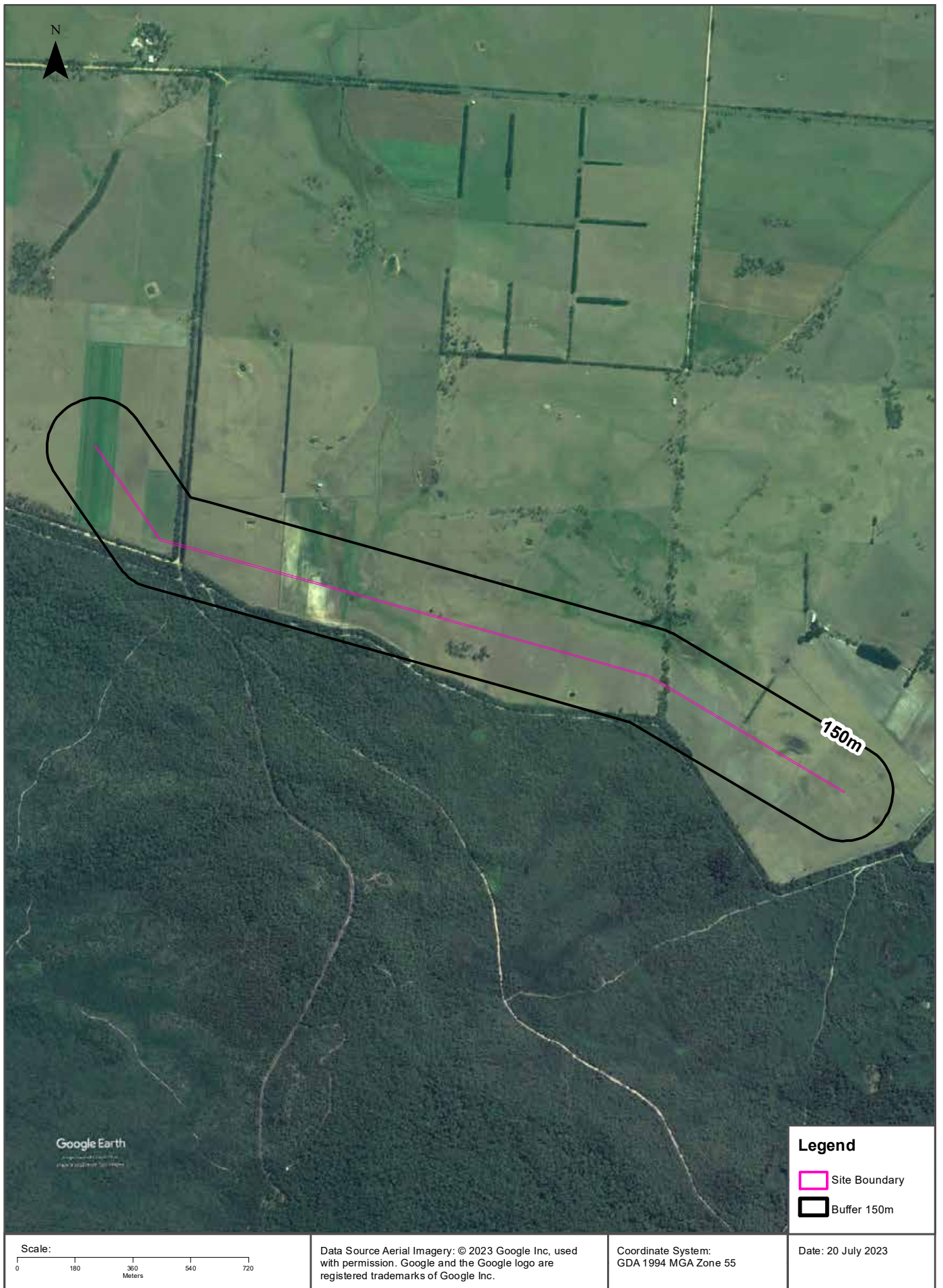
Aerial Imagery 2014

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



Aerial Imagery 2010

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



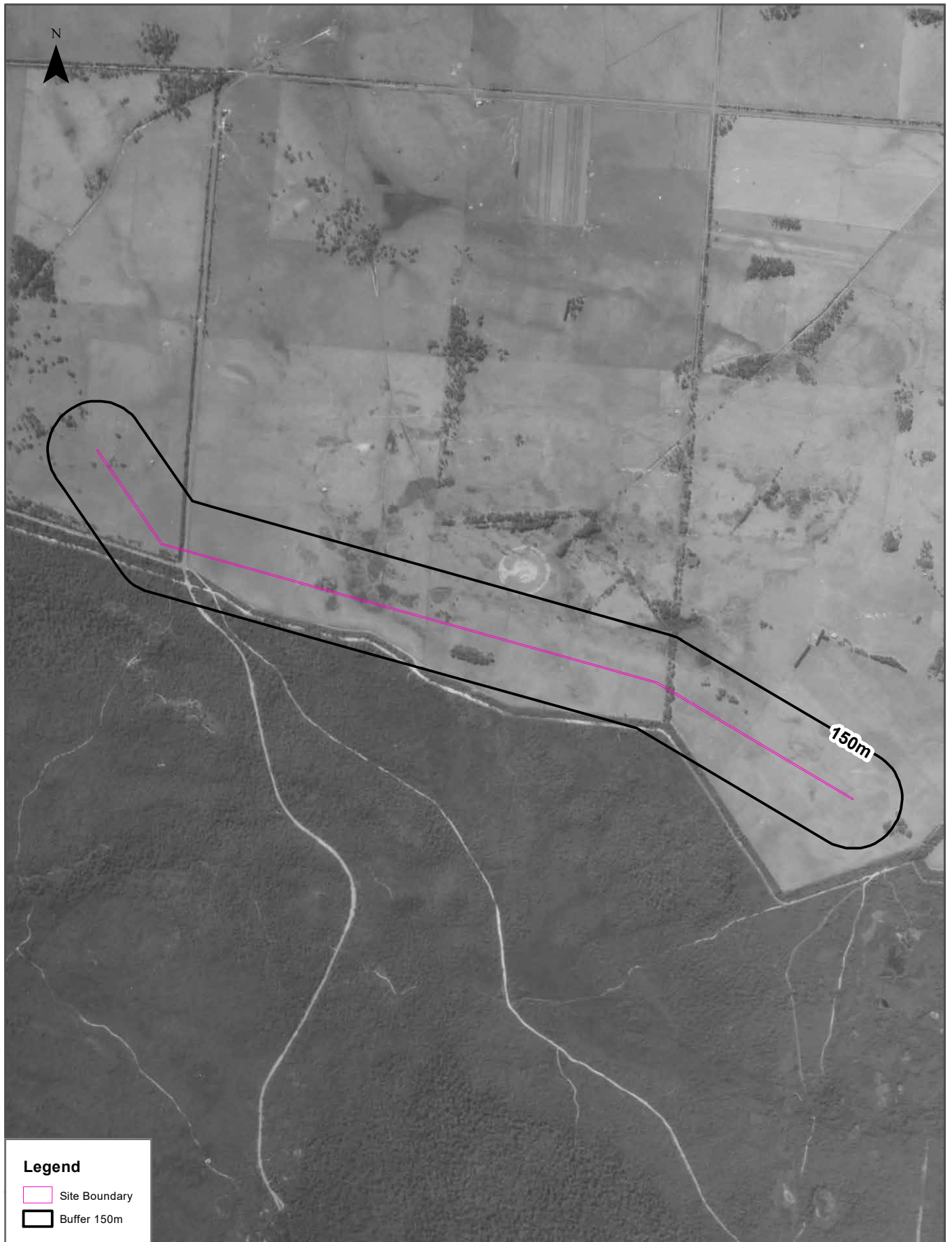
Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292





Aerial Imagery 1981

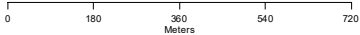
Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



Legend

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-  Buffer 150m

Scale:



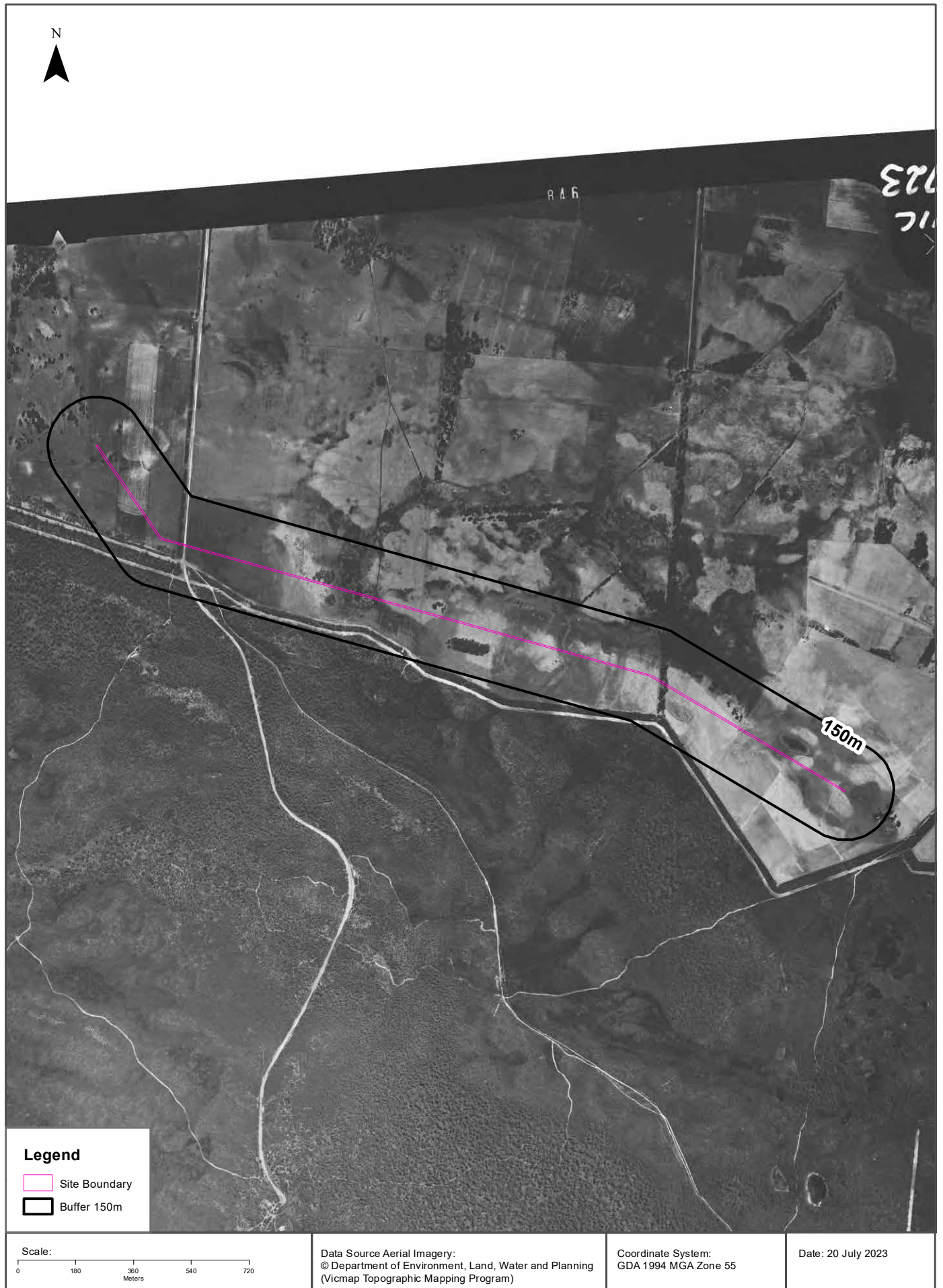
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Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

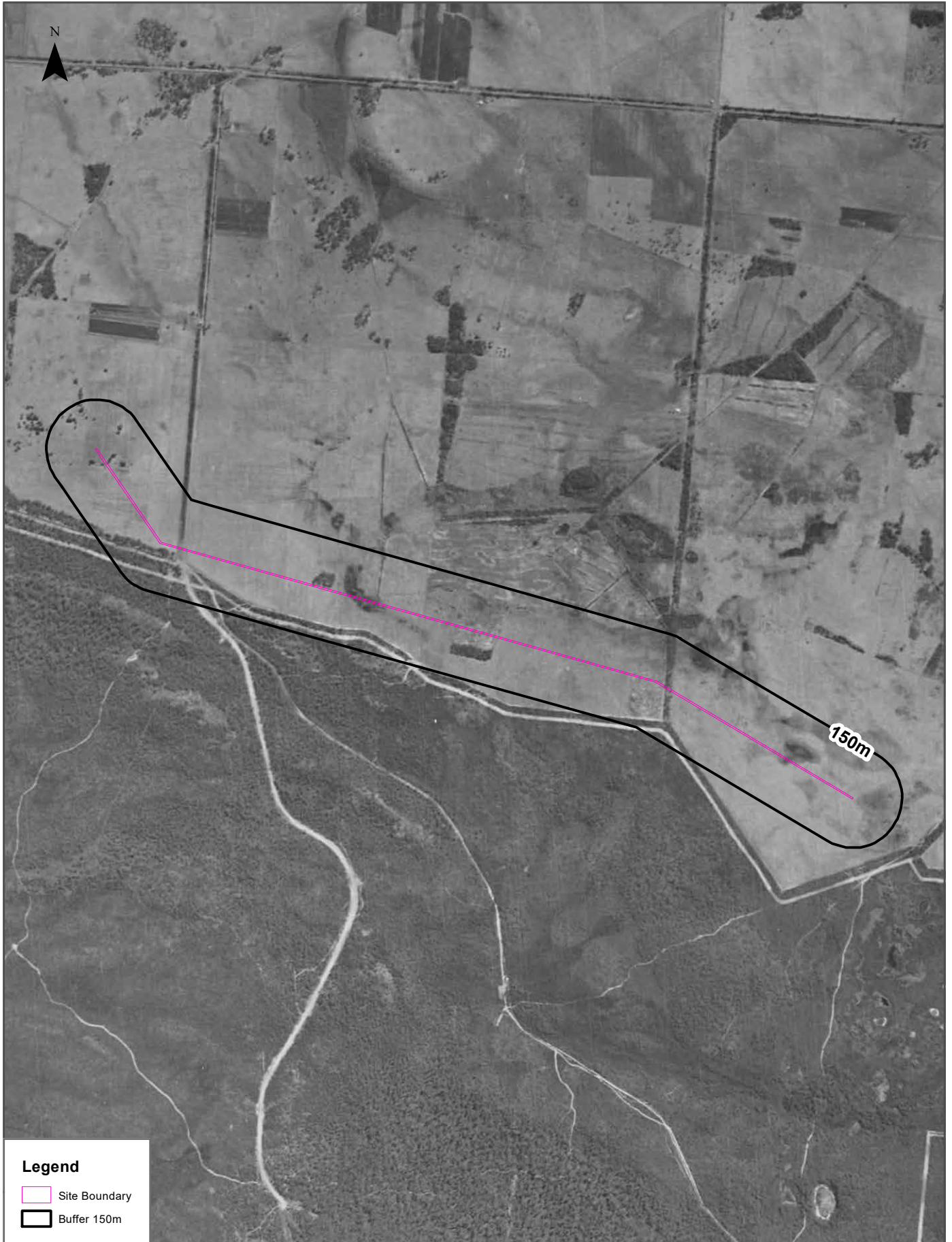
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292





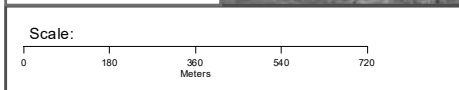
Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m



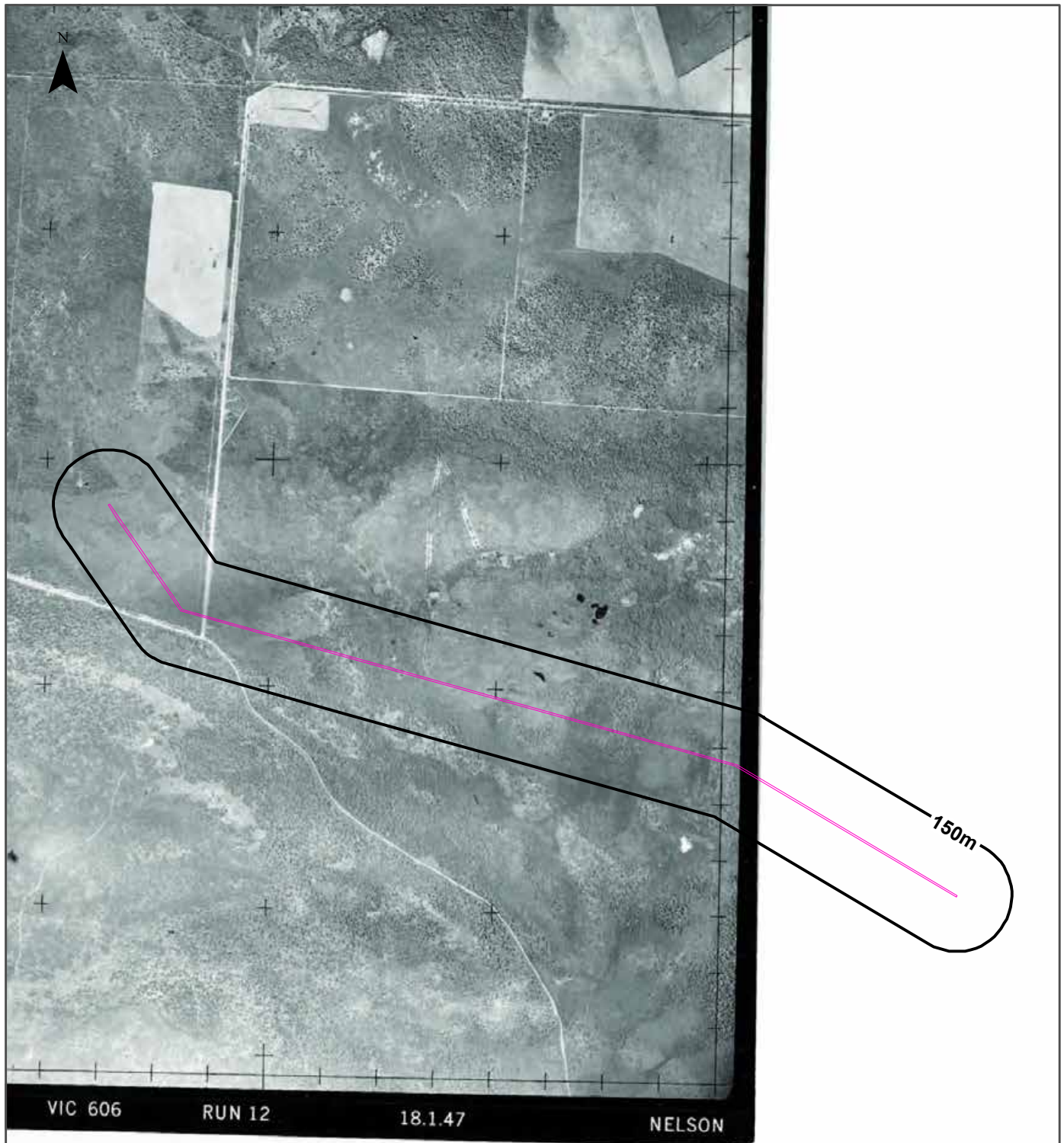
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Coordinate System:
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Date: 20 July 2023

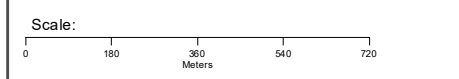
Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m



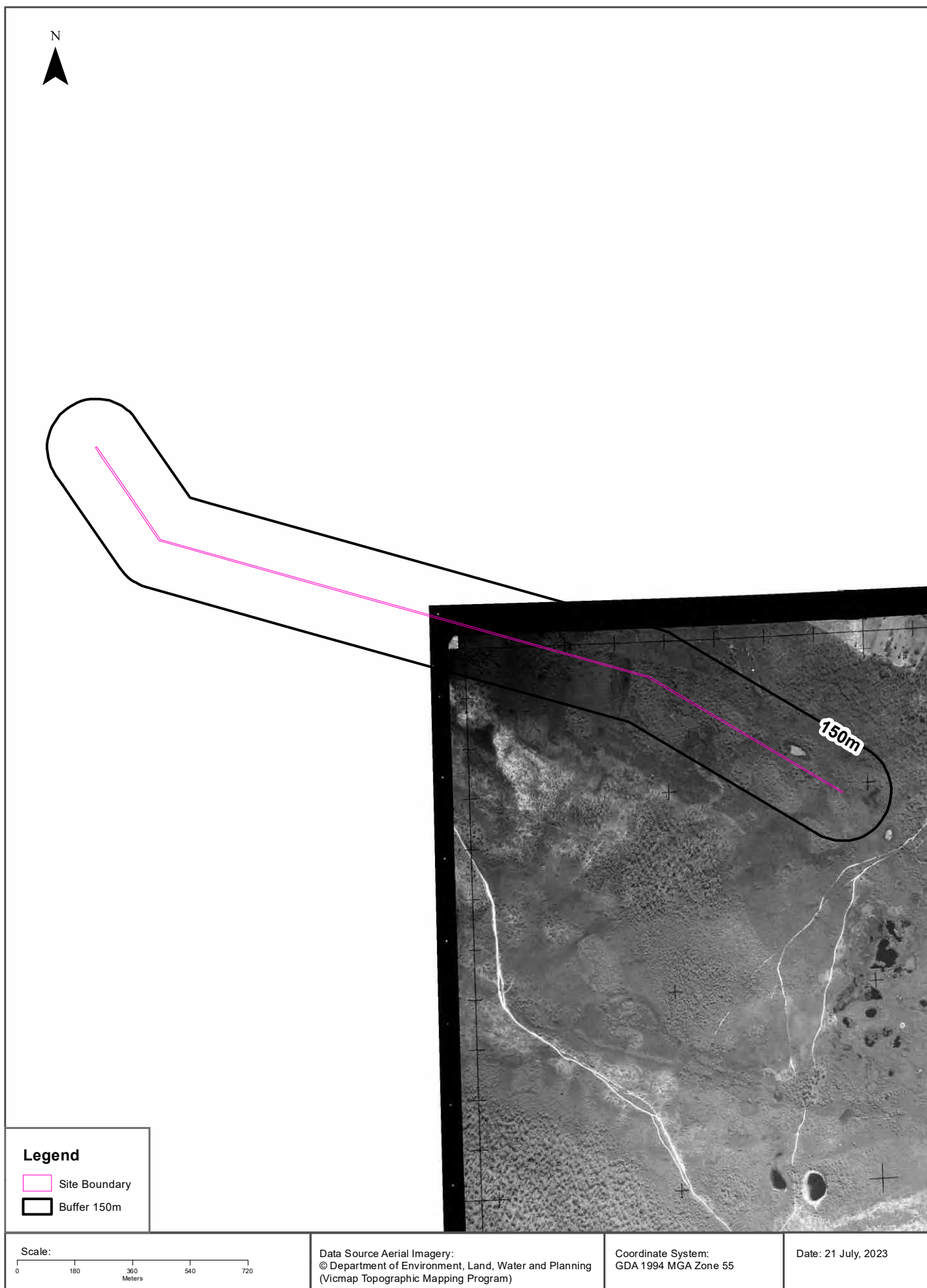
Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 55

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Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 5 of 9), Nelson, VIC 3292



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LOTSEARCH
LOTSEARCH AERIALS

Date: 21 Jul 2023

Reference: LS046037 EA

Address: Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292

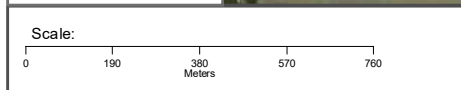
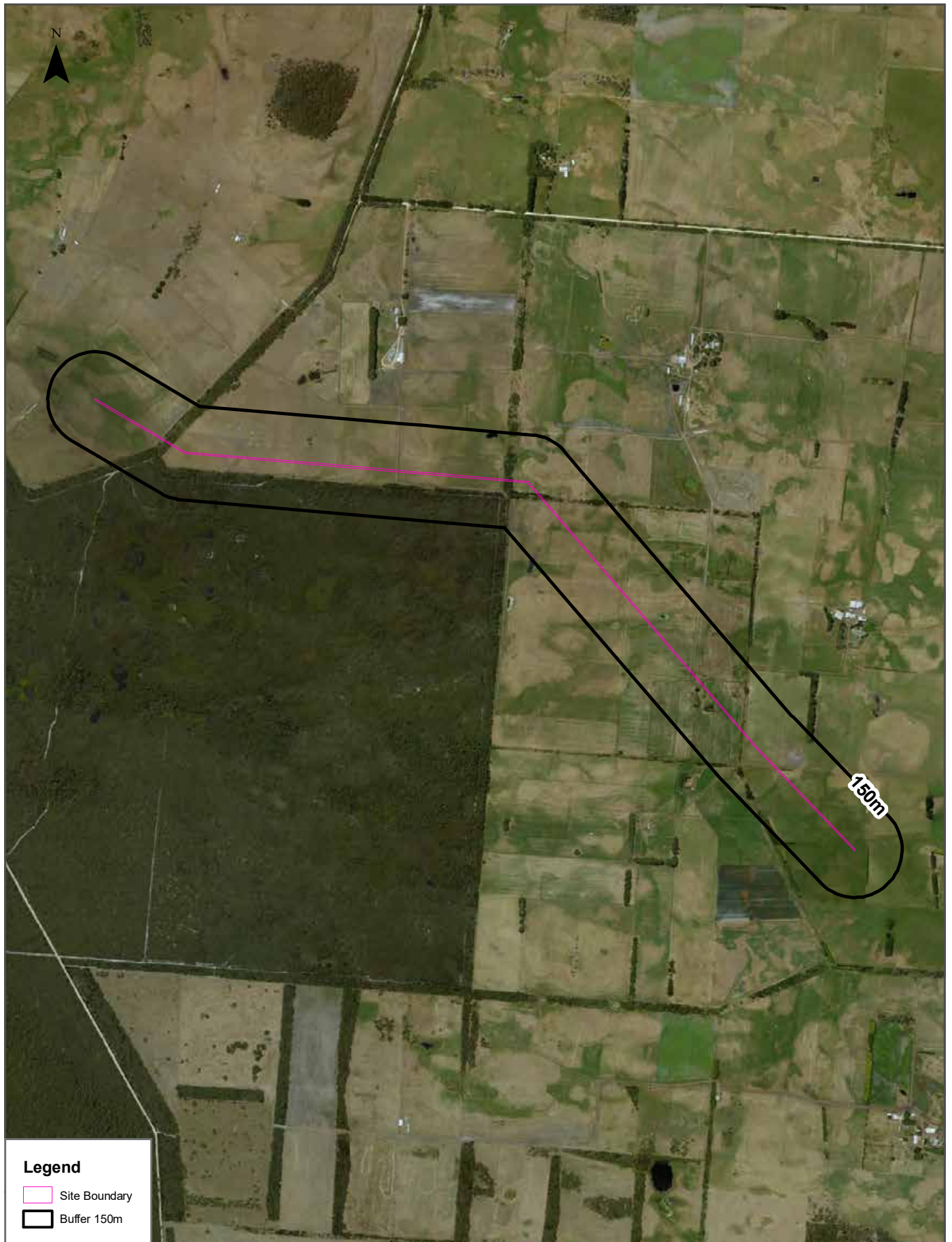
Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Aerial Imagery 2018

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



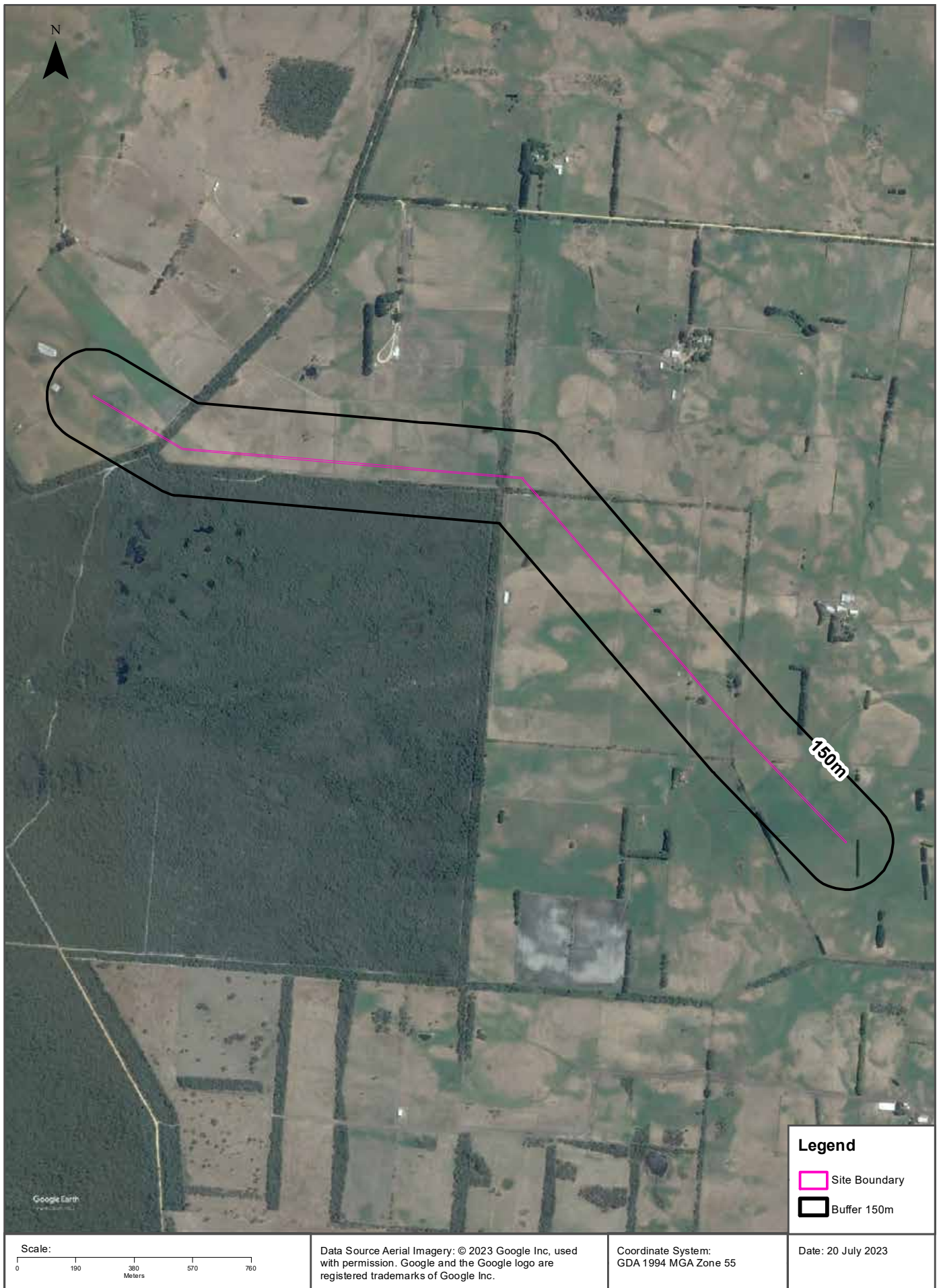
Data Sources Aerial Imagery: © Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

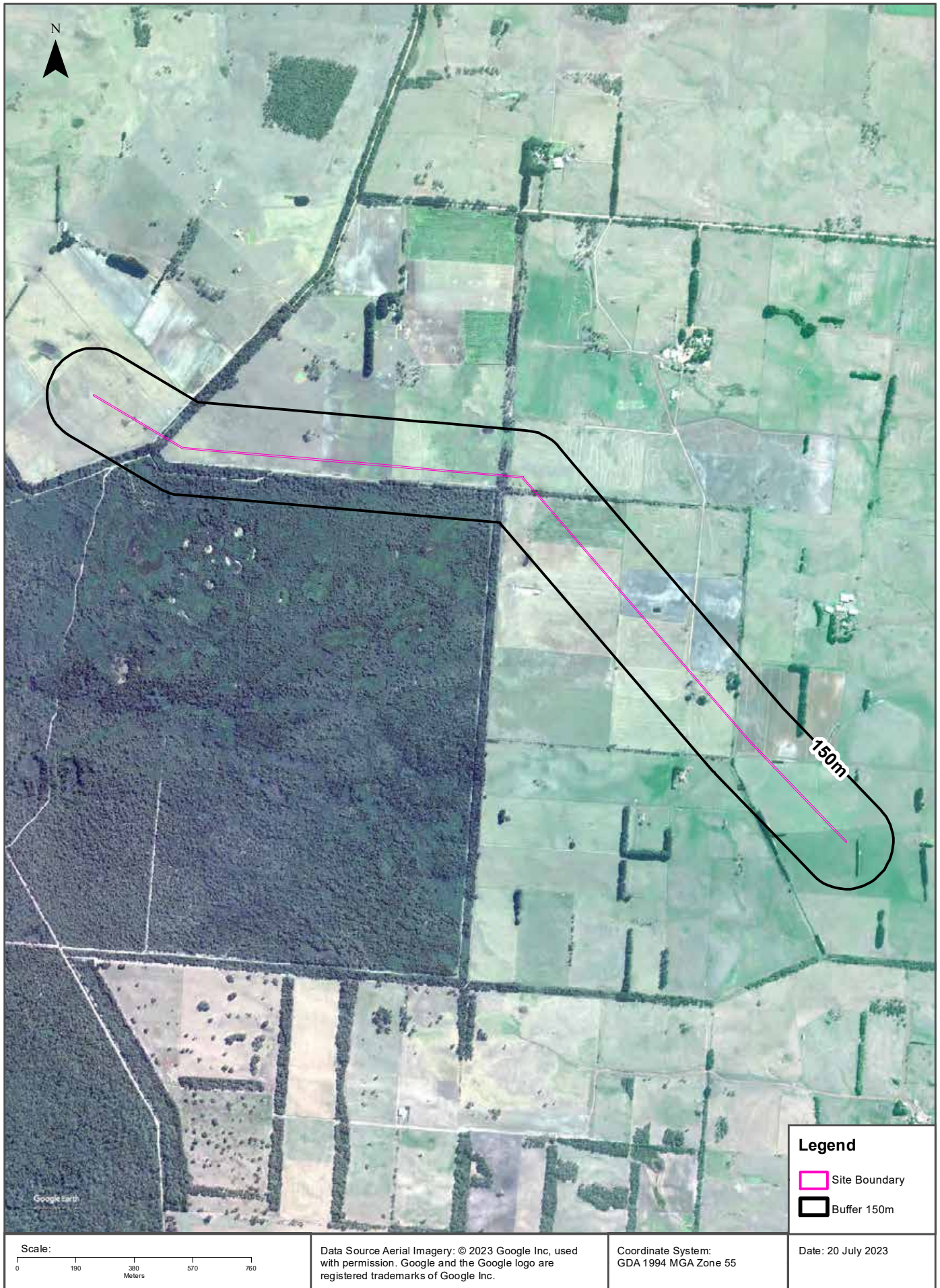
Aerial Imagery 2014

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Aerial Imagery 2010

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Scale:
0 190 380 570 760
Meters

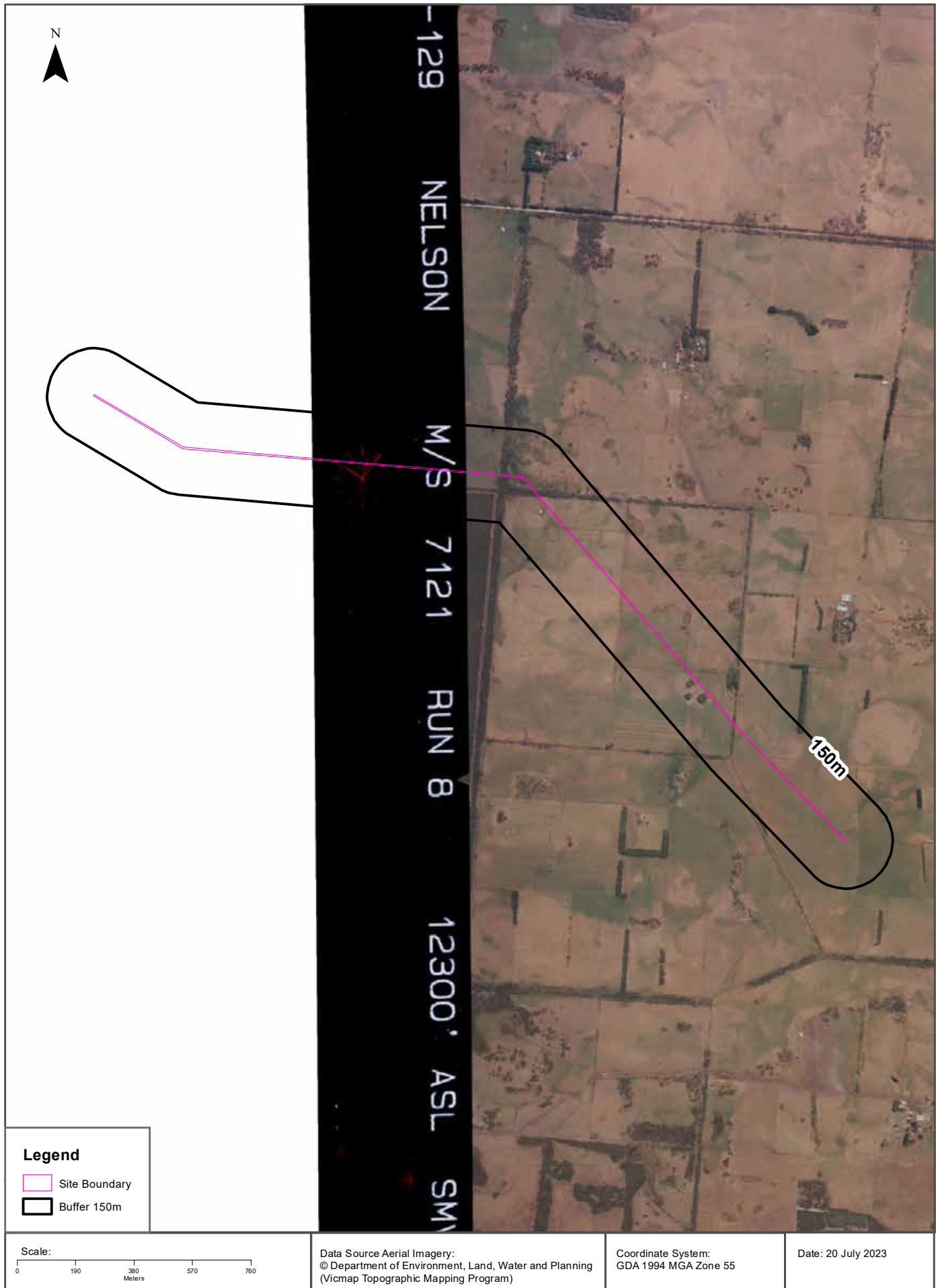
Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

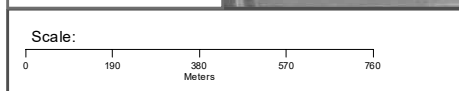
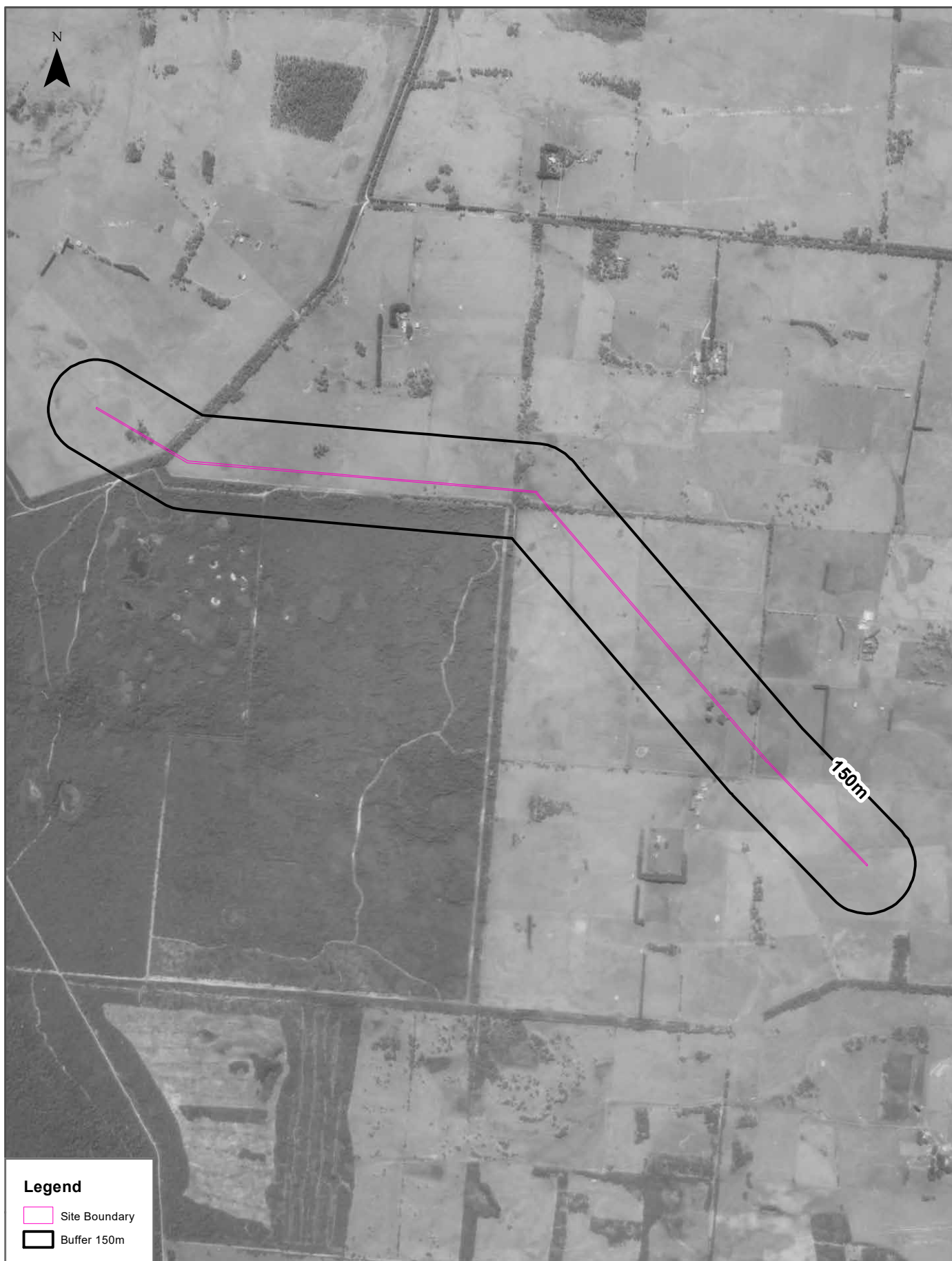
Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Aerial Imagery 1981

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



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Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

Aerial Imagery 1975

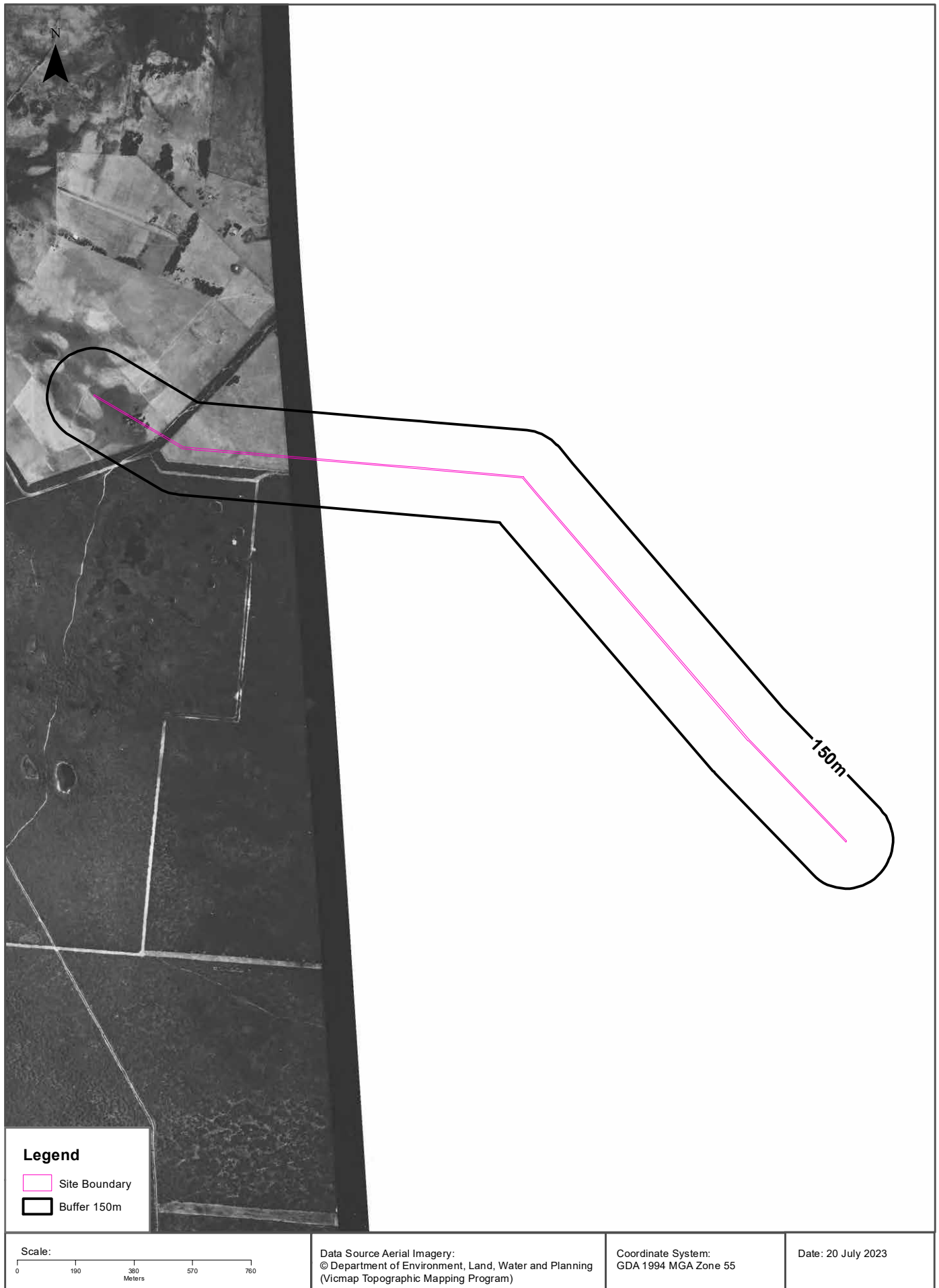
Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



<p>Scale:</p> <p>0 190 380 570 760 Meters</p>	<p>Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)</p>	<p>Coordinate System: GDA 1994 MGA Zone 55</p>	<p>Date: 20 July 2023</p>
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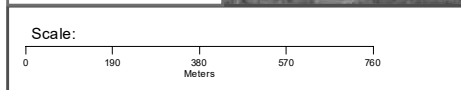
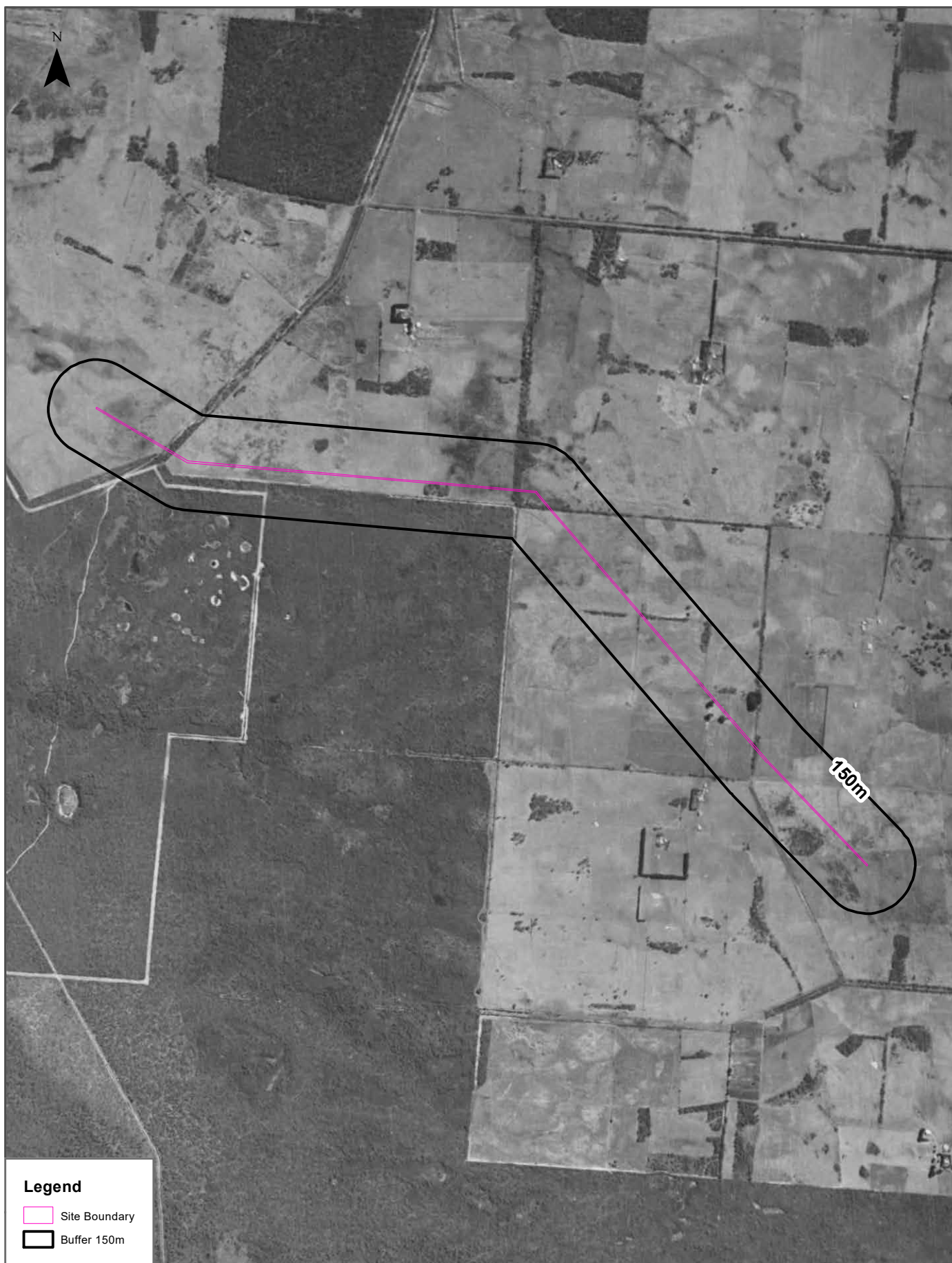
Aerial Imagery 1972

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



data source: © 2023 Geoscience Australia

Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

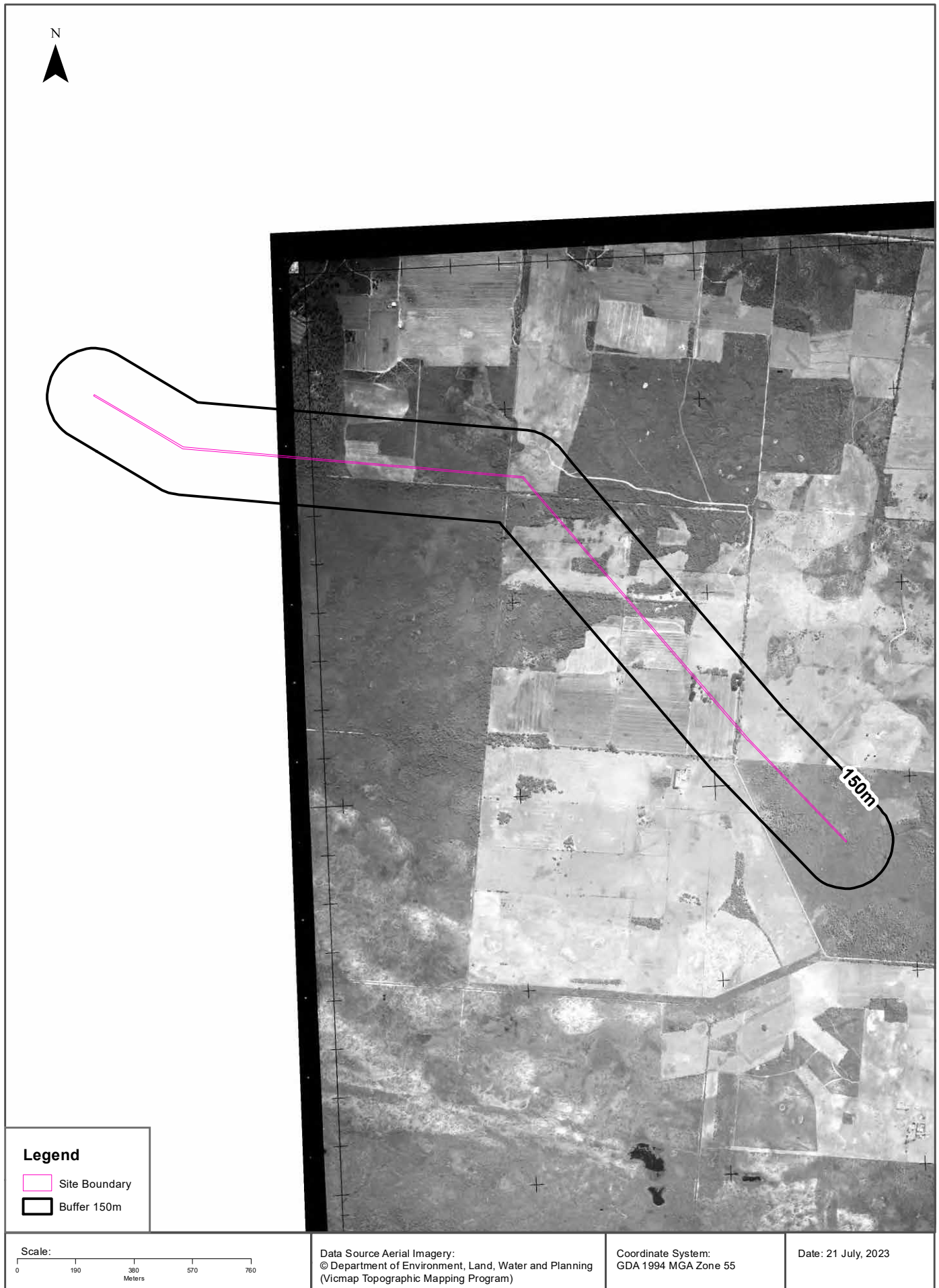
Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 6 of 9), Nelson, VIC 3292



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 - (g) neither Lotsearch nor Third Party Content Suppliers warrants that all land uses or features whether past or current are identified in the Report;
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LOTSEARCH
LOTSEARCH AERIALS

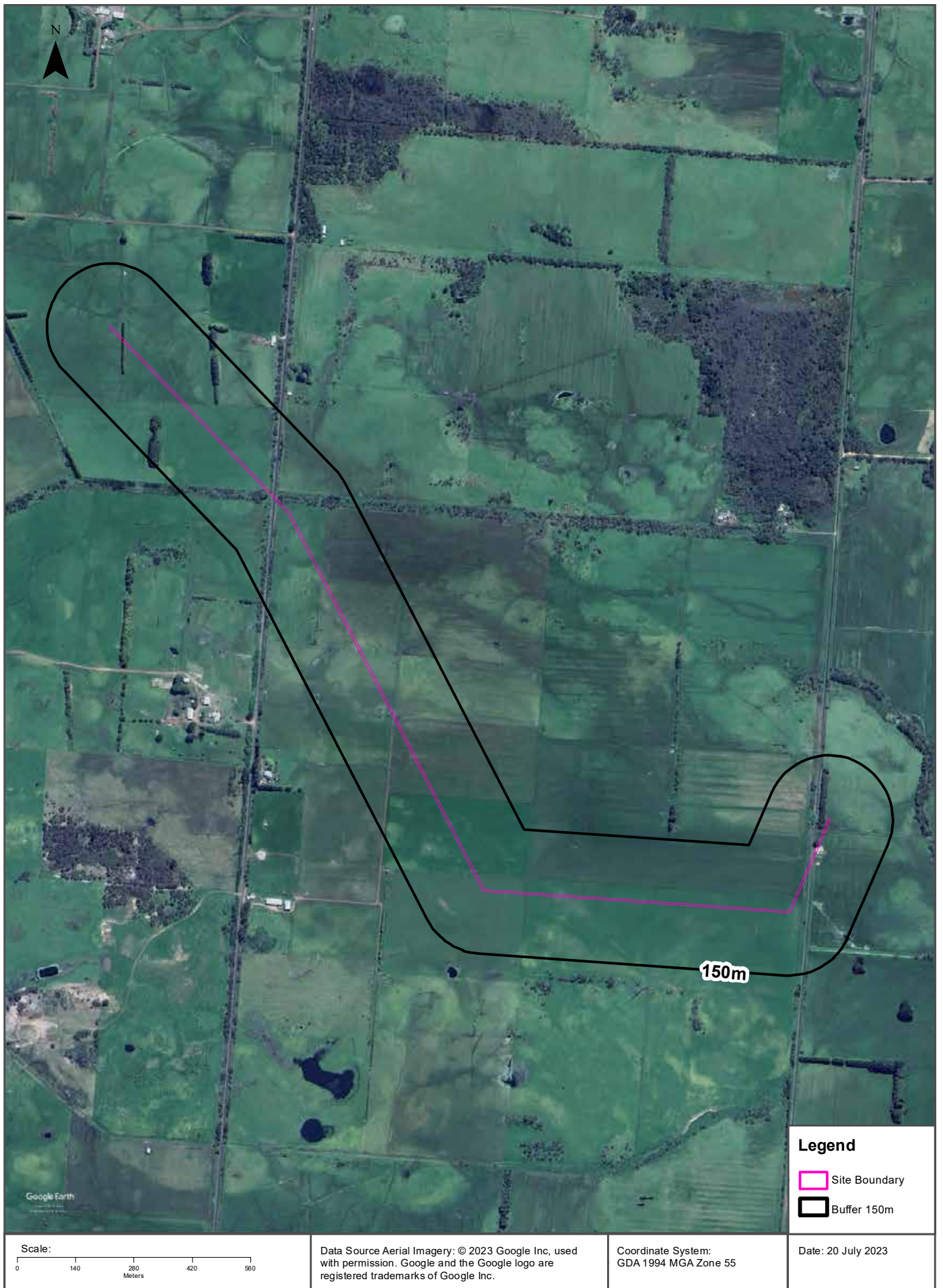
Date: 24 Jul 2023

Reference: LS046038 EA

Address: Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292

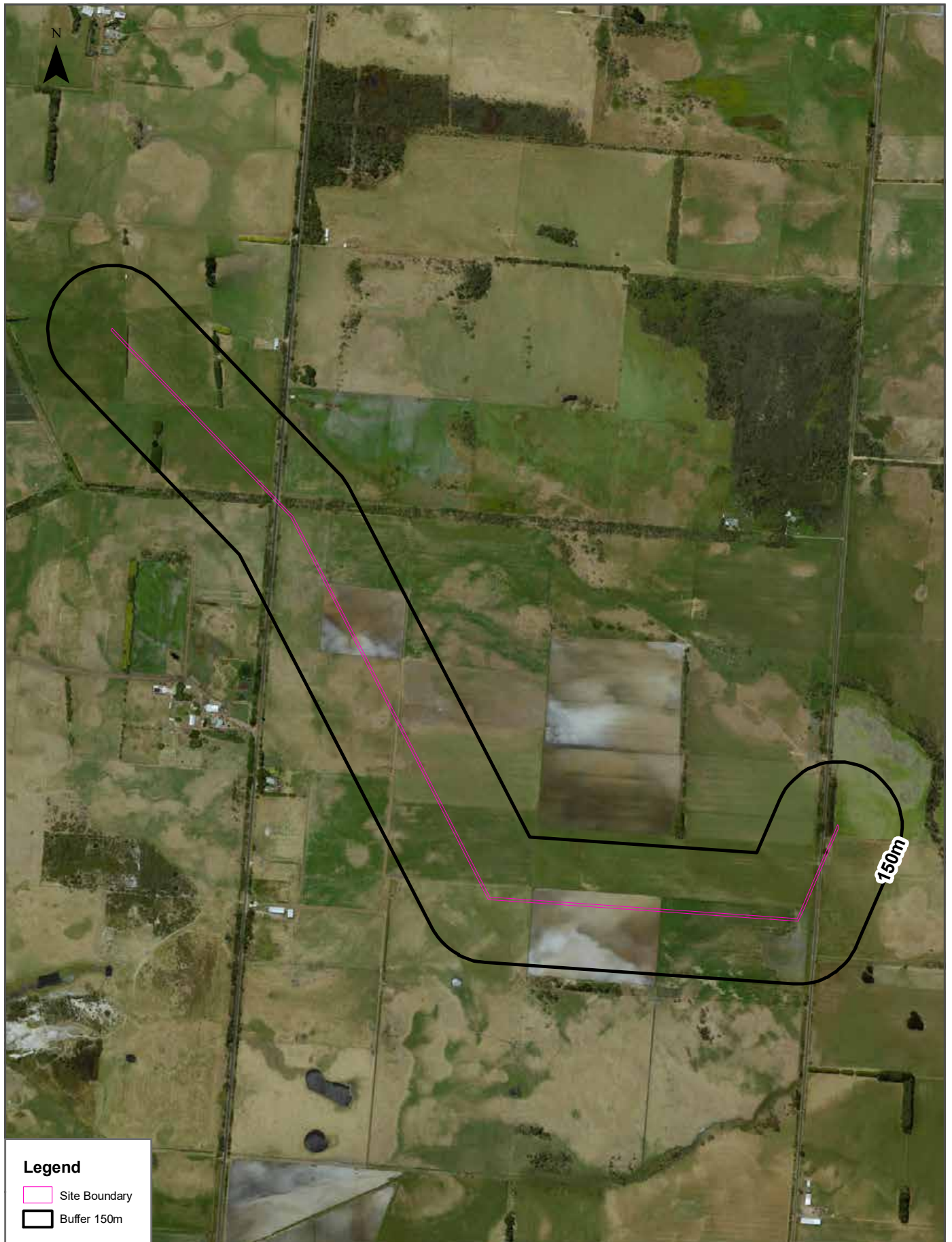
Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



Aerial Imagery 2018

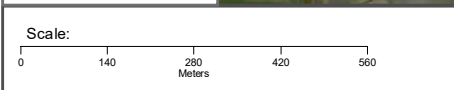
Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



150m

Legend

- Site Boundary
- Buffer 150m



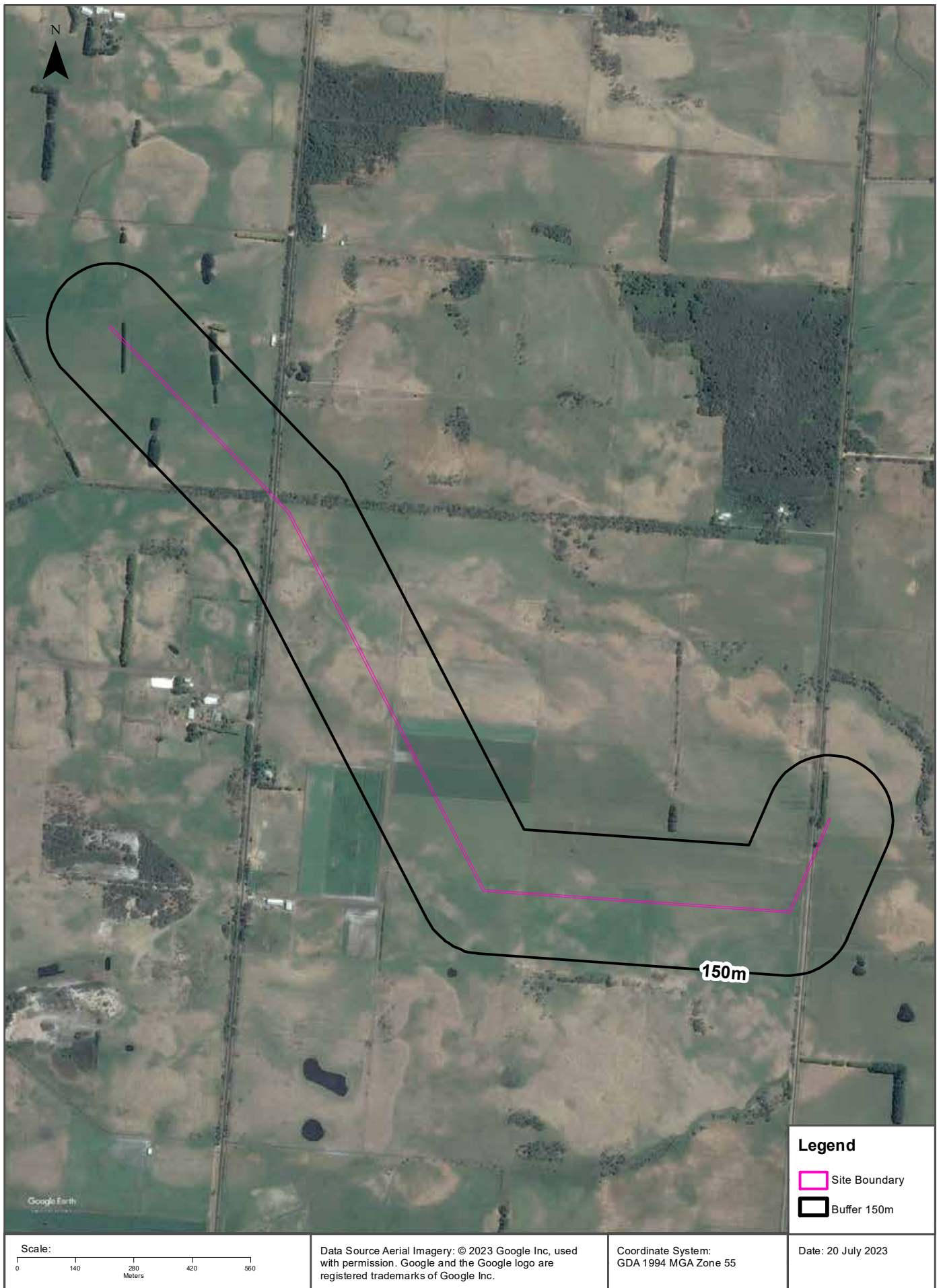
Data Sources Aerial Imagery: © Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

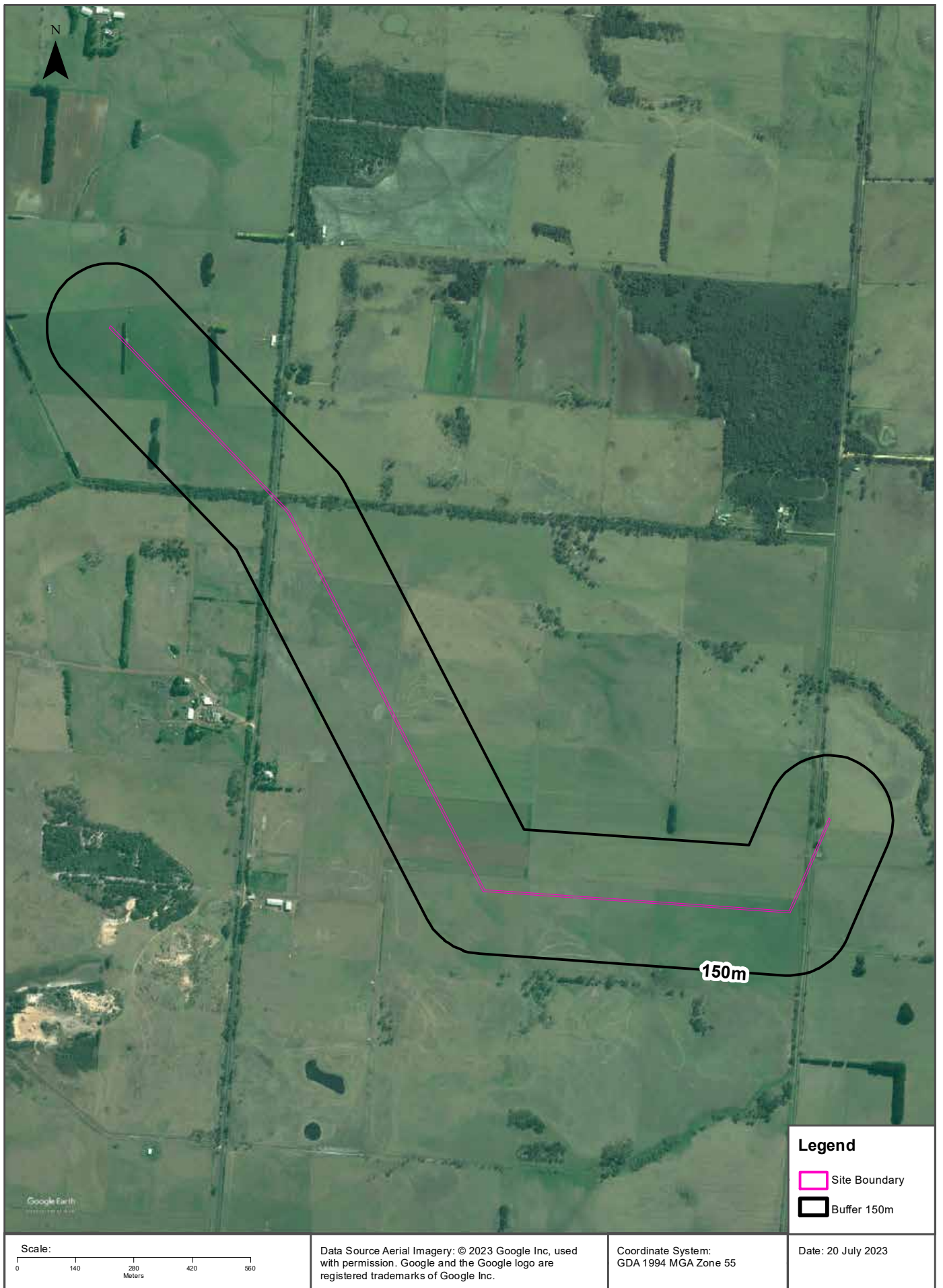
Aerial Imagery 2014

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



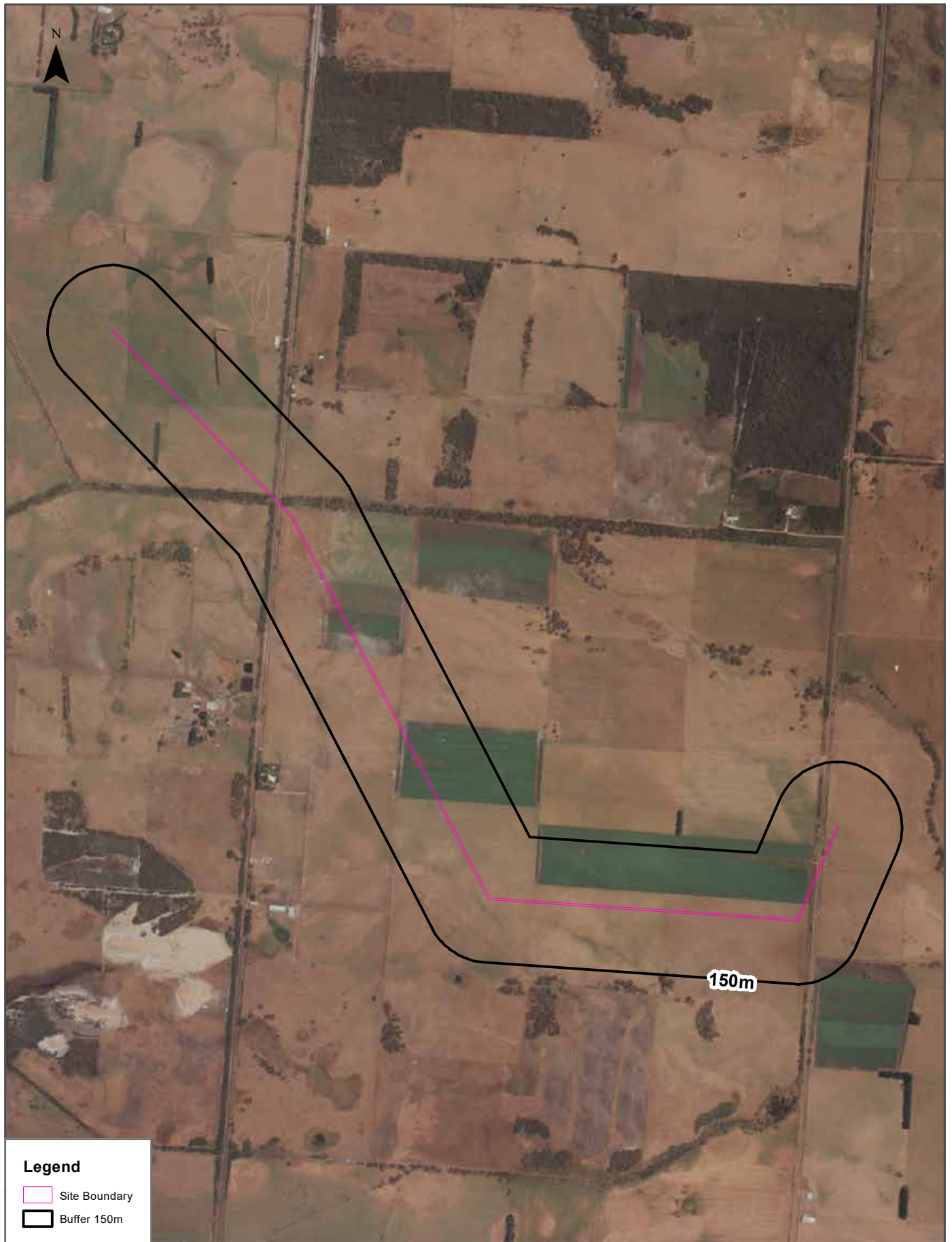
Aerial Imagery 2010

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



150m

Legend

- Site Boundary
- Buffer 150m

Scale:
0 140 280 420 560
Meters

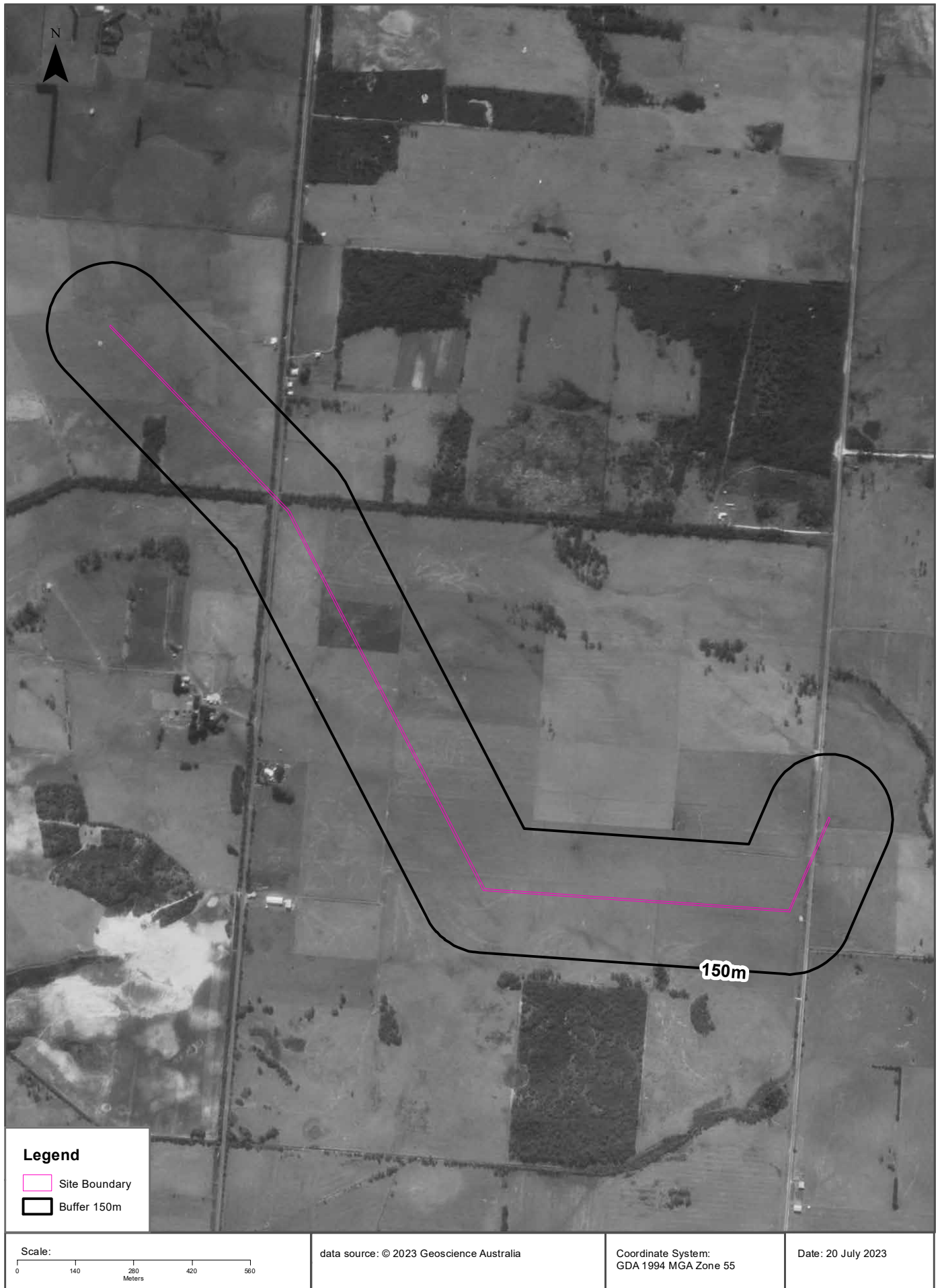
Data Source Aerial Imagery:
© Department of Environment, Land, Water and Planning
(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

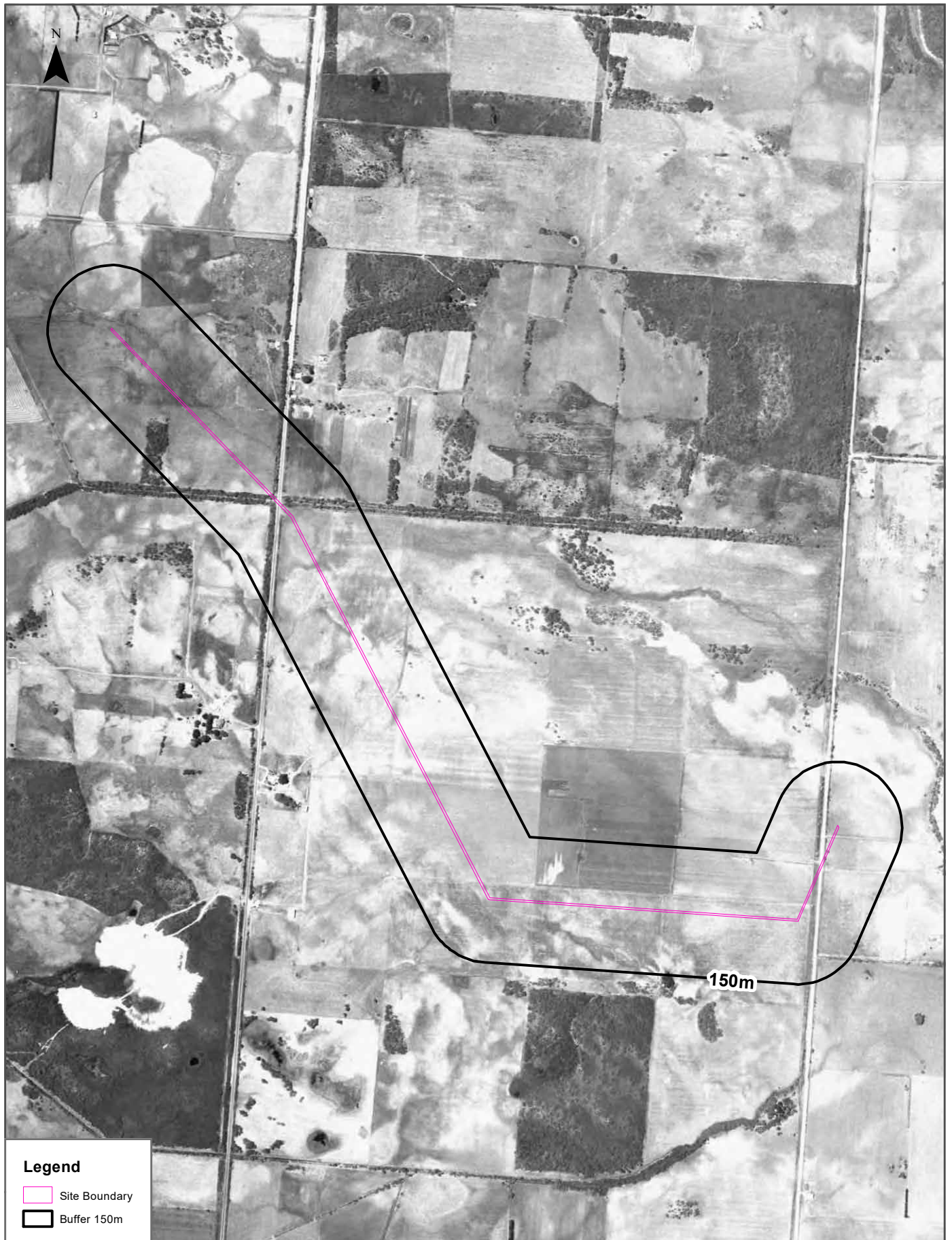
Aerial Imagery 1981

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



Aerial Imagery 1975

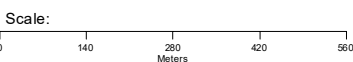
Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



150m

Legend

- Site Boundary
- Buffer 150m



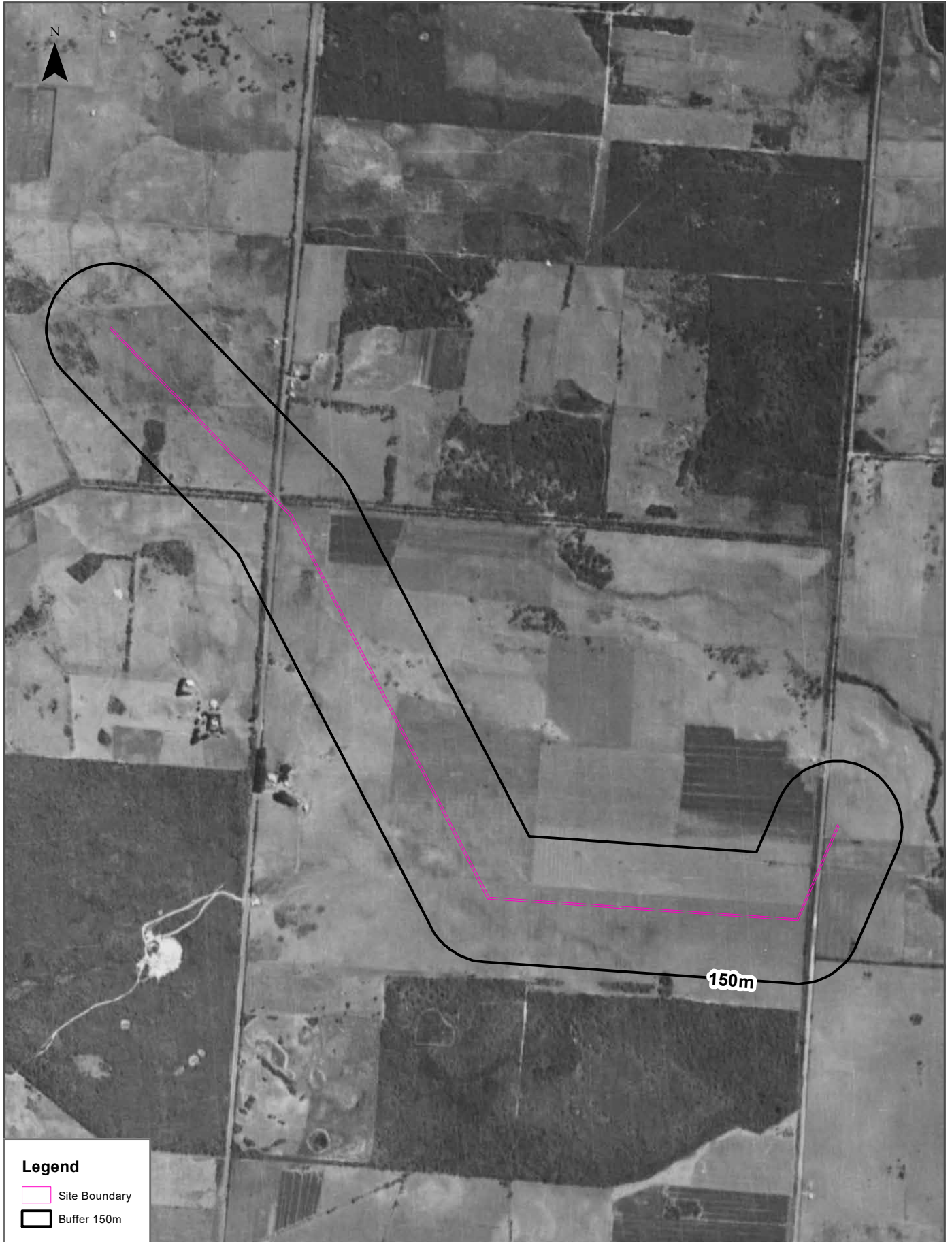
Data Source Aerial Imagery:
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(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

Aerial Imagery 1966

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292





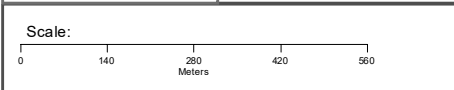
Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m



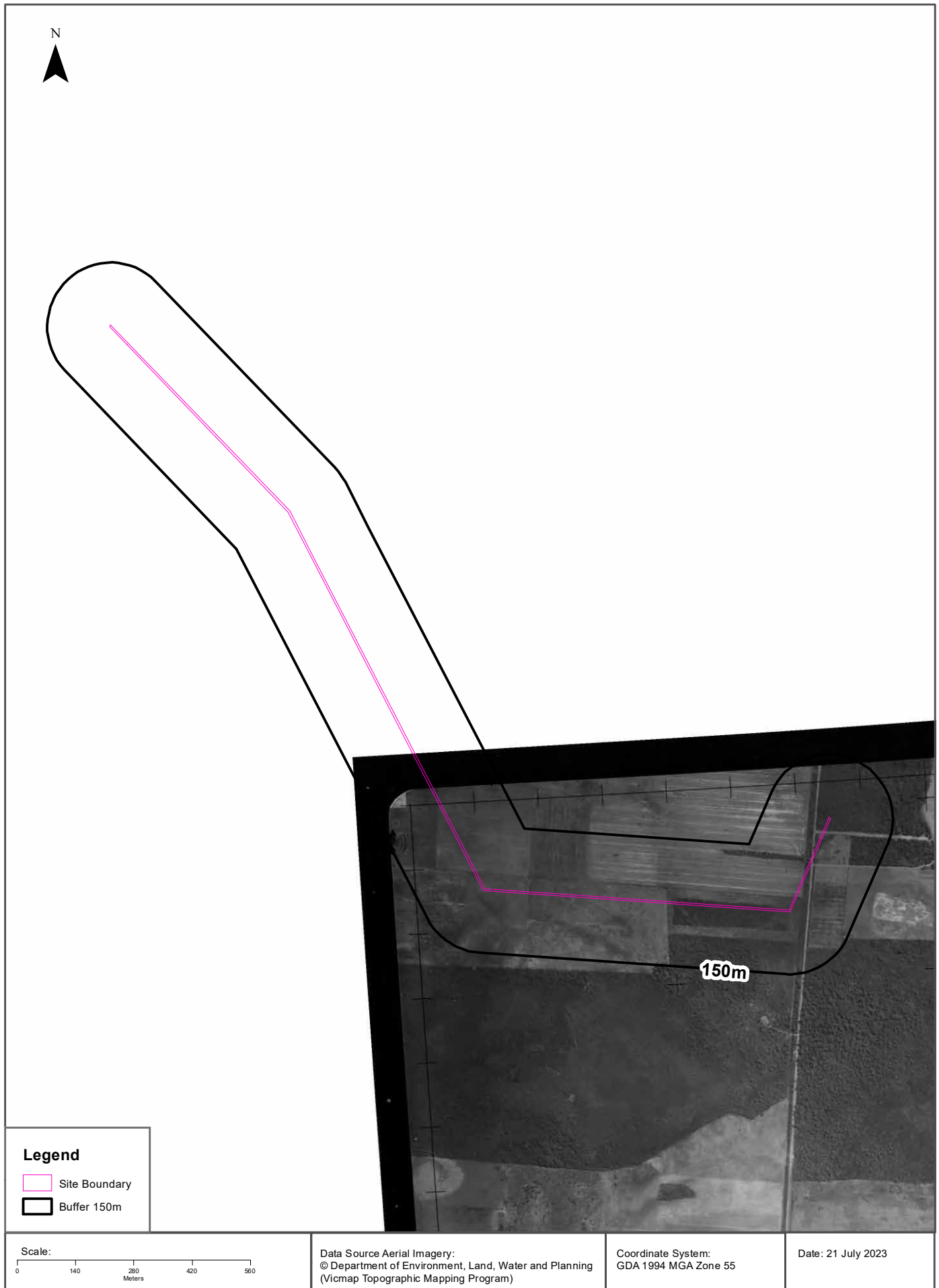
Data Source Aerial Imagery:
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(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 7 of 9), Nelson, VIC 3292



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LOTSEARCH
LOTSEARCH AERIALS

Date: 24 Jul 2023

Reference: LS046039 EA

Address: Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Aerial Imagery 2022

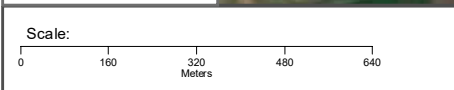
Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



150m

Legend

-  Site Boundary
-  Buffer 150m



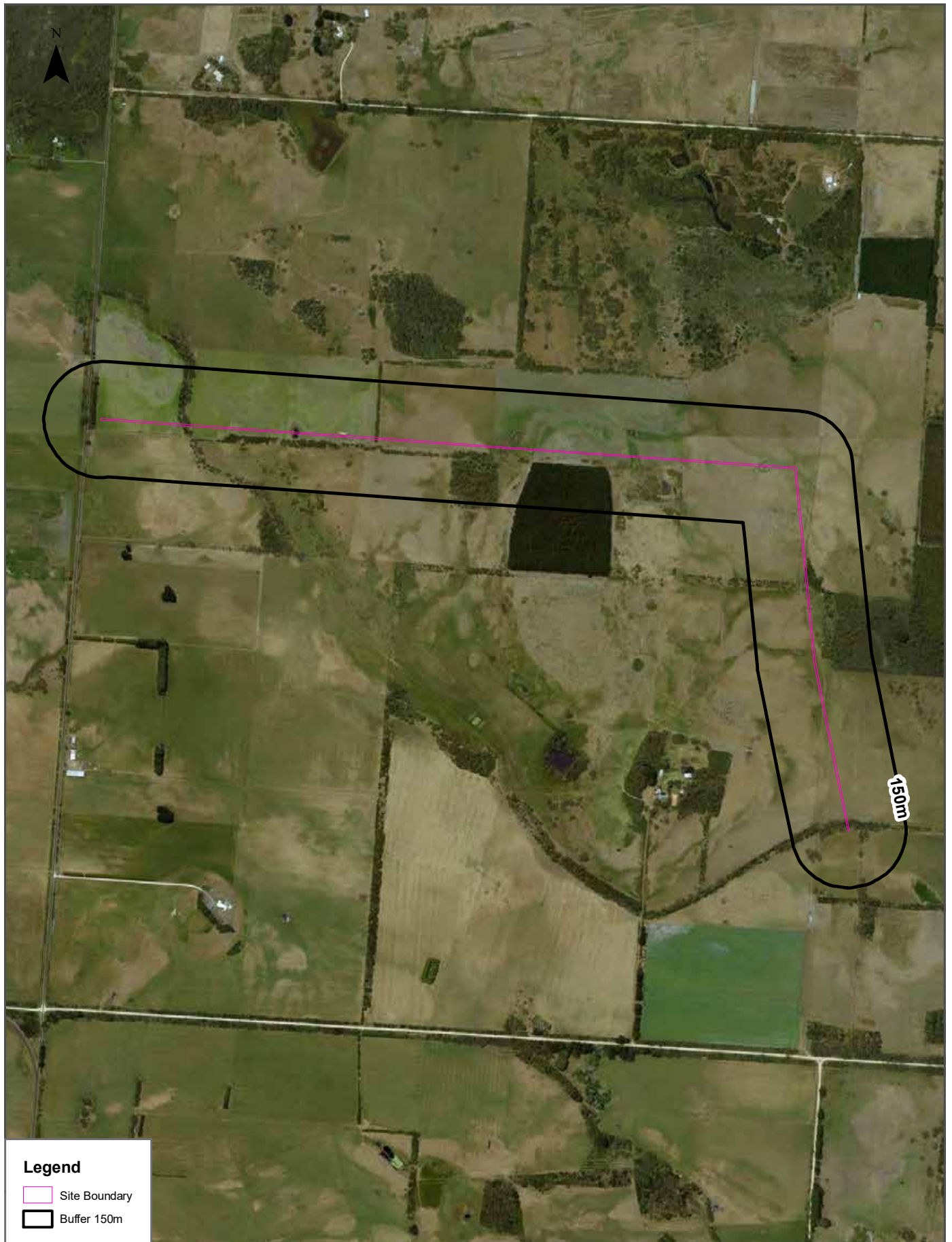
Data Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS UserCommunity

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

Aerial Imagery 2018

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Legend

- Site Boundary
- Buffer 150m

Scale: 0 160 320 480 640 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 55

Date: 21 July 2023

Aerial Imagery 2016

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Aerial Imagery 2010

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292

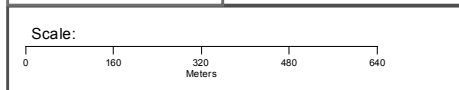


Aerial Imagery 1992

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Legend			
[Pink Line] Site Boundary			
[Black Line] Buffer 150m			



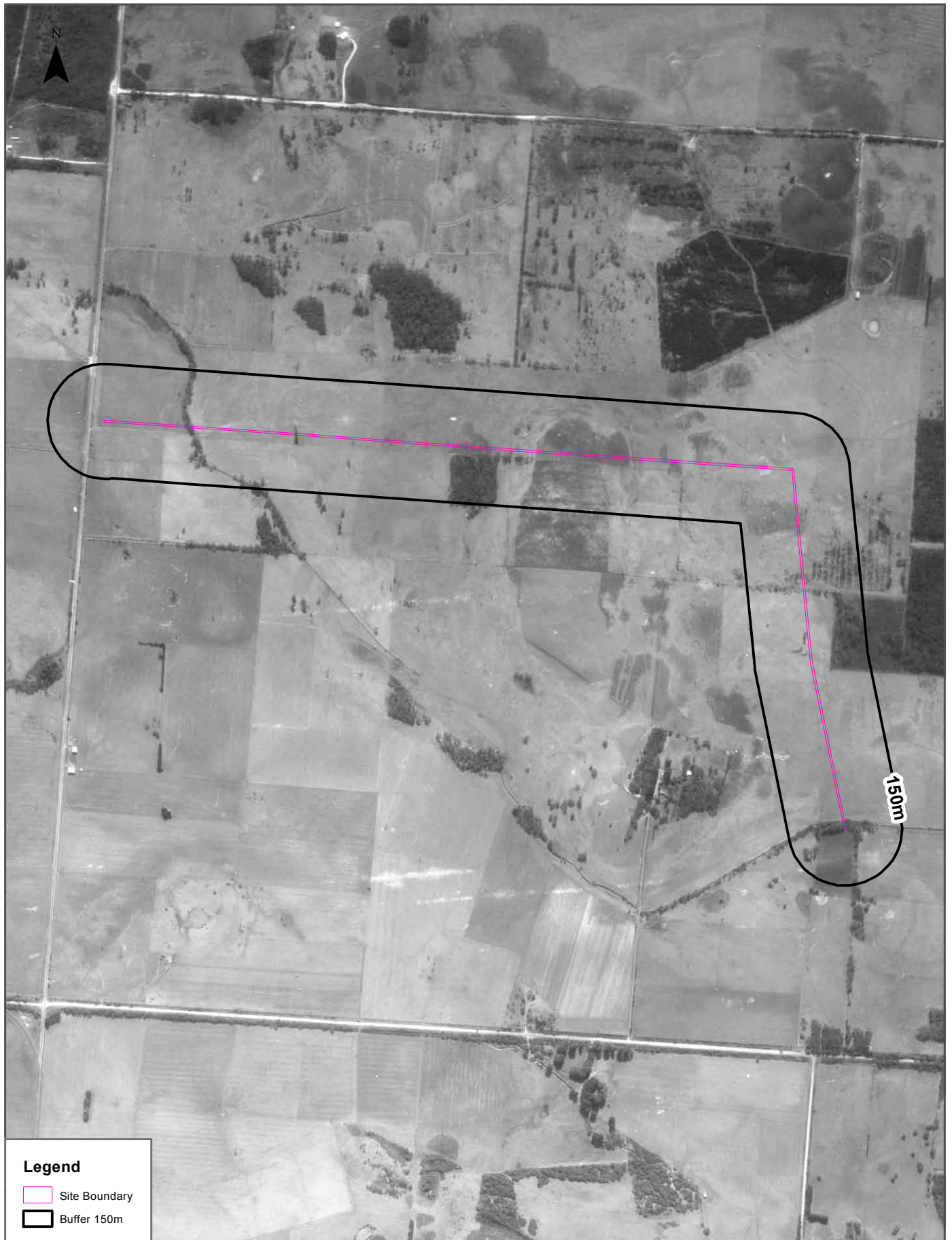
Data Source Aerial Imagery:
© Department of Environment, Land, Water and Planning
(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55



Date: 20 July 2023

Aerial Imagery 1981

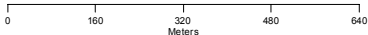
Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m

Scale:



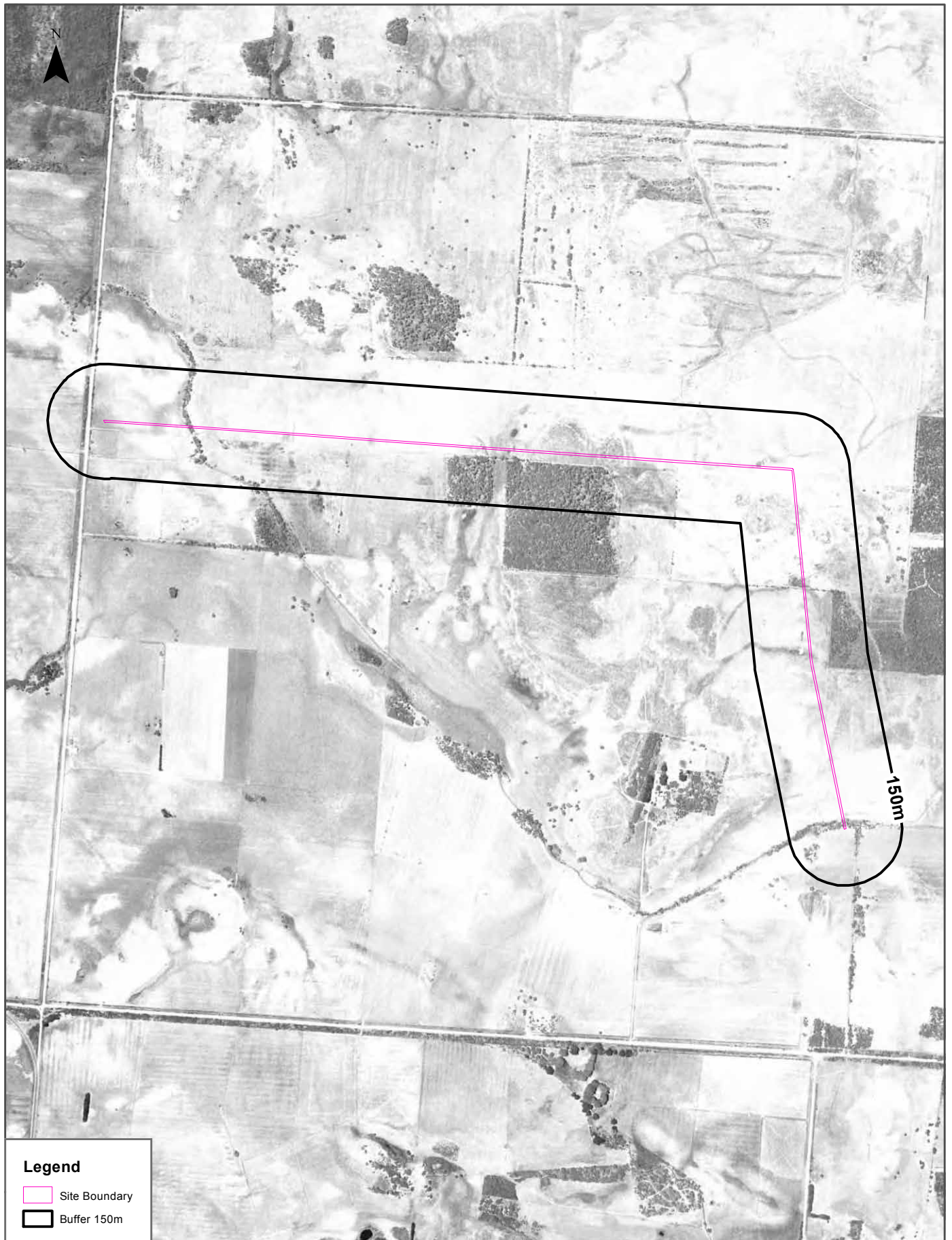
Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System:
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Date: 20 July 2023

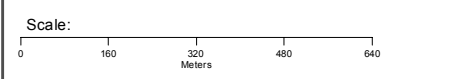
Aerial Imagery 1975

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m



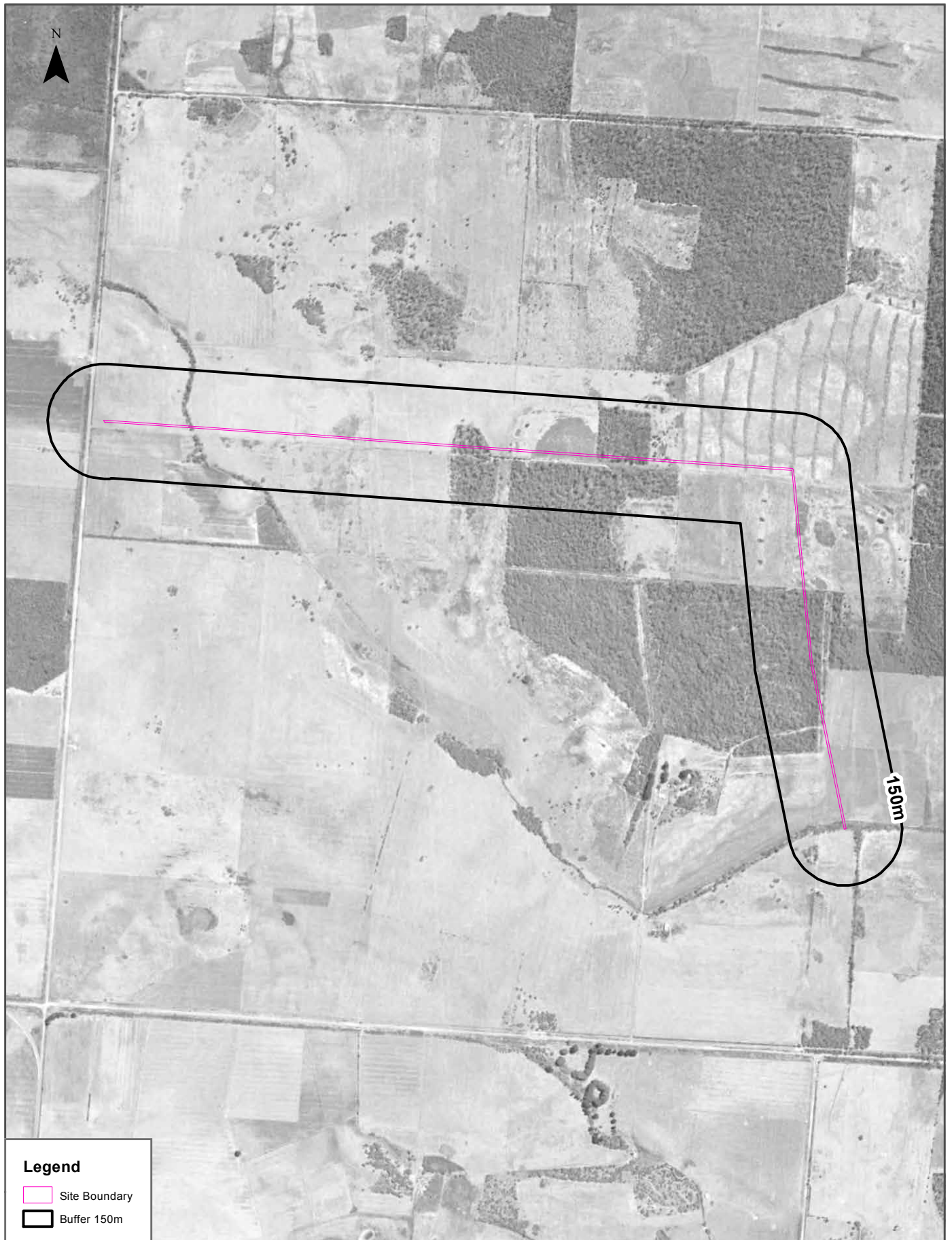
Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023


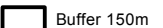
Aerial Imagery 1966

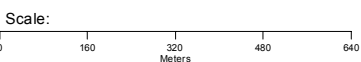
Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



150m

Legend

-  Site Boundary
-  Buffer 150m



Data Source Aerial Imagery: © 2023 Geoscience Australia

Coordinate System:
GDA 1994 MGA Zone 55

Date: 20 July 2023

Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



Aerial Imagery 1948

Kentbruck Option 2a/B Alignment (Part 8 of 9), Nelson, VIC 3292



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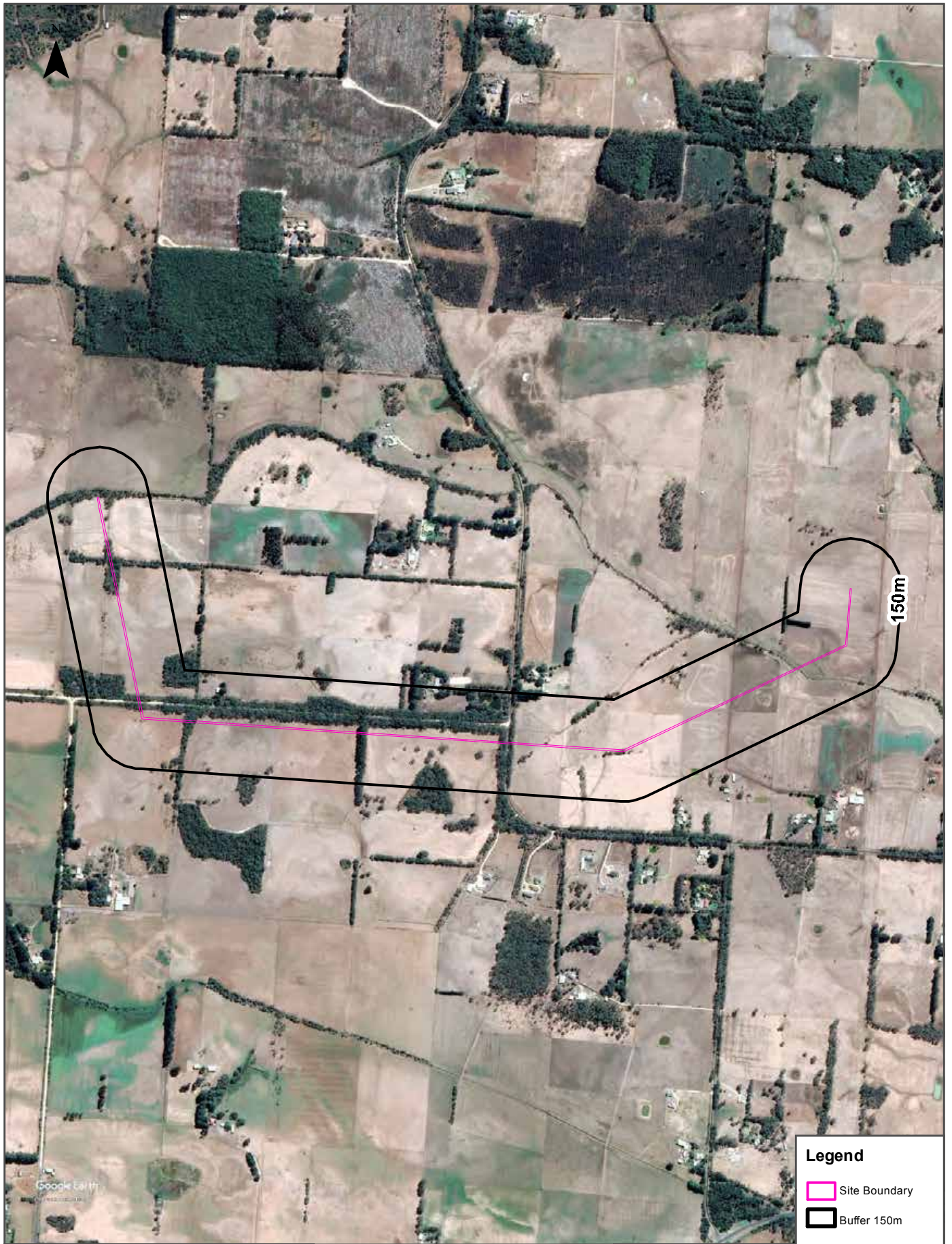
Date: 24 Jul 2023

Reference: LS046040 EA

Address: Kentbruck Option 2a/B Alignment (Part 9 of 9), Nelson, VIC 3292

Aerial Imagery 2022

Kentbruck Option 2a/B Alignment (Part 9 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m

Scale:
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Meters

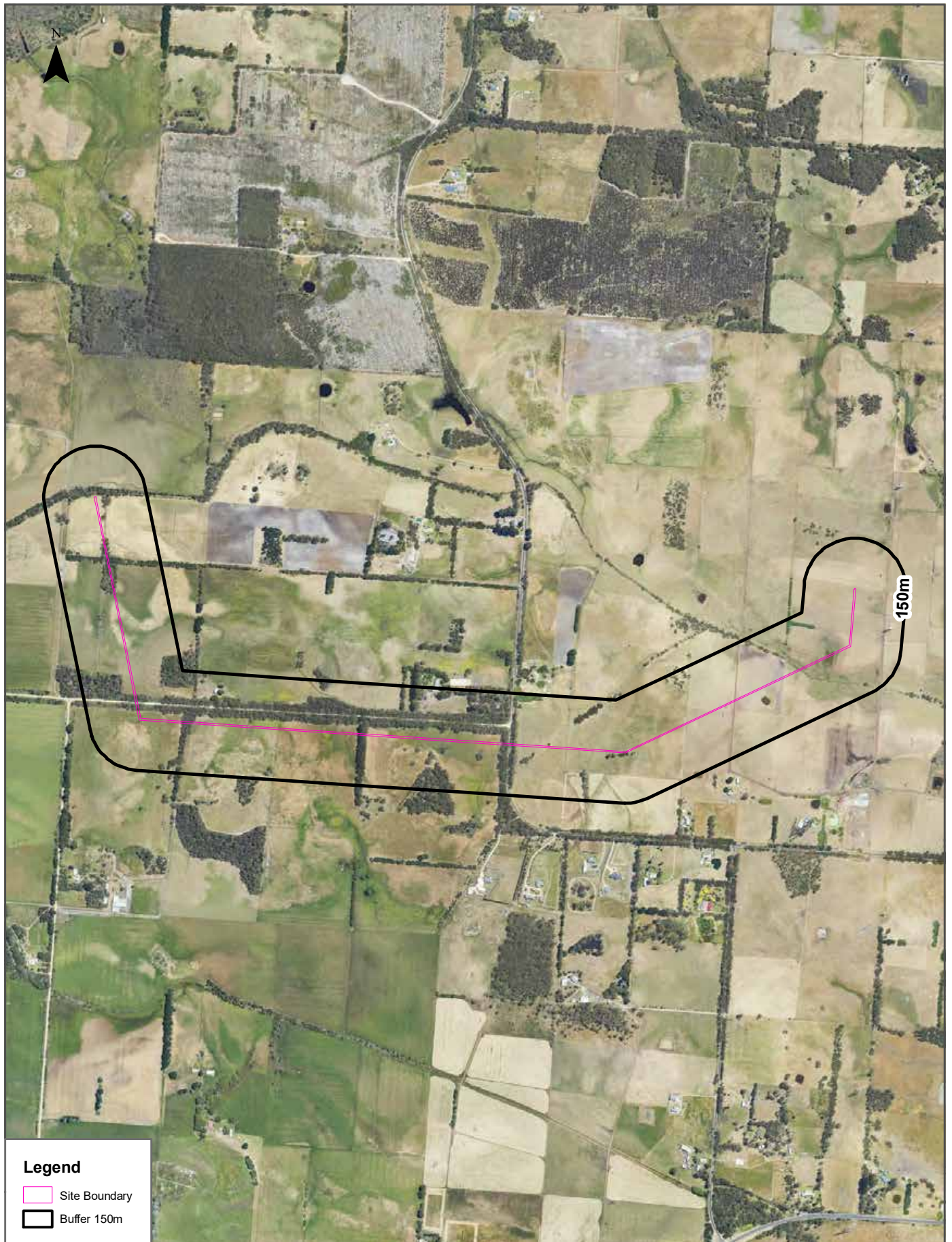
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Coordinate System:
GDA 1994 MGA Zone 55



Date: 20 July 2023

Aerial Imagery 2021

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Legend

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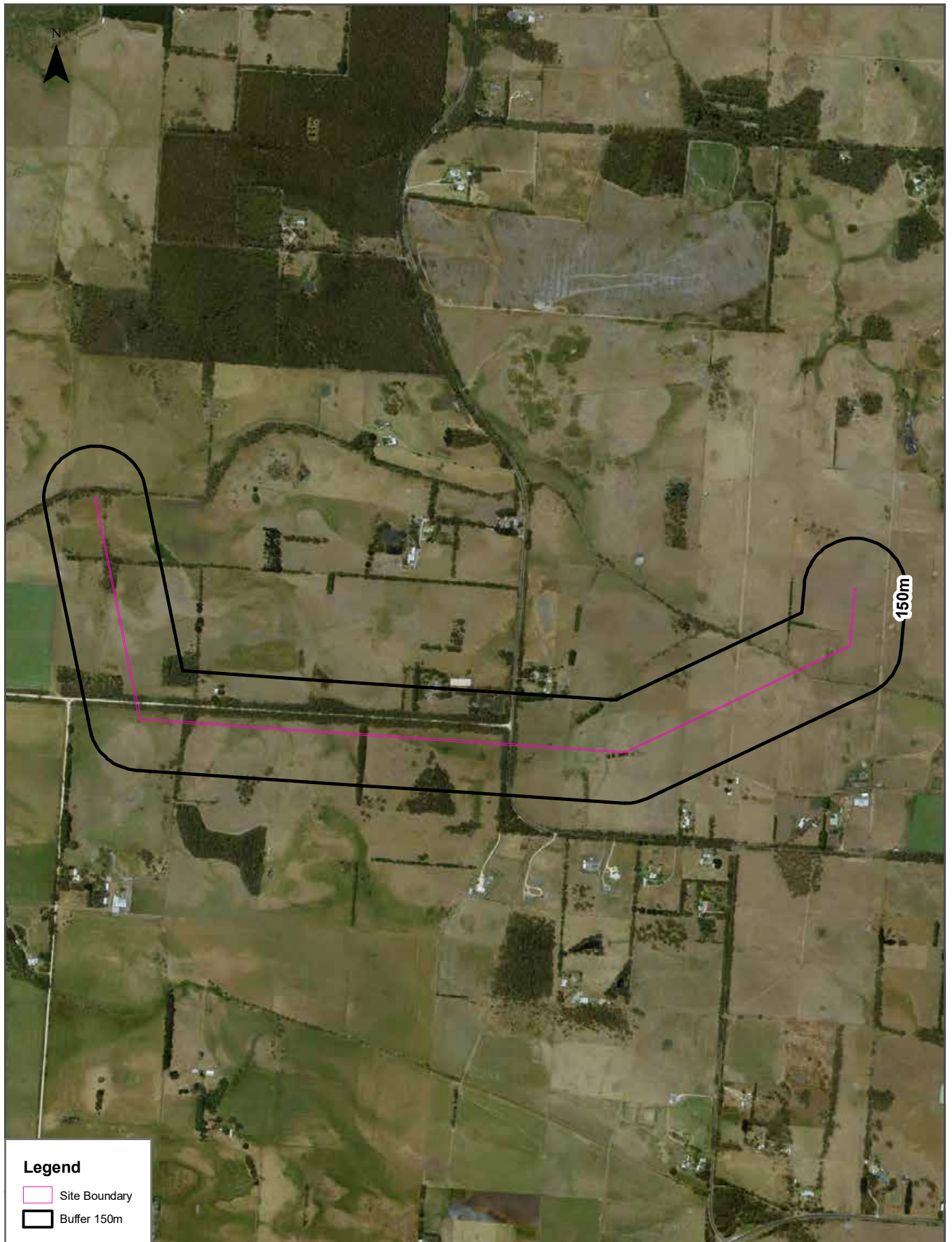
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Aerial Imagery 2018

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Legend

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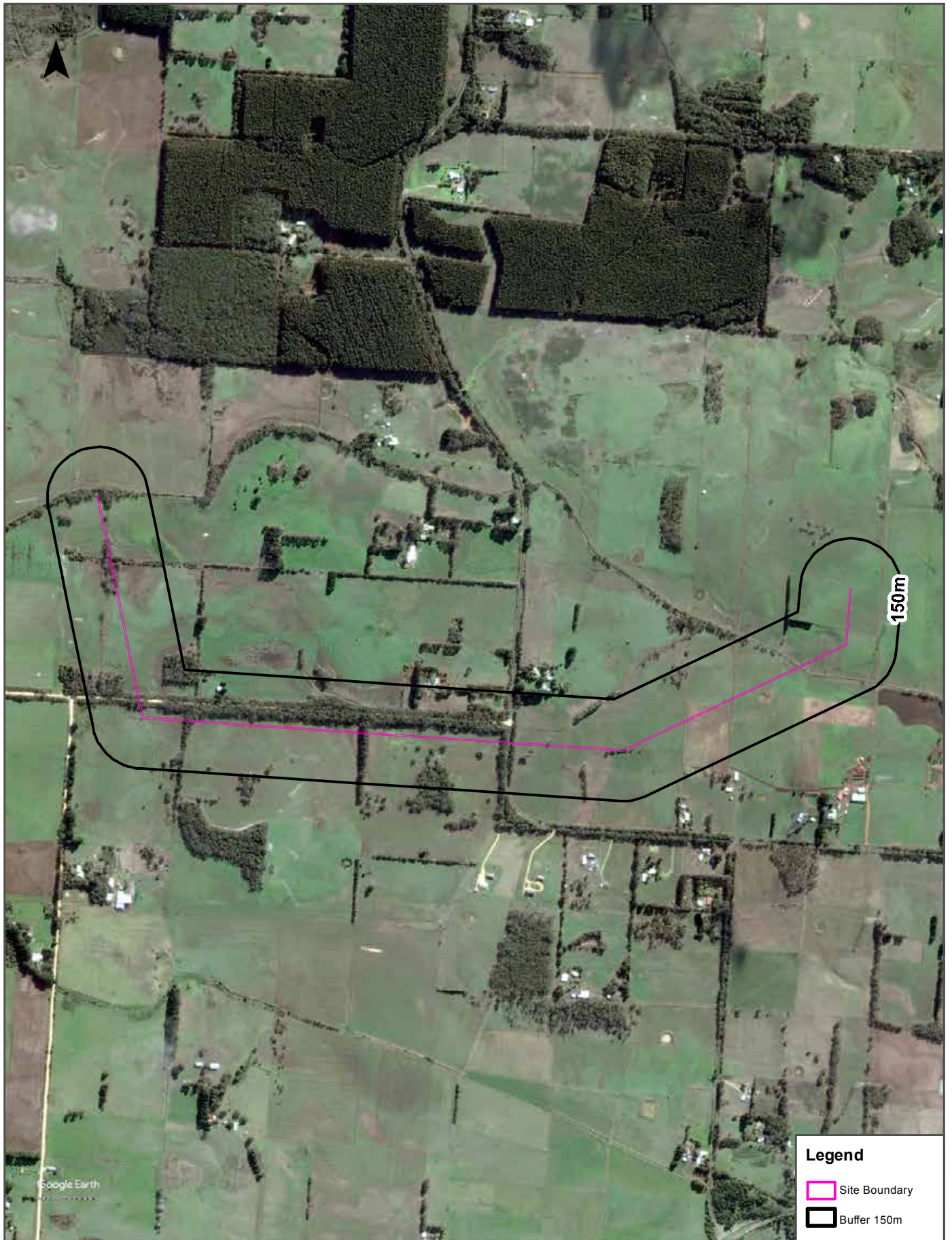
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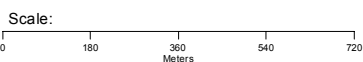
Aerial Imagery 2016

Kentbruck Option 2a/B Alignment (Part 9 of 9), Nelson, VIC 3292



Legend

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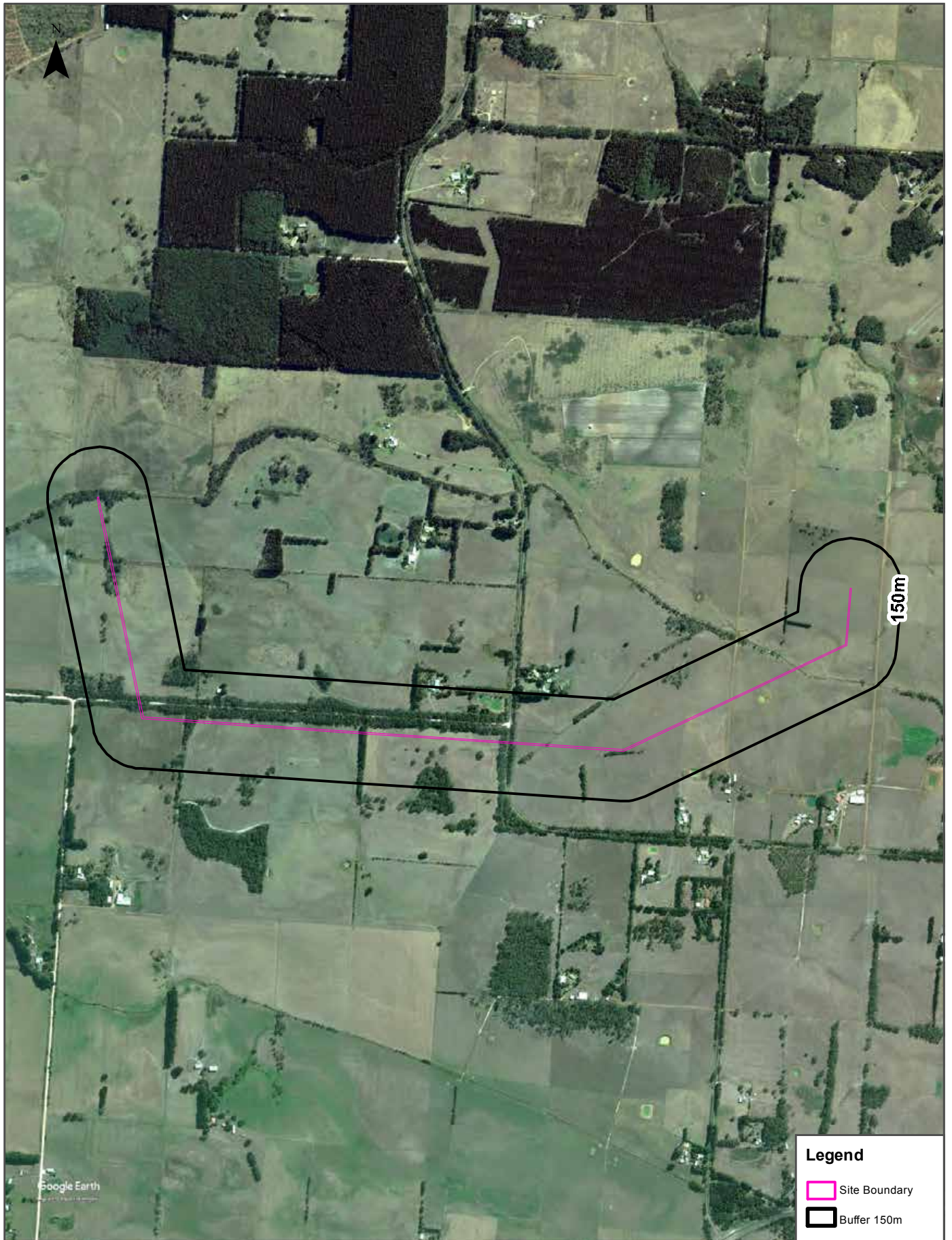
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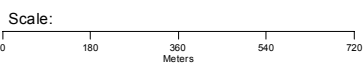
Aerial Imagery 2010

Kentbruck Option 2a/B Alignment (Part 9 of 9), Nelson, VIC 3292



Legend

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-  Buffer 150m



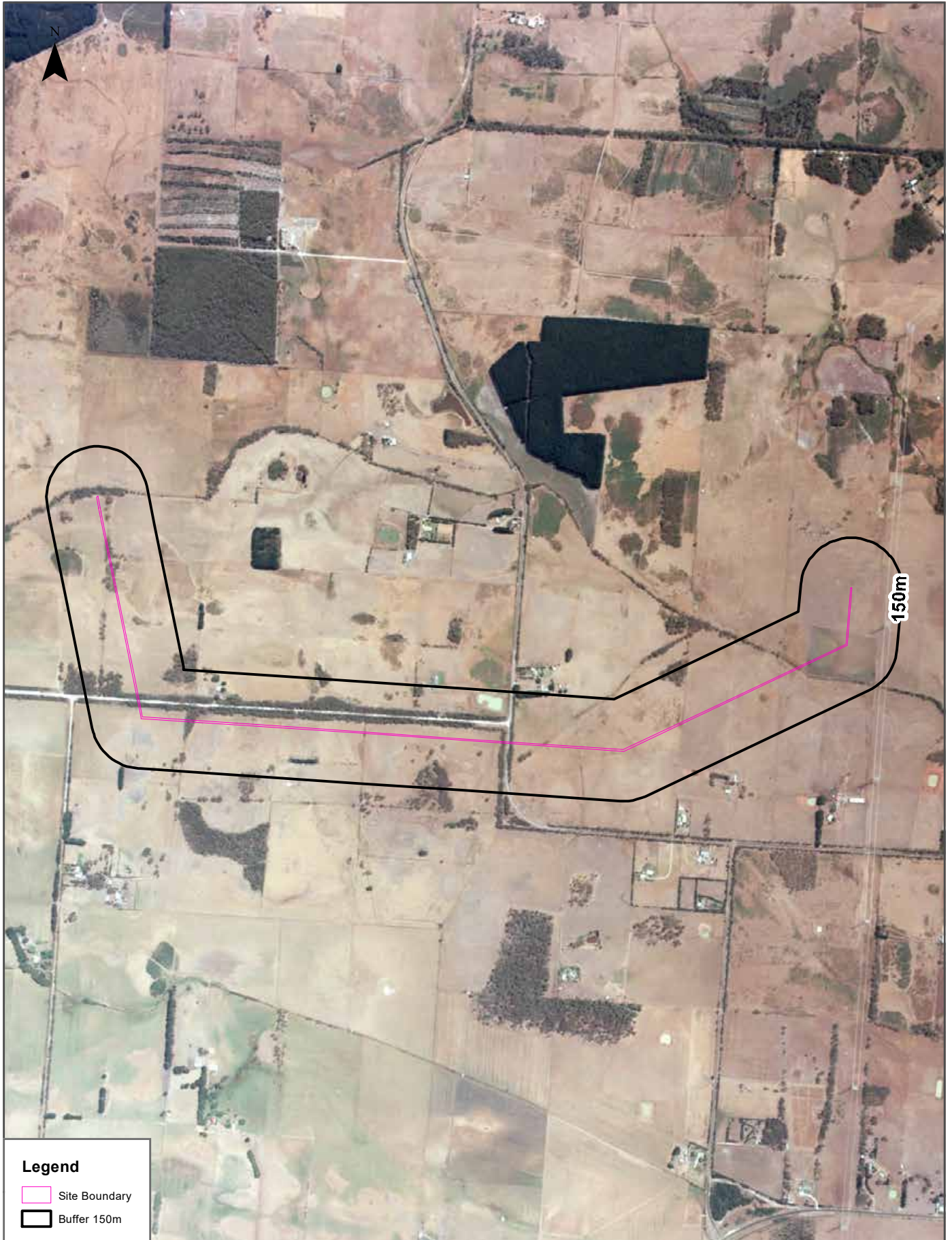
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Aerial Imagery 1992

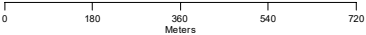
Kentbruck Option 2a/B Alignment (Part 9 of 9), Nelson, VIC 3292



Legend

-  Site Boundary
-  Buffer 150m

Scale:



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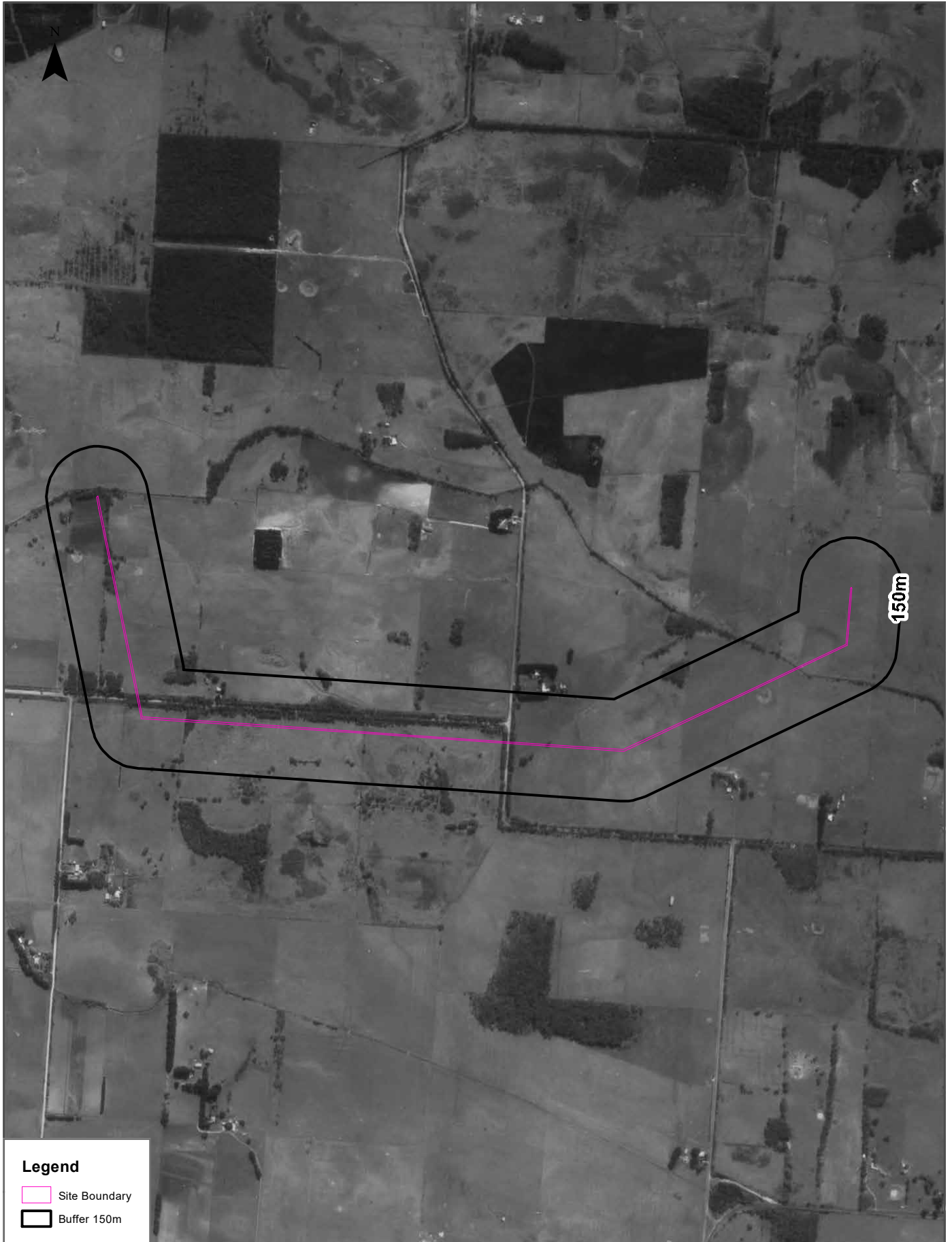
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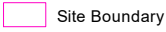
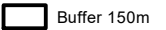
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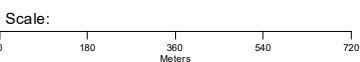
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Legend

-  Site Boundary
-  Buffer 150m



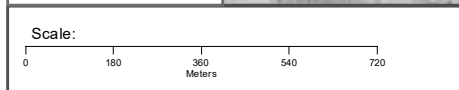
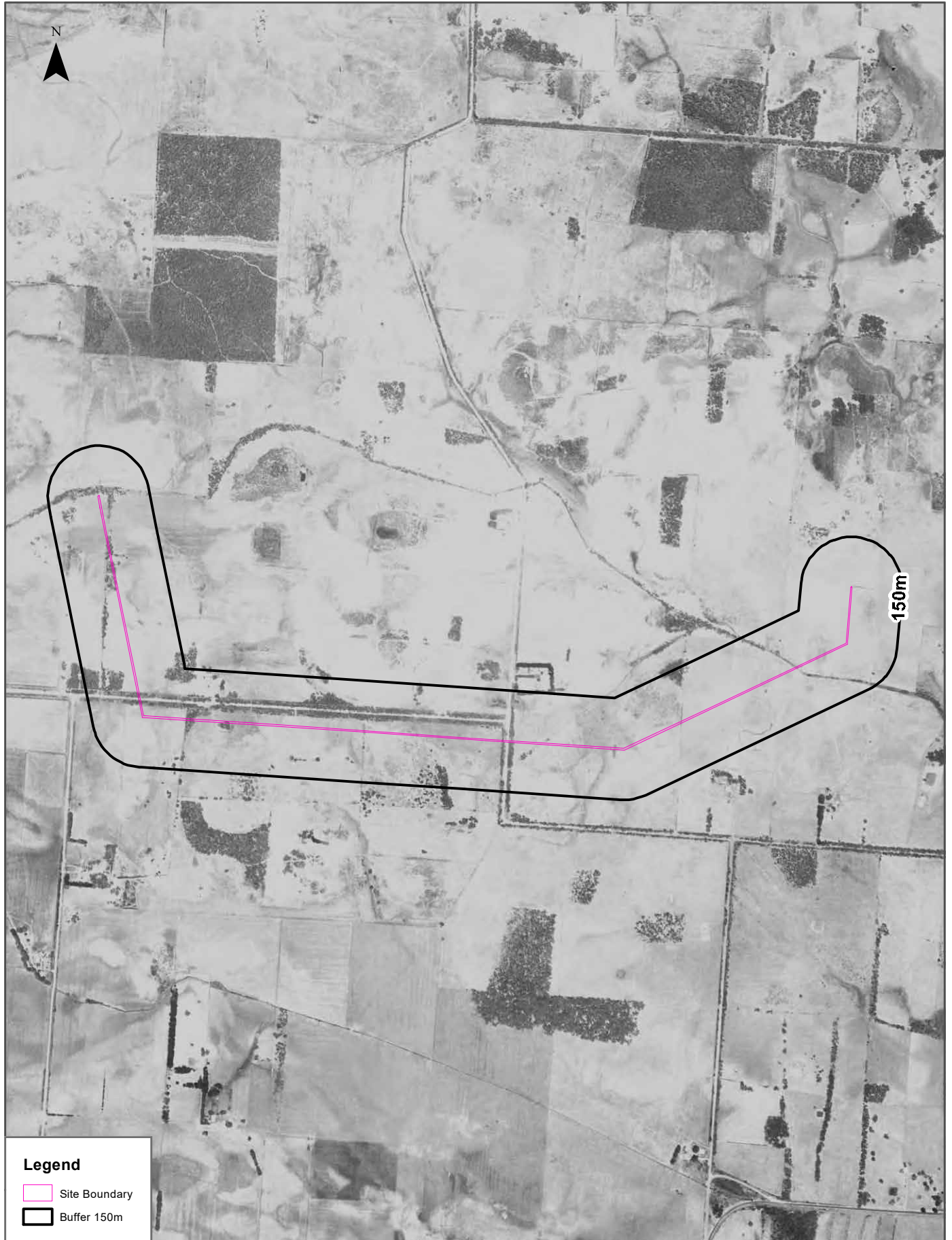
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Aerial Imagery 1975

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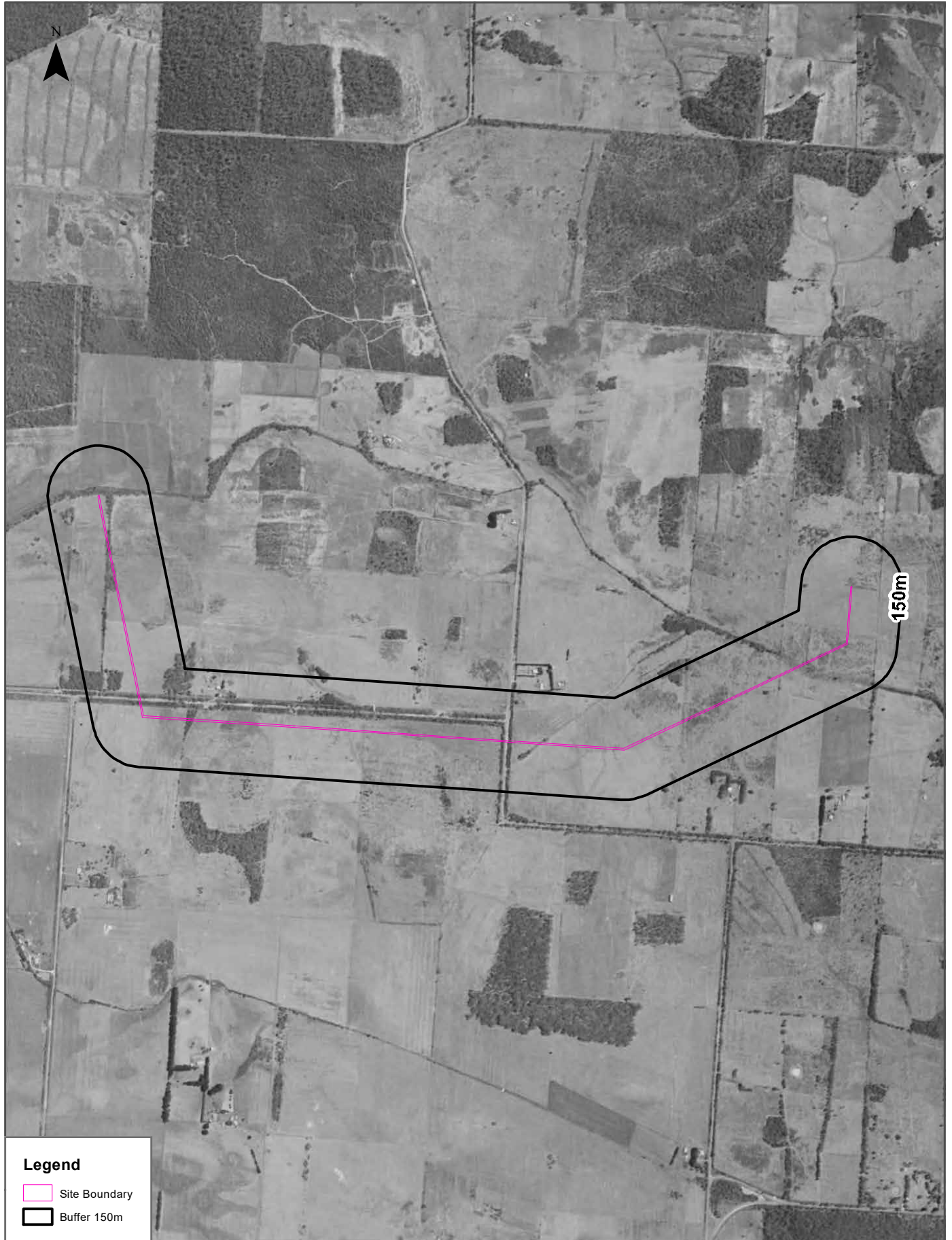
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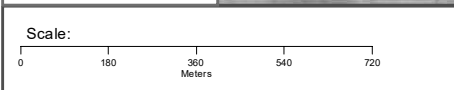
Aerial Imagery 1966

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Legend

- Site Boundary
- Buffer 150m



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Aerial Imagery 1948

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