Information sheet for environmental audits and preliminary risk screen assessments (PRSAs)

Publication 2009 June 2021

Victoria's audit system

An environmental audit system has operated in Victoria since 1989. The *Environment Protection Act 2017* (the Act) provides for the appointment of environmental auditors. It also provides for Environment Protection Authority (EPA or the Authority) to have a system of preliminary risk screen assessments (PRSAs) and environmental audits. These are used in the planning, approval, regulation and management of activities, and in protection of human health and the environment.

Under the Act, the functions of an environmental auditor include to:

- conduct PRSAs and environmental audits
- prepare and issue PRSA statements and reports, and environmental audit statements and reports.

The purpose of a PRSA is to:

- assess the likelihood of the presence of contaminated land
- determine if an environmental audit is required
- recommend a scope for the environmental audit if an environmental audit is required.

The purpose of an environmental audit is to:

- assess the nature and extent of the risk of harm to human health or the environment from contaminated land, waste, pollution, or any activity
- recommend measures to manage the risk of harm to human health or the environment from contaminated land, waste, pollution, or any activity
- make recommendations to manage any contaminated land, waste, pollution or activity.

Upon completion, all PRSAs and environmental audits require preparation of either a PRSA statement, accompanied by a PRSA report, or an environmental audit statement, accompanied by an environmental audit report.

A person may engage an environmental auditor to conduct a PRSA or an environmental audit.

EPA administers the environmental audit system and ensures an acceptable quality of environmental auditing is maintained. This is achieved by assessing auditor applications and conducting a quality assurance program. These measures ensure that PRSAs and environmental audits that environmental auditors undertake are completed in accordance with the relevant sections of the Act or any other Act, and with the guidelines the Authority or other government agencies have published.

Environment Protection Authority Victoria
GPO BOX 4395 Melbourne VIC 3001
1300 372 842 (1300 EPA VIC) **epa.vic.gov.au**

File structures

EPA stores digital statements and reports from PRSAs and environmental audits in three parts:

- Part A, the PRSA or environmental audit report
- Part B, report appendices
- Part C, the PRSA statement and executive summary or environmental audit statement and executive summary.

Report executive summaries, findings and recommendations should be read and relied upon only in the context of the whole document, including any appendices and the PRSA statement or environmental audit statement.

Currency of PRSAs and environmental audits

PRSAs and environmental audits are based on the conditions encountered and information reviewed at the time of preparation. They don't represent any changes that may have occurred since the completion date. As it's not possible for the PRSA or audit report to present all data that could be of interest to all readers, consideration should be made to any appendices or referenced documentation for further information.

When information about the site changes from what was available at the time the PRSA or environmental audit was completed, or where an administrative error is identified, an environmental auditor may amend or withdraw PRSA or environmental audit statements and/or reports. Users are advised to check EPA's website to ensure documents' currency.

PDF searchability and printing

EPA can only provide PRSAs and environmental audit statements, reports and appendices that the environmental auditor provided to EPA via the EPA portal on the EPA website.

All statements and reports should be in a Portable Document Format (PDF) and searchable; however at times some appendices may be provided as image-only PDFs, which can affect searchability.

The PDF is compatible with Adobe Acrobat Reader, which is downloadable free from Adobe's Website (www.adobe.com).

Further information

For more information on Victoria's environmental audit system, visit EPA's website or contact EPA's Environmental Audit Unit.

Web: www.epa.vic.gov.au

Email: environmental.audit@epa.vic.gov.au

EPA VICTORIA

Preliminary risk screen assessment statement

Under Part 8.3 of the *Environment Protection Act 2017*

Publication F1031.1 published February 2022

The purpose of a preliminary risk screen assessment is:

(a) to assess the likelihood of the presence of contaminated land; and

(b) to determine if an environmental audit is required; and

(c) if an environmental audit is required, to recommend a scope for the environmental audit.

It is important to note that a PRSA statement is not an environmental audit statement or an environmental audit report. It should not be construed as an environmental audit conducted to assess the suitability of land use.

This statement is a summary of the findings of a preliminary risk screen assessment conducted under Part 8.3 of the *Environment Protection Act 2017* for:

1300-1320 Mickleham Road, Craigieburn (Lot 6 and Lot 7 LP129504)

Further details are provided in the preliminary risk screen assessment report that accompanies this statement.

Section 1: Preliminary risk screen assessment overview

Environmental auditor details

Name:	Mark Stuckey
Company:	Environmental Earth Sciences VIC
Address:	98 Maribyrnong Street, Footscray, VIC, 3011
Phone:	03 9687 1666
Email:	mstuckey@eesigroup.com

Site owner/occupant

Name:	-
Company:	AK (Aust) Pty Ltd

Environmental auditor engaged by

Name:	Scott Payten
Company:	PGG(Craigieburn) Pty Ltd
Relationship to site owner:	Purchaser/Developer

Reason for preliminary risk screen assessment

Planning scheme:	-
Permit details (if applicable):	-
Other:	Requirement of planning scheme for subdivision

Preliminary risk screen assessment statement

☐ Permit is attached (if applicable):	-

Section 2: Assessment scope

Site details

Address:	1300-1320 Mickleham Road, Craigieburn
Title details:	Lot 6 and Lot 7 LP129504
Area (m^2):	257,800 m^2

☒ a plan of the site is attached

Use or proposed use assessed

The below section details which land uses (current and proposed) the PRSA has assessed. Note, this is not a suitability of land use audit, rather an assessment to determine if an environmental audit is required for the land uses that apply to the specific PRSA.

Sensitive land use categories

Note that sensitive land uses in the *Environment Reference Standard 2021* (ERS 2021) are categorised as lower and high density. Lower density is where there is generally substantial access to soil and high density is restricted to developments that make maximum use of available land space, and there is minimal access to soil. For planning purposes, the *Ministerial Direction No. 1* (MD No.1) considers secondary schools and children's playgrounds to be sensitive land uses.

☐ High density

☒ Other (lower density)

- ☒ Residential land use
- ☐ Child care centre
- ☐ Pre-school
- ☒ Primary school
- ☒ Secondary school

☐ Children's playground (indoor)

☐ Children's playground (outdoor)

Other land use categories

☒ Recreation/open space

☐ Parks and reserves

☐ Agricultural

☐ Commercial

☐ Industrial

☐ Other land uses not captured by the above as described here:

Environmental elements assessed

☒ Land

- ☒ all environmental values that apply to the land use category were considered **OR**
- ☐ all environmental values that apply to the land use category, other than the following, were considered:

☐ Water

- ☐ Surface water
  - ☐ all environmental values that apply to the applicable segment were considered **OR**

Preliminary risk screen assessment statement

☐ all environmental values that apply to the applicable segment, other than the following, were considered:

☒ Groundwater
- ☒ all environmental values that apply to the applicable segment were considered **OR**
- ☐ all environmental values that apply to the applicable segment, other than the following, were considered:

Standards considered

Environment Reference Standard 2021
National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended from time to time

Assumptions made during the assessment or any limitations

Exclusions from the assessment and the rationale for these

This statement is accompanied by the following preliminary risk screen assessment report

Title:	Preliminary Risk Screen Assessment At 1300 - 1320 Mickleham Rd, Craigieburn, Victoria
Report no:	222047
Date:	18 August 2022

Preliminary risk screen assessment statement

Section 3: Assessment outcome

Based on my assessment, I am of the opinion that an environmental audit is **not required** for the following land uses, **including** the use or proposed use for which the site has been assessed:

Sensitive land use categories

Note that sensitive land uses in the ERS 2021 are categorised as lower and high density. Lower density is where there is generally substantial access to soil and high density is restricted to developments that make maximum use of available land space, and there is minimal access to soil. For planning purposes, the MD No.1 considers secondary schools and children's playgrounds to be sensitive land uses.

☐ High density

☒ Other (lower density)

- ☒ Residential land use
- ☐ Child care centre
- ☐ Pre-school
- ☒ Primary school
- ☒ Secondary school

☐ Children's playground (indoor)

☐ Children's playground (outdoor)

Other land use categories

☒ Recreation/open space

☐ Parks and reserves

☐ Agricultural

☐ Commercial

☐ Industrial

☐ Other land uses not captured by the above as described here:

Other information

As the only potential land contamination at the site has been assessed as asbestos containing materials in stockpiles (and other low-level possible contamination in the stockpiles), it is considered that this soil will be managed under the *General Environmental Duty* and *Duty to Manage* provisions of the Environment Protection Act 2017 (Sections 25 and 39), which includes responsible stockpile management and waste disposal as per the requirements of EPA Publication 1827.2 and 1828.2.

Section 4: Environmental auditor's declaration

I state that:

- I am appointed as an environmental auditor by the Environment Protection Authority Victoria under the *Environment Protection Act 2017*.
- The findings contained in this statement represents a true and accurate summary of the findings of the preliminary risk screen assessment that I have completed.

Date: 18 August 2022

Signed:

Name: Mark Stuckey

Environmental Auditor

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Imaged Document Cover Sheet

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Document Type	**Plan**
Document Identification	**LP129504**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**11/07/2022 11:12**

LIST OF MODIFICATIONS				
LAND	MODIFICATION	DEALING No:	A.R.T.	NEW EDN.
9 & 10	SUBDIVISION	PS 333257		2
LOT 8	CREATION OF EASEMENT	AT163018G	J.N	3

LP129504
EDITION 3
APPROVED 12/6/79

PLAN OF SUBDIVISION

PART OF CROWN ALLOTMENT W

SECTION 12

PART OF CROWN ALLOTMENT V

SECTION 13

PART OF CROWN ALLOTMENT B

SECTION 17

PART OF CROWN ALLOTMENTS A C & D

SECTION 18

PARISH OF YUROKE

COUNTY OF BOURKE

LENGTHS ARE IN METRES

VOL:5677 FOL:364
VOL:5217 FOL:259

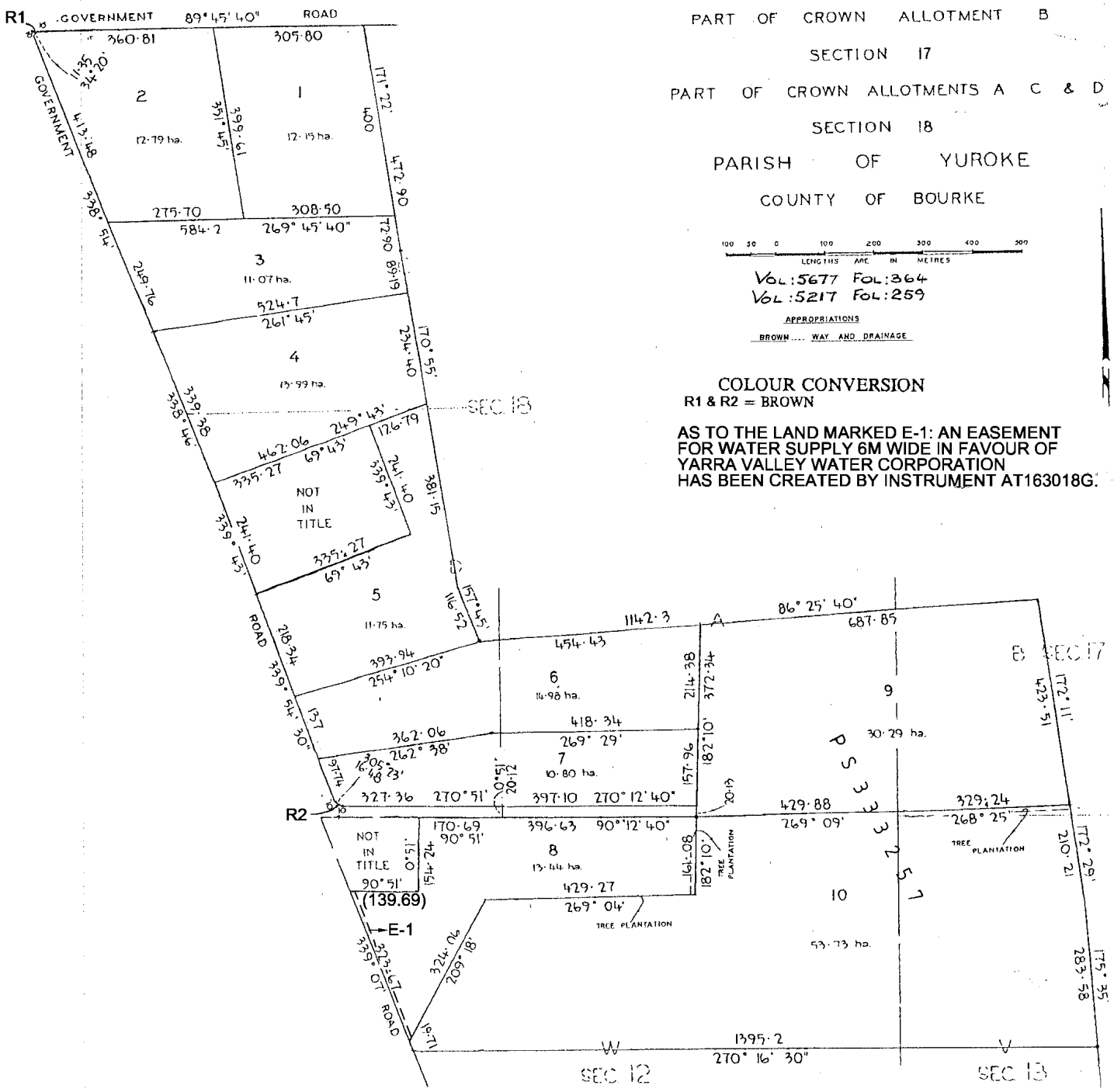
APPROPRIATIONS

BROWN .... WAY AND DRAINAGE

COLOUR CONVERSION
R1 & R2 = BROWN

AS TO THE LAND MARKED E-1: AN EASEMENT FOR WATER SUPPLY 6M WIDE IN FAVOUR OF YARRA VALLEY WATER CORPORATION HAS BEEN CREATED BY INSTRUMENT AT163018G.

LITHO



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PRELIMINARY RISK SCREEN ASSESSMENT AT 1300 – 1320 MICKLEHAM ROAD, CRAIGIEBURN, VICTORIA

PGG (CRAIGIEBURN) PTY LTD

18 AUGUST 2022
222047
VERSION 1

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

18 August 2022

PGG (CRAIGIEBURN) PTY LTD
PO Box 7383
Southport Park, QLD, 4215

Attention: **Scott Payten**

Dear Scott,

Preliminary Risk Screen Assessment at 1300-1320 Mickleham Road, Craigieburn, VIC

Please find enclosed a copy of our report entitled as above. Thank you for the opportunity to undertake this work.

Should you have any queries, please do not hesitate to contact us on (03) 96871666.

For and on behalf of
Environmental Earth Sciences VIC

Mark Stuckey
Environmental Auditor (appointed pursuant to the *Environment Protection Act 2017*)

222047_PRSA_V1.docx

ENVIRONMENTAL EARTH SCIENCES
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EXECUTIVE SUMMARY

Table 1: Summary of PRSA information

Item	Details
Auditor	Mark Stuckey
Auditor account number	EXT001139
Name of person requesting audit or PRSA	Scott Payten
Relationship of person requesting audit or PRSA to site	Purchaser
Name of site owner	AK (AUST) Pty Ltd
Date of auditor engagement	4 April 2022
Completion date of the audit or PRSA	18 August 2022
Reason for audit or PRSA	Planning scheme
Elements of the environment assessed	Land (including groundwater)
Planning permit number or requirement detail if applicable	N/A
EPA Region	Northern Metropolitan
Municipality	Hume
Dominant — Lot on plan	Lot 7LP129504
Additional — Lot on plan(s)	Lot 6 LP129504
Site/premises name	-
Street/Lot — Lower No.	1300
Street/Lot — Upper No	1320
Street Name	Mickleham
Street type (For example, road, court)	Road
Street suffix (For example, North, South)	
Suburb	Craigieburn
Postcode	3064
Site area (in square metres)	257,800 m^2 Lot 6 – 149,800 m^2 (14.98 Ha) Lot 7 – 108,000 m^2 (10.80 Ha)
Plan of site/ premises/ location showing the audit site boundary attached	Yes
Members and categories of support team utilised	Patrick Carroll – Environmental Consultant Tim Vass – Principal Consultant

Item	Details
Further work or requirements	Stockpiles containing potential asbestos containing materials (and other low-level possible contamination), are to be managed under the General Environmental Duty and Duty to Manage provisions of the Environment Protection Act 2017 (Sections 25 and 39), which includes responsible stockpile management and waste disposal as per the requirements of EPA Publication 1827.2 and 1828.2.
Nature and extent of continuing risk of harm	-
Outcome of the PRSA report	No Audit required

Table 2: Physical site information

Item	Details
Historical land use	Lot 6 – Agricultural and residential Lot 7 – Agricultural and residential
Current land use	Lot 6 – Agricultural and residential; portion used for building contractor set down area Lot 7 – Agricultural and residential
Proposed land use	Residential
Current land use zoning	Urban Growth Zone12
Proposed land use zoning	General Residential Zone 1
Surrounding land use – north	Residential and agricultural
Surrounding land use – south	Residential and agricultural
Surrounding land use – east	Agricultural
Surrounding land use – west	Agricultural
Has EPA been notified about the site under Section 40 of the Environment Protection Act 2017?	No
Nearest surface water receptor – name	Yuroke Creek
Nearest surface water receptor – direction	South
Site aquifer formation	Newer Volcanics
Groundwater segment	Segment B – D (inferred)

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1 INTRODUCTION

PGG (Craigieburn) Pty Ltd engaged Environmental Earth Sciences VIC to undertake a preliminary risk screen assessment (PRSA) of a property located at 1300-1320 Mickleham Rd, Craigieburn, Victoria ('the site').

The site comprises two parcels and is currently zoned Urban Growth Zone but used for rural residential and farming (grazing) land. It is understood that PGG (Craigieburn) Pty Ltd are proposing to subdivide the property for general residential use. The site is located within the Craigieburn West Precinct Structure Plan (PSP) and the two parcels have been identified as having a 'moderate' potential for contamination, as described in a site history review conducted as part of the PSP preparation.

As a requirement of the planning scheme, prior to approval of any subdivision, sites identified with a 'moderate' contamination potential require a PRSA to be completed to determine if an Environmental Audit is necessary.

2 OBJECTIVES

The objective of the PRSA is to assess the potential for contamination to be present at the site and conclude whether an Audit of the site will be required to determine that the land is suitable for the proposed residential use. If an Audit is considered by the Auditor to be required, an outline scope for Audit will also be provided.

3 SCOPE OF WORK

To achieve the above stated objective the following was undertaken:

- A desktop review of the existing site history and site investigation reports.
- Additional desktop historical information review.
- Review of site environmental setting to evaluate contaminant transport mechanisms.
- A site inspection.
- Development of a conceptual site model (CSM) and assessment of the likelihood of the land being contaminated.
- Preparation of a PRSA report summarising the details and findings of the investigation and basis for conclusions as to whether or not an Audit is required.
- Preparation of a PRSA Statement in accordance with Section 206 of the Act including, if one is recommended, a scope for the Audit.

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4 SITE IDENTIFICATION

4.1 Site land use

The site identification details are summarised in **Table 3** below and the site locality and layout are presented in **Figure 1** (Figures Appendix).

Table 3: Site Identification

Item	Details
Site Address	1300-1320 Mickleham Rd, Craigieburn, Victoria
Site Owner	AK (AUST) Pty Ltd
Lot & Plan number	Lot 6, LP 129504 Lot 7, LP 129504
Area	14.96 ha 10.63 ha
Current Zoning	Urban Growth Zone12
Planning Overlays	Environmental Significance Overlay (ESO)
Current land use	Low density residential
Local Government Authority	Hume City Council

4.2 Surrounding land uses

The surrounding land uses to the site are presented below in **Table 2**.

Table 4: Surrounding land uses

Direction	Description
East	Aitken Hill Conference Centre, vacant/ cleared land. Anecdotally, this site has been sold and is planned for residential subdivision
West	Mickleham Rd and cleared agricultural (grazing)/rural residential land beyond.
North	Emerging low density housing development along the north-eastern half of the boundary and cleared agricultural (grazing) land along the north-west.
South	Dunhelen Lane, Agricultural/residential land, low density housing development further to the south and Greenvale Reservoir approximately 1 km south-east.

4.3 Sensitive receptors

The nearest sensitive receptors to the site include those listed in **Table 5**.

Table 5: Sensitive receptors

Receptor	Onsite	Offsite
Human	Site users (present and future) including residents, construction workers and maintenance workers	Surrounding site users (present and future) including residents, pedestrians, workers and maintenance workers
Ecological	Flora and fauna with access to site soil	Flora and fauna at the location of groundwater discharge. The location of groundwater discharge is considered likely to be a stream connected to Yuroke Creek, 500m south-east of the site

4.4 Proposed site use

The proposed use for the site is, subject to final layout modifications and planning approvals:

- Subdivision of property into 420 lots;
- A mixture of low density residential lots, park/ recreational area and a potential non-government school.

The proposed subdivision plan is presented in **Appendix A**.

5 PHYSICAL SETTING

5.1 Regional geology

A review of Sunbury 1: 63,360 geological map (Geological Survey of Victoria, 1974) indicates the surface geology at the site consist of the following:

- Quaternary Period Pleistocene Epoch Newer Volcanics Formation, predominantly comprising dark to light grey olivine basalt. Newer volcanic basalt is noted as occurring in the eastern half of the site.
- Upper Devonian aged Bulla Granodiorite is present in the site's western half.

5.2 Soil and acid sulfate soils

According to ASRIS (CSIRO 2022) these soils are classified as Sodosols, which are soils with clear or abrupt textural B horizon and in which the major part of the upper 0.2 m of the B2 horizon (or the major part of the entire B2 horizon if it is less than 0.2 m thick) is sodic and is not strongly sub plastic.

A review of the ASRIS Atlas of Australian Acid Sulfate Soils Map indicates there is an extremely low probability for acid sulfate soils to occur at the site. This is supported by DELWP (2022a), and also the Auditor's own knowledge of soils in the area.

5.3 Topography and hydrology

The surface elevation across the property ranges from approximately 230 mAHD in the centre north of the site, falling to the east and west to approximately 215 mAHD along the western boundary and 210 mAHD in the south eastern corner (DELWP 2022b). Surface drainage is controlled by the land topography.

Constructed farm dams were present on the site as follows (see also **Figure 1**):

- on the south-western corner of No. 1300
- in the western third of No. 1320
- in the south-eastern corners of both No. 1300 and 1320.

5.4 Hydrogeology

The depth to groundwater at the site is inferred to be 10 – 20 m below ground level (VVG 2022) and is inferred to exist within the Newer Volcanic fractured rock basalt aquifer overlying the Devonian Bulla Granodiorite. Hydraulic connection between the two formations is unknown, but there is likely direct hydraulic connection, as well as direct recharge to the granodiorite in areas of outcrop.

Groundwater flow direction is inferred to be broadly to the south, following surface topography.

Groundwater salinity is anticipated to be present in the range 3,500 – 7,000 mg/L as total dissolved salts (TDS), placing the groundwater salinity within the range of Segment C – D as defined in the *Environment Reference Standard* (ERS) (Victorian Government 2021, Table 5.2). This requires protection of all environmental values relevant to groundwater, as per Table 5.3 of the ERS.

5.5 Registered groundwater bores

A search of registered groundwater users was undertaken. Twenty-nine bores were identified within a 2 km radius of the site. Below in **Table 6** is a summary of surrounding registered groundwater uses and aquifer details.

- The closest bore to site is located 988 m east and was drilled to a depth of 55m. The bore was installed into scoria and is listed as being used for irrigation purposes.
- The remaining groundwater bores are listed for domestic and stock (18), unknown (7), non groundwater (2) and observation (1).
- Registered groundwater bores are drilled to depths ranging 21.34 – 150 m and are screened within sandstone, mudstone, siltstone, shale and basalt.

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Table 6: Groundwater bore search summary

Site ID	Easting	Northing	Date Completed	Distance (m)	Direction	Total Depth (m)	Registered Use
334694	313522	5834757	26/03/1970	1206	SW	9.44	Non groundwater
109420	314728	5834679	30/09/1962	1686	SE	21.34	Not known
WRK985649	315081	5835715		1471	E	25	-
WRK957997	314789	5837091	15/11/2004	1621	NE	26.92	Observation, dryland salinity bore network
112643	312078	5837134	19/01/1992	1947	NW	27.43	Domestic, stock
140205	312463	5835809	24/01/2000	1176	W	33.6	Domestic, stock
109442	313359	5837699	29/04/1981	1762	N	39.6	Domestic, stock
334693	312957	5837506	12/04/1970	1688	NW	40.99	Non groundwater
109428	312551	5837693	4/11/1971	2043	NW	41.8	Domestic, stock
109438	312512	5837460	1/11/1978	1872	NW	45	Domestic, stock
WRK988836	312524	5837724	26/01/2009	2083	NW	47	Domestic, stock
109443	312390	5837424	9/04/1981	1920	NW	48	Stock, domestic
WRK043244	314555	5835610	11/05/2003	988	E	55	Irrigation
142048	312753	5836844	1/11/1999	1246	NW	58	Domestic
112781	312613	5835124	29/03/1992	1315	SW	58	Domestic, stock
109437	312458	5837156	26/06/1978	1676	NW	66	Stock, domestic
WRK967617	314943	5837084		1730	NE	75	-
WRK967616	314923	5837234		1817	NE	75	-
109449	314933	5837424	10/02/1988	1961	NE	77	Domestic, stock
109440	313729	5837320	4/08/1980	1365	N	82	Domestic
139974	312263	5837404	20/02/1999	1990	NW	85	Domestic, stock
109441	312741	5837521	10/10/1980	1798	NW	94.5	Stock, domestic
109430	312160	5836652	30/07/1973	1625	NW	99.06	Stock, domestic
109450	313393	5837584	22/04/1989	1643	N	120	Domestic
109452	313353	5837824	3/07/1989	1886	N	121	Stock, domestic
WRK991377	312779	5837259		1554	NW	150	-
109446	312653	5837064	31/05/1985	1475	NW	150	Stock, domestic
109426	312533	5836904	31/12/1962	1448	NW	-	Not known
109425	312493	5837364	31/12/1962	1808	NW	-	Not known

5.6 Groundwater dependent ecosystems

A review of the Department of Environment, Land, Water and Planning (DELWP) and Australian Government Bureau of Meteorology (BOM) Groundwater dependent ecosystems (GDE) atlas maps (2022) suggests the site is unlikely be situated within an area identified as being reliant upon the surface expression of groundwater (terrestrial GDE). A small parcel of moderate potential terrestrial GDE associated with a Plains Grassy Woodland ecosystem is present nearby the northern boundary of 1320 Mickleham Road, however, this appears to align with a surface water dam likely used for agricultural purposes.

The nearest high potential GDE is present approximately 1.7 km south-east and is listed as Yuroke Creek River ecosystem.

6 ENVIRONMENTAL REPORTS

A list of the known environmental reports that have been produced for the site are summarised below (and provided in **Appendix B**):

- LandServ (2018) Craigieburn West Precinct Structure Plan Preliminary Land Contamination Assessment - Craigieburn West, Victoria, Report prepared for Victorian Planning Authority.
- Greencap (2021) Targeted Soil Contamination assessment, 1300 & 1320 Mickleham Rd, Craigieburn, report prepared for Resolution Property Group.

A summary of the scope of works undertaken is provided below. Observations and findings of the investigation are discussed in subsequent sections in consideration of the Auditor's findings.

6.1 LandServ (2018) Preliminary Land Contamination Assessment

Landserv Pty Ltd (Landserv) was engaged by Victoria Planning Authority (VPA) to undertake a Preliminary Land Contamination Assessment to assist the development of 42 allotments, collectively known as the Craigieburn West Precinct in Victoria in accordance with the Craigieburn West Precinct Structure Plan (PSP). The assessment undertaken comprised of the following scope of works:

- A desktop study investigating the potential contaminating activities of the study area and surrounding areas inclusive of:
    - Available reports and/or studies regarding environment, geological and/or groundwater conditions;
    - Historical aerial photographs review;
    - Review of available Environment Protection Authority Victoria (EPA) online resources;

  - Australian Government Department of Environment and Energy's Australian Heritage Databases;
  - Historical title searches for the 42 properties identified within the study area;
  - A report from the Royal Historical Society of Victoria, summarising historical development and activities of the sites and broader regional area;
  - Available information from City of Hume regarding current and former land use; and previous planning permits for both the study area and surrounding areas;
  - Interviews, enquiries and discussion with relevant personnel who are familiar with the Study Area.
- A site inspection of the whole PSP investigation area, which included limited inspection of the subject site (refer **Section 8** below).
- Preparation of a Preliminary Land Contamination Assessment report.

6.2 Greencap (2021) Targeted Soil Contamination assessment

Greencap property was engaged by Resolution Property Group to undertake a targeted soil contamination assessment at 1300 – 1320 Mickleham Road, Craigieburn. The assessment undertaken comprised of the following scope of works:

- Site identification and description;
- Physical site description including geology, topography, hydrogeology;
- Site history review (summarising information provided within LandServ (2018));
- Site inspection (refer **Section 8**); and
- Collection and analysis of ten soil samples from stockpiles present across the site (refer **Section 9** of this report).

7 SITE HISTORY REVIEW

A review of historical site information as provided by LandServ (2018) and was undertaken and independently verified by the auditor. Aerials are included in Appendix A within the assessor's report (**Appendix B**).

7.1 Historical aerial imagery

Historical aerial imagery between 1951 – 2017 was reviewed by LandServ (2018) and the Auditor, with observations summarised below:

- 1951 – The area predominantly consists of cleared land which is assumed to be used for agricultural or pastoral purposes.
- 1966 – 1979: As above with the exception of some surface disturbance in eastern portion of the northern Lot (1320 Mickleham Rd) possibly pooling of water, or erosion in a gully.
- 1984 – The two lots appear to be separated into multiple paddocks. Two dams are present on each of the lots (consistent with present day locations) and surface disturbance in two discrete areas is present on each lot, possibly indicative of ploughed land. Each lot has a structure built upon it.
- 1991 – 2009: The development of two new structures, likely farm sheds, is apparent on the southern lot (1300 Mickleham Rd). The “ploughed” areas are noticeably greener than surrounding paddocks. Possible stockpiling to the east of structure on No. 1320 and south of the residence at No. 1300 in the 2009 image.
- 2017 – a cleared gravel topped area is adjacent to the west of the structure on No. 1320, with storage of equipment apparent.

Additional aerial imagery information was obtained by the Auditor and is summarised below:

- 2006 – Multiple soil stockpiles are present to the south of the southern-most lot (1300 Mickleham Rd) and a cluster of seven soil stockpiles are present on the southernmost lot adjacent the western dam.
- 2012 – 2022: Increasing surface disturbance is apparent surrounding the shed structure on the northern block (1320 Mickleham Road) and the area appears to be used as a lay down area for trucks and potentially waste materials. Some stockpiled soils are present on the southern boundary of the northern lot as well.

7.2 Historical title history

A review of historical site information was provided by LandServ (2018) and independently verified by the Auditor. Details of historical titles are presented below in **Table 7**.

Table 7: Title history summary

Date	Volume and folio	Owner
Lot 6, LP 129504 Lot 7, LP 129504 – Shared history		
		Crown land
3/02/1925	Volume 6438 Folio 504	Harold Chambers Langford
4/11/1926	Volume 5217 Folio 259	Peter Irvine

Date	Volume and folio	Owner
6/06/1930		Studleigh Estates Pty Ltd
6/03/1979	Volume 9326 Folio 506	Studleigh Estates Pty Ltd
Lot 6, LP 129504		
27/11/2001	Volume 9341 Folio 960	Ihsan Pty Ltd
20/07/2011		AK (Aust) Pty Ltd
Lot 7, LP 129504		
12/08/1981	Volume 9341 Folio 961	Cornelia Maria Schoots, Rita Marina Ashwell
21/02/1995	Volume 10224 Folio 123	Cornelia Maria Schoots, Rita Marina Ashwell
24/09/2002		Ihsan Pty Ltd
18/11/2002		AK (Aust) Pty Ltd

The title history indicates:

- The lots were originally crown land prior to 1925;
- The lots were subdivided from larger allotments into their present form in 1979. Studleigh Estates (which owned the site from 1930 until 1981/ 2001) is inferred to be cattle breeders based on internet search which indicates an alternate business name to be 'Dunhelen Poll Herefords'.
- Following subdivision, the lots were purchased by Cornelia Maria Schoots, Rita Marina Ashwell; and AK (Aust) Pty Ltd and Ihsan Pty Ltd (two entities listed as existing at the same address).

7.3 EPA Victoria records

A review of EPA Victoria records was provided by LandServ (2018) and independently verified by the Auditor.

7.3.1 Completed audits

A search of the EPA completed site register indicates that two audits have been completed within 2km of the site. A summary of the audits is provided below in **Table 8**.

Table 8: Completed audit summary

CARMs Number	Audit outcome	Address	Distance from site	Date	Site history
56205-5	Certificate	Audit Area C, Greenvale Lakes Estate, 30-98 Lysterfield Drive, Greenvale	1.8km South east	13 April 2017	Royal Australian Navy Armament and Ammunition Depot

CARMs Number	Audit outcome	Address	Distance from site	Date	Site history
56205-4	Certificate	Audit Area D, Greenvale Lakes Estate, Somerton Road, Greenvale	1.8km South east	17 May 2008	

Both audit sites are associated with the former Royal Australian Navy Armament and Ammunition Depot and were issued certificates of environmental audit indicating low potential for land or groundwater contamination. In addition to the above the distance (1.8 km) and location of the audit sites (likely hydraulically downgradient) also indicate a low likelihood of potentially contaminating activities affecting the investigation site.

7.3.2 Priority site register

A search of the EPA Victoria Priority Site register dated 25 May 2022 indicates that there is no listed EPA Priority site within 2 km of the investigation site.

7.3.3 Landfill register

A search of the EPA Victoria Landfill register indicates that there is no listed historical or current landfills within 2 km of the investigation site.

7.4 Royal Historical Society of Victoria

A review of the Royal Historical Society of Victoria transcript as provided by LandServ (2018) was undertaken.

- The Craigieburn area was listed within the Country section of the Sands and McDougall directories between 1914 – 1969.
- Specific information regarding occupations were unable to be obtained from the Sand and McDougall directories as businesses were not assigned to specific addresses.
- Craigieburn was listed in the Victorian Municipal Directory as early as the 1920s. In the 1929 edition it was recorded as having a post office, recreation hall, various sporting facilities and 'good fishing and shooting'.

8 SITE OBSERVATIONS

8.1 LandServ (2018)

A site inspection was completed by LandServ on 30 October 2018. Given the LandServ (2018) report was undertaken with consideration given to multiple allotments, specific information relating to Lot 6, LP 129504 and Lot 7, LP 129504 is limited.

The findings of the site inspection, as considered likely relevant to the site, are presented below:

- The topography varied both naturally and due to the presence of engineered dams and barriers and earthworks;
- The site was comprised of predominantly vacant grassland consistent with farmland;
- The site and surrounding area has numerous residential properties and sheds (low density residential / rural allotments), predominantly consistent with agricultural uses;
- The vegetation in the site and surrounding area is typically grazed agricultural pasture, with groomed residential gardens associated with dwellings and some overgrown vegetation;
- Evidence of both potential underground and above ground services/features with the site and surrounding area were evident from visual indications.
- Regional land uses include agriculture/pastoral, small farms and rural properties, with low density residential dwelling, to the north and west, and standard to high residential dwellings to the east and south;
- Numerous areas where old farm machinery, truck bodies and general waste has been collected, were identified across the site/surrounding area *(unclear as whether this specifically applies to the site);*
- The site/surrounding area appear to contain laydown areas for mobile plant and/or materials, which may include the movement of material on and offsite *(unclear as whether this specifically applies to the site)*;
- Numerous stockpiles of unknown origin, containing both soil and rocks are present on site;
- The CFA Yuroke Satellite fire station facility is located nearby to the west (downgradient of the site topographically and cross hydraulic gradient) and comprises of a shed and grassed laydown area. Through communication with both CFA Greenvale and the CFA district headquarters, it is apparent that this station has been in disuse for a number of years.
- A number of troughs and animal scats consistent with the presence of livestock were observed onsite/ surrounding area.

8.2 Greencap (2021)

Site observation made during Greencap (2021) are presented below:

- Asbestos fragments were observed in the vicinity of stockpiled materials along the southern boundary of Lot 7, LP 129504.
- Stockpiled materials were present at various locations across the site.

- Some stockpiles appeared to contain building rubble (crushed brick, ceramic tile, wood and plastics).
- Stockpiled materials were predominantly dark grey – dark brown silty clays with low plasticity. Other stockpiled materials included yellow to orange builders sand and light brown to dark brown silty clays.
- No staining or odours indicative of potential chemical contamination were noted during the investigation.

8.3 Auditor

An inspection of the site was undertaken on 20 May 2022. Photographs from the site inspection are presented in **Appendix C**. A summary of observations is provided below.

8.3.1 No. 1300 (southern portion of site)

- The site is largely grassed paddocks, vacant at the time of the inspection other than several horses.
- A residence is located in the middle of the property with septic system evident (disposal field to the south of the house). Large water tanks and small constructed ornamental pond were present near the house and there is evidence of basalt outcropping on the lawn areas adjacent the house.
- An overgrown area of stockpiled soils is present to the south of the house. The heavy grass cover prevented visual inspection of the soils, but there were some inert materials (rock, plastic buckets, carpet) noted. The stockpiles are low lying (not more than approximately 1 m). Anecdotally, speaking with the tenant, the owner was (is) a builder and soils may have been deposited from general site clean-ups on other construction works.
- Three small to medium sized farm sheds are located to the east of the house.
- In the southwest and south east corners of the site are constructed farm dams. Soils around the western dam appeared sandy, consistent with the mapped granodiorite geology.
- A groundwater monitoring well was observed to the north of the dam located in the southwest, but was not accessed/ dipped. Prior investigations (e.g. by Greencap) did not report installation of monitoring wells, and it may have been installed for geotechnical purposes.
- No indications of contamination or significant contaminating activities were observed other than the small stockpiles of fill material of unknown origin south of the residence. Minor incidental contamination around the farm sheds east of the residence is possible.

8.3.2 No. 1320 (northern portion of site)

- There are areas of rocky outcropping, which have more significant tree growth and are un-mown. Stockpiles of basalt were noted in one of these areas, presumably picked up from the grazing paddocks.
- In the western half of the site near the southern boundary there is a large stockpile which extends to 3-4 m high (as the surrounding topography falls, the stockpile continues 'at grade' resulting in significant mounding at the western end). This stockpile is also heavily overgrown, but at least one piece of suspected asbestos containing cement sheeting was observed.
- East of the stockpile was disused excavation machinery, and west of the stockpile was a large shed and set down area being used primarily for storage of scaffolding materials. However, there was also a wide range of other scrap materials, construction materials and equipment and shipping containers. Empty ICBs were noted onsite, but are likely to have been used for water storage, with no evidence of chemical residue.
- A small number of telegraph poles were stored on the southern boundary.
- A large farm dam is present in the western half of the site. Another farm dam is also present in the east of the site.
- There is potential for surficial contamination in the contractor set down areas and around the sheds and large stockpile of fill of unknown origin (which had some evidence of inert materials and at least one piece of cement sheet with potential asbestos).

Based on the above discussion, the majority of the site is considered unlikely to be contaminated, however further consideration of stockpile areas is likely to be necessary.

9 SOIL ASSESSMENT

9.1 Greencap (2021) assessment

Greencap Property was engaged by Resolution Property Group to undertake a targeted soil contamination assessment at 1300 – 1320 Mickleham Rd, Craigieburn. Whilst the scope, synopsis of work undertaken and descriptions of soil sampling results were provided, no laboratory analytical data was included with the report provided by the client.

The assessment undertaken comprised of:

- Collection of ten soil samples from eight stockpiles present across the site (details of stockpile numbering and location was not available in the provided report extract);
- Laboratory analysis of samples for EPA Victoria 1828.2 Suite and asbestos in soil.

No laboratory analytical results were provided within the report, however, a synopsis of the soil data with reference to relevant Land Environmental Value quality indicators (NEPM 2013 values) and EPA Victoria (2020) Publication 1828.2 values is presented in the report.

The results indicated:

- Reported contaminant concentrations of lead (1 sample), nickel (2 samples) and zinc (2 samples) exceeded the Fill Material upper limits (300 mg/kg, 60 mg/kg and 200 mg/kg respectively). The magnitudes of the exceedances were not recorded within the report body, however the report concluded that two stockpiles were categorised as Category C Priority Waste, the remaining six as fill material.
- Inert materials were observed in stockpiles.
- One sample exceeded NEPM HIL A for lead (300 mg/kg) (in Stockpile 4); the magnitude of the exceedance was not recorded within the report body. All other results were below HIL, HSL, ESL and EIL guideline values for low density residential land use.

9.2 Evaluation of quality and completeness

Given that laboratory data and documentation has not been provided by the assessor a compete evaluation of quality and completeness is not able to be undertaken. The following was obtained from the report body:

- It is inferred that 10 primary soil samples were analysed from each of eight stockpiles.
- Soil samples were collected from stockpiled soils using a hand auger and excavator.
- Clean gloves were used to collect each soil sample and sampling equipment (spatula or trowel) was decontaminated between locations with Decon 90.
- Soil samples were collected in laboratory supplied containers and transported in a chilled cooler box.
- Soil samples were analysed for EPA Victoria 1828.2 Limited suite and asbestos in soils.
- The Environmental Auditor is of the opinion that the analytical program undertaken was generally sufficient to characterise chemicals of potential concern in soil at the site.

The Auditor considered the approach as described was generally in accordance with standard industry practice and appropriate assuming stockpile volumes are less than 2,500 m^3. The results are therefore inferred to be a reasonable representation of the contamination status of tested stockpiles.

10 ENVIRONMENTAL QUALITY OBJECTIVES AND CRITERIA

The Victorian Government has prepared an *Environment Reference Standard* (ERS) in accordance with Clause 93 of the *Environment Protection (EP) Act* 2017. The ERS provides the framework for the assessment and reporting on environmental conditions in Victoria. It sets out the environmental values (EVs) of the ambient air, ambient sound, land, and water

(groundwater and surface water) environments that are sought to be achieved or maintained in Victoria and standards to support those values.

Standards for the EVs are comprised of objectives for supporting different uses of the environment and indicators that can be measured to determine whether those objectives are being met. The ERS is not a compliance standard, but the indicators and objectives provide a basis for assessment and reporting on environmental conditions in Victoria and the ERS is required to be considered by Auditors when carrying out their functions under the EP Act, including conducting Audits.

The PRSA process requires that the levels of contamination reported be assessed in the context of the future land use. The applicable sections of the environment which need to be considered, such as soil, groundwater, surface water and air, are discussed in more detail below.

10.1 Land environmental values

Part 4 of the ERS sets out EVs applicable to various land use categories. These are summarised in **Table 9**.

Table 9: Land Environmental Values

Environmental Values		Land use						
		Parks and reserves	Agricultural	Sensitive use		Recreation/ open space	Commercial	Industrial
				High Density	Other (lower density)			
Land dependant ecosystems and species-	Natural ecosystems	✓						
	Modified ecosystems	✓	✓		✓	✓		
	Highly modified ecosystems	✓	✓	✓	✓	✓	✓	✓
Human Health		✓	✓	✓	✓	✓	✓	✓
Building and structures		✓	✓	✓	✓	✓	✓	✓
Aesthetics		✓		✓	✓	✓	✓	
Production of food, flora, and fibre		✓	✓		✓			

The site is proposed to be used for general residential use, for which EVs are:

- Land dependant ecosystems and species – Modified to Highly modified ecosystems;
- Human Health;
- Buildings and Structures;

- Aesthetics; and
- Production of food, flora and fibre.

All the above land EVs are considered to be applicable to the site.

10.2 Soil assessment criteria

The environmental quality indicators and objectives applicable to the assessment of the relevant EVs for the proposed land uses are detailed in **Table 10**.

Table 10: Indicators and objectives for relevant land environmental values

Beneficial use	Indicators	Objectives
Land dependant ecosystems and species	Contaminants set out in the ASC NEPM[1] and any other contaminants present at the site as determined by the site history	Health investigation or screening levels (HIL/ HSL) specified in the ASC NEPM or other such levels (where no guidelines are available) or where more appropriate, levels derived in accordance with risk-based methodologies specified in the NEPM or background levels established in accordance with the Act.
Human health	Contaminants set out in the ASC NEPM and any other contaminants present at the site as determined by the site history	Health investigation or screening levels (HIL/ HSL) specified in the ASC NEPM or other such levels (where no guidelines are available) or where more appropriate, levels derived in accordance with risk-based methodologies specified in the NEPM
Buildings and structures	pH; sulfate; ORP; salinity; other substance or waste that may have a detrimental impact on the structural integrity of buildings and other structures.	Contamination should not cause the land to be corrosive to or adversely affect the integrity of structures or building materials.
Aesthetics	Any chemical substance or waste that may be offensive to the senses.	Contamination must not cause the land to be offensive to the senses of human beings.
Production of food flora and fibre	Contaminants set out in the ASC NEPM and any other contaminants present at the site as determined by the site history	The levels specified in the Food Standards Code detected in any food, flora or fibre produced at the site. Levels that do not adversely affect produce quality or yield

The following sections discuss the specific assessment criteria adopted for the protection of relevant land EVs at site.

[1] NEPC, 2013 *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended.

10.2.1 Human health

The ASC NEPM provides a range of investigation levels for the protection of human health, referred to as health investigation levels (HILs), and provides health screening levels (HSLs) for BTEXN and petroleum hydrocarbons.

HILs and HSLs are provided for four generic land use settings:

- HIL A: residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), also includes children's day care centres, preschools and primary schools;
- HIL B: residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats;
- HIL C: public open space such as parks, playgrounds, playing fields (e.g., ovals), secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves) which should be subject to a site-specific assessment where appropriate; and
- HIL D: commercial/ industrial such as shops, offices, factories, and industrial sites.

The adopted HIL level for the site is HIL A (residential) based on the likely future use.

10.2.2 Land dependant ecosystems and species

The EILs outlined in the ASC NEPM are adopted for this assessment. The ASC NEPM presents the methodology for deriving terrestrial EILs using aged (i.e., >2 years old) contamination for soil with the following land use types:

- Areas of ecological significance (AES);
- Urban residential/ public open space (UR/POS); and
- Commercial/ industrial (C/I).

The methodology has been developed to protect soil processes, soil biota (flora and fauna) and terrestrial invertebrates and vertebrates. As the proposed use for the site is high density residential, the UR/POS EIL has been adopted for the assessment.

The EILs provided in the ASC NEPM are calculated from summing the added contaminant limit (ACL) to the ambient background concentration (ABC) to derive the site-specific soil quality guideline considering the effect caused by pH, exchangeable cations (CEC), iron and total organic carbon in soil that can affect concentration toxicity data.

The values presented for zinc, chromium (III), copper and lead are based on derivation of ACLs. Values presented for arsenic and naphthalene are generic EILs based on total concentrations of aged (arsenic) and fresh contaminants.

Ecological screening levels (ESLs) listed in Table 1B (5) of the ASC NEPM have been adopted in this assessment for TPH/TRH and BTEXN compounds.

10.2.3 Buildings and structures

The ERS states that the contamination must not cause the land to be corrosive to or adversely affect the integrity of structures or building materials. The relevant indicators include pH, sulfate, redox potential, salinity or any chemical substance or waste that may have detrimental impact on the structural integrity of buildings and other structures.

Objectives for these key indicators have primarily been sourced from AS 2159 (2009), *Piling Design and Installation*, in which levels of pH, chloride and sulfate which are considered to represent mild and/or non-aggressive conditions for concrete or steel piles are specified. The values adopted for initial screening (<5,000 mg/kg sulfate, pH >5 and <5,000 mg/kg chloride) are the most conservative of those reported in AS 2159 for concrete and steel piles and are considered to be associated with mild or non-aggressive conditions only where all objectives are met.

10.2.4 Aesthetics

The ERS states that contamination must not cause the land to be offensive to the senses of human beings. Aesthetic issues may include discoloured soil (stained from spills); solid inert waste (bricks, glass, steel, polyvinylchloride [PVC], etc.); fill with waste (demolition rubble, ash, coke, black carbon, foundry slag, etc.); and offensive odours.

10.2.5 Production of food, flora and fibre

The ERS defers to the levels referenced in the Australian and New Zealand Food Authority Standards Codes for assessing the production of food, flora and fibre at a site. In this case, the Auditor has used the EILs (which are the most sensitive investigation level) as an initial screening tool.

11 CONCEPTUAL SITE MODEL DEVELOPMENT

A conceptual site model (CSM) of the site can be formed by considering the geophysical characteristics at play at the site, the contaminant source, potential receptors and the pathways to the receptors. A CSM is an iterative process constantly being updated during the investigation process as more information becomes available.

11.1 Chemicals of potential concern

Based on the site history the chemicals of potential concern (CoPC) are considered to be:

- Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn).
- Pesticides (OCPs and OPPs);
- Petroleum hydrocarbons (TRH /TPH);
- Polycyclic aromatic hydrocarbons (PAHs);

- Benzene, toluene, ethyl benzene, xylenes and naphthalene (BTEXN); and
- Asbestos containing materials (ACM).

11.2 Source to receptor pathway analysis

11.2.1 Sources

Sources of potential contamination are considered to be limited to the following:

- No. 1300 and 1320 – Agricultural practices (pesticides such as OCPs and OPPs);
    - Though OCP/ OPPs are listed, the potential for elevated levels is considered to be very low due to the predominantly grazing activity onsite.
- No. 1300 and 1320 – Contamination associated with the importation of soil (Metals, TRH, PAHs, BTEXN, asbestos)
    - This is considered to be primarily confined to areas where stockpiled soil is present.
- No. 1320 – Waste and machinery storage (Metals, TRH, PAHs, BTEXN, asbestos).
    - This is considered to be confined to the current machinery and waste storage area situated in the western portion of the site.

11.2.2 Pathways and geophysical components of the CSM

The potential pathways between the sources and receptors include:

- Soil: direct contact (dermal), inhalation of volatile chemicals/ asbestos fibres and incidental ingestion.

Pathways relevant to impacted soil are considered likely to be limited to areas where imported soil has been placed.

11.2.3 Receptors

The potential human receptors include the future users of the site (residents, workers and visitors), the most sensitive being young children in a low-density residential scenario. The potential environmental receptors include flora and fauna at the point of groundwater discharge (taken to Yuroke Creek), as well as the on-site soil terrestrial ecosystem.

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12 CONCLUSION AND PRSA OUTCOMES

Based on a review of the existing PSIs, site inspection and assessment of areas of concern by the Auditor, the PRSA has identified the following:

- The lots were originally combined together as crown land prior to 1925 before being transferred into private ownership, and later subdivided into the two individual lots in 1979;
- The lots appear to have been predominantly used for agricultural purposes (grazing) with possible attempts at cropping small portions of the site east of the residence on No. 1300, and at the western end of No. 1320. These areas have been returned (if indeed they were cropped) to grassed grazing land.
- No significant sources of potential contamination were observed at the site other than:
    - the presence of stockpiled soils south of the residence at No. 1300 and east of the large shed in No. 1320. These soils are apparent from 2006 onwards based on historical aerial imagery, and anecdotally are likely spoil from other construction sites managed by the site owner operating as a commercial builder.
    - Site observations indicate the presence of some building wastes and potential asbestos containing materials (cement sheeting) within the stockpiles.
    - Testing of stockpiles indicated one sample above NEPM HIL A for lead; two of eight stockpiles tested by an assessor were classified as Category C Priority Wastes and the remainder as Fill Material.
    - A contractor set down area with potential surficial contamination from construction machinery and stored equipment/materials (minor spills, leaks).

A septic tank is present servicing the house at No. 1300.

As a result of the presence of potentially contaminated stockpiled soils, the outcome of the PRSA is:

- Outcome 2: Likely that contaminated land is present, but no environmental audit is required. See further comments in the “Other information” section of the PRSA Statement at the front of this report.

13 LIMITATIONS

This report has been prepared by Environmental Earth Sciences VIC ACN 109 404 024 in response to and subject to the following limitations:

1. The specific instructions received from PGG (Craigieburn) Pty Ltd;

2. The specific scope of works set out in PO222067_V1 issued by Environmental Earth Sciences VIC for and on behalf of PGG (Craigieburn) Pty Ltd, is included in Section 3 (Scope of Work) of this report;

3. May not be relied upon by any third party not named in this report for any purpose except with the prior written consent of Environmental Earth Sciences VIC (which consent may or may not be given at the discretion of Environmental Earth Sciences VIC);

4. This report comprises the formal report, documentation sections, tables, figures and appendices as referred to in the index to this report and must not be released to any third party or copied in part without all the material included in this report for any reason;

5. The report only relates to the site referred to in the scope of works being located at 1300 – 1320 Mickleham Rd, Craigieburn, VIC ("the site");

6. The report relates to the site as at the date of the report as conditions may change thereafter due to natural processes and/or site activities;

7. No warranty or guarantee is made in regard to any other use than as specified in the scope of works and only applies to the depth tested and reported in this report;

8. Fill, soil, groundwater and rock to the depth tested on the site may be fit for the use specified in this report. Unless it is expressly stated in this report, the fill, soil and/or rock may not be suitable for classification as clean fill if deposited off site;

9. This report is not a geotechnical or planning report suitable for planning or zoning purposes; and

10. Our General Limitations set out at the back of the body of this report.

14 REFERENCES

Bureau of Meteorology (BOM) (2022) *Groundwater Dependent Ecosystems Atlas*, available at: http://www.bom.gov.au/water/groundwater/gde/index.shtml

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EPA Victoria (2021a) *Environmental auditor guidelines – provision of statements and reports for environmental audits and preliminary risk screen assessments*, Publication 2022, August 2021.

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Greencap (2021) *Targeted Soil Contamination assessment, 1300 & 1320 Mickleham Rd, Craigieburn*, report prepared for Resolution Property Group

LandServ (2018) *Craigieburn West Precinct Structure Plan Preliminary Land Contamination Assessment - Craigieburn West, Victoria*, Report prepared for Victorian Planning Authority.

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ENVIRONMENTAL EARTH SCIENCES GENERAL LIMITATIONS

Scope of services
The work presented in this report is Environmental Earth Sciences response to the specific scope of works requested by, planned with and approved by the client. It cannot be relied on by any other third party for any purpose except with our prior written consent. Client may distribute this report to other parties and in doing so warrants that the report is suitable for the purpose it was intended for. However, any party wishing to rely on this report should contact us to determine the suitability of this report for their specific purpose.

Data should not be separated from the report
A report is provided inclusive of all documentation sections, limitations, tables, figures and appendices and should not be provided or copied in part without all supporting documentation for any reason, because misinterpretation may occur.

Subsurface conditions change
Understanding an environmental study will reduce exposure to the risk of the presence of contaminated soil and or groundwater. However, contaminants may be present in areas that were not investigated, or may migrate to other areas. Analysis cannot cover every type of contaminant that could possibly be present. When combined with field observations, field measurements and professional judgement, this approach increases the probability of identifying contaminated soil and or groundwater. Under no circumstances can it be considered that these findings represent the actual condition of the site at all points.

Environmental studies identify actual sub-surface conditions only at those points where samples are taken, when they are taken. Actual conditions between sampling locations differ from those inferred because no professional, no matter how qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden below the ground surface. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from that predicted. Nothing can be done to prevent the unanticipated. However, steps can be taken to help minimize the impact. For this reason, site owners should retain our services.

Problems with interpretation by others
Advice and interpretation is provided on the basis that subsequent work will be undertaken by Environmental Earth Sciences VIC. This will identify variances, maintain consistency in how data is interpreted, conduct additional tests that may be necessary and recommend solutions to problems encountered on site. Other parties may misinterpret our work and we cannot be responsible for how the information in this report is used. If further data is collected or comes to light we reserve the right to alter their conclusions.

Obtain regulatory approval
The investigation and remediation of contaminated sites is a field in which legislation and interpretation of legislation is changing rapidly. Our interpretation of the investigation findings should not be taken to be that of any other party. When approval from a statutory authority is required for a project, that approval should be directly sought by the client.

Limit of liability
This study has been carried out to a particular scope of works at a specified site and should not be used for any other purpose. This report is provided on the condition that Environmental Earth Sciences VIC disclaims all liability to any person or entity other than the client in respect of anything done or omitted to be done and of the consequence of anything done or omitted to be done by any such person in reliance, whether in whole or in part, on the contents of this report. Furthermore, Environmental Earth Sciences VIC disclaims all liability in respect of anything done or omitted to be done and of the consequence of anything done or omitted to be done by the client, or any such person in reliance, whether in whole or any part of the contents of this report of all matters not stated in the brief outlined in Environmental Earth Sciences VIC's proposal number and according to Environmental Earth Sciences general terms and conditions and special terms and conditions for contaminated sites.

To the maximum extent permitted by law, we exclude all liability of whatever nature, whether in contract, tort or otherwise, for the acts, omissions or default, whether negligent or otherwise for any loss or damage whatsoever that may arise in any way in connection with the supply of services. Under circumstances where liability cannot be excluded, such liability is limited to the value of the purchased service.

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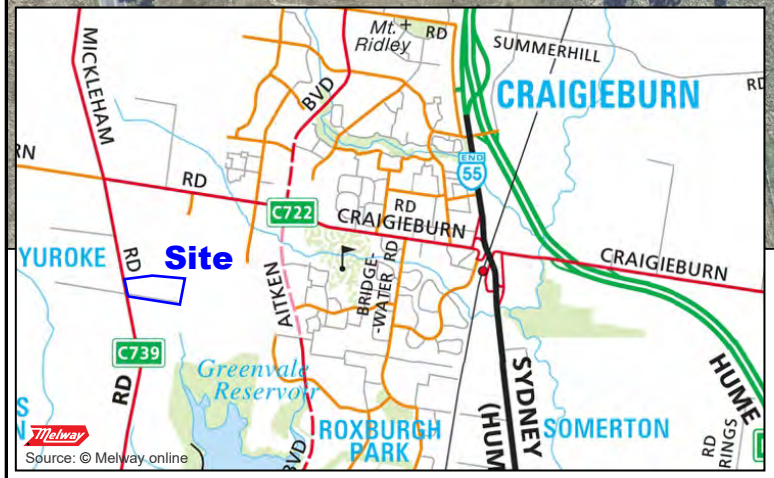
FIGURES



LEGEND:

Site boundary

0 25 50 75 100 125

Scale in Metres

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Title:	**Site Layout and Regional Locality Map**
Location:	**1300-1320 Mickleham Road, Craigieburn, Vic.**
Client:	**PGG (Craigieburn) Pty Ltd**
Job No:	**222047**
PM:	**TV**
Scale:	**As Shown**
Drawn:	**LB**
Date:	**July 2022**
Figure	**1**