



Douglas Partners

Geotechnics • Environment • Groundwater

Integrated Practical Solutions

REPORT

on

PRELIMINARY CONTAMINATION ASSESSMENT

**BEVIAN ROAD CONCEPT APPLICATION
BEVIAN ROAD, ROSEDALE**

Prepared for
MARSIM

**PROJECT 38045E
OCTOBER 2007**



Douglas Partners

Geotechnics • Environment • Groundwater

REPORT
on
PRELIMINARY CONTAMINATION ASSESSMENT

BEVIAN ROAD CONCEPT APPLICATION
BEVIAN ROAD, ROSEDALE

Prepared for
MARSIM

PROJECT 38045E
OCTOBER 2007

Douglas Partners Pty Ltd
ABN 75 053 980 117
Unit 1
1 Luso drive
Unanderra 2526

PO Box 486
Unanderra NSW 2526
Phone (02) 4271 1836
Fax (02) 4271 1897
wollongong@douglaspartners.com.au



EXECUTIVE SUMMARY

This report presents the results of a preliminary contamination assessment undertaken on a 188 ha parcel of land known as the Bevia Road Concept Application, Bevia Road, Rosedale (henceforth “the site”, refer Drawing 1). The work was commissioned by Marsim.

The assessment was undertaken to comply with part of the Director General's Requirements (DGR) 12.1, which is copied below:

12. Soil and Contamination

12.1 Identify the presence and extent of acid sulphate soils on the site and outline appropriate mitigation measures. Identify areas of contamination on site and appropriate mitigation measures. The level of assessment shall be consistent with the Acid Sulphate Soil Manual by ASSMAC.

The underlined section is addressed within this report. This assessment has been undertaken in general accordance with SEPP55 which allows for staged assessments. This Stage 1: Preliminary assessment may be augmented by subsequent assessments, if warranted.

The investigation comprised a review of site history information including a review of previous investigations, a groundwater bore search, a review of historical titles, council records and historical aerial photographs, a search of regulatory Notices or Orders, a review of Rosedale Urban Release Area Cultural Heritage Assessment, an interview with a former site owner, a site inspection and the identification of areas of environmental concern.

Based on the site history review and inspection/field mapping, the overall potential for contamination at the subject site is considered to be low.

Thirty seven separate PAECs were identified across the site of which ten were deemed to be areas of environmental concern. As the land has been proposed for residential development, it is recommended that field-based investigations be carried out in each of the identified AEC to confirm the suitability for residential landuse. Appropriate scopes of work and sample and analysis quality plans (SAQP) should be prepared for each AEC prior to commencement of fieldwork. Section 10 of the report provides a guide to the type of additional investigations that may be required on the site and remediation strategies based on information currently available.

It is considered that the land designated as AEC can be made suitable for residential development following further investigation, preparation of remediation action plans, remedial works and validation in AEC areas, where necessary. Further investigation will delineate and determine the areas of contamination and the scope of remediation. The following table presents possible remediation strategies which would render the site suitable for residential use.

Possible Remediation Strategy

<p>AEC1</p> <p>Above Ground Storage Tanks</p>	<p>Hydrocarbon contaminated material will require delineation, excavation, waste classification and off site removal. Depending on the extent of contamination, soils may require excavation to underlying bedrock and a groundwater monitoring and remediation program may be necessary. Following the successful removal of the tanks, validation of the excavation and confirmation of off site disposal of excavated material the site would be deemed suitable for residential use.</p>
<p>AEC2</p> <p>Old Cheese Factory</p>	<p>If the hazardous building material assessment confirms the existence of the hazardous building materials on site, the hazardous material would require removal by an appropriately licensed contractor and the factory restored using non hazardous material. A Clearance Certificate by an Occupational Hygienist must be provided post refurbishment,</p> <p>Further to this, soils surrounding the building will require investigation and any lead, asbestos or other contamination identified would require delineation. The delineated area would require excavation and material disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>
<p>AEC3, 5 and 8</p> <p>Possible Filling</p>	<p>The extent of filling would require further delineation and assessment. If it is found that the fill material is not suitable to remain on site based on contaminant levels and aesthetics, the delineated area would require excavation and the fill disposed of to an off site location. The resultant excavation would require validation and back filling. Following successful validation of the site, the site would be suitable for residential use.</p>
<p>AEC4</p> <p>Derelict Dairy</p>	<p>Similar to the AEC2, if the hazardous building material assessment confirms the existence of the hazardous building materials on site, the hazardous material would require removal by an appropriately licensed contractor and the dairy restored using non hazardous material. A Clearance Certificate by an Occupational Hygienist should be provided post refurbishment.</p> <p>Further to this, soils surrounding the dairy and cattle yards would require investigation and any contamination identified would require delineation. The</p>

	delineated area would require excavation and material disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.
AEC6 Asbestos Scatter	The area of asbestos scatter requires delineation, the delineated area would then be excavated and the material disposed of to an appropriate off site location. A Clearance Certificate by an Occupational Hygienist would be required following remediation works to validate the site. Following the provision of a clearance certificate the site would be suitable for residential use.
AEC7 Abandoned Orchard	Contaminated areas identified by low density sampling would require further delineation by further sampling. The delineated areas would then be excavated and the material removed off site. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.
AEC8 Two Pits	Further investigation of the pits would be required to determine the contents of the pits and their suitability to remain on site and to delineate the extent of the pits. If it is found that the pit material is not suitable to remain on site deemed by contaminant levels and aesthetics, the delineated pit areas would require excavation and the fill disposed of to an off site location. If extensive signs of contamination are observed in the pit may be required to be excavated to the underlying bedrock and the groundwater monitoring (and possibly remediation) program be put in place. The resultant excavations would require validation. Following successful validation of the site, the site would be suitable for residential use.
AEC9 Creek and gully filling north of nursery	The extent of filling would require further delineation and assessment. If it is found that the fill material is not suitable to remain on site deemed by contaminant levels and aesthetics, the delineated area would require excavation and the fill disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.
AEC10 Gully filling south of dairy	The extent of filling would require further delineation and assessment. If it is found that the fill material is not suitable to remain on site deemed by contaminant levels and aesthetics, the delineated area would require excavation and the fill disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.

TABLE OF CONTENTS

	Page
1. INTRODUCTION	1
2. SITE IDENTIFICATION AND SURROUNDING LAND USES	2
3. PROPOSED DEVELOPMENT	2
4. REGIONAL TOPOGRAPHY AND GEOLOGY	2
5. SCOPE OF WORKS.....	3
6. SITE HISTORY INVESTIGATION	4
6.1 Review of Previous Investigations.....	4
6.2 DNR Groundwater Bore Search.....	5
6.3 Historical Title Search.....	6
6.4 Part 2 of the Section 149 certificate.....	6
6.5 Historical Aerial Photography	6
6.6 Regulatory Notices Search.....	7
6.7 Review of Rosedale Urban Release Area Cultural Heritage Assessment	7
7. INTERVIEW WITH A FORMER SITE OWNER.....	8
8. SITE INSPECTION.....	8
9. POTENTIAL FOR CONTAMINATION	8
9.1 Potential Areas of Environmental Concern (PAEC)	8
9.2 Areas of Concern (AEC).....	10
10. CONCLUSIONS AND RECOMMENDATIONS	11
11. LIMITATIONS OF THIS REPORT	15

APPENDICES

- A Drawings 1 - 8
- B PAEC Identification and Inspection Logs
- C Notes from Interview
- D Photographic Plates

DRAWINGS

- 1 Site Plan and Lot Boundaries
- 2 Aerial Photograph: 1961
- 3 Aerial Photograph: 1969
- 4 Aerial Photograph: 1975
- 5 Aerial Photograph: 1991
- 6 Aerial Photograph: 2006
- 7 Potential Areas of Environmental Concern
- 8 Areas of Environmental Concern

CCK
Project 38045E
16 October 2007

REPORT ON PRELIMINARY CONTAMINATION ASSESSMENT
BEVIAN ROAD CONCEPT APPLICATION
BEVIAN ROAD, ROSEDALE

1. INTRODUCTION

This report presents the results of a preliminary contamination assessment undertaken on a 188 ha parcel of land known as the Bevia Road Concept Application, Bevia Road, Rosedale (henceforth “the site”, refer Drawing 1). The work was commissioned by Marsim. The assessment was undertaken to comply with part of the Director General’s Requirements (DGR) 12.1, which is copied below:

12. Soil and Contamination

12.1 Identify the presence and extent of acid sulphate soils on the site and outline appropriate mitigation measures. Identify areas of contamination on site and appropriate mitigation measures. The level of assessment shall be consistent with the Acid Sulphate Soil Manual by ASSMAC.

The underlined section is addressed within this report. This assessment has been undertaken in general accordance with SEPP55 which allows for staged assessments. This Stage 1: Preliminary assessment may be augmented by subsequent assessments, if warranted.

The investigation comprised a review of site history information including a review of previous investigations, a groundwater bore search, a review of historical titles, council records and historical aerial photographs, a search of regulatory Notices or Orders, a review of Rosedale

Urban Release Area Cultural Heritage Assessment, an interview with a former site owner, a site inspection and the identification of areas of environmental concern.

2. SITE IDENTIFICATION AND SURROUNDING LAND USES

The study area comprises an irregular shaped site totalling 188 ha lying to the north and west of George Bass Drive between the villages of Tomakin and Rosedale, approximately 12 km south of Batemans Bay. The site has maximum plan dimensions of approximately 2.0 km (north-south) and 1.1 km (east-west) and comprises 10 land holdings on both sides of Bevan Road. The Lots and DP numbers of these land holdings are:

- | | |
|--------------------|---------------------|
| - Lot 2 DP 623340 | - Lot 72 DP 755902 |
| - Lot 2 DP 627034 | - Lot 102 DP 755902 |
| - Lot 11 DP 755902 | - Lot 118 DP 755902 |
| - Lot 29 DP 755902 | - Lot 119 DP 755902 |
| - Lot 32 DP 755902 | - Lot 213 DP 755902 |

The surrounding land to the north and west consists of dense bushland which is understood to be held partly within State forest. To the east of the site are bushland and the residential community of Malua Bay and the Pacific Ocean. To the south of the site are Bevan Swamp, a sewage treatment works, a caravan park and the Pacific Ocean.

3. PROPOSED DEVELOPMENT

It is understood that the proposed residential development will comprise 806 residential lots. Site occupiers will have significant access to soil and gardens. The lots will be serviced by a network of roads accessed from George Bass Drive.

4. REGIONAL TOPOGRAPHY AND GEOLOGY

Surface levels range from approximately RL 126 at the north-western corner to RL 2 at the foreshore of Bevia Swamp at the southern extent of the site. Most of the site has surface grades less than 15%, particularly along the eastern and southern boundaries. The ridgelines generally have surface grades of between 15% and 25%, with areas in excess of 25% in the north-western corner of the site.

An east-west trending ridgeline divides the site into two distinct stream catchments. An entrenched, dendritic stream pattern characterises the headwaters of Salt Water Creek, which drains the northern and central sections of the site. Several farm dams have been constructed across the tributary gullies. The southern section of the site is characterised by two broad and partially alluvium or colluvium infilled gullies that drain into the Bevia Swamp. The site has been mostly cleared of timber and is grass covered.

Reference to the Ulladulla 1:250 000 Series Sheets (Department of Mines, 1966) indicates that the study area is underlain by the Wogonga Beds of possible Cambrian or Ordovician age. This unit comprises a tightly folded and steeply dipping, bedded sequence of chert, conglomerate, agglomerate, slate, sandstone and phyllite.

Within the southern section of the study area (adjacent to Bevia Swamp), the bedrock sequence is extensively overlain by alluvium of Recent (Quaternary) age. Shallow groundwater on the site is expected to be largely confined to the Alluvial deposits in the southern section of the site and in gully bases. A regional aquifer is found in fractures of the underlying phyllite. Available information is limited and suggests that deep aquifer water levels are in the order of 30 m below surface. Groundwater is expected to be discharging to the Pacific Ocean.

5. SCOPE OF WORKS

In order to determine the potential for land contamination and particular environmental constraints in the release area, a Preliminary Contamination Assessment was conducted as reported herein. This included primarily an appraisal of the potential for site contamination that may have resulted from past and present land uses.

Based on the information relating to the proposed development, the Preliminary Assessment included the following scope of works:

- A review of previous investigations at the site including two geotechnical and a Stage 1 Environmental Site Assessments.
- A search of surrounding registered groundwater bore information.
- A review of previous site ownership records including land title records archived at the Land Titles Office. These records were compiled by Peter S. Hopley Pty Ltd.
- A review of Part 2 of the Section 149 planning certificates for each property for issues pertaining to possible contamination.
- A review of historical aerial photography for the area through the Land Information Section of the Department of Lands.
- A search through the NSW EPA Land Information records to confirm that there are no statutory Notices or Orders current on any parts of the release area issued under the *Contaminated Land Management Act* (1997).
- A review of Rosedale Urban Release Area Cultural Heritage Assessment prepared by Navin Officer Heritage Consultants Pty Ltd to further identify past potentially contaminating actives and sources of contamination.
- Interviews with a former site owner to obtain anecdotal information regarding historical ownership of the site.
- Formulation of a list of Potential Areas of Environmental Concern (PAEC) based on the findings of the reviews.
- Site inspection of each identified PAEC and a drive-over survey of the site by an Environmental Engineer for discernable signs of contamination or contaminating activities.

- Refinement of the PAEC into actual Areas of Environmental Concern (AEC) based on the findings of the site inspection and evaluation of the site history in particular by reference to the aerial photography.
- Preparation of an interpretive report identifying AECs and providing recommendations regarding the need for further field-based environmental investigations of these areas as well as to provide an assessment of the remaining areas of the site to determine local background conditions.

6. SITE HISTORY INVESTIGATION

A site history investigation was undertaken for the site. Issues pertinent to contamination were logged as a Potential Area of Environmental Concern (PAEC). These PAEC Identification & Inspection Logs described site observations and the potential for contamination and further classified each individual area as an Area of Environmental Concern (AEC), where required.

The following sections detail the methodology of investigations undertaken with results of the investigations discussed in Section 9. PAEC Identification & Inspection Logs are contained in Appendix B, which contain detailed information and observations relating to each identified area, and provide the rationale for declaring a site's AEC status. This report must be read in conjunction with the PAEC logs.

6.1 Review of Previous Investigations

A review of the available previously conducted investigations was conducted. These investigations included:

- Douglas Partners Pty Ltd Report on *Geotechnical Investigation, Rosedale Urban Release Area, Rosedale*, Project Number 38045, dated 18 September 2002.
- Douglas Partners Pty Ltd Report on *Stage 1 Environmental Site Assessment, Lot 11 DP 755902, Bevia Road, Rosedale*, Project Number 38045A, dated 29 April 2003.
- Douglas Partners Pty Ltd Report on *Supplementary Geotechnical Investigation, Rosedale Urban Release Area, Rosedale*, Project Number 38045B, dated 18 July 2005.

The review identified one PAEC reported in the Stage 1 Environmental Site Assessment with limited sampling. This report investigated the contamination status of the former nursery area, which was located on Lot 11. In this report above-ground storage tanks and a pump were identified in the nursery compound of Lot 11 DP 755902. No elevated contaminant levels were identified during the assessment of the former Nursery area.

6.2 DNR Groundwater Bore Search

A registered groundwater bore search was conducted by the Department of Water and Energy (DWE) on the 2nd of July 2007. None of the registered groundwater bores were found to occur within the Rosedale Urban Release Area boundaries. The closest groundwater bores found are as follows:

- GW107545 - approximately 800 m east from the centre of the precinct. No information on soil strata was provided in the bore records. Water quality details were not provided. The bore was authorised for Domestic use.
- GW105003 - approximately 850 m east from the centre of the precinct. No information on soil strata was provided in the bore records. Water quality details were not provided. The bore was authorised for Domestic use and intended for Domestic use.
- GW104803 - approximately 850 m east from the centre of the precinct. No information on soil strata was provided in the bore records. Water quality details were not provided. The bore was authorised for Domestic use and intended for Domestic Use.
- GW105652 - approximately 1600 m south west from the centre of the precinct. No information on soil strata was provided in the bore records. Water quality details were not provided. The bore was authorised for Domestic use.
- GW067920 - approximately 2400 m west from the centre of the precinct. Information provided in the driller's logs indicate top soil and weathered phyllite to a depth of 5 m underlain by hard and well joined green/yellow phyllite. Water quality details were not provided. The bore was authorised for Domestic use and intended for Domestic and Stock uses.
- GW104288 - approximately 2600 m west from the centre of the precinct. Information provided in the driller's logs indicates clay to a depth of 5 m, underlain by phyllite. The bore was authorised for Domestic/Stock use and intended for Domestic use.

- GW044651 - approximately 2200 m north-west from the centre of the precinct. Information provided in the driller's log indicates topsoil to a depth of 0.3 m underlain by clay to a depth of 0.61 m, claystone to a depth of 8.2 m shale to a depth of 31 m and slate. Water quality details were not provided. The bore was authorised for Domestic/Stock use and intended for General Use.

Three bores are located down gradient of the site, all are used for domestic purposes. All upgradient bores are registered for domestic or stock use. No industrial uses were recorded this is consistent with the non industrial surroundings of the site. No PAEC were recorded.

6.3 Historical Title Search

A search of land title ownership information held by Land Titles Office in Sydney was compiled by Peter S. Hopley Pty Ltd and covered records dating back to circa 1904. Detailed copies of titles and survey plans were analysed. PAEC were logged based on the potential for contamination resulting from the inferred site ownership.

6.4 Part 2 of the Section 149 certificate

A review of the Part 2 of the Section 149 planning certificates were reviewed for each parcel of land within the release area. It is understood Eurobodalla Shire Council does not issue Part 5 of the S149 certificate (Information received from Mr Peter Best, Nature Coast Developments Pty Ltd). No potential contamination issues were identified in the certificates.

6.5 Historical Aerial Photography

Historical aerial photographs from five periods of photography, archived by the Land Information Section of the Department of Land, were inspected and indicated that the site has undergone changes in layout since the earliest available aerial photograph dated January 1961. Aerial photographs examined included:

- August 1961 (Run 2, Prints 1066-5102)
- January 1969 (Run 2, Prints 1588-5184)
- September 1975 (Run 6, Prints 105-2333)
- November 1991 (Run 9, Print 54)
- January 2006 (Run 9, Prints 246-258)

All photographs were scanned at high resolution and geocoded for use in a GIS database for review and logging. Photos were examined for signs of structures, which may have been deleted, stripped soil or areas of fill. All unexplained surface features were logged as PAEC. Aerial photographs examined have been included in Appendix A (Drawings 2 – 6).

6.6 Regulatory Notices Search

A search was conducted through the NSW EPA web site for any Regulatory Notices that may be current on the site under the *Contaminated Land Management Act*, 1997. No Notices or Orders to investigate or remediate have been issued for the site under this legislation.

6.7 Review of Rosedale Urban Release Area Cultural Heritage Assessment

A review of the Rosedale Urban Release Area Cultural Heritage Assessment, dated October 2002 prepared by Navin Officer Heritage Consultants Pty Ltd was undertaken to further identify potential areas of environmental concern. The report was reviewed for indicators of potentially contaminating activities and sources of contamination such as former buildings, burial pits, areas of disturbance and landuses. All areas of potential environmental concern were recorded and logged in the sheets attached in Appendix B.

7. INTERVIEW WITH A FORMER SITE OWNER

An interview with a former site owner, Mr Robert Mann, was conducted on 21 August 2007. Completed Standard Interview Sheets are provided in Appendix C for review. All PAEC's resulting from the interview process were logged.

8. SITE INSPECTION

A site inspection on 26th and 27th July 2007 was undertaken with the intent of visiting all logged areas of PAEC as well as undertaking field mapping of PAEC not identified as part of the Site History Investigation. During this visit all PAEC were visited, photos were taken and site inspection logs recorded. Details are provided in the PAEC Identification Logs in Appendix B. Site photos are included in Appendix D.

9. POTENTIAL FOR CONTAMINATION

9.1 Potential Areas of Environmental Concern (PAEC)

Thirty seven areas were identified in the course of site history investigations as Potential Areas of Environmental Concern (PAEC). Each PAEC was logged on a PAEC Identification & Inspection Log. These logs are included for reference in Appendix B. The logs contain detailed information regarding the desk-top investigations and analysis undertaken for the assessment. Table 1 below lists the identified PAEC which includes an "outcome" as not all nominated PAEC became an AEC. Drawing 7 in Appendix A indicates the location of each PAEC on the most recent aerial photograph.

Table 1 – Identified Potential Areas of Environmental Concern

PAEC #	Description	Grid Ref	Identified from	Inspection Type	Outcome
1	Areas surrounding above ground storage tanks and pump shed (Lot 11 DP 755902)	C5	Stage 1 ESA	Walkover	AEC
2	Lots 32 and 213 DP 755902 - owned by unknown company and nursery men	A2	Title Deeds	Interview/Walkover	
3	Old Cheese Factory (Lot 11 DP 755902)	D6	Aerials	Walkover	AEC
4	Creek alignment (Lot 11 DP 755902)	C6	Aerials	Walkover	Not AEC
5	Dam (Lot 11 DP 755902)	D5	Aerials	Walkover	Not AEC
6	Disturbed Area (Lot 32 DP 755902)	E4	Aerials	Walkover	AEC
7	Possible Fill (Lot 29 DP 755902)	H4	Aerials	Walkover	Not AEC
8	Possible fill of low lying area (Lots 72 and 102 DP 755902)	G2	Aerials	Walkover	Not AEC
9	Cleared area adjacent to road (Lot 72 DP 755902)	H3	Aerials	Walkover	Not AEC
10	Creek alignment (Lot 32 DP 755902)	D2	Aerials	Walkover	Not AEC
11	Outcropping Granite (Lot 213 DP 755902)	C3	Aerials	Walkover	Not AEC
12	Creek crossing (Lot 213 DP 755902)	C4	Aerials	Walkover	Not AEC
13	Disused Dairy (Lot 213 DP 755902)	D4	Aerials	Walkover	AEC
14	Possible Creek alignment (Lot 32 DP 755902)	E4	Aerials	Walkover	Not AEC
15	Greenhouses (Lot 11 DP 755902)	D5	Aerials	Walkover	Not AEC
16	Series of Dams (Lots 11 and 118 DP 755902)	E4	Aerials	Walkover	Not AEC
17	Brick Structure (Lot 11 DP 755902)	E6	Aerials	Walkover	Not AEC
18	Possible cultivation area (Lot 118 DP 755902)	G5	Aerials	Walkover	Not AEC
19	Water and Road Easement	H6	Aerials	Walkover	Not AEC
20	Possible filling adjacent to creek (Lot 29 DP 755902)	J4	Aerials	Walkover	Not AEC
21	Possible stockpiles (Lot 72 DP 755902)	I2	Aerials	Walkover	Not AEC
22	Filling of gully (Lot 118 DP 755902)	F2	Aerials	Walkover	AEC
23	Possible filling of creek (Lot 213 DP 755902)	B2	Aerials	Walkover	Not AEC
24	Possible filling of creek (Lot 11 DP 755902)	D3	Aerials	Walkover	Not AEC
25	Farm Dam (Lot 118 DP 755902)	F6	Aerials	Walkover	Not AEC
26	Possible water tank and structure (Lot 102 DP 755902)	G2	Aerials	Walkover	Not AEC
27	Possible shed (Lot 29 DP 755902)	I5	Aerials	Walkover	Not AEC
28	Asbestos Scatter (Lot 11 DP 755902)	C5	Walkover	Walkover	AEC
29	Abandoned Orchard (Lot 29 DP 755902)	I4	Heritage	Heritage	AEC
30	Two Pits (Lot 213 DP 755902)	C5	Heritage	Heritage	AEC
31	1870s Selectors Huts (Various)	-	Heritage	Heritage	Not AEC
32	Footings from previous dairy	I5	Interview	N/A	Not AEC
33	Illegal Dump near Burri Road	A6	Interview	N/A	AEC
34	Fuel and Chemical Storage	-	Interview	N/A	PAEC13
35	Cattle Yards at Old Dairy	C4	Interview	N/A	PAEC13
36	Filled gully/ Creek North of Nursery	C6	Interview	N/A	AEC
37	Filled gullies on Southern side of Old Dairy	D4	Interview	N/A	AEC

9.2 Areas of Concern (AEC)

The site history and inspection indicated that the site had mainly been used for agricultural, horticultural and rural residential purposes. Following investigation of each PAEC sites were classified as either AEC or not AEC, the reasoning for this is provided on the PAEC Inspection Logs. The identified areas of environmental concern (AEC) are summarised in Table 2 together with an assessment of the potential contamination associated with each AEC. The location of each of the AEC is shown on Drawing 8, Appendix A.

Table 2 – Summary of Identified Areas of Environmental Concern

AEC #	PAEC #	Description	Grid Ref	Contaminants	Level of Assessment
1	1	Areas surrounding ASTs (Lot 11 DP 755902)	C5	TRH BTEX, PAH, Phenols	Petroleum
2	3	Old Cheese Factory (Lot 11 DP 755902)	D6	Asbestos Lead in paint, lead in soil, OC, OP	Structure
3	6	Disturbed Area (Lot 32 DP 755902)	E4	Heavy Metals, TRH/BTEX, PAH, OC, O,P PCB, Asb	Full
4	13, 34, 35	Disused Dairy (Lot 213 DP 755902)	D4	Heavy Metals, TRH/BTEX, PAH, OC, OP, PCB, Asb	Full
5	22	Possible Filling of gully (Lot 118 DP 755902)	F2	Heavy Metals, TRH/BTEX, PAH, OC, OP, PCB, Asb	Full
6	28	Asbestos Scatter (Lot 11 DP 755902)	C5	Asbestos	Clearance
7	29	Abandoned Orchard (Lot 29 DP 755902)	I4	Heavy Metals, OC, OP	Surface
8	30	Two Pits (Lot 213 DP 755902)	C5	Heavy Metals, TRH/BTEX, PAH, OC, OP, PCB, Asb	Full
9	36	Filled gully/ Creek North of Nursery	C6	Heavy Metals, TRH/BTEX, PAH, OC, OP, PCB, Asb	Full
10	37	Filled gullies on Southern side of Old Dairy	D4	Heavy Metals, TRH/BTEX, PAH, OC, OP, PCB, Asb	Full

Notes: *Contaminants*

Heavy metals	=	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	TRH	=	Total Recoverable Hydrocarbons
BTEX	=	Benzene, Toluene, Ethylbenzene, Xylene	PAH	=	Polycyclic aromatic hydrocarbons
OC	=	Organochlorine pesticides	OP	=	Organophosphorus pesticides
PCB	=	Polycyclic Biphenyls	Asb	=	Asbestos

Level of Assessment

Petroleum	=	In accordance with the NSW EPA Contaminated Sites: <i>Guidelines for Assessing Service Station Sites</i> , 1994
Structure	=	Hazardous Building Material survey and surface sampling around perimeter of structures
Full	=	In accordance with NSW EPA Contaminated Sites: <i>Sampling Design Guidelines</i> , 1995
Clearance	=	Removal of Hazardous Building Material and investigation In accordance with NSW EPA Contaminated Sites: <i>Sampling Design Guidelines</i> , 1995
Surface	=	Surface sampling to max depth of 150 mm in accordance with NSW EPA <i>Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens</i> , 2005

10. CONCLUSIONS AND RECOMMENDATIONS

Based on the site history review and inspection/field mapping, the overall potential for contamination at the subject site is considered to be low.

Thirty- seven separate PAECs were identified across the site of which ten were deemed to be areas of environmental concern. As the land has been proposed for residential development, it is recommended that field-based investigations be carried out in each of the identified AEC to confirm the suitability for residential landuse. Appropriate scopes of work and sample and analysis quality plans (SAQP) should be prepared for each AEC prior to commencement of fieldwork.

The following table is a guide to the type of additional investigations that may be required:

Table 3 – Additional Investigations

AEC1 Above Ground Storage Tanks	Associated with hydrocarbon contamination. Above-ground storage tanks noted on site will require pumping out and removal, soil from beneath the tank and the heaters will require sampling to assess the extent of hydrocarbon contamination. It is expected that a minor quantity of soil will require waste classification and off-site disposal.
AEC2 Old Cheese Factory	Some asbestos sheeting was noted in the external walls of the building. Due to the buildings age lead in paint is also possible. A hazardous building material assessment should be undertaken prior to refurbishment. At the same time assessment of the soils directly surrounding the structure should be made for lead, asbestos and pesticides. Care should be taken if HBMs are removed to prevent cross contamination of the area A Clearance Certificate by an Occupational Hygienist should be provided post refurbishment

AEC 3, 5 and 8 Possible Filling	These AEC may have been subject to filling. As a result contaminants may have been introduced to the site. Sample densities of the Stage 2 investigation should at a minimum meet EPA requirements as set out in the NSW EPA Contaminated Sites : <i>Sampling Design Guidelines</i> , 1995.
AEC4 Derelict Dairy	Some asbestos sheeting was noted in the external walls of the building. Due to the buildings age lead in paint is also possible. A hazardous building material assessment should be undertaken prior to demolition. Care should be taken if HBMs are removed to prevent cross contamination of the area A clearance Certificate by an Occupational Hygienist should be provided In addition a Stage 2 contamination assessment should be undertaken on the surrounding area (including the cattle yards).
AEC6 Asbestos Scatter	The area of asbestos requires delineation followed by preparation of a Remediation action plan, remediation and then provision of a clearance Certificate by an Occupational Hygienist.
AEC7 Abandoned Orchard	Low density surface sampling in accordance with the NSW EPA Contaminated Sites: <i>Sampling Design Guidelines</i> , 1994 to assess the presence of heavy metals and pesticides as described in the NSW EPA <i>Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens</i> , 2005
AEC8	See Above
AEC9 Creek and gully filling north of nursery	Depth and character of fill requires delineation and determination. Test pits should be excavated, to penetrate fill and collected samples. Strip trenching should be used to delineate the extent of fill. Future investigation will depend on the proposed plan of management for the creekline.
AEC10 Gully filling south of dairy	Depth and character of fill requires delineation and determination. Test pits should be excavated, to penetrate fill and collected samples. Strip trenching should be used to delineate the extent of fill. Depending on proposed reuse, all fill material may require exhumation, and off site disposal.

Remaining Areas Outside of identified AEC	Low density sampling on an appropriate grid to determine background levels combined with detailed walkover inspection to minimise the likelihood that any AECs remain unidentified.
Whole Site	Further AEC/PAECs may be added subject to subsequent investigations/inspections. An environmental management plan for unexpected finds will be required, to address any contamination uncovered during site earthworks not detected as part of the contamination assessment.

It is considered that the land designated as AEC can be made suitable for residential development following further investigation, preparation of remediation action plans, remedial works and validation in AEC areas, where necessary. Further investigation will delineate and determine the areas of contamination and the scope of remediation. Based on the information currently available the following table provides a possible strategy to render the site suitable for the proposed residential use.

Table 4 – Possible Remediation Strategy

AEC1 Above Ground Storage Tanks	Hydrocarbon contaminated material will require delineation, excavation, waste classification and off site removal. Depending on the extent of contamination, soils may require excavation to underlying bedrock and a groundwater monitoring and remediation program may be necessary. Following the successful removal of the tanks, validation of the excavation and confirmation of off site disposal of excavated material the site would be deemed suitable for residential use.
AEC2 Old Cheese Factory	<p>If the hazardous building material assessment confirms the existence of the hazardous building materials on site, the hazardous material would require removal by an appropriately licensed contractor and the factory restored using non hazardous material. A Clearance Certificate by an Occupational Hygienist must be provided post refurbishment,</p> <p>Further to this, soils surrounding the building will require investigation and any lead, asbestos or other contamination identified would require delineation. The delineated area would require excavation and material disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>

<p>AEC3, 5 and 8</p> <p>Possible Filling</p>	<p>The extent of filling would require further delineation and assessment. If it is found that the fill material is not suitable to remain on site based on contaminant levels and aesthetics, the delineated area would require excavation and the fill disposed of to an off site location. The resultant excavation would require validation and back filling. Following successful validation of the site, the site would be suitable for residential use.</p>
<p>AEC4</p> <p>Derelict Dairy</p>	<p>Similar to the AEC2, if the hazardous building material assessment confirms the existence of the hazardous building materials on site, the hazardous material would require removal by an appropriately licensed contractor and the dairy restored using non hazardous material. A Clearance Certificate by an Occupational Hygienist should be provided post refurbishment.</p> <p>Further to this, soils surrounding the dairy and cattle yards would require investigation and any contamination identified would require delineation. The delineated area would require excavation and material disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>
<p>AEC6</p> <p>Asbestos Scatter</p>	<p>The area of asbestos scatter requires delineation, the delineated area would then be excavated and the material disposed of to an appropriate off site location. A Clearance Certificate by an Occupational Hygienist would be required following remediation works to validate the site. Following the provision of a clearance certificate the site would be suitable for residential use.</p>
<p>AEC7</p> <p>Abandoned Orchard</p>	<p>Contaminated areas identified by low density sampling would require further delineation by further sampling. The delineated areas would then be excavated and the material removed off site. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>

<p>AEC8</p> <p>Two Pits</p>	<p>Further investigation of the pits would be required to determine the contents of the pits and their suitability to remain on site and to delineate the extent of the pits. If it is found that the pit material is not suitable to remain on site deemed by contaminant levels and aesthetics, the delineated pit areas would require excavation and the fill disposed of to an off site location. If extensive signs of contamination are observed in the pit may be required to be excavated to the underlying bedrock and the groundwater monitoring (and possibly remediation) program be put in place. The resultant excavations would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>
<p>AEC9</p> <p>Creek and gully filling north of nursery</p>	<p>The extent of filling would require further delineation and assessment. If it is found that the fill material is not suitable to remain on site deemed by contaminant levels and aesthetics, the delineated area would require excavation and the fill disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>
<p>AEC10</p> <p>Gully filling south of dairy</p>	<p>The extent of filling would require further delineation and assessment. If it is found that the fill material is not suitable to remain on site deemed by contaminant levels and aesthetics, the delineated area would require excavation and the fill disposed of to an off site location. The resultant excavation would require validation. Following successful validation of the site, the site would be suitable for residential use.</p>

11. LIMITATIONS OF THIS REPORT

DP's assessment is necessarily based upon the result of a site history search and site inspections that were set out in the original proposal. Neither DP, nor any other reputable consultant, can provide unqualified warranties nor does DP assume any liability for site conditions not observed, or accessible during the time of the investigations (ie areas under or within buildings, thickly wooded areas, overgrown areas). Despite all reasonable care and diligence, site characteristics may change at any time in response to variations in natural

conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to DP's investigations and assessment.

This report and associated documentation have been prepared solely for the use of the Marsim. Any reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from use of the report by third parties cannot be transferred to DP.

DOUGLAS PARTNERS PTY LTD

Reviewed by:



Chris Kline
Environmental Engineer



For: **J M Nash**
Principal

APPENDIX A

Drawings 1 – 8



LOCALITY PLAN

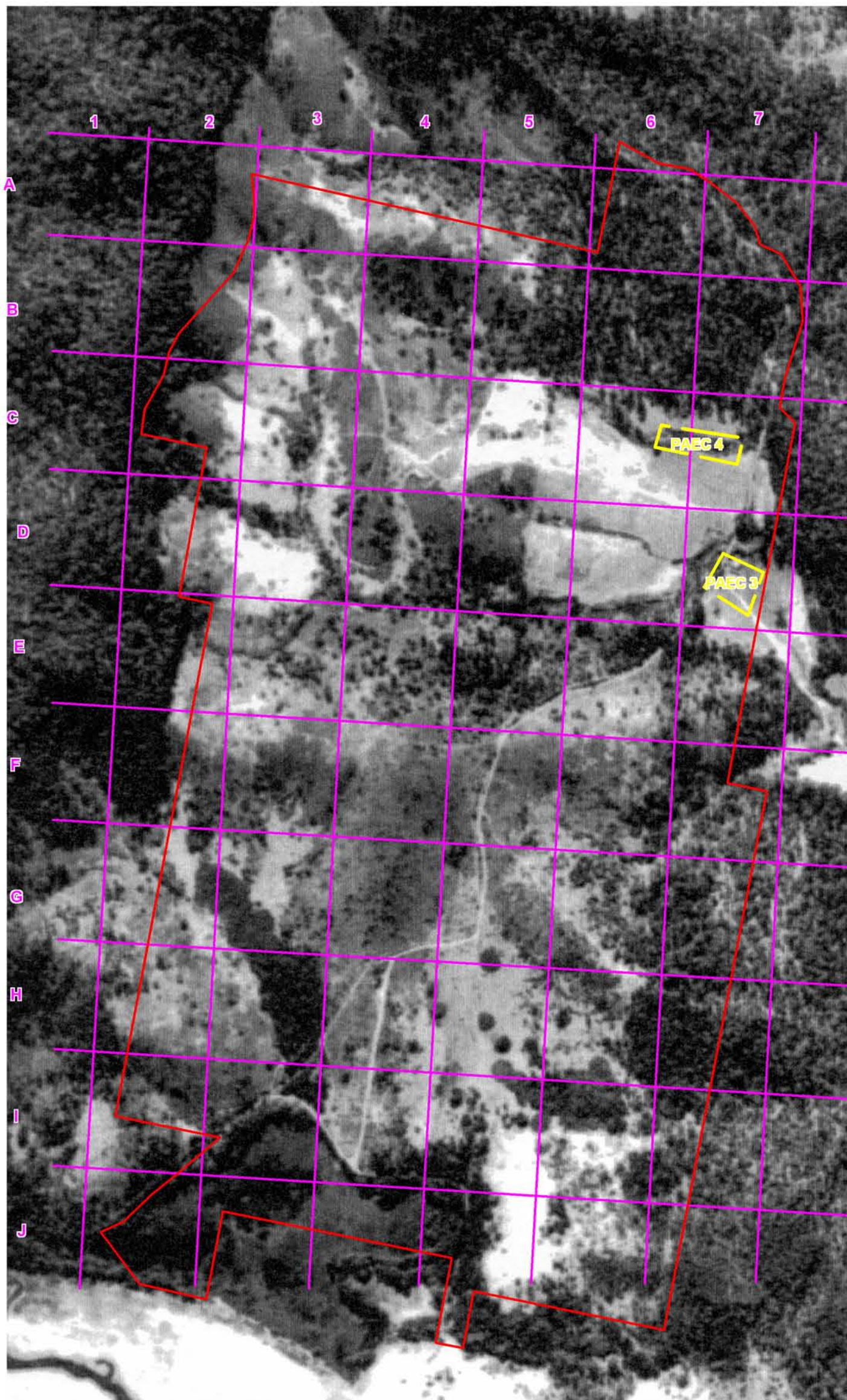


Douglas Partners
Geotechnics, Environment, Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville, Canberra
Cairns, Wollongong, Darwin

TITLE: Site Plan and Lot Boundaries
Preliminary Contamination Assessment
Bevian Road Concept Application
Bevian Road, ROSEDALE

CLIENT: MARSIM			
DRAWN BY: JAS	SCALE: NTS	PROJECT No: 38045E	OFFICE: WOLLONGONG
APPROVED BY:		DATE: 15.08.2007	DRAWING No: 1



LEGEND

- BOUNDARY
- GRIDLINE
- - POTENTIAL AREA OF CONCERN
- - AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: 1961 Aerial Photograph
Preliminary Contamination Assessment
Bevan Road Concept Application
Bevan Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

SCALE: NTS

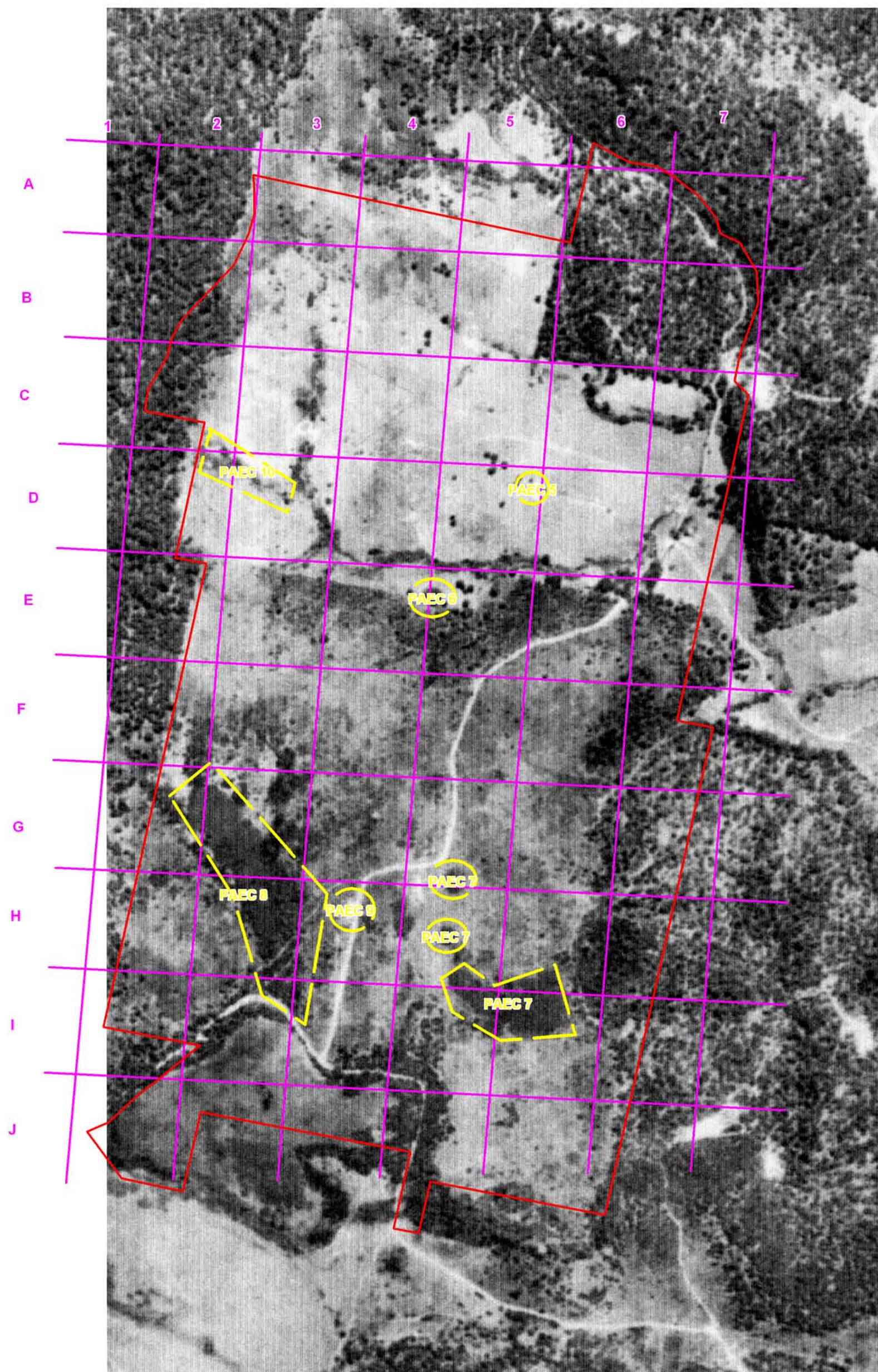
PROJECT No: 38045E

OFFICE: WOLLONGONG

APPROVED BY:

DATE: 13 AUGUST 2007

DRAWING No: 2



LEGEND

- BOUNDARY
- GRIDLINE
- POTENTIAL AREA OF CONCERN
- AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: 1969 Aerial Photograph
Preliminary Contamination Assessment
Bevan Road Concept Application
Bevan Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

SCALE: NTS

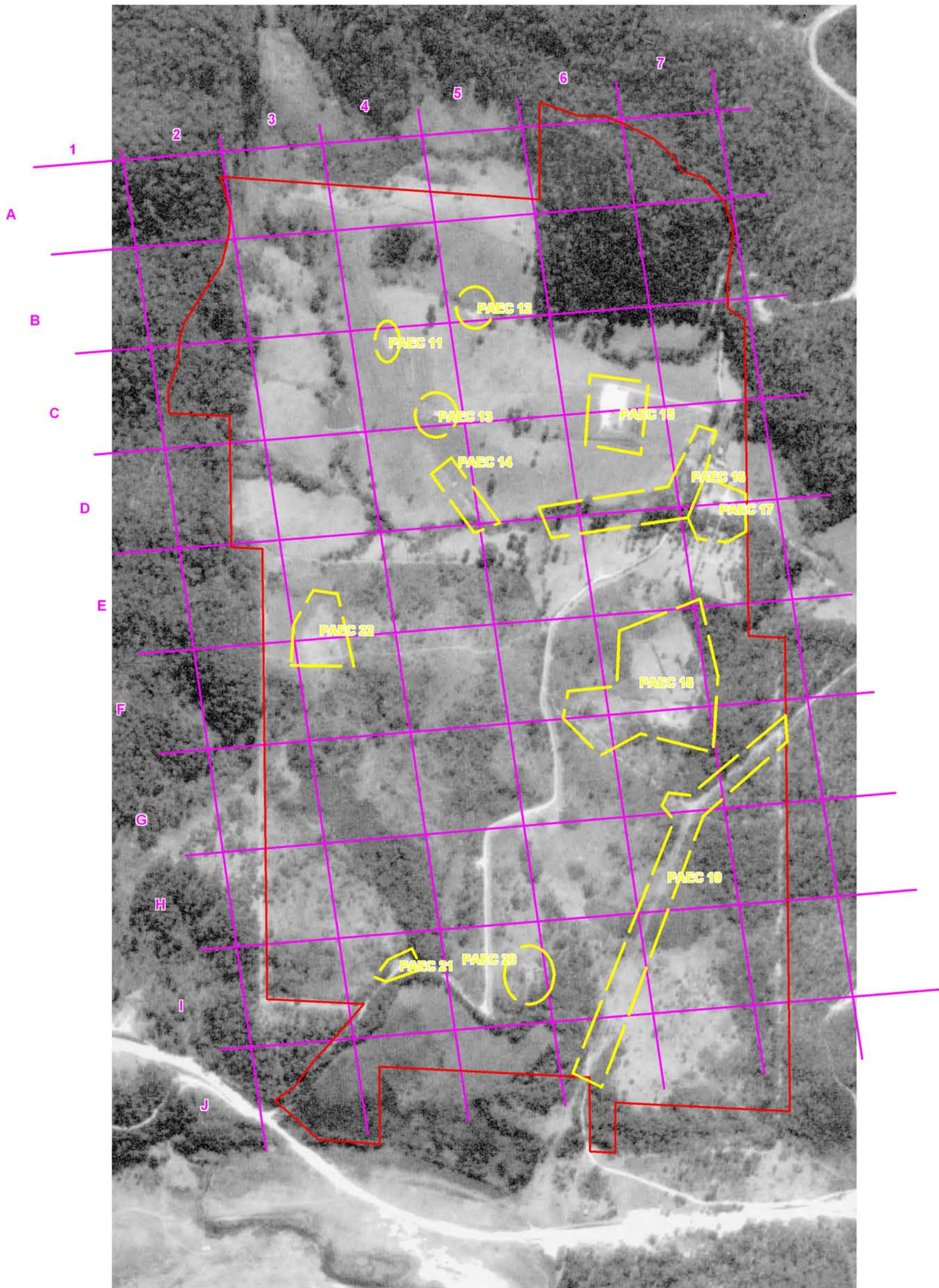
PROJECT No: 38045E

OFFICE: WOLLONGONG

APPROVED BY:

DATE: 13 AUGUST 2007

DRAWING No: 3



LEGEND

- BOUNDARY
- GRIDLINE
- POTENTIAL AREA OF CONCERN
- AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: 1975 Aerial Photograph
Preliminary Contamination Assessment
Bevian Road Concept Application
Bevian Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

SCALE: NTS

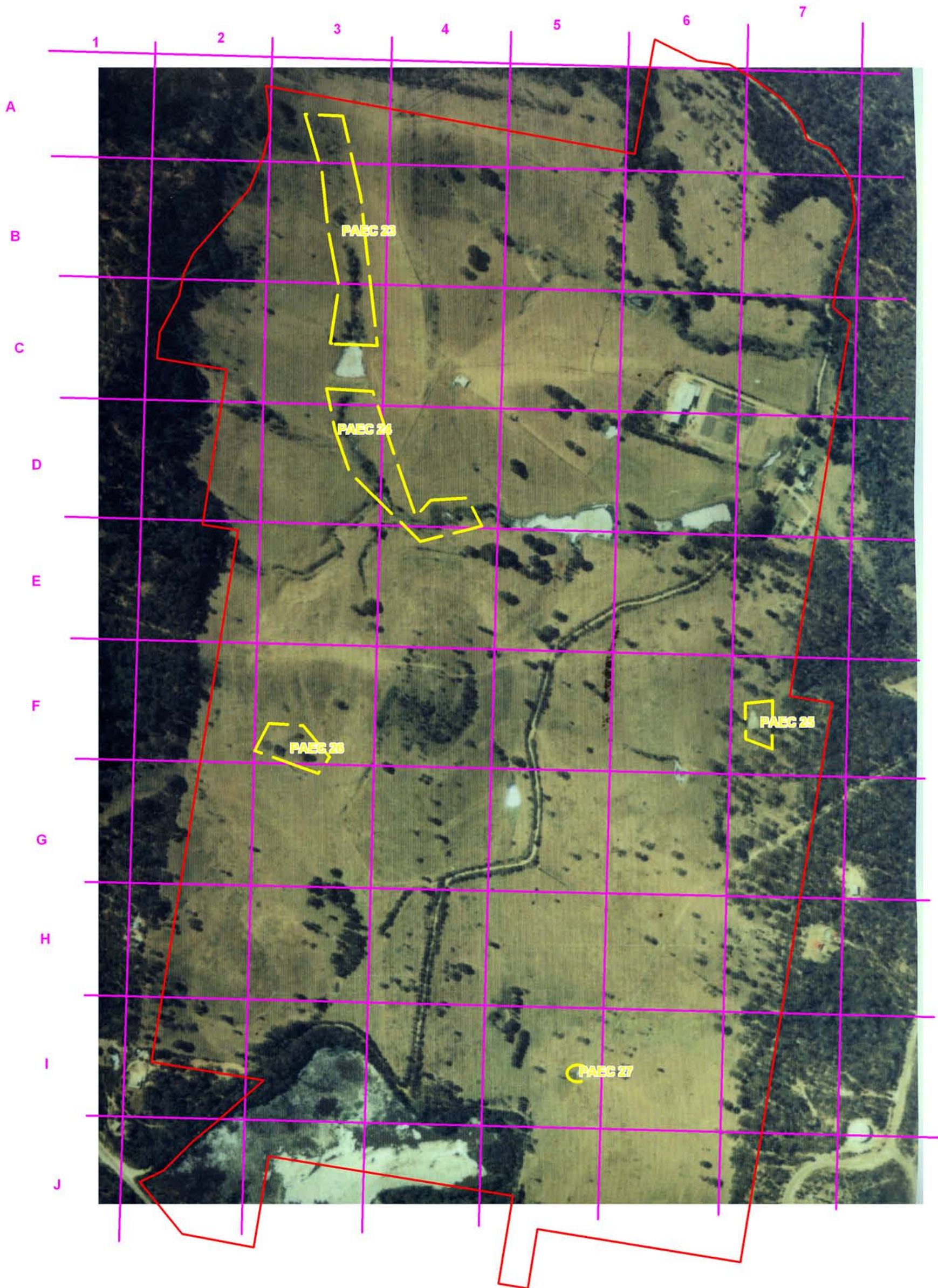
PROJECT No: 38045E

OFFICE: WOLLONGONG

APPROVED BY:

DATE: 13 AUGUST 2007

DRAWING No: 4



LEGEND

- BOUNDARY
- GRIDLINE
- - - POTENTIAL AREA OF CONCERN
- - - AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: 1991 Aerial Photograph
Preliminary Contamination Assessment
Bevan Road Concept Application
Bevan Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

SCALE: NTS

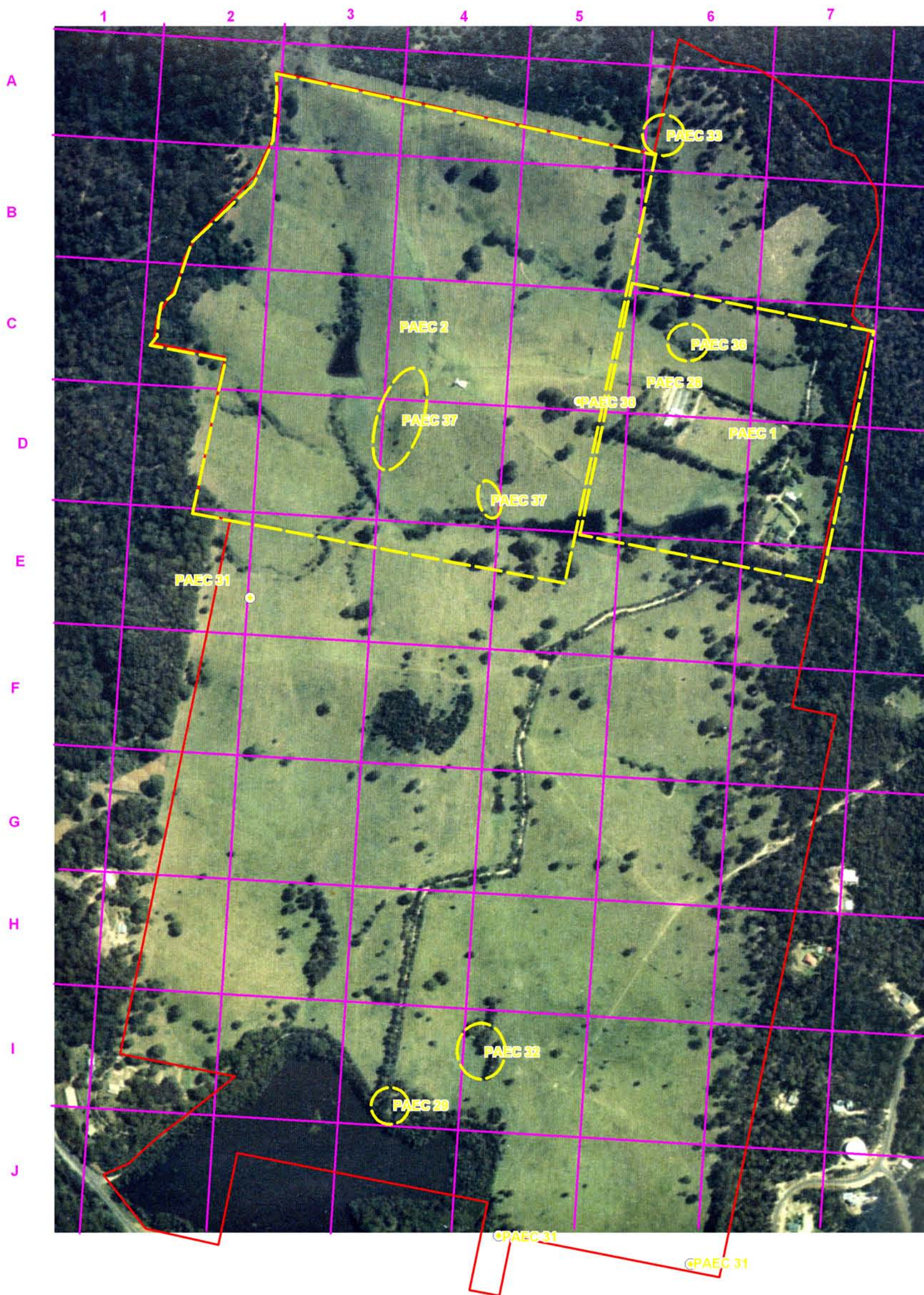
PROJECT No: 38045E

OFFICE: WOLLONGONG

APPROVED BY:

DATE: 13 AUGUST 2007

DRAWING No: 5



LEGEND

- BOUNDARY
- GRIDLINE
- - - POTENTIAL AREA OF CONCERN
- - - AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: 2006 Aerial Photograph and remaining PAECs
Preliminary Contamination Assessment
Bevan Road Concept Application
Bevan Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

APPROVED BY:

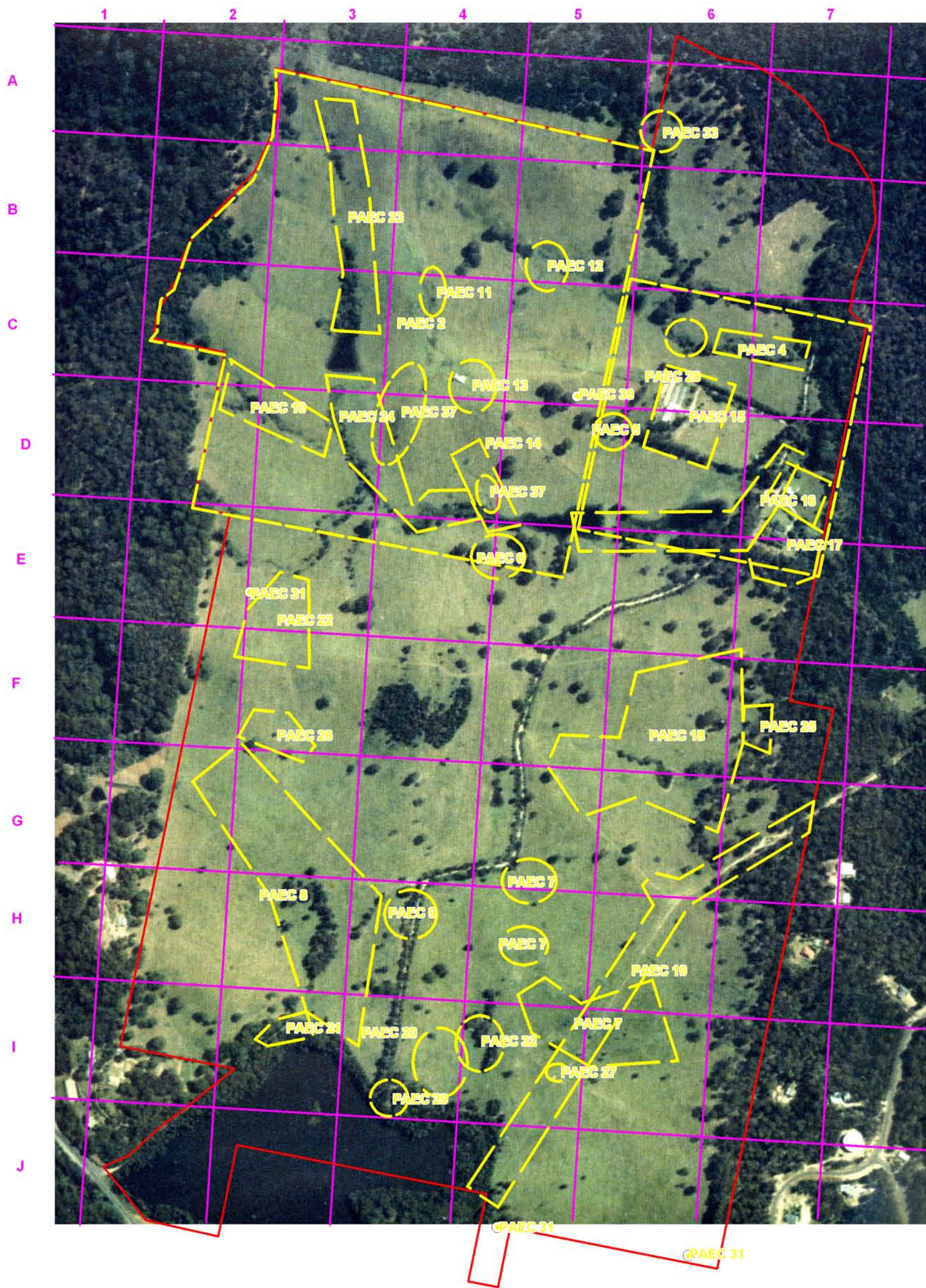
SCALE: NTS

PROJECT No: 38045E

DATE: 13 AUGUST 2007

OFFICE: WOLLONGONG

DRAWING No: 6



LEGEND

- BOUNDARY
- GRIDLINE
- - - POTENTIAL AREA OF CONCERN
- - - AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wyong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: Potential Areas of Environmental Concern
Preliminary Contamination Assessment
Bevan Road Concept Application
Bevan Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

APPROVED BY:

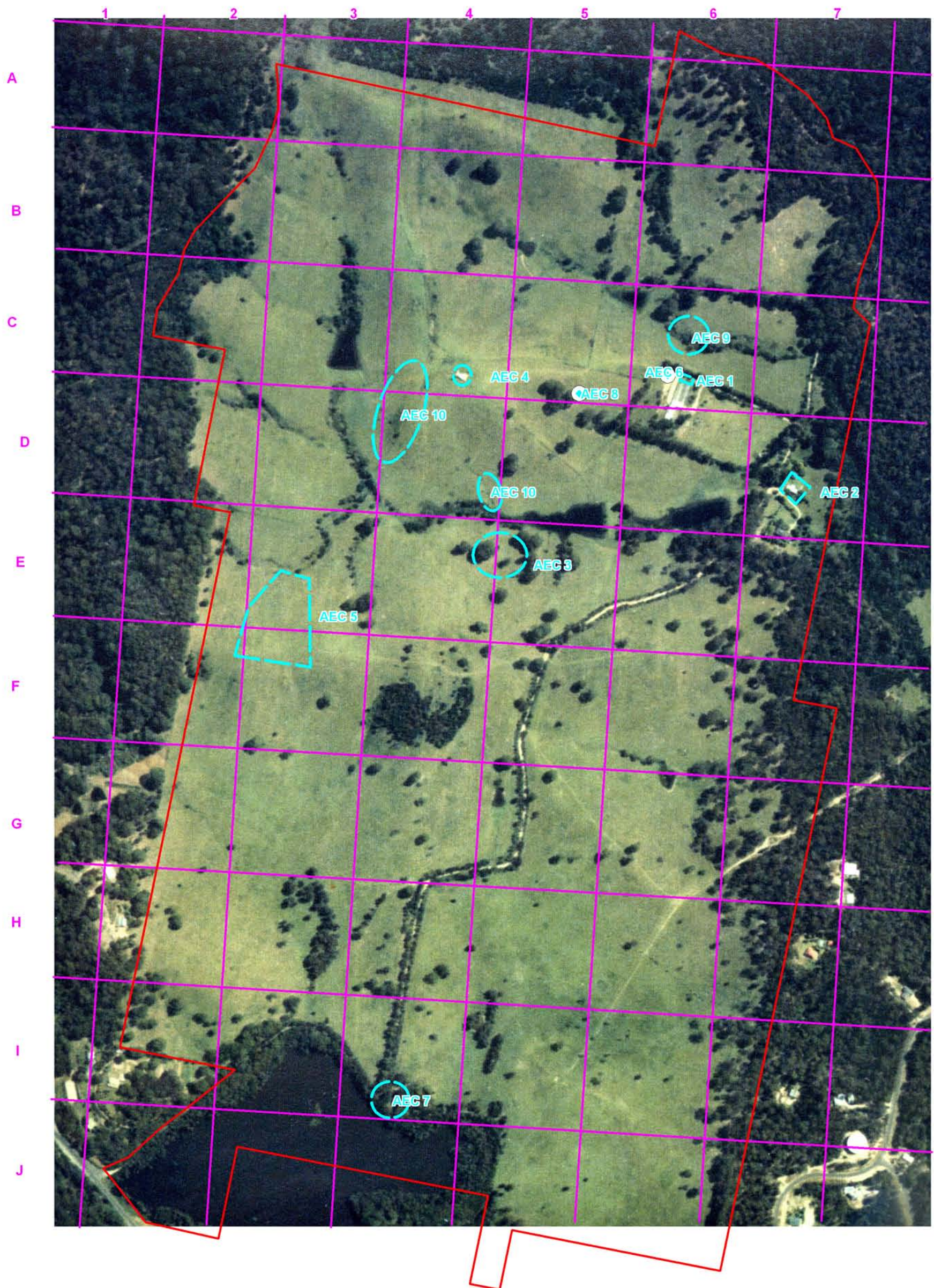
SCALE: NTS

PROJECT No: 38045E

DATE: 13 AUGUST 2007

OFFICE: WOLLONGONG

DRAWING No: 7



LEGEND

- BOUNDARY
- GRIDLINE
- POTENTIAL AREA OF CONCERN
- AREA OF CONCERN



Douglas Partners
Geotechnics • Environment • Groundwater

Sydney, Newcastle, Brisbane,
Melbourne, Perth, Wylong,
Campbelltown, Townsville
Cairns, Wollongong, Canberra

TITLE: Areas of Environmental Concern
Preliminary Contamination Assessment
Bevan Road Concept Application
Bevan Road, ROSEDALE

CLIENT: MARSIM

DRAWN BY: JAS

APPROVED BY:

SCALE: NTS

PROJECT No: 38045E

DATE: 13 AUGUST 2007

OFFICE: WOLLONGONG

DRAWING No: 8

APPENDIX B

PAEC Identification and Inspection Logs

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	D6	Easting:	Not required
PAEC #:	1	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Stage 1 ESA ☒
 Geotechnical ☐ Aerial Photography ☐ (Lot 11 only) ☐
 Historical Society ☐ Year:

Details:

AST identified onsite. Require inspection for possible leaks since last inspection.
 Pump shed adjacent to dam. Type of pump unknown.
 May be petrol powered.
 Heritage assessment identifies area as nursery since 1980

Follow up:

Inspect ASTs for signs of leaks. Inspect surrounds for spills.
 Inspect pump shed for possible spills.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Pump removed – Pipes galvanised and poly pipe, no AC. ASTs – appear to be used for heating oil for heaters in glasshouse. Some minor leakage.

Reasoning:

Only area directly surrounding ASTs.

Classified as an AEC?

Yes ☒
 No ☐

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lots 32 & 312 DP755902	GPS Coordinates	
Grid Ref:	C5	Easting:	
PAEC #:	2	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☒ Interviews ☐
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year: ☐

Details:

Search indicates lots owned by Director of Plant Quarantine and Farmer.
 In 1973 owned by 3 companies of unknown nature.

Follow up:

Discuss with heritage consultants.

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Classified as an AEC?

Yes ☐
 No ☐

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	D7	Easting:	
PAEC #:	3	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>	Heritage Assessment	<input checked="" type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1961			

Details:

Two structures are visible adjacent to road. Area surrounding structures is cleared. Heritage assessment indicates original structure built in 1934-35 and factory made into a dwelling 1958. Assessment indicates current structure consists of weatherboard cladding and fibro sheeting. Assessment also indicates presence of a septic system (installed in 1982), chook run, vegetable garden plots and ornamental garden beds are present in the vicinity of the factory building

Follow up:

Inspect area for signs of dwellings/filling.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

"Old cheese factory" – Currently used as a dwelling. Exterior AC cladding noted.

Reasoning:

Based on the structures age (possible Pb paint) and the noted asbestos sheeting.

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	C6	Easting:	
PAEC #:	4	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1961 ☐

Details:

Dark rectangular area is visible in cleared area, may have been used for agricultural activities. Appears to be creek line, may be subject to land filling.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	Yes
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Creek remaining deeply incised (2.5 – 3.0m). No filling materials noted.

Reasoning:

No fill materials.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	D5	Easting:	
PAEC #:	5	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1969			

Details:

Area appears stripped of grass. May have been subject to dumping.

Follow up:

Inspection for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	Yes
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Site is a dam – photograph appears to coincide with construction.

Reasoning:

No dumping.

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 32 DP755902	GPS Coordinates	
Grid Ref:	E4	Easting:	247573
PAEC #:	6	Northing:	6033011

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1969			

Details:

Dark circular area adjacent to boundary. May be affected by land filling.

Follow up:

Inspect during walkover for signs of anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Some level of disturbance.

Reasoning:

Some investigation warranted.

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 29 DP755902	GPS Coordinates	
Grid Ref:	H5	Easting:	
PAEC #:	7	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1969			

Details:

Three large darkened areas appears low lying may be affected by filling.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover/Aerial		

Observations:

The dark areas are clumps of trees – Visible up to 1975 aerial.

Reasoning:

No filling.

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lots 72 & 102 DP755902	GPS Coordinates	
Grid Ref:	G3	Easting:	
PAEC #:	8	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1969 ☐

Details:

Large rectangular darkened area. Could be low lying/water logged and affected by filling.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	no
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Previous dense stand of trees now cleared.

Reasoning:

No Filling

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 72 DP755902	GPS Coordinates	
Grid Ref:	H4	Easting:	
PAEC #:	9	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1969			

Details:

Cleared area adjacent to road. May be subject to fly tipping/dumping.

Follow up:

Inspect area for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

No anthropogenic fill noted. Likely to be associated with gate construction.

Reasoning:

No illegal dumping.

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 32 DP755902	GPS Coordinates	
Grid Ref:	D2	Easting:	
PAEC #:	10	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1969 ☐

Details:

Creek appears to have filling within alignment. May be subject to filling.

Follow up:

Inspection for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Gully remains deeply incised – no anthropogenic filling noted.

Reasoning:

No fill.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 213 DP755902	GPS Coordinates	
Grid Ref:	C4	Easting:	
PAEC #:	11	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Light oval shaped area in middle of lot. May be subject to stockpiling.

Follow up:

Inspection during for stockpiled material.

Inspection Details:

Inspected by:	CCK	Photographed:	Yes
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Granite outcropping.

Reasoning:

Not stockpiles.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 213 DP755902	GPS Coordinates	
Grid Ref:	B5	Easting:	
PAEC #:	12	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Appears to be creek crossing. Grass appears scraped back. May have been subject to filling (to create causeway or improve crossing).

Follow up:

Inspect area for filling.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Dam wall has been created from what appears to be locally sourced material.

Reasoning:

No imported fill.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 213 DP755902	GPS Coordinates	
Grid Ref:	C4	Easting:	
PAEC #:	13	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Square shaped, light coloured structure in middle of cleared area.

Follow up:

Inspect for signs of structure.

Inspection Details:

Inspected by:	CCK	Photographed:	
Date Inspected:	July 2007		
Inspection Method:	Walkover		

Observations:

Structure in place. Derelict milking shed (Dairy). Asbestos cladding.
 Unusual depression at rear.

Reasoning:

Due to past use and potential use of pesticides and land filling for levelling. Fuel oils used in generator.

Classified as an AEC?

Yes ☒
 No ☐

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 32 DP755902	GPS Coordinates	
Grid Ref:	D4	Easting:	
PAEC #:	14	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Possible creek line subject to erosion/filling. Light and dark coloured areas visible in alignment.

Follow up:

Inspect for filling/erosion.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Only slight gully – possible filled gully, though unlikely – low risk. No anthropogenic material noted.

Reasoning:

No anthropogenic fill material.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	C6	Easting:	
PAEC #:	15	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Large light coloured area, grass appears to be scraped back. Possible structure in southern part of area and to the east of area.

Follow up:

Inspect for signs of structures and filling.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

Structures are greenhouses, investigated as part of the previous phase 1 investigation.

Reasoning:

No other structures. No hazardous materials noted.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lots 11 & 118 DP755902	GPS Coordinates	
Grid Ref:	D6	Easting:	
PAEC #:	16	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Light and dark coloured areas visible in creek line. May be filling material.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

A series of dams have been constructed. No anthropogenic material was noted. Dark features appear to be consistent with present location of trees.

Reasoning:

No anthropogenic material noted

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	E7	Easting:	
PAEC #:	17	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Structure in area. Light coloured area visible adjacent to possible structure.

Follow up:

Inspect area for structure/filling.

Inspection Details:

Inspected by:	CCK	Photographed:	
Date Inspected:	July 2007		
Inspection Method:	Walkover		

Observations:

Structure still in place – Double brick construction. Bathroom recently renovated.

Reasoning:

No hazardous materials – structure to remain.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 118 DP755902	GPS Coordinates	
Grid Ref:	F6	Easting:	
PAEC #:	18	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1975			

Details:

Cleared area in centre of lot.
 Dark lines in centre of cleared areas, light and dark patches across area.
 May be subject to agricultural activities/filling.

Follow up:

Inspect area for signs of disturbance and filling.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	26 July 2007		
Inspection Method:	Walkover		

Observations:

No ground disturbance noted

Reasoning:

No filling noted.

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 118 & 29 DP755902 Lot 2 DP623340	GPS Coordinates	
Grid Ref:	G6	Easting:	
PAEC #:	19	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	<input type="checkbox"/>
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1975			

Details:

Long straight cleared area, possible road/easement.

Follow up:

Inspect for signs of filling.

Inspection Details:

Inspected by:	CCK	Photographed:	
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Service line (water) and road.

Reasoning:

No filling material

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 29 DP755902	GPS Coordinates	
Grid Ref:	I4	Easting:	
PAEC #:	20	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1975			

Details:

Light and dark coloured area adjacent to creek line. Possible filling.

Follow up:

Inspect for signs of anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

No filling noted.

Reasoning:

No filling noted.

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 72 DP755902	GPS Coordinates	
Grid Ref:	I3	Easting:	
PAEC #:	21	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1975 ☐

Details:

Cleared area adjacent to road.
 Dark circular area visible in centre of area.
 Possible filling/stockpiling.

Follow up:

Inspect for stockpiles.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	July 2007		
Inspection Method:	Walkover		

Observations:

None noted.

Reasoning:

No fill/illegal dumping.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 118 DP755902	GPS Coordinates	
Grid Ref:	E3	Easting:	
PAEC #:	22	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1975			

Details:

Light coloured area with dark patches. Possible filling of gully.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

No anthropogenic fill noted. Some ground disturbance noted.

Reasoning:

Further investigation required.

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 213 DP755902	GPS Coordinates	
Grid Ref:	B3	Easting:	
PAEC #:	23	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1991			

Details:

Creek line has dark and light coloured material scattered along length.
 Possible dumping/filling.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

No filling noted.

Reasoning:

No filling noted.

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	D3	Easting:	
PAEC #:	24	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1991 ☐

Details:

Possible filling visible in creek line.
 Light and dark patches visible.

Follow up:

Inspect for anthropogenic material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

No anthropogenic material noted.

Reasoning:

No Filling noted

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 118 DP755902	GPS Coordinates	
Grid Ref:	F7	Easting:	
PAEC #:	25	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1991 ☐

Details:

Irregular shaped light coloured area in middle of cleared area.
Possible filling/stockpile.

Follow up:

Inspect area for signs of filling.

Inspection Details:

Inspected by:	CCK	Photographed:	Yes
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Farm dam.

Reasoning:

No filling

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 102 DP755902	GPS Coordinates	
Grid Ref:	F3	Easting:	
PAEC #:	26	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below): ☐
 Title Deed info. ☐ Interviews ☐
 Geotechnical ☐ Aerial Photography ☒
 Historical Society ☐ Year: 1991 ☐

Details:

Two dark areas – one circular and one square.
 Possible water tank and dwelling/shed.

Follow up:

Inspect area for structure remnants.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Possible structure is actually a tree.

Reasoning:

Not a structure

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 2 July 07
Logged: JAS

Location:

Property:	Lot 29 DP755902	GPS Coordinates	
Grid Ref:	I5	Easting:	
PAEC #:	27	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>		<input type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1991			

Details:

Small rectangular structure visible in middle of cleared area.
 Possibly a shed.

Follow up:

Inspect area for signs of structure/fill material.

Inspection Details:

Inspected by:	CCK	Photographed:	No
Date Inspected:	27 July 2007		
Inspection Method:	Walkover		

Observations:

Structure located on site – Pumphouse associated with sewer main

Reasoning:

Low contamination risk

Classified as an AEC?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 26 July 07
Logged: JAS

Location:

Property:	Lot 11 DP755902	GPS Coordinates	
Grid Ref:	C5	Easting:	247924
PAEC #:	28	Northing:	6033349

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>	Walkover	<input checked="" type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year: 1991			

Details:

Asbestos Scattered on cutting

Follow up:

Not Required -AEC

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 27 August 07
Logged: JAS

Location:

Property:	Lot 29 DP 755902	GPS Coordinates	
Grid Ref:	I4	Easting:	
PAEC #:	29	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Heritage Assessment ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year:

Details:

Location of orchard developed in 1878. Identifiable as a series of at least three parallel ditches on valley floor flats, (at least 175 m long), approx location 0247542, 6032050

Follow up:

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 27 August 07
Logged: JAS

Location:

Property:	Lot 213 DP 755902	GPS Coordinates	
Grid Ref:	C5	Easting:	
PAEC #:	30	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Heritage Assessment ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year:

Details:

Heritage assessment describes "two shallow, roughly circular pits with fringing spoil piles on their downslope sides. The pits are 6 m apart, constructed on the same level, and are situated on north facing basal slopes, approximately 80 m south of a tributary streamline. The streamline includes agricultural dams constructed up and downstream of the pits.

Both pits contain a single wooden fence post lying on their side, and one also contains some old folded corrugated iron. The pits have dimensions 3 x 3 m and 4 x 5 m and are approximately 30 to 40 cm deep. A ruined corrugated iron round water tank occurs opposite in the creekbed.

The original purpose and function of these pits is not known. Possible explanations include the site of a water pumping wind vane or 'windmill', dug out water soaks, borrow pits, or prospectors pits."

Follow up:

Inspection of area for possible landfilling/anthropogenic material

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Inspection to be carried out as part of further investigations, may warrant surface sampling to be undertaken

Classified as an AEC?

Yes ☒
 No ☐

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 27 August 07
Logged: JAS

Location:

Property:	Various	GPS Coordinates	
Grid Ref:		Easting:	
PAEC #:	31	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Heritage Assessment ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year:

Details:

1870s selectors hut sites. Three sites spread across site. Presences of hut remains are unconfirmed.

Follow up:

Further investigate heritage assessment

Inspection Details:

Inspected by:	JAS	Photographed:	
Date Inspected:	27 Aug 07		
Inspection Method:	Review of Heritage Report		

Observations:

The huts were constructed in the 1870s most likely of wood, remains are not confirmed and not noted in site walkover, not considered a source of contamination

Reasoning:

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 31 August 07
Logged: CCK

Location:

Property:	Lot 29 DP755902	GPS Coordinates	
Grid Ref:	I5	Easting:	
PAEC #:	32	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Interview ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year:

Details:

During paddock clearing some footings were uncovered, which anecdotal evidence provided to the Manns suggested it was part of a previous dairy.
 (Refer Question 3 and Question 14 of interview)

Follow up:

Robert Mann indicated in the interview that all signs of the footings have disappeared.

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Due to the age of the ruins and low potential for contamination.

Classified as an AEC?

Yes ☐
 No ☒

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevan Road, Rosedale

Project Number: 38045E
Date: 31 August 07
Logged: CCK

Location:

Property:	Lot 119 DP 755902	GPS Coordinates	
Grid Ref:	A6	Easting:	
PAEC #:	33	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Interview ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year:

Details:

An illegal dump was operating in the far northern portion of the site and the border with Burri Road. Council cleaned up the dump in the early 90s. There is now very little evidence of the dump.
 (Refer Question 7 of interview)

Follow up:

None required

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Potential for dumped material, chemicals in soil.

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 31 August 07
Logged: CCK

Location:

Property:	Various	GPS Coordinates	
Grid Ref:	-	Easting:	
PAEC #:	34	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Interview ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year: ☐

Details:

Fuel and chemicals were stored on site at the nursery and old dairy property.
 (Refer Question 8 and question 9 of interview)

Follow up:

None required, both areas have already been declared AEC

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Potential for chemicals in soil.

Classified as an AEC?

Yes ☒
 No ☐

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 31 August 07
Logged: CCK

Location:

Property:	Lot 213 DP 755902	GPS Coordinates	
Grid Ref:	C4	Easting:	
PAEC #:	35	Northing:	

Identified from:

Site Inspection	<input type="checkbox"/>	Conductivity Data	<input type="checkbox"/>	Other (list below):	
Title Deed info.	<input type="checkbox"/>	Interviews	<input type="checkbox"/>	Interview	<input checked="" type="checkbox"/>
Geotechnical	<input type="checkbox"/>	Aerial Photography	<input type="checkbox"/>		<input type="checkbox"/>
Historical Society	<input type="checkbox"/>	Year:			

Details:

Animals were drenched in the yards at the old dairy.
 (Refer Question 13 of interview)

Follow up:

None required, this area has already been declared AEC

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Potential for OC OP chemicals in soil.

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 31 August 07
Logged: CCK

Location:

Property:	Lot 119 DP 755902	GPS Coordinates	
Grid Ref:	C6	Easting:	
PAEC #:	36	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Interview ☒
 Geotechnical ☐ Aerial Photography ☐
 Historical Society ☐ Year:

Details:

Filling material placed in creek and gully. Material has been filled over with soil and sediment. Apparently there is little or no visual evidence.
 (Refer Question 16 of interview)

Follow up:

None required, declared AEC

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Fill and buried waste/scrap.

Classified as an AEC?

Yes ☒
 No ☐

PAEC Identification & Inspection Log

Client: Marsim
Project: Preliminary CA
Location: Bevia Road, Rosedale

Project Number: 38045E
Date: 31 August 07
Logged: CCK

Location:

Property:	Lot 32 DP 755902	GPS Coordinates	
Grid Ref:	D4	Easting:	
PAEC #:	37	Northing:	

Identified from:

Site Inspection ☐ Conductivity Data ☐ Other (list below):
 Title Deed info. ☐ Interviews ☐ Interview ☒
 Geotechnical ☐ Aerial Photography ☐ ☐
 Historical Society ☐ Year:

Details:

Filling material placed in the two prominent gullies running to the creek from the old dairy. Material has been filled over with soil and sediment. Apparently there is little or no visual evidence. Some asbestos sheeting may have been used as fill.
 (Refer Question 16 of interview)

Follow up:

None required, declared AEC

Inspection Details:

Inspected by:		Photographed:	
Date Inspected:			
Inspection Method:			

Observations:

Reasoning:

Fill and buried waste/scrap.

Classified as an AEC?

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

APPENDIX C

Notes from Interview

Standard Interview Sheet

Client:	Nature Coast Property	Project Number:	38045E
Project:	Preliminary Contamination Assessment	Date:	21 August 07
Location:	Rosedale	Interviewed by:	CCK
Interviewee:	Robert Mann	Occupation:	Former Nurseryman

Question 1 – What properties did you own?

Along with my father, I owned the whole site (Note: this corresponds to the area of investigation)

Question 2 – What period did you own these properties?? What period do you have knowledge of farm operations? And for which properties?

I owned them roughly from 1980 -2005. I know that the previous owners, the Kendugan Brothers, ran beef cattle on the property but know no other history.

Question 3 – Any present or former intensive agriculture?

Formerly a dairy. There is the current dairy at the top of the hill in the north and the reported remains of a dairy in the southern portion of the site. I don't know when these were last operational. I don't know of any intensive agriculture being undertaken on the site, there was certainly none at the time we owned the property.

Question 4 – Any present or former market gardens, orchards or nurseries?

Only the nursery. No market gardens or orchards to my knowledge.

Question 5 – What type of agriculture has been undertaken on site? Herds? Crops?

Grazing of beef cattle. Herd was about 60 breeders which made for a total herd size of about 150 head.

Question 6 – Any known use of filling materials on site?

No. All dam walls were constructed of locally sourced material as were internal roads. No fill was imported to site.

Question 7 – Any known history of Illegal Dumping?

There was an illegal dump on the property near Burri Road (Note: dump was at grid location A6). Dump was generally scrap household appliances and car bodies.
Council cleaned it up during the early 90s. There was some left over scrap metal that was pushed around by a dozer and there is now no evidence of it.

Question 8 – Was there any storage of fuels on the site? USTs? ASTs?

Yes ASTs for heaters
Diesel fuel drums stored at the nursery and at the old dairy.

Question 9 – Was there a central chemical storage? What chemicals were kept?

Yes, locked up at the nursery and the old dairy. All remaining chemicals were disposed off site, during a local council chemical clean up day, prior to sale.

Question 10 – Any known instances of spills or accidents?

No, only typical minor fuel and chemical spills, during filling, nothing major.

Question 11 – What is the history of pesticide application?

Outside of the nursery no pesticides were used except for a minor amount of
Roundup along fence lines.

Question 12 – Were cattle dips used on site?

No

Question 13 – Cattle spraying areas? If no, where were animals treated?

Animals were oral drenched in the top yards adjacent to the dairy. Any spraying
would have been undertaken here as well.

Question 14 – Any buildings that may have been demolished? Construction type?

No all buildings remain. During clearing of the wattle from the eastern side paddocks
we came across foundations of what was said to be an old dairy. I doubt whether any
evidence would remain. It was half way between the council pump house and Bevan
Road.

Question 15 – Any use of any part of the site by other individuals or companies?

No

Question 16 – How and where was waste disposed on the site? Historically?

Household rubbish went to the local tip. Scrap and other building rubble was used to
fill gullies. The major gullies filled were running from the dairy to the main creek (Map
grid reference D4) and a deep 'hole' in the creek north of the dairy (Note: Map grid
reference C6).

Question 17 – How and where is animal effluent disposed on the site? Historically

N/A – Beef cattle

Question 18 – What water management practices are undertaken on site? (Dams, asbestos pipelines, diesel pumps?)

All pipe lines were either galvanised pipes or polypipes no asbestos pipes were
placed or ever noticed on site.

Question 19 – In your opinion is there any other activities that may contribute to further potential for contamination?

No

Question 20 – Do you know any other individuals who may have knowledge of the site? Contact details?

APPENDIX D

Photographic Plates



Photo 1: Site looking east to PAEC 13



Photo 2: PAEC 4 - incised creek, no filling



Photo 3: Asbestos scatter



Photo 4: Asbestos scatter (close up)

<p>Preliminary Contamination Assessment Bevian Road Rosedale</p>	<p>38045E</p>	<p>Oct-07</p>
--------------------------------------------------------------------------	---------------	---------------



Photo 5: PAEC 15 - oil heater in nursery



Photo 6: leaking heating oil



Photo 7: leaking heating oil and distressed vegetation

Preliminary Contamination Assessment Bevian Road Rosedale	38045E	Oct-07
------------------------------------------------------------------------	---------------	---------------



Photo 8: PAEC 10 - incised gully, no filling



Photo 9: PAEC 13 - old dairy



Photo 10: PAEC 11 - rock outcrop



Photo 11: PAEC 16 - farm dam