



Pacific Highway / Italia Road Intersection



Preliminary Site Investigation

Boral Resources (NSW) Pty Ltd

09 August 2023

→ The Power of Commitment



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1. Introduction

1.1 Overview

Boral Resources (NSW) Pty Ltd (Boral) is acting on behalf of Eagleton Rock Syndicate (ERS) and Australian Resource Development Group Pty Limited (ARDG) (collectively referred to as the 'quarry operators') in submitting a development application (DA) to Port Stephens Council (Council), pursuant to Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act), for proposed upgrades to the Italia Road and Pacific Highway intersection (the proposed development).

The proposed development involves safety upgrades to the Italia Road and Pacific Highway intersection, including:

- Construction of a dedicated left-turn northbound acceleration lane from Italia Road onto the Pacific Highway;
- Widening of the existing bridge over the Balickera Canal (to accommodate the northbound acceleration lane); and
- Lengthening of the northbound deceleration lane into Italia Road.

All works are proposed to be undertaken within the existing road reserve.

GHD Pty Ltd (GHD) was engaged by Boral to complete a Preliminary Site Investigation (PSI) to assess potential contamination at the Italia Road and Pacific Highway intersection, Balickera, NSW, 2324 (referred to as the Site). The site location is shown on Figure 1, Appendix A. The 'Site' refers to the site area as shown in Figure 2, Appendix A.

1.2 Project description

Transport for NSW (TfNSW) has identified the need for safety upgrades to the Italia Road and Pacific Highway intersection to meet the future predicted traffic growth of the area. The need to bring forward the safety upgrades to the intersection is in direct response to the vehicle movements predicted to be generated by the State Significant Development (SSD) applications submitted by Boral, ERS and ARDG. Consequently, the quarry operators have been working closely with TfNSW since 2020 to prepare a design for the intersection upgrades.

In principle, support was provided by TfNSW for a concept design in June 2022 on the basis that the quarry operators agreed to jointly fund all costs associated with the approval and construction of the required upgrades. A commercial agreement between the quarry operators is in place and (subject to approvals), construction of the intersection is expected to be finalised and operational within the last quarter of 2025.

The concept design has now been further developed to meet the requirements of TfNSW, Council and Hunter Water Corporation (HWC) and this refined design forms the basis of the DA.

GHD has been engaged by Boral to facilitate the DA submission. GHD's general scope of work comprises:

- An updated concept road design
- Bridge and culvert extension concept designs
- Flood impact assessment
- Geotechnical desktop assessment
- Construction noise and vibration impact assessment
- Phase 1 preliminary contamination assessment
- Traffic impact assessment
- A road safety audit
- A detailed cost report

The existing concept design includes northbound widening of the Pacific Highway to facilitate deceleration and acceleration lanes connecting with new turn lanes into and out of Italia Road. Road widening associated with the deceleration lane is in the order of 250 m in length, while the widening associated with the acceleration lane is in the order of 650 m in length. The northbound acceleration lane will also require widening of the bridge over the Balickera Canal.

1.3 Purpose

The purpose of this PSI is to identify the existing and potential contamination issues associated with previous activities at the Site, to enable more detailed understanding of site conditions prior to planning for future potential land uses.

1.4 Objectives

The objectives of the assessment were to:

- Assess the potential risk to human health and/or the environment that may exist as a result of contamination from past and/or present site uses.
- Provide recommendations as to the requirement for further investigation, remediation and/or management of potential contamination (if identified).

1.5 Regulatory guidelines

This PSI has been completed with consideration of guidelines made or approved by the NSW EPA under Section 105 of the *Contaminated Land Management Act, 1997*. These guidelines include the following key documents:

- National Environment Protection Council (NEPC) (1999, Amended 2013). National Environment Protection (Assessment of Site Contamination) Amendment Measure (No. 1).
- NSW Office of Environment and Heritage (OEH) (2011). *Guidelines for Consultants Reporting on Contaminated Sites*.
- NSW Environment Protection Authority (EPA) (2015). *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997*.
- NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated Land*.
- NSW Roads & Maritime Services (RMS) (2013/2019/2013), *Guideline for The Management of Contamination*.

1.6 Scope of work

The scope of work completed included the following:

- Desktop review of:
 - Previous investigations pertaining to the Site, and any other relevant information related to the Site's history and operation held by Boral.
 - Current and historical aerial photographs.
 - NSW EPA information including notices under the Contaminated Lands Management Act (CLM Act 1997) and Protection of the Environment Operations Act (POEO Act 1997).
 - EPA notices under the CLM Act 1997 and other publicly available information.
 - Geology, hydrology and topography information for the Site including search of the NSW Office of Water 'All Water Data' database for records of nearby registered groundwater bores.
- Completion of a site inspection to identify areas of potential sources of on and off-site contamination, documenting important features, and confirming features identified in this review.
- Preparation of this report with reference to the NSW EPA *Consultants Reporting on Contaminated Land* (NSW EPA, 2020) summarising the results of the desktop review and recommendations for additional investigations and/or management or remediation actions that may be needed as part of the proposed works.

GHD note that the historical titles and 10.7 planning certificates were not provided by Boral and therefore have not been reviewed as part of this PSI. No soil or groundwater sampling was completed as part of this PSI.

1.7 Scope and limitations

This report has been prepared by GHD for Boral Resources (NSW) Pty Ltd and may only be used and relied on by Boral Resources (NSW) Pty Ltd for the purpose agreed between GHD and Boral Resources (NSW) Pty Ltd as set out in Section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Boral Resources (NSW) Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring after the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

The works were limited to desktop review of site contamination issues and a site inspection. The works did not include investigation of soil or groundwater.

Inspections undertaken in respect of this Report are limited to visual inspections only and are constrained by the Site conditions, such as access to roads and tracks and dense vegetation. The Site conditions (including the presence of hazardous building materials and/or site contamination) may change after the date of this Report. Changes to building materials overtime may be due, but not limited to, deterioration, damage or other disturbance. As such, the Report records conditions at the time of assessment only. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

GHD has prepared this report based on information provided by Boral Resources (NSW) Pty Ltd and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Site information

2.1 Site identification

A summary of identification details for the Site are provided in Table 2.1. The Site location is shown on Figure 1 in Appendix A.

Table 2.1 Site identification summary

Information	Details
Street address/location	Intersection of Italia Road and Pacific Highway, Balickera NSW 2324
Site area	Approximately 6.6 hectares
Local Government Area (LGA)	Port Stephens Council
Land Use Zoning	The Site consists of several land zones ones including SP2 Infrastructure, being the Pacific Highway, eastern side of site and adjacent north including the canal adjacent to the State Forest (RU3) is SP1 Special Activities controlled by Hunter Water Corporation under the Port Stephens Council LZN003A (Local Environment Plan 2013). The remaining areas are zone RU2 (Rural landscape).
Current site use	The Site is currently used a national highway, median strips and seagull island intersection.
Proposed Land Use	20m extension of the northbound carriageway turning lanes, and 3.5m widening of the Balickera Canal bridge.
Surrounding land use	North – Hunter Water Corporation activities and Wallaroo State Forest East – Residential properties and Hunter Water Corporation activities South – Hunter Water Corporation activities and Grahamstown Dam 1.5km away West – Residential property, a motor park complex and Wallaroo Sate Forest

2.2 Site observations

A GHD environmental scientist completed a site inspection on 10 May 2023. The main features observed at the Site during the investigation are summarised in Table 2.2 with reference to the relevant Figures as presented in Appendix A. A photograph log is provided in Appendix B.

Table 2.2 Site inspection summary

Item	Site conditions
Site access and conditions	Italia Road and the Site area is accessed via the northbound and southbound lanes of the Pacific Highway. The landform is gently undulating in nature with a steep embankment road verge in the east. No evidence of soil stockpiles were observed during the site inspection. Thick vegetation was present on the road verge to the North and South of Italia Road. General litter and evidence of waste dumping was noted within the vegetated areas of the road verge and road shoulder. Several fire trails were present on the northwest side of the area in the Wallaroo State Forest.
Site buildings and infrastructure	Several structures were identified within the Site: <ul style="list-style-type: none">– B01 Paved highway– B02 Seagull Island intersection located centrally on the northern boundary– B03 Paved and Earthen shoulders on the north bound of the highway with ravines– B04 Median strips with drain way in the centre and grated drains– B05 Balickera Canal bridge which runs directly into Grahamstown Dam

Item	Site conditions
Ground surface and site drainage	<p>The surface of the highway and Italia Road infrastructure is flat and sealed, with the exception of side road northbound, Nine Mile Road (unsealed).</p> <p>The canal and roadside vegetation were overgrown with long, thick grass and shrubs at the time of the assessment.</p> <p>Surface water is expected to either infiltrate into surface soils or run off to the southeast towards Balickera Canal.</p> <p>Regional groundwater is expected to flow southeast towards Balickera Canal which runs directly into Grahamstown Dam.</p>
Potential sources of contamination	<p>Potential sources of contamination at the Site during the site inspection include:</p> <ul style="list-style-type: none"> – General rubbish on the earthen and paved shoulders as well as on the median strips. – Use of uncontrolled fill materials within the road verge(s). – No signs of stressed vegetation were observed.

2.3 Environmental setting

Table 2.3 provides an overview of the environmental setting of the Site as obtained from Water NSW, Spatial Map Viewer and EPA NSW.

Table 2.3 Site environmental setting

Setting	Site conditions
Topography	<p>The Site has an elevation of approximately 20-30m Australian Height Datum (AHD), with a gentle downward slope to the north in the direction of the Balickera Canal adjacent to Wallaroo State Forest.</p>
Hydrology	<p>Grahamstown Dam is located approximately 1.5km to the Southeast of the area.</p> <p>Balickera Canal starts approximately 950 m west of site from the Balickera Canal Tunnel which flows from the Williams River to the Dam.</p> <p>The Site consists of both sealed and unsealed areas. Surface runoff is expected to follow stormwater diversion pathways that are located in the median strip, as well as drainage which directly leads to the canal.</p> <p>For unsealed areas surface water runoff is expected to either infiltrate into surface soils or run off to the north to northeast towards Balickera Canal.</p> <p>As seen in Figure 1 and 2, two unnamed creeks are present which flow into Balickera Canal.</p> <p>The Site is not located within a flood extent area FLD003 (Local Environment Plan 2013).</p>
Geology and soils	<p>Reference to the MinView Geological Survey of NSW seamless geology mapping shows that the site is primarily underlain by the Carboniferous aged Seaham Formation and Quaternary aged alluvial floodplain deposits in the vicinity of Balickera Canal. The Seaham Formation is described to comprise "tillite, varved siltstone, tuff, red and green zeolitic mudstone with dropstones interbedded in thick-bedded lithic sandstone and conglomerate". The alluvial floodplain deposits are described to comprise "Silt, very fine to medium grained lithic to quartz-rich sand, clay".</p> <p>Reference to the acid sulfate soil (ASS) probability map, accessed via eSPADE (NSW Planning, Industry and Environment, v2.2), shows that there are no mapped occurrences of ASS at the site.</p> <p>The Site is not within an area listed as having potential for naturally occurring asbestos.</p>
Hydrogeology and groundwater bore search	<p>Based on observations and GHD's understanding of the environmental setting of the Site, regional groundwater would generally be expected to flow in a southeast direction towards Grahamstown Dam located 1.5 km southeast.</p> <p>No registered groundwater wells were identified within a 2 km radius of the Site, however one groundwater well (GW079737) was identified approximately 3 km west of the Site.</p>

3. Site history

The following section provides an overview of the Site's history as obtained from publicly available information.

3.1 Historical aerial photographs

Historical aerial photographs were examined from the years 1974, 1976, 1984, 1987, 1993, 1998, 2001, and 2020. The historical aerial photographs are provided in Appendix C and a summary of the information gained from their review for the Site and its surrounds are provided in Table 3.1.

Table 3.1 Review of historical aerial photographs

Photograph	Site observations
1974 Black and white	Resolution of the imagery is low; however, no structures are visible near the Site. A water body is visible (the canal). The general Site area is predominantly grazing land with some scattered trees. Multiple well defined access roads are visible within the area, and beyond towards Balickera Canal. Italia Road is visible and several access tracks.
1976 Colour	The Site and surrounds appear largely unchanged from the previous photograph. Corner of Italia Road and the Pacific Highway appears to have some type of fill on the side of the road as it appears clearer than in the 1974 photograph on the southwestern side of the intersection.
1984 Black and white	The vegetation in the areas has thickened since previous photo and the water bodies previously observed remain. A large stockpile appears to be on the northwest shoulder of Italia Road and the Pacific Highway. The nearby motor sport site had been established (1982).
1987 Black and white	The Site and surrounds appear largely unchanged from the previous photograph. Corner of Italia Road and the Pacific Highway appears to have the stockpile gone with further overgrowth of vegetation along the canal. A detention pond has been constructed on the southwest side of the intersection off Italia Road.
1993 Colour	A new residential building is visible along the western boundary 140 m of the Highway on Italia Road. Italia road appears that a sealed road has been constructed, connecting to the Pacific Highway with stockpile reappearing on the northwest shoulder of the intersection. Painted median strips are present for a turning lane into Italia Road on the south bound. Northbound has its own turning lane to enter Italia Road. Further growth of vegetation appears on the sidelines of the canal.
1998 Colour	The Site and surrounds appear largely unchanged from the previous photograph, except for further vegetation growth that appears to have overgrown into the canal. A detention pond is noted on southwest side of bridge and cleared vegetation is noted on the northwest side of the bridge off Nine-Mile Road. Further residential properties are noted in the area.
2001 Colour	Dual carriage laneways have been constructed with dual carriageway bridge across canal bridge. Median strips with adequate draining were constructed with a larger intersection. Further vegetation cleared on the northwest side of the bridge and shoulders of the highway to make way for the dual carriageway.
2020 Colour	The vegetation has thickened and the two water bodies remain overgrown with the other western boundary water bodies appearing to have somewhat dried with increased vegetation overgrowth. Canal area maintenance is noted to have increased with less overgrowth observed. Further residential properties are noted to the northeast of the canal bridge.

Based on the review of historical aerial photographs, the Site has been used as grazing land prior to use as the Pacific Highway. By 1993 Italia Road became sealed bitumen road. By 2001 the construction of the paved dual carriage way was seen with dual carriage bridge built across Balickera Canal with median strips and larger intersection was constructed.

3.2 Historical topographic maps

Topographic maps were viewed from 1974. In 1993 a residential property was built and was marked 140m west of the Site, and a stockpile was used for roadworks several times in two locations near the shoulders, from 1976 and a detention basin was established from 1987. Further residential properties were established 410 m from Balickera Canal bridge in 1998 and another residential built between 2001 and 2020, 290m from Balickera Canal bridge.

3.3 NSW Environment Protection Authority

A search of the datasets maintained by NSW EPA including notices under the *Contaminated Land Management Act 1997* (CLM Act) and *Protection of the Environment Operations Act 1997* (POEO Act) Environment Protection License Register was carried out. The search results are summarised in Table 3.2.

Table 3.2 NSW EPA dataset search

	Details of EPA notices
List of NSW contaminated sites notified to EPA	Nil notices
Contaminated land record of notices	Nil notices
POEO licence register	EPL number 5346 – Applies to Hunter Water Corporation and the application of herbicides within the Balickera Canal and wetlands
Other delicensed, surrendered, or revoked licensed activities	Nil notices

3.4 Other information

Other information resulting from searches of publicly available databases is summarised in Table 3.3.

Table 3.3 Public database search

	Details of EPA notices
Former Gas Works	Nil records
Waste Management Facilities	Nil records
Liquid Fuel Facilities	Nil records
Investigation or Management for Per- and Poly-Fluoroalkyl Substances	Nil records
Current Mining or Exploration Titles or Applications	Nil records
Motor Garages, Dry Cleaners or Service Stations	Nil records
Historic business directory records of note	Ringwood Motorsport Park 2009 (within 200m of the Site) MX Central 1982 (Within 800m of the Site) Boral Quarries Seaham 1991 (within 1.2km of the Site) Port Stephens Gardenland Composting, 2004 (within 1.3km of the Site) Hunter Valley Paintball, 1995 (within 1.3km of the Site)

4. Preliminary conceptual site model

A Conceptual Site Model (CSM) was developed to provide an understanding of the potential for exposure to contaminants and impacts to beneficial uses from contamination within the Site. The CSM draws together historical data, specific and regional geological, hydrogeological, hydro-geochemical and contamination information to identify potential contamination sources, migration and exposure pathways and sensitive receptors for the Site.

4.1 Sources

Based on the results of the desktop assessment, the following potential contamination sources were identified:

- Stockpiling of soil from unknown sources. Stockpiles were noted on the site in the 1984 and 1993 aerial photographs.
- Potential use of fill material from unknown sources. Possible filling of portions of the site were noted in the 1976 and 1987 aerial photograph.
- Historical illegal dumping of waste materials and general rubbish within the Site.
- Potential historical use of herbicides or pesticides on the Site and adjacent properties as part of property and roadway maintenance.

Potential sources of contamination and associated contaminants of potential concern (COPC) are presented in Table 4.1.

Table 4.1 Potential sources and contaminants of potential concern

Description	Rationale/detail	Contaminants of Potential Concern
Herbicide and pesticide use	Historical use of herbicides or pesticides across the Site.	Heavy metals Organochlorine pesticides (OCP) Organophosphate pesticides (OPP)
Stockpiled soils and use of soils and fill materials	Fill materials from unknown and uncontrolled sources	Total recoverable hydrocarbons (TRH) Benzene, toluene, ethylbenzene and xylenes (BTEX) Polycyclic aromatic hydrocarbons (PAHs) Phenols Heavy metals OCPs and OPPs Asbestos
Illegal dumping of waste materials	Illegal dumping of soil, garbage and rubbish	TRH BTEX PAHs Phenols Heavy metals OCPs and OPPs Asbestos

4.2 Pathways

The primary pathways by which current and future receptors could be exposed to the potential sources of contamination are considered to be:

- Direct contact (including ingestion) with potentially contaminated soil, sediment, surface water or groundwater.
- Inhalation of potentially contaminated dust.
- Lateral migration of potential contaminants via surface water run-off to impact surface water.
- Vertical and horizontal migration of potential contaminants within the groundwater.

4.3 Potential receptors

When evaluating potential adverse health/environmental effects from exposure to a contaminated site, all potentially exposed populations should be considered. For the Site, the key populations or receptors of interest are considered to include:

Human health receptors

- Current and future on-site workers, intrusive maintenance workers and Site visitors.
- Current and future occupants and visitors of surrounding properties (e.g. residents occupying surrounding properties and visitors and workers of commercial properties/health services).

Environmental receptors

- Flora and fauna within the Site and surrounding land.
- Aquatic ecological receptors (Balickera Canal to the northwest).
- Groundwater beneath the Site.

4.4 Potential source-pathway-receptor linkages

Table 4.2 summarises the potential areas of environmental concern based on the results of the desktop review and site inspection.

Table 4.2 Preliminary conceptual site model

Sources	Pathway	Receptor	Potentially Complete?
<ul style="list-style-type: none"> – Potential historical stockpiling of uncontrolled fill materials – Potential unclassified fill material located within the roadway corridor – Potential contamination of soil, groundwater and surface water associated with the use of pesticides and herbicides at the site and neighbouring properties 	Direct contact with contaminated fill or soil. Inhalation and ingestion of contaminated fill, soil or fibres. Migration of surface impacts into subsurface soils.	Current site users (commercial/industrial workers)	Possible if contamination is identified.
		Future construction workers during road upgrade works and future intrusive maintenance workers.	Possible if contamination is identified.
		Neighbouring property users (residential / commercial / industrial)	Unlikely – offsite residential and commercial land users unlikely to come into direct contact with site soils.
		Terrestrial ecological receptors	Possible if contamination is identified.
	Direct contact or inhalation of vapours from contaminated groundwater. Vertical and horizontal migration through the unsaturated zone into the saturated zone and horizontal migration within the groundwater or unsaturated zone.	Future intrusive maintenance workers	Possibly complete if earthworks encounter contaminated groundwater. Potential to encounter shallow groundwater in area adjacent to Balickera Canal.
		Future construction workers during road upgrade works	
		Current site users	Unlikely – current users and offsite residential and commercial land users unlikely to come into direct contact with groundwater on site.
		Neighbouring property users (residential / commercial / industrial)	
		Ecological receptor (groundwater)	Possible if contamination is identified.
	Migration of surface water towards down-gradient receptors. Absorption onto sediments from surface water or groundwater. Discharge of groundwater to surface water bodies.	Future construction workers during road upgrade works and future intrusive maintenance workers	Possible if contamination is identified.
		Aquatic ecological receptors (Balickera Canal and standing surface water / groundwater present in the area)	

5. Conclusions and recommendations

5.1 Conclusions

Based on the results of the desktop assessment, the overall likelihood for significant chemical contamination to be present within the Site is considered to be low. In accordance with the objectives detailed in Section 1.2, and based on the information contained within this assessment and limitations outlined in Section 1.4, the following potential sources of contamination were identified:

- Potential historic stockpiling and use of uncontrolled fill (soil) of unknown origin and quality
- Potential unclassified fill material located within the roadway corridor
- Historical use of herbicides on the Site and adjacent properties

5.2 Recommendations

While there is a low potential for contamination to be present on the Site, there has been limited contamination investigation completed across the site. In order to provide higher level of confidence in the contamination status of the Site GHD recommends soil sampling across the Site to assess the potential contaminants of concern within subsurface soils.

It is recommended that a soil management plan be prepared to address the potential for unexpected contamination and to document waste disposal requirements. Any contaminated soil removed from the Site during the proposed development should be classified in accordance with NSW EPA Waste Classification Guidelines (2014) and disposed of at a suitable licensed waste facility.

6. References

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

NSW EPA (2014) *Waste Classification Guidelines*. NSW EPA 2014.

NSW EPA (2020) *Contamination Guidelines - Consultants Reporting on Contaminated Land*. NSW EPA 2020.

NSW EPA (2022a) *Sampling design part 1 -application, Contaminated land guidelines*. NSW EPA 2022a.

NSW EPA (2022b) *Sampling design part 2 -interpretation, Contaminated land guidelines*. NSW EPA 2022b.

NSW map portal 2020, nsw.gov.au

Water NSW, water.nsw.gov.au

Naturally occurring asbestos in NSW, arcgis.com

NSW EPA licence summary, epa.nsw.gov.au

Appendices

Appendix A

Figures



Legend

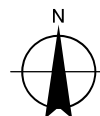
- Site boundary
- ~ Waterways
- Roads

Paper Size ISO A4

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

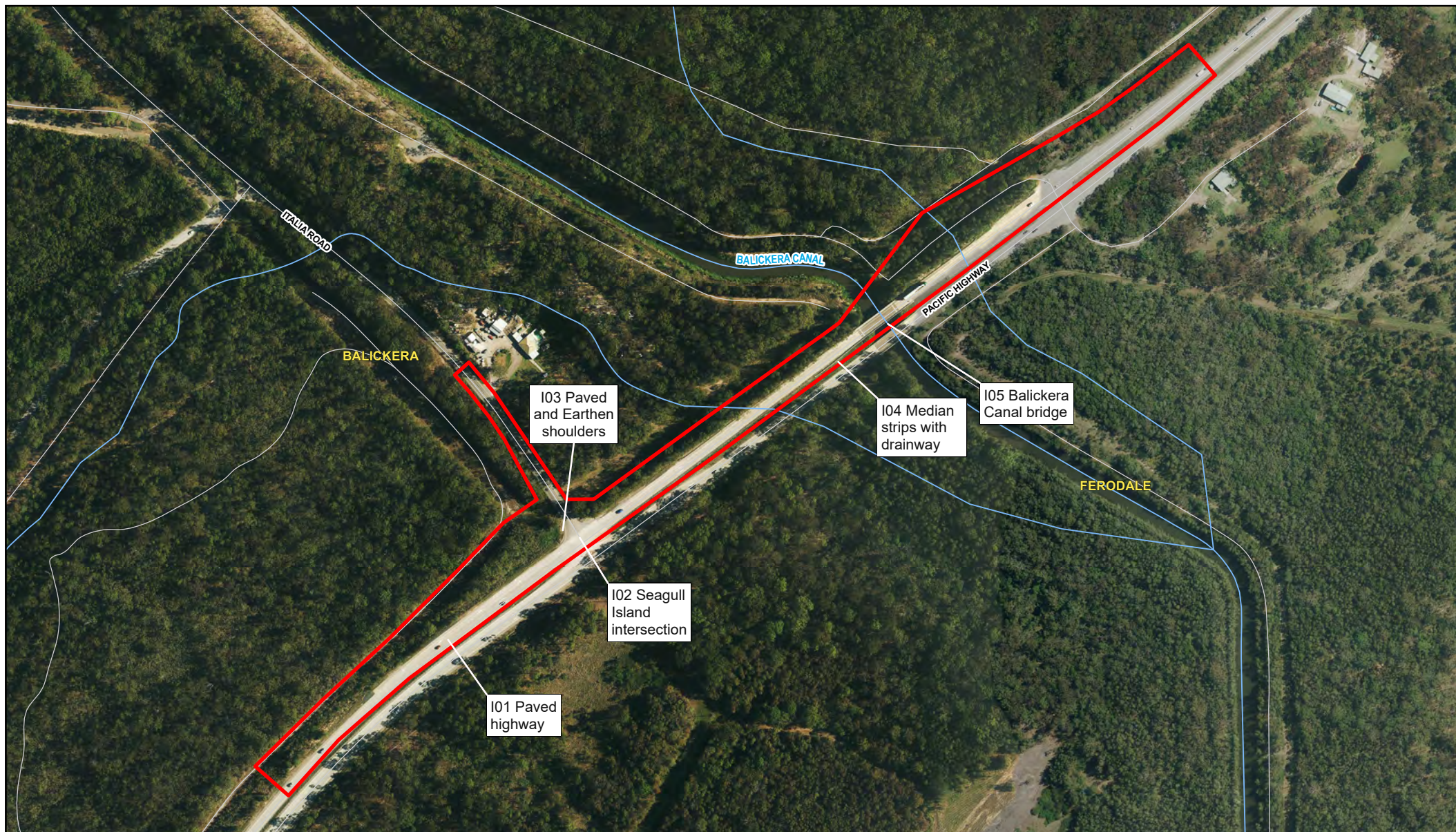


Boral Resources (NSW) Pty Ltd
Boral Quarry Seaham -
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Project No. 12599191
Revision No. 0
Date 23/06/2023

Site location

FIGURE 1

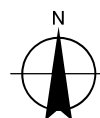


Legend

- Site boundary
- ~ Waterways
- Roads

Paper Size ISO A4
0 30 60 90 120
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56



Boral Resources (NSW) Pty Ltd
Boral Quarry Seaham -
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Site layout

FIGURE 2

Appendix B

Photographic Log



Photo 1 **Corner of Italia Road and Pacific Highway
damaged bitumen**



Photo 2 **Creek on the northbound side of the Highway
near shoulder**



Photo 3 **Intersection of Italia Road and Pacific Highway**



Photo 4 **Road verge southern side of Italia Road**



Photo 5 **Road verge northern side of Italia Road**



Photo 6 **Dumped waste concrete in vegetated area of road
verge**



Photo 7 ***Road verge looking northbound noting***



Photo 8 ***Potential filled embankment on road verge northbound***

Appendix C

Historic Aerial Photographs

207

SAq11 2010 88.12

NSW
1976
5109



58
2260
NSN

UAG 1025 151.45

1 1 9

NSN
2421
27

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