accendo AUSTRALIA

WORKS APPROVAL APPLICATION

LOT 4154 GOVERNOR BROOME ROAD, SCOTT RIVER

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1 INTRODUCTION

1.1 Background

Harbecks Transport (the applicant) is proposing to extract gravel from a 16.7 hectare (ha) area within Lot 4154 Governor Broome Road, Scott River (herein referred to as the subject site) (refer to **Figure 1** and **2**).

The available volume of gravel within the subject site (*insitu* volume of approximately 210,800 m^3) is to be extracted, commencing in the west and moving in an easterly direction.

The proposal involves the crushing of gravel on site. These activities will require a works approval and subsequent licence under the *Environmental Protection Act 1986*. This document provides supporting information for a works approval and licence application under the *Environmental Protection Act 1986*. The document includes an environmental assessment of emissions and discharges and their associated mitigation and management.

The works approval and licence application are for the set-up and operation of a screening and crushing unit within the subject site. The unit will be located on the pit floor during times when extraction is occurring. Crushing of material is an activity that is prescribed by the *Environmental Protection Regulations 1987* as follows:

Category 12: Screening, etc. of material – premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.

It is anticipated that approximately 72,000 tonnes per annum of gravel will be crushed and screened. Typical operating hours for quarries will be adopted for the subject site which involves a six day week from 7am to 6pm, each Monday to Friday and Saturday 7am to 1pm excluding public holidays.

1.2 Location and Layout Plans

The subject site is located within Lot 4154 Governor Broome Road, Scott River. The Lot is wholly owned by Ross Woodhouse (refer to **Appendix A** for Certificate of Title). Authorisation for Harbecks Transport to act on the landowner's behalf for this proposal has been provided (refer to **Appendix B**).

2 EXISTING ENVIRONMENT

2.1 Regional Setting

The subject site is located within the municipality of the Shire of Augusta Margaret River, approximately 13 km northeast of the Augusta town centre and approximately 300 km south of Perth (refer to **Figure 1**).

The subject site is zoned 'General Agriculture under the Shire of Augusta Margaret River's *Local Planning Scheme No. 2*. Properties abutting the boundaries of the subject site are likewise zoned 'General Agriculture' with a 'Parks and Recreation' zoned parcel of land to the west of the subject site across the intersection of Coolstien and Governor Broome Roads.

2.2 Topography and Soils

The current topography of the subject site can be described as sloping with the elevation ranging from 28 m Australian Height Datum (AHD) in the east to 22 m AHD in the west (refer to **Appendix C**).

The subject site is located within the Scott Coastal Zone landform within the Scott River Plain system consisting of "*Poorly drained coastal plain, in the southern Donnybrook Sunkland. Non-saline wet soil and pale deep sand. Heaths, sedgelands and jarrah-marri-paperbark woodland*" (Tille 2006).

The subject site is located within the Scott River wet ironstone flat phase described as, "*Poorly drained flats with shallow sands over laterite* (bog iron ore)" (DPIRD, 2023).

2.2.1 Acid Sulfate Soils

Acid Sulfate Soils (ASS) is the common name given to naturally occurring soil and sediment containing iron sulfides. They have become a potential issue in land development projects on the Swan Coastal Plain when the naturally anaerobic conditions in which they are situated are disturbed and they are exposed to aerobic conditions and subsequently oxidise. When oxidised, ASS produce sulfuric acid, which can result in a range of impacts to the surrounding environment. ASS that has oxidised and resulted in the creation of acidic conditions are termed "Actual ASS" (AASS), and those that have acid generating potential but remain in their naturally anaerobic conditions are termed "Potential ASS" (PASS).

ASS risk mapping (DWER 2021) indicates that there is a 'high to moderate' risk of ASS occurring within the subject site. This proposal involves the excavation of material above the watertable (at least 0.5 m separation to maximum groundwater levels will be maintained at all times) and no dewatering will be undertaken during excavation works. Accordingly, the potential impacts associated with ASS are expected to be low and therefore no further investigations regarding ASS are considered necessary.

2.3 Climate

The climate of the locality is classified as Mediterranean with warm to hot summers and cool wet winters.

The closest weather recording station is Cape Leeuwin (Station 9518). Temperatures are highest on average in February, at approximately 23.4°C. August has the lowest average temperature of the year of 11.3°C.

Rainfall for the area is approximately 947.9 mm per annum with approximately 89% of the rain falling during the winter months, April to October inclusive. Evaporation exceeds rainfall in all but the wettest winter months.

During the summer months the dominant wind in the mornings is from the south-east at 10-14 knots, swinging to the south-west at 20-25 knots in the afternoon. During winter, the winds are most commonly

10-14 knots with no dominant prevailing direction. During storms winds from the west and north-west can reach 40 knots (BoM 2020).

Rainfall intensity has been calculated using the Bureau of Meteorology (BoM) Intensity-Frequency-Duration (IFD) data system which yields the two hour 10 year average return interval storm event for the subject site as 36.9 mm/hr.

2.4 Vegetation and Flora

The vegetation within the subject site is in a 'completely degraded' (Keighery 1994) condition due to prolonged land degradation processes including land clearing and livestock grazing. This has resulted in the complete absence of native vegetation. Onsite vegetation is limited to pasture grasses.

Therefore, Priority and Threatened Flora are unlikely to be present within the subject site due to the history of anthropogenic disturbances. The proposal will not result in any direct or indirect impacts to flora of conservation significance given that the disturbance footprint will be restricted to existing paddock areas.

2.4.1 Threatened Ecological Communities

An ecological community is defined as "a naturally occurring assemblage that occurs in a particular type of habitat" (PWS 2015). A Threatened Ecological Community (TEC) is one that has declined in area or was originally limited in distribution. Uncommon ecological communities that do not strictly meet TEC defined criteria, or are inadequately defined, are listed by the DBCA as a Priority Ecological Community (PEC).

As well as protection under State legislation, selected ecological communities are also afforded statutory protection at a Federal level pursuant to the EPBC Act. The EPBC Act provides for the protection of TECs, which are listed under section 181 of the Act, and are defined as "Critically Endangered", "Endangered" or "Vulnerable" under Section 182.

A search of the DBCA's and EPBC Act databases found two 'Endangered' TEC endorsed under State and Commonwealth legislation and policy recorded within proximity to the subject site, as follows:

- *Empodisma* peatlands of southwestern Australia ecological community; and
- Scott River Ironstone Association.

None of the vegetation within the subject site is representative of these TECs due to the 'completely degraded' condition of the vegetation. The absence of suitable soil types associated with the *Empodisma* peatlands of southwestern Australia TEC and lack of seasonal inundation also does not support the presence of these TECs within the subject site.

2.4.2 Environmentally Sensitive Areas

Section 51B of the *Environmental Protection Act 1986* (EP Act) allows the Minister to declare an Environmentally Sensitive Area (ESA). Once declared, the exemptions to clear native vegetation under the regulations do not apply in these areas. TEC's areas within 50 m of any Declared Rare flora (DRF) and defined wetland areas constitute ESAs. However, a number of other areas of environmental significance are also listed. Current declared ESAs are listed in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*.

The subject site is mapped as occurring within an ESA due to being located within a buffer for a TEC and Conservation Category wetland. However, the subject site does not contain any vegetation associated with the TEC and is not mapped as a Conservation Category wetland. It is worth noting that the entire locality is located within the buffer of a TEC.

2.5 Fauna

Fauna habitat within the subject site is absent, attributed to a history of anthropogenic disturbances which has resulted in an altered land use and the removal of native vegetation.

2.6 Hydrology

2.6.1 Groundwater

The subject site is located within the Beenup subarea of the *Rights in Irrigation and Water (RiWI) Act 1914* proclaimed Blackwood Groundwater Area.

The closest DWER groundwater monitoring bores are located approximately 1.7 km to the west (SC5C) and 4.8 km to the east (SC9B) of the subject site (refer to **Figure 2**). Data from these bores for the period from 1994 to 2024 shows that the highest groundwater levels in both bores was recorded in September 2016. Levels of 18.408 m AHD and 20.448 m AHD respectively were recorded at this time. Given that the distance between these bores is approximately 6,870 m, a groundwater gradient of approximately 1:3368 was calculated. Using an extrapolation of this gradient, groundwater levels at the western and eastern extremity of the pit can be calculated and were found to be 18.94 m AHD and 19.01 m AHD, respectively.

Given a maximum excavation depth of 22.5 m AHD, the minimum separation to groundwater will be in excess of 3 m (3.56 m in the west to 3.49 m in the east) in all areas of the subject site.

Furthermore, test pitting was undertaken in October 2024 to depths between 2 m BGL to 3.8 m BGL whereby no groundwater was encountered (refer to **Figure 2**). The base of all test pits was observed to be solid rock. The impermeable nature of this formation is likely to restrict the formation of aquifers and movement of groundwater and therefore no interaction with groundwater is expected.

2.6.2 Surface Water

The subject site is located in the Scott subarea of the RiWI Act proclaimed Lower Blackwood surface water area. The subject site is not proclaimed under the *Country Areas Water Supply Act 1947* as a public drinking water source area.

The subject site is located approximately 1.75 km north-east of the Scott River and approximately 1 km east of a tributary of the Scott River. A drainage channel is mapped to the north of the subject site, however, no features consistent with this are evident within the subject site. There are no other surface water features present within the subject site.

The current water cycle within the subject site consists of inputs from rainwater flowing downhill in a north westerly, south westerly and westerly direction into the wider drainage system. The north westerly runoff discharges into the drainage system of the Governor Broome Road into the channel navigating through the downstream property to the Scott River (Cat Hydro Services 2025). Westerly and south westerly runoff accumulates around Coostein Road and follows the drainage channel toward Scott River (Cat Hydro Services 2025) (refer to **Appendix D**).

All clean catchment generated surface water will be diverted around each mined cell into the local drainage system. The stormwater runoff volume from one cell will be designed and contained within detention basins and a surrounding bund wall. Infiltration through the base of the detention basins will account for most of the runoff volume with the remainder evaporated (Cat Hydro Services 2026).

2.6.3 Wetlands

Areas of wetlands in Western Australia have been mapped and this mapping has been converted into a digital dataset that is maintained by the Department of Biodiversity, Conservation and Attractions (DBCA) and is referred to as the '*Geomorphic Wetlands Augusta to Walpole'* dataset. Pursuant to this dataset, the subject site and the majority of the surrounding area is mapped as a palusplain (seasonally waterlogged flat). However, the subject site does not experience seasonal waterlogging. Three sumplands (seasonally inundated basins) are mapped as occurring within proximity to the subject site. A minimum buffer of 350m will be provided to these sumplands from the subject site (refer to **Figure 3**).

2.7 Aboriginal Heritage

All Aboriginal sites in Western Australia are provided protection under the *Aboriginal Heritage Act 1972* in which it is an offence for anyone to excavate, damage, destroy, conceal or in any way alter an Aboriginal site without the Minister's permission.

An online search for relevant Aboriginal heritage information was undertaken using the Department for Planning, Lands and Heritage *Aboriginal Inquiry System* that incorporates both the heritage site register and the heritage survey database (DPLH 2021). The Aboriginal Heritage Site Register is maintained pursuant to Section 38 of the *Aboriginal Heritage Act 1972* and contains information on over 22,000 listed Aboriginal sites throughout Western Australia.

Results of the database search revealed that an Aboriginal heritage site is present to the north of the subject site (refer to **Figure 4**). This site is named Scott River (ID22928) and is associated with a drainage channel of the Scott River. A 20 m buffer will be maintained from this site at all times.

3 PROJECT DESCRIPTION

3.1 Area of Disturbance

The gravel quarry will cover an area of 16.7 ha. The subject site will be excavated to an elevation of 22.5 m AHD commencing in the west and moving in an easterly direction. Cells will range in size from approximately 4.0 ha to 4.3 ha in size (refer to **Figure 2**).

The proposal involves the crushing and screening of gravel on site. Therefore, a works approval from the DWER is being sought for this activity. The duration of crushing and screening operations will be dependent on the timing and requirements of specific campaigns. Access from the property will be via Governor Broome Road, utilising Scott River Road north to Brockman Highway (refer to **Figure 5**). Signage will be erected at a distance of 100 m to each side of the driveway at the entrance to Lot 4154 Governor Broome Road.

The planned end use of the quarry is to restore a natural soil profile and return the area to pasture, ensuring that there is no net loss of agricultural land.

3.2 Description Overview

All crushing and screening equipment and infrastructure at the subject site will be fully portable to facilitate movement throughout the site required for staged quarrying operations. The key project characteristics associated with the proposal are provided below in **Table 1**.

Table 1. Project characteristics.

Characteristic	Description
Quarry life	Five years
Total resource	Approximately 210,800 m^3 of gravel.
Project footprint	16.7 ha
Vegetation clearing	No clearing of vegetation is required.
Operating hours	7:00 am – 6:00 pm, Monday to Friday and 7:00 am to 1:00 pm Saturday (for rehabilitation works only).
Storage shed	A storage container may be located in the fenced compound for the overnight storage of valuable equipment.
Fenced compound	A compound area will be fenced to secure equipment and restrict public access.
Water Tankers	A 15,000L water tanker or similar will be used for dust suppression on the access road and working floors as required. The water tanker will be filled within the property.
Bulldozer (D8)	Bulldozers will also be used for the movement of gravel and loading road trucks.
Excavator (PC300 or similar)	An excavator may be used for the removal of gravel material.
Loader (Cat 980H or similar)	Loaders will be used for the movement of gravel and loading road trucks.
Surface Miner- Wirtgen 2500 or similar	Used to dig, grind and crush the gravel and then transport to a stockpile.

Characteristic	Description
Toilets	A portable toilet may be required onsite.
Generator	A generator may be required to provide power to a variety of equipment.
Water usage	Water will be sourced from the property for dust suppressions purposes, as required.
Waste	All waste products will be stored in appropriate rubbish bins (recycling, putrescible, and hydrocarbons will be separated in lidded bins) and removed from site by a contractor at regular intervals and disposed of at the licensed landfill facilities. There will be no landfill on site

Onsite facilities will be kept to a minimum and importantly no fuel or chemicals will be stored onsite.

The commencement of operations is proposed in the first half of 2026 (subject to obtaining all approvals). The estimated construction costs to mobilise the crushing and screening equipment is approximately $1,540 (refer to **Table 2**). The only cost associated with the infrastructure outlined in this works approval application is the mobilisation of equipment to the subject site.

3.3 Mining Operations

Using a loader, the topsoil (where available) will be stripped and placed in stockpiles less than 3 m high. Overburden, if present, will be removed using a dump truck and stockpiled to the perimeter of the proposed pit area.

Typical operating hours will be restricted to 7:00 am – 6:00 pm, Monday to Friday and 7:00 am to 1:00 pm on Saturdays (for rehabilitation only). It should be noted that the quarry will operate on a campaign and as needs basis. The site will be worked by 2-3 persons, depending on market demand.

Access from the property will be via Governor Broome Road, utilising Scott River Road north to Brockman Highway (refer to **Figure 5**).

It is proposed to utilise 22 tonne semi-trailers with a capacity of approximately 14.7 LCM of gravel. A estimated maximum number of 64 truck movements (i.e. 32 trucks entering and 32 trucks exiting the site) will occur on any day as per the Development Approval (refer to **Appendix E)**.

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3.3.1 Gravel Extraction

A Wirtgen Surface Miner will be used to excavate, grind, crush and then stockpile the material to the stockpile area located in the northwestern portion of the subject site. The material will then be loaded on to waiting trucks for transport. A summary of the proposed gravel extraction activities is provided below:

- Prior to excavation commencing the site will be ground surveyed, the excavation footprint marked out and a 1 m contour plan developed.
- The topsoil/overburden will be stripped and used to construct earthen bunds using a loader.
- A surface miner will be used to dig the gravel, grind and crush it and then transport it to a stockpile.
- Any areas of deeper sand will also be stripped and stockpiled for reuse.
- The gravel will then be picked up by a loader and loaded to trucks for transport.
- If required, campaign crushing and screening may occur. This is likely to be intermittent, as required.
- Excavation will commence in the west of the quarry and then move in an easterly direction.
- Upon completion of each section of quarry, the last cut of approximately 400 mm will be screened with the fines left behind. These will be reformed and back filled, where subgrade material is available, to achieve the proposed final contours.
- At the end of excavation, the floor of the quarry will be deep ripped, covered by overburden and topsoil, and rehabilitated to a constructed soil.

3.3.2 Final Contours

The final surface contours of the quarry will be approximately 22.5 m AHD which is consistent with the adjoining land.

Slopes of the batters at the end of excavation will be retained at 1:5 vertical to horizontal where required.

3.3.3 Rehabilitation

Progressive rehabilitation will not be possible due to the stockpiling of rock materials onsite. Rehabilitation will be completed upon the completion of the quarry. This is expected to be within approximately three years from commencement of works.

Upon completion of quarrying, the following broad completion criteria will be achieved:

- A self-sustaining cover of pasture;
- Weed levels that are not likely to impact on the viability of the reconstructed soils; and
- A safe and stable landform suitable for the proposed future land use which will be productive, grazing pasturelands.

3.4 Crushing and Screening Equipment

3.4.1 Installation

Due to the mobile nature of the crushing and screening equipment, installation at the subject site will be very simple. The ‘plug and play’ equipment does not require earthworks or significant construction and therefore has a low risk of noise and dust generation during this phase.

3.4.2 Operation

The crusher and screening plant will be located on the pit floor during campaigns when gravel material is being produced. The mobile crushing and screening equipment used is modular and interchangeable. The crusher and screens can be configured differently for the production of several gravel products.

3.4.3 Resource Requirements and Regional Infrastructure

Regional resource requirements are described below as follows:

- Water supply is not required for excavation;
- Water will be required for dust suppression, water will sourced from within the property;
- Power is not required; and
- Equipment will be refuelled at the nearby Leeuwin Civil depot.

4 ENVIRONMENTAL IMPACTS AND MANAGEMENT

The following factors are considered to represent the potential environmental and amenity impacts associated with the proposal:

- Hydrology;
- Weed and pathogens;
- Noise;
- Dust; and
- Uncontrolled discharge of contaminants to land.

These environmental factors are discussed in more detail below, together with the proposed management actions.

4.1 Hydrology

4.1.1 Surface Water

The current water cycle within the subject site consists of inputs from rainwater flowing downhill in a north westerly direction into the wider drainage system. The development is not proposing to alter this process.

A drainage channel is mapped to the north of the subject site, however, no features consistent with this are evident and no impact on the drainage within the subject site will occur.

A *Water Management Plan* has been prepared for the subject site and is provided in **Appendix F**. This Plan documents the proposed surface water management measures associated with the extractive industry operation.

4.1.1.1 Construction

The mobilisation and positioning of equipment associated with a Category 12 prescribed premises is not associated with any impacts to surface water, including stormwater runoff.

4.1.1.2 Operation

The operation of the screening and crushing plant will be a dry operation.

All stormwater drainage within the extraction area is internal and the runoff generated by direct rainfall into the pit will be fully retained within the depression basin created by the mining, as demonstrated within the *Water Management Plan* (Accendo 2025) (refer to **Appendix F**) submitted to the Shire of Augusta Margaret River. Any surface water falling outside of the pit will be diverted around the pit by the perimeter bunds to the drainage system. Surface water retained within the excavated areas will either evaporate or infiltrate through the pit ensuring water quality to the drainage system is maintained.

The pit will be monitored post rainfall events for any incidences of erosion damage and any required repairs will be undertaken as soon as practicable.

4.1.1.3 Risk Assessment

A risk assessment relating to surface water and stormwater runoff in consideration of the proposed management measures is provided below. The residual risk associated with sedimentation and erosion from stormwater runoff during the operation of the crushing and screening equipment is considered low.

Table 3. Risk assessment associated with surface water and stormwater.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Erosion and sedimentation	Uncontrolled and contaminated stormwater runoff	Erosion and sedimentation resulting in poor surface water quality.	Bunding of the process excavation area to ensure that stormwater is contained within the excavation footprint.	1	2	Low

4.1.2 Groundwater

Groundwater will not be extracted or dewatered during the operation of the quarry and therefore, no impacts to groundwater levels are proposed.

Maximum excavation levels will be to 22.5 m AHD. As discussed within **Section 2.6.1** no interaction with groundwater is expected during excavation works. Furthermore, a separation of at least 0.5 m (but more likely greater than 3 m), between the final contours and the maximum groundwater elevation will be maintained.

The extraction and processing of gravel is a chemically free operation with the liquids used being lubricants for machinery and refuelling. There will be no storage of chemicals or fuel on site.

4.1.2.1 Construction

The mobilisation and positioning of equipment associated with a Category 12 prescribed premises is not associated with any impacts to groundwater.

4.1.2.2 Operation

The operation of the screening and crushing plant will be a dry operation and is not associated with any impacts to groundwater.

4.2 Dieback (*Phytophthora cinnamomi*) and Weed Management

Phytophthora dieback is a soil-borne pathogen recognised as a major threat to Australian vegetation, and in particular, the vegetation and dependent biota within the southwest botanical province. *Phytophthora* dieback is known to reduce the health and species diversity of native vegetation and the disease is listed as a key threatening process under the EPBC Act.

Given that native vegetation has been altered within the subject site to enable the establishment of pasture, dieback indicator species are largely absent and therefore it is not possible to detect whether dieback is present or absent. On this basis, it is reasonable to classify the subject site as 'uninterpretable', denoting that a precautionary management approach should be adopted.

The primary objective of dieback management during operations is to minimise the risk of entry of dieback to the subject site. This can be achieved by preventing the importation of soil or plant material to and from the subject site. The risk of transportation via vehicles and equipment is low given that sealed roads will be utilised prior to entering the subject site.

4.2.1 Construction

The mobilisation and positioning of equipment associated with a Category 12 prescribed premises could be associated with the introduction/spread of dieback and weeds within the subject site. Accordingly, the management measures provided in **Table 4** are proposed.

4.2.2 Operation

The primary objective of dieback management during operations is to minimise the risk of entry of dieback to the subject site. The risk of transportation via vehicles and equipment is low given that sealed roads will be utilised prior to entering the site.

4.2.3 Management Measures

The management measures proposed for dieback control are developed in accordance with the *Dieback Working Group (DWG) – Best Practice Guidelines* (DWG, 2005) for an uninterpretable site and are provided within **Table 4.**

Table 4. Dieback and weed management measures.

***Phytophthora* dieback and weed management**	
Responsibility • Project Manager. • Contractors.	
Objectives • To prevent the introduction and spread of *Phytophthora* dieback and weeds within the subject site.	
Potential Impacts • Introduction and spread of disease (*Phytophthora* spp.) and weeds.	
Management Strategies	**Timing**
• Training will be provided to all personnel during the safety and environment induction course. This will include an explanation of the specific requirements relating to *Phytophthora* dieback management.	• Prior to commencement
• All earthmoving and ground engaging equipment will be inspected and cleaned of vegetation and soil prior to entry and exit of the subject site.	• Prior to commencement
• Access to the subject site during excavation activities will be restricted to the proposed roads and driveways. No other access points should be established.	• Prior to and during operation
• As far as practicable, onsite drainage shall be designed to contain runoff from building envelopes and roads within disturbed areas.	• Prior to and during operation
• Reduce vehicle and plant movement into and within the site as much as possible, particularly during wet conditions.	• During operation
• All material will be transported such that soil shall not fall from the vehicle onto road verges.	• During and operation.

4.2.4 Risk Assessment

A risk assessment to determine the residual risk associated with dieback and weeds is provided below. The risk assessment indicates that with the application of suitable management measures the potential risk associated with dieback introduction and spread is 'Low'.

Table 5. Risk assessment associated with dieback and weeds.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Introduction/ spread of dieback and weed species	Importation of soil/plant material. Onsite movement of soil.	Impacts to the condition of remnant vegetation. Spread to offsite locations.	Refer to Management Measures provided in **Table 4**.	1	2	Low

4.3 Noise

The subject site has been designed to maximise setbacks to the closest sensitive receptors. This has involved extensive analysis of the local landform, environmental characteristics, land uses and location of sensitive receptors.

The Environmental Protection Authority's (EPA) *Guidance for the Assessment of Environmental Factors* (June 2005) provides generic separation distances to assist in the determination of suitable buffers where industry may have the potential to affect the amenity of a sensitive land use. In particular, for extractive industries, a buffer distance of 300 m to 500 m is recommended from sensitive land uses.

The closest residential dwellings to the subject site are provided below and shown in **Figure 6.**

Table 6. Residential dwellings within 1500m of the subject site

Resident No.	Distance to subject site (m)
1	170 m
2	580 m
3	1418 m
4	1439 m
5	1468 m
Proposed Chalet 1	368 m
Proposed Chalet 2	342 m
Proposed Chalet 3	378 m
Proposed Chalet 4	467 m

The closest residential dwelling to the subject site is located 170 m from the northern boundary, with a second dwelling located approximately 580 m to the northwest. Both dwellings are owned by the property of the subject site, Ross Woodhouse. A letter of support for the proposed operations has been supplied by the owner (refer to **Appendix B**).

A Development Approval is currently under assessment for proposed chalet development at 1165 Scott River Road, Scott River. If constructed, the four chalets would be between 350 to 470 m from the nearest operations.

4.3.1 Construction

The mobilisation and positioning of equipment associated with a Category 12 prescribed premises is not associated with any significant noise emissions.

4.3.2 Operation

The proposed extraction activities will be low impact in nature and the minimal noise emanating from the subject site will be indistinct from typical rural noises. Furthermore, extraction activities will only be undertaken during standard hours of operation (in accordance with the conditions of the Extractive Industry Licence). A summary of potential noise generating activities is presented in **Table 7**.

Table 7. Noise generating activities.

Activity	Duration	Equipment to be used	Sound pressure Level (dB(A))	Comments
Topsoil stripping	3 weeks per year	CAT 980H Front end Wheel Loader (FEL) or similar	105	Initial impact to closest resident which will reduce as stockpiles increase.
Excavation and stockpiling of gravel	80% of works undertaken within 6 months of the year	PC300 Excavator	98	Noise will be muffled by stockpiles at edge of excavation areas.
		D8 Dozer	113	
Crushing and screening of gravel	80% of works undertaken within 6 months of the year	Surface Miner – Wirtgen 2500 or similar	98	Noise will be muffled by stockpiles at edge of excavation areas.
Loading of trucks from stockpiles	A maximum of 5 years with up to 62 loads per day, dependent on demand.	Single Semi-loader, semi – tipper or road train	102	Noise will be muffled by stockpiles, vehicles are new and well maintained.
		CAT 980H Front end Wheel Loader (FEL) or similar	105	

The proponent will ensure that all noise emissions comply with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times, as per the management measures provided in **Table 8**. An Acoustic Assessment (Herring Storer Acoustics, 2025) (refer to **Appendix G)** showed that with the proposed mitigation measures and provided the topsoil stripping within cells 1 and 2 is undertaken prior to the

completion of the construction of chalets that the gravel extraction operations will comply with the *Environmental Protection (Noise) Regulations* 1997 during all operating hours. Additional management measures are not required as cells 1 and 2 will be completed first (and before the completion of the chalets) and thereafter there will be no impacts to sensitive receptors from noise.

Table 8. Management actions for noise.

Item	Action	Trigger/Timing	Responsibility
Inductions			
1	As part of site inductions, employees, contractors and visitors to the site are reminded of their responsibility to undertake work activities in an environmentally sensitive manner, including minimising noise while on site, or entering and leaving the site.	Ongoing	Site Manager
Planning Controls			
2	Daily Planning • The use of significant noise generating equipment or activities simultaneously is avoided. • The noisiest activities are scheduled to the least sensitive times of the day.	Where possible	Site Manager
3	Regular review of meteorological data, specifically wind speed and direction, to guide decisions on quarrying activities.	As required, with consideration to the intensity of activities onsite and the prevailing weather conditions	Site Manager
Operational Controls			
4	Equipment and Machinery • Use machinery and equipment with minimal noise output levels. • Ensure all machinery is regularly serviced as per the equipment's maintenance schedule to minimise noise generation. • Where appropriate, all machinery and equipment will be shut off when not in use. • Use flashing lights/broadband alarms instead of tonal reversing alarms on excavators/loaders. • Apply speed restrictions (10 km/hr within site) and a ban on exhaust braking.	Continuous	All employees & contractors
5	Earth bunds • Overburden and topsoil will be used to form perimeter bunds to assist with noise screening.	Prior to quarrying	Site Manager
Complaints Management			

Item	Action	Trigger/Timing	Responsibility
6	Erect on-site signage directing public to make complaints to the relevant person.	Prior to quarrying	Site Manager
7	Maintain a complaints register (refer to **Appendix H**). A Complaints Register will be established for the site to record the following information: • Date, time, location and nature of the exceedance. • Identify the cause (or likely cause) of the exceedance and responsible parties. • Identify the activities that were occurring at the time of the non-compliance. • Determine the activities that were most likely contributing to the non-compliance. • Describe what action has been taken to date. • Describe the proposed measures to address the exceedance. If the complaint is verified as being due to a site source, remedial action will be undertaken within 2 hours. The Shire of Augusta Margaret River will be advised of all complaints as soon as they are received. If a complaint cannot be resolved within the 2 hour response period, it may be necessary to cease operations.	Upon receiving complaint	Site Manager

4.3.3 Risk Assessment

Further to this a risk assessment to determine the residual risk associated with noise emissions is provided below. The risk assessment indicates that with the application of suitable management measures the potential risk associated with noise emissions is 'Low'.

Table 9. Risk assessment associated with noise emissions.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Noise emission	Excavation machinery and processing	Noise impacts to neighbouring properties	Refer to Actions provided in **Table 8**.	1	2	Low

4.4 Dust Emissions

In accordance with the EPA (2005) Guidance Statement No. 3 *Separation Distances between Industrial and Sensitive Land Uses*, the recommended separation distance between an extractive industry and a residential dwelling is 300-500 m. As previously discussed in **Section 4.3**, the closest residential dwelling is owned by the land owner and is located approximately 170 m to the north of the subject site.

No significant dust emissions are expected from the set-up or operation of the crushing unit as suitable management measures will be implemented. This will include the use of water carts as required, and the operation of sprayers and sprinklers, equipped on the crushing and screening equipment, to dampen material stockpiles. This is consistent with industry accepted quarry treatment practices.

4.4.1 Topography

The current topography of the subject site can be described as undulating with online mapping showing an elevation ranging between approximately 22 m AHD to 28 m AHD within the proposed excavation area.

4.4.2 Wind Direction

The wind direction is predominantly from the south-east in the morning and from the south-west in the afternoon during the summer months. During winter, the winds are most commonly 10-14 knots with no dominant prevailing direction. During storms winds from the west and north-west can reach 40 knots (BoM 2020).

4.4.3 Dust Sources

The proposed extractive industry activities will involve the disturbance of large quantities of soil and earthen material. Specifically, this may include the following activities:

- Earthworks during extraction activities;
- Topsoil stripping;
- Loading and transportation of material;
- Crushing and screening of material;
- Vehicle movement within the site; and
- Wind erosion of exposed surfaces.

These activities have the potential to generate dust that, if not adequately controlled, can cause nuisance and safety risks. In-pit operations tend to generate less dust than surrounding activities due to the reduced airflow within the pit. The removal and replacement of topsoil material has the highest risk associated with dust generation due to the large volumes of material involved and generally lower levels of soil moisture.

4.4.4 Risk Assessment

In accordance with the DWER's "*A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities*", a risk assessment for dust emissions has been prepared.

For a site that is generating uncontaminated dust, such as extractive industry sites, the site classification chart in Appendix 1 of the DWER guideline can be used for assessing the site risk. Appendix 1 also details the provisions and contingency arrangements for dust management which apply to each site classification score.

The site classification assessment is provided below.

Part A. Nature of site

Item	**Score Options**				**Score**
1.Nuisance potential of soil when disturbed	Very low – 1 *Material is of coarse composition (gravel)*	Low – 2	Medium – 4	High – 6	1
2. Topography and protection provided by undisturbed vegetation	Sheltered and screened – 1 Extensive bunding will be provided to closest resident	Medium screening – 6	Little screening – 12	Exposed and wind prone – 18	1
3. Area of site disturbed by the works	Less than 1ha – 1	Between 1 and 5ha – 3	Between 5 and 10ha – 6	More than 10ha – 9 Up to 16.7 ha will be excavated	9
4. Type of work being done	Roads and trenches – 1	Roads, drains and medium deep sewers – 3	Roads, drains, sewers and partial earthworks – 6	Bulk earthworks – 9 *Gravel extraction*	9
Total score for Part A					20

Part B. Proximity of site to other land uses

Item	Score Options				Score
1.Distance of other land uses from site	More than 1km – 1	Between 1km and 500m – 6	Between 100m and 500m – 12	Less than 100m - 18	12
2. Affect of prevailing wind direction (easterly) on other land uses	Not affected – 1	Isolated land uses affected by one wind direction – 6	Dense land uses affected by one wind direction – 9	Dense/sensitive land uses highly affected by prevailing winds – 12	6
Total score for Part A					18

Site Classification Score (A x B) = 360

Classification 2 (score between 200 and 399, considered **low risk**)

Provisions:

The developer shall supply a contingency plan to the local government, which shall detail the activities to be undertaken should dust impact occur.

Contingency arrangements:

Include an allowance for water-cart operation, wind fencing and surface stabilisation during construction period for the purposes of dust suppression.

All areas of disturbed land should be stabilised to ensure that the disturbed area exposed at any time is kept to a practical minimum.

Monitoring requirements:

Complaints management system in place.

Notice to be erected at the site providing contact details of the person to be contacted.

4.4.5 Management Measures

While the potential impacts to amenity from dust emissions are considered low, standard dust suppression measures will be implemented during operation activities, as provided within **Table 10**.

Table 10. Dust management measures.

Legislation and Key Standards		
Environmental Protection Act 1986 (EP Act) *A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities* (DEC 2011)		
Objectives		
• Minimise dust lift during all activities. • No adverse dust impacts to sensitive receptors from the quarry operations.		
Targets		
• No visible dust beyond the property boundary. • No dust complaints.		
Management Actions		
Description	**Responsibility**	**Timing**
Notice to be erected at the site, providing contact details of the person to be contacted regarding the works. This person will also be available outside of operational hours to address any complaints.	Site Manager	Prior to extraction
Induction for all employees will include information on: • Potential sources of dust • Dust Management Plan • Speed limits onsite and staying on designated roads • Reporting procedure for dust issues	Site Manager	Prior to extraction
Topsoil stripping shall <u>not</u> occur during the following conditions: • Forecasted winds in excess of 40 km/hr;	Site Manager	Topsoil stripping and bund construction

Water trucks are to water down unsealed roads during operation to reduce dust lift.	Site Manager	As required
Temporary stockpiles and exposed areas will be watered and stabilised as required. Stabilisation techniques that will be considered depending on environmental conditions will include hydro-mulching.	Site Manager	As required
Transport of material will be via covered trucks or dampened prior to transport to prevent dust lift during transport.	Drivers	During soil transport activities
Water trucks are to be available at all times during quarry activities to water the site on observation of dust lift.	Site Manager	As required
Vehicle speeds will be restricted to no more than 10km/hr on the site to minimize dust lift off.	Drivers	At all times
Maintain a complaints register (refer to **Appendix H**). A Complaints Register will be established for the site to record the following information: • Date, time, location and nature of the exceedance. • Identify the cause (or likely cause) of the exceedance and responsible parties. • Identify the activities that were occurring at the time of the non-compliance. • Determine the activities that were most likely contributing to the non-compliance. • Describe what action has been taken to date. • Describe the proposed measures to address the exceedance.	Site Manager	As required

Monitoring			
Description	**Parameter**	**Responsibility**	**Frequency**
Visual monitoring of dust will be ongoing throughout the day during operations. All monitoring is to be maintained on a logging sheet for reference and proof of compliance.	Dust lift and signs of dust deposition near property boundary. Evidence of no visible dust crossing the site boundary will be used as the monitoring criteria for compliance.	Site Manager	Continuous

Contingency and Corrective Actions

Incident or Consequence	Corrective Action	Responsibility
Observation of excessive dust lift onsite	Report and investigate as incident.	Site Manager
	Halt work within proximity of the area until cause of dust is addressed.	Site Manager
	Increase dust mitigation measures (e.g. additional watering of exposed areas).	Site Manager
Complaint received	Report and investigate as incident. To determine the validity of the complaint, the wind direction, wind speed and activities being undertaken on site at the time of the complaint will be established.	Site Manager
	If required, halt work until cause of dust is addressed.	Site Manager
	If the complaint is verified as being due to a site source, remedial action will be undertaken within 2 hours. The Shire of Augusta Margaret River will be advised of all complaints as soon as they are received. If a complaint cannot be resolved within the 2 hour response period, it may be necessary to cease operations.	Site Manger
	Review dust management procedures and adjust if deemed necessary.	Site Manager

4.5 Domestic and Industrial Waste Products

No domestic or industrial waste will be stored onsite. Any waste material generated during the operational activities will be taken offsite for disposal at an approved landfill facility on a daily basis. Hydrocarbon wastes such as accidental oil spills will be mopped up with absorbent material and segregated for removal and disposal offsite by a licensed contractor.

An approved portable toilet system may be temporarily placed onsite during construction activities. Waste from the toilet system will be disposed of offsite at an approved treatment facility.

4.6 Hydrocarbons and Dangerous Goods Management

Hydrocarbons are the only dangerous goods that will be utilised within the proposed extraction area. However, storage of hydrocarbons on the site will not occur.

4.6.1 Construction

The mobilisation and positioning of equipment associated with a Category 12 prescribed premises is not associated with any uncontrolled discharges of contaminants to land.

4.6.2 Operation

There is the minor possibility for soil and water contamination as a result of incidental hydrocarbon leakages or spills during the operation/refuelling of machinery. In such instances the management measures specified below will be implemented. Servicing of machinery and equipment will not occur onsite further reducing the possibility of contamination.

Table 11. Hydrocarbon and dangerous goods management measures.

Timing	Management Measure
During quarry operations	Mobile refuelling of equipment and vehicles will be undertaken following set procedures to acceptably minimise the risk of spills and to ensure adequate containment and bunding is in place to contain any spills that may occur.
	Spill kits containing appropriate equipment for control, containment and cleanup of hydrocarbon and chemical spills will be available in appropriate locations onsite and maintained.
	No vehicles or machinery are to be serviced or cleaned within the extraction area.

4.6.3 Risk Assessment

A risk assessment to determine the residual risk associated with the uncontrolled discharge of contaminants is provided below. The risk assessment indicates that with the application of suitable management measures the potential risk associated with uncontrolled discharges is 'Low'.

Table 12. Risk assessment associated with the uncontrolled discharge of contaminants.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Uncontrolled discharge of contaminants to land	Machinery	Contamination of soils and/or water	Refer to Management Measures provided in **Table 11**.	1	2	Low

REFERENCES

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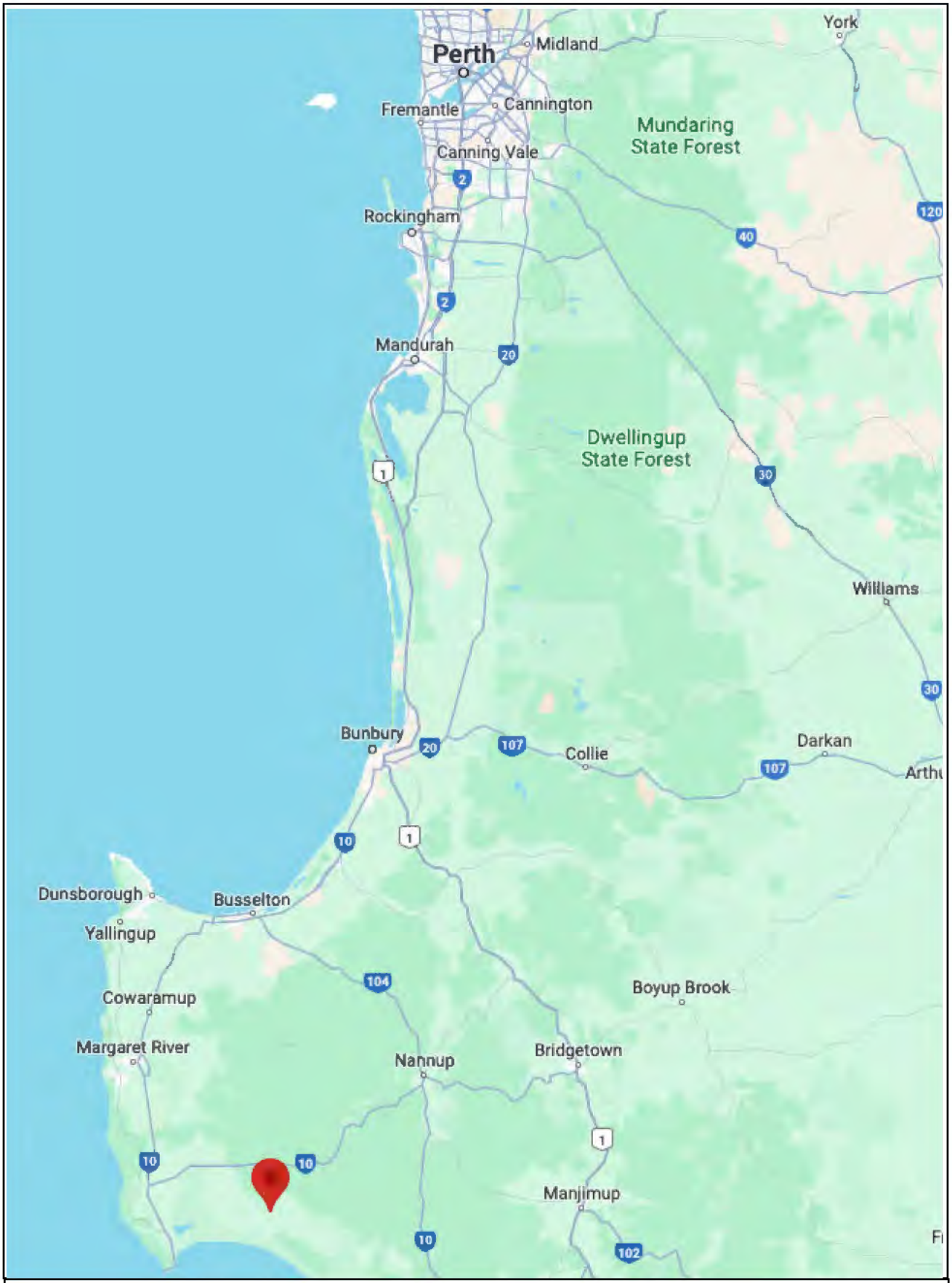
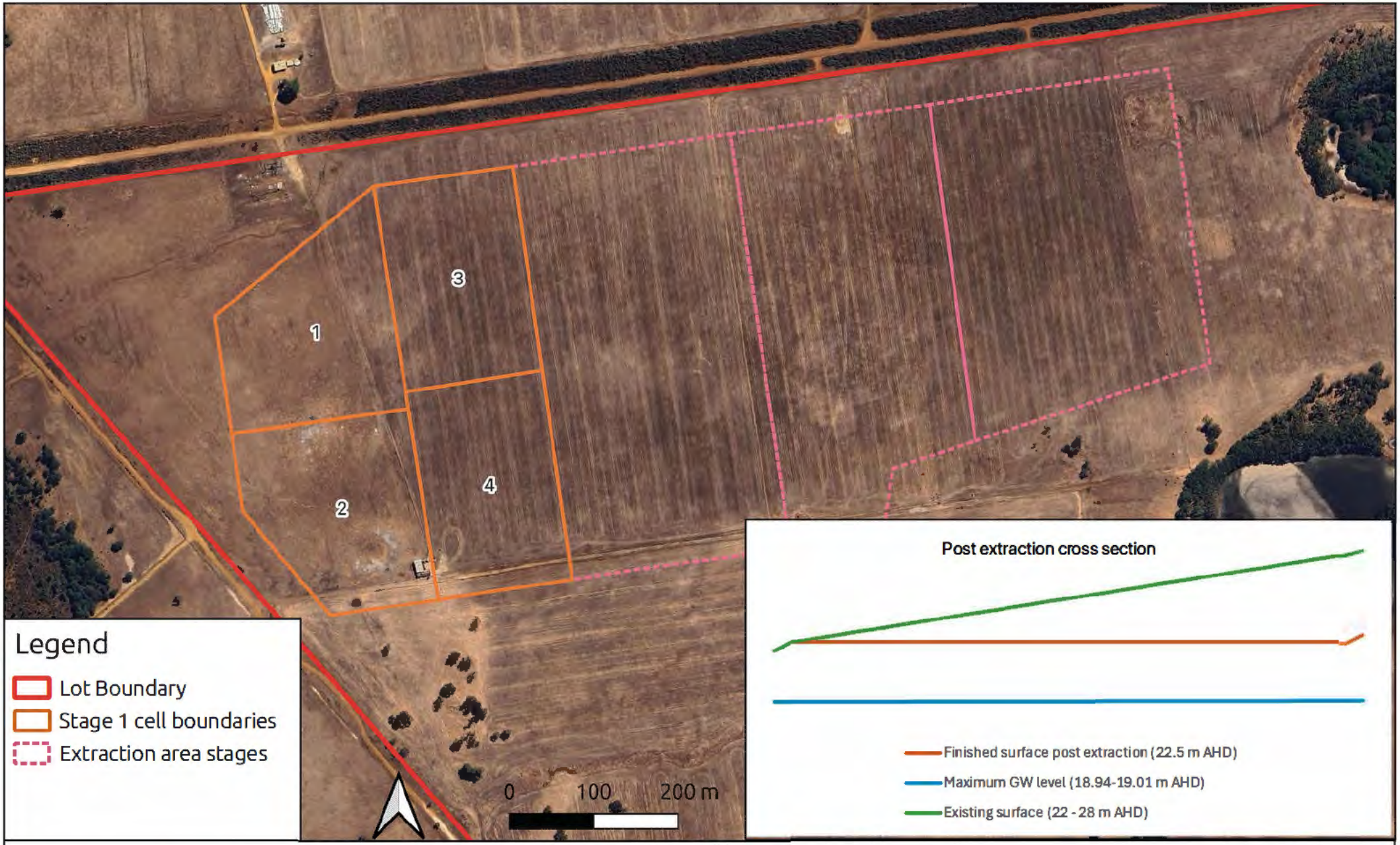
FIGURES



PROJECT	Lot 4154 Governor Broome Rd, Scott River	Project Number	Drawing Number	Revision
		2604	Figure 1	A
DRAWING TITLE	Figure 1 – Site Locality	Designed NC	Checked	
CLIENT	Harbecks Transport	Drawn PN	Approved	
		Date	30/01/2026	
		Local Authority	Shire of Augusta Margaret River	
		Sheet 1 of 1		

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852



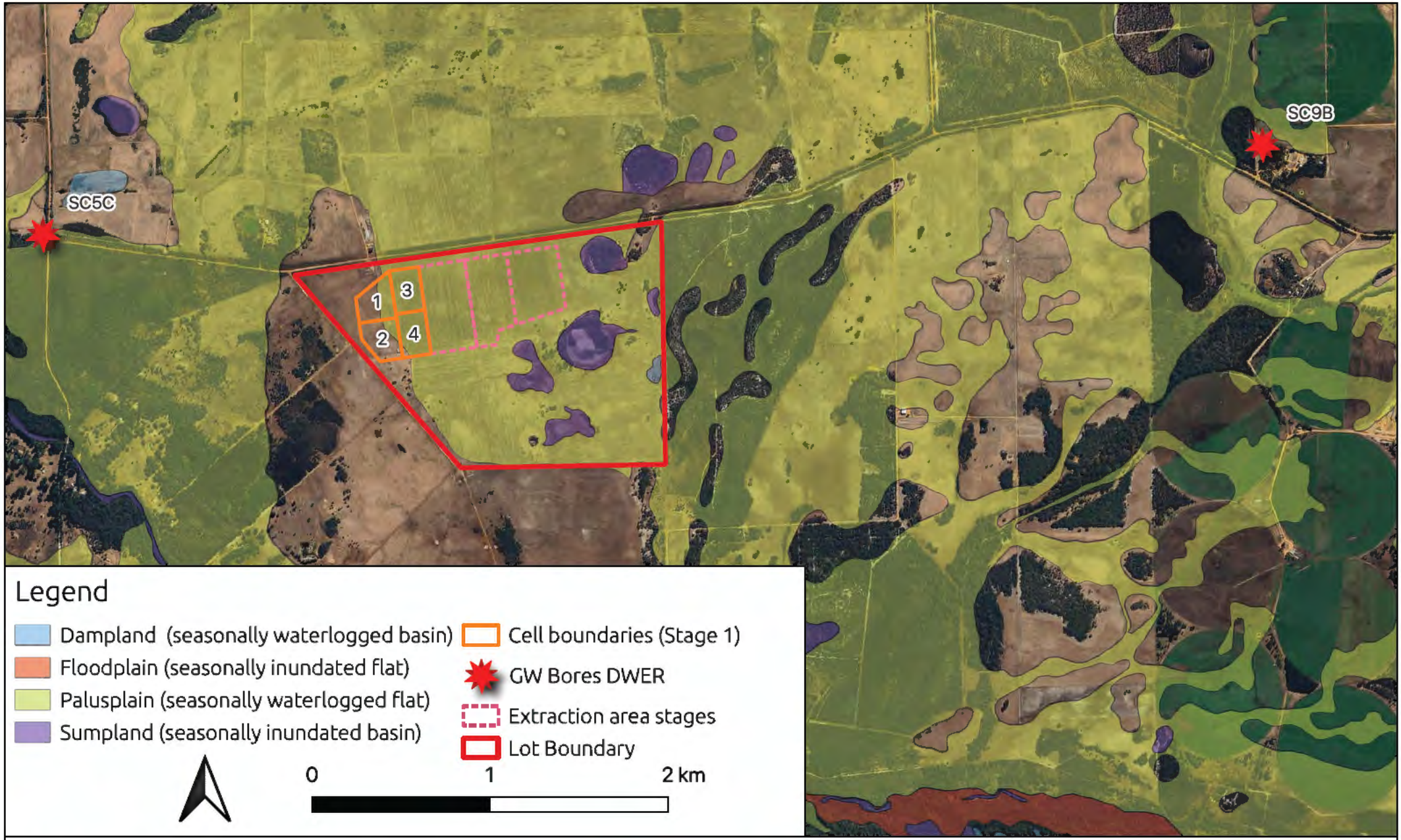
Legend

- Lot Boundary
- Stage 1 cell boundaries
- Extraction area stages

PROJECT	Lot 4154 Governor Broome Road, Scott River
DRAWING TITLE	Figure 2 - Site Extent
CLIENT	Harbecks Transport

accendo AUSTRALIA
PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2604	Designed	NC
Drawing Number	Figure 2	Drawn	
Revision	A	Checked	PN
Date	30/01/2026	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River



Legend

- Dampland (seasonally waterlogged basin)
- Floodplain (seasonally inundated flat)
- Palusplain (seasonally waterlogged flat)
- Sumpland (seasonally inundated basin)
- Cell boundaries (Stage 1)
- GW Bores DWER
- Extraction area stages
- Lot Boundary

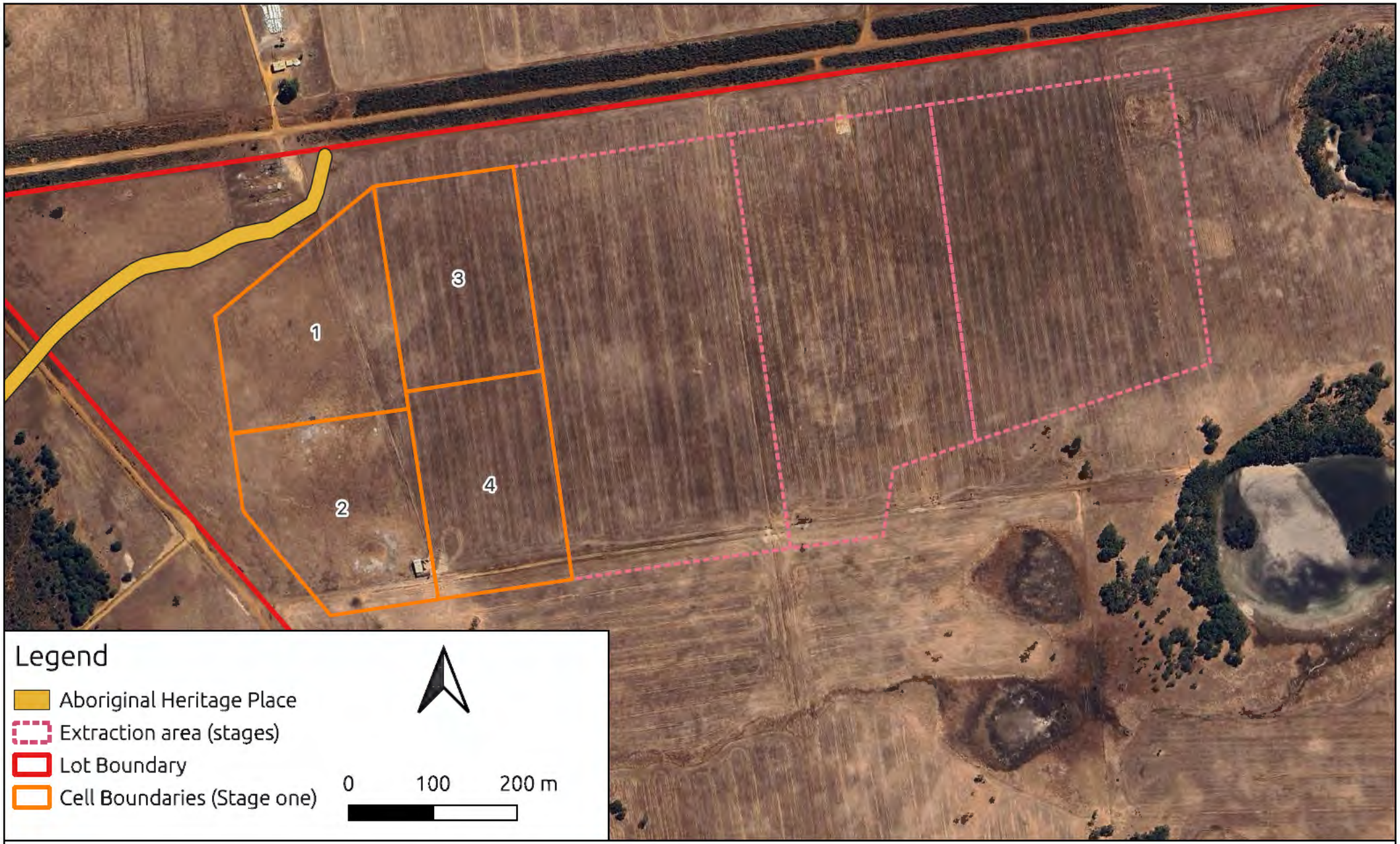
0 1 2 km

PROJECT	Lot 4154 Governor Broome Road, Scott River
DRAWING TITLE	Figure 3 - Water Features
CLIENT	Harbecks Transport

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2604	Designed	NC
Drawing Number	Figure 3	Drawn	
Revision	A	Checked	PN
Date	30/01/2026	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River



PROJECT Lot 4154 Governor Broome Road, Scott River

DRAWING TITLE Figure 4 - Aboriginal Heritage

CLIENT Harbecks Transport

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2604	Designed	NC
Drawing Number	Figure 4	Drawn	
Revision	A	Checked	PN
Date	30/01/2025	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River

PROJECT	Lot 4154 Governor Broome Road,Scott River	Project Number	Drawing Number	Revision
		2604	Figure 5	A
DRAWING TITLE	Figure 5 - Transport Route	Designed NC Drawn PN	Checked Approved	
CLIENT	Harbecks Transport	Date	30/01/2026	
		Local Authority	Shire of Augusta Margaret River	
		Sheet 1 of 1		

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PO Box 5178
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Western Australia 6280
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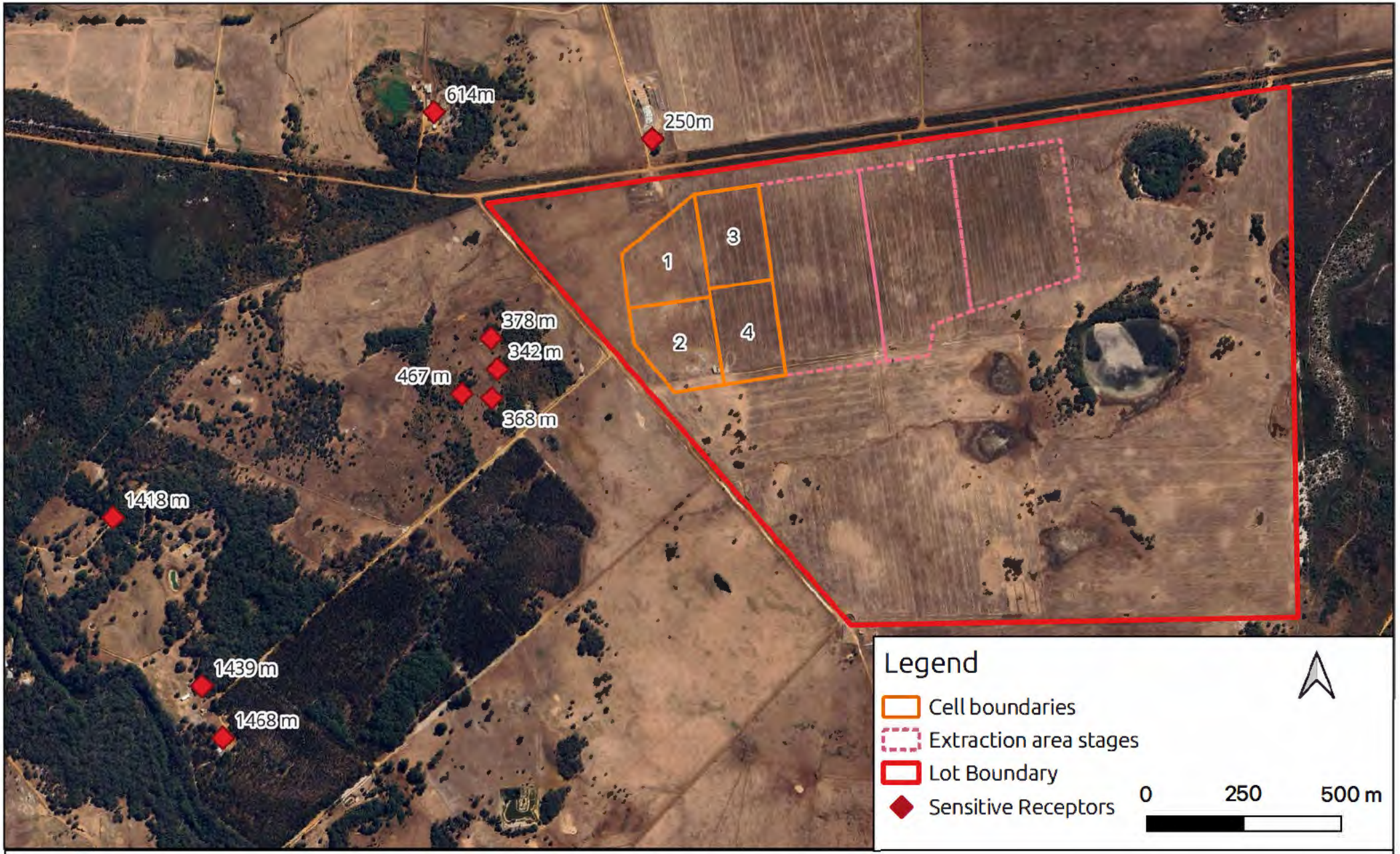


PROJECT	Lot 4154 Governor Broome Road, Scott River
DRAWING TITLE	Figure 6 - Sensitive Receptors
CLIENT	Harbecks Transport

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2604	Designed	NC
Drawing Number	Figure 6	Drawn	
Revision	B	Checked	PN
Date	30/01/2026	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
1930	**228**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BG Roberts
REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 4154 ON DEPOSITED PLAN 207769

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ROSS KINGSLEY WOODHOUSE OF 1713 WARNER GLEN ROAD WARNER GLEN WA 6288
(T K361625) REGISTERED 2/10/2007

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. E893206 CAVEAT BY CABLE SANDS PTY LTD LODGED 28/5/1992.
2. O806264 MORTGAGE TO NATIONAL AUSTRALIA BANK LTD REGISTERED 16/7/2021.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	1930-228 (4154/DP207769)
PREVIOUS TITLE:	1591-758
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF AUGUSTA MARGARET RIVER

ORIGINAL—NOT TO BE REMOVED FROM OFFICE OF TITLES

Transfer E893205
Volume 1591 Folio 758

WESTERN AUSTRALIA

REGISTER BOOK
VOL. FOL.
CT 1930 228

CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

REGISTRAR OF TITLES

Dated 28th May, 1992

ESTATE AND LAND REFERRED TO

Estate in fee simple in Sussex Location 4154, delineated on the map in the Third Schedule hereto, limited however to the natural surface and therefrom to a depth of 12.19 metres.

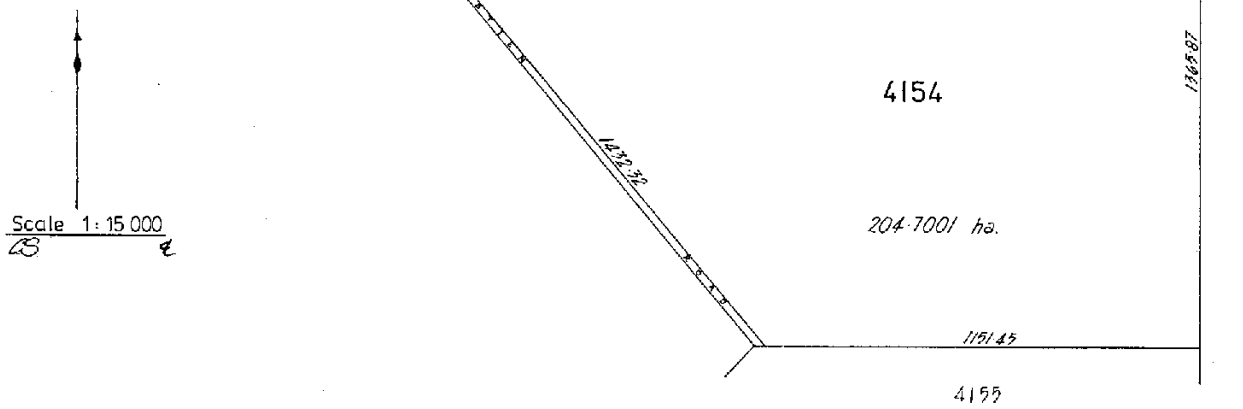
FIRST SCHEDULE (continued overleaf)

David John Reid and Helen Marion Reid, both of RMB 163 Brockman Highway, Karridale, as joint tenants.

SECOND SCHEDULE (continued overleaf)

1. CAVEAT E893206. Lodged 28.5.1992 at 11.49 hrs.

THIRD SCHEDULE



NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

E67590/3/89-20M-L/4664

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

LT. 37

FIRST SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	TIME	SEAL	CERT. OFFICER

SECOND SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	TIME	SEAL	CERT. OFFICER	CANCELLATION	NUMBER	REGISTERED OR LODGED	SEAL	CERT. OFFICER

CERTIFICATE OF TITLE VOL. 1930 FOL. 228

PENINSULA DOWNS PTY LTD

ABN: 17 161 292 280

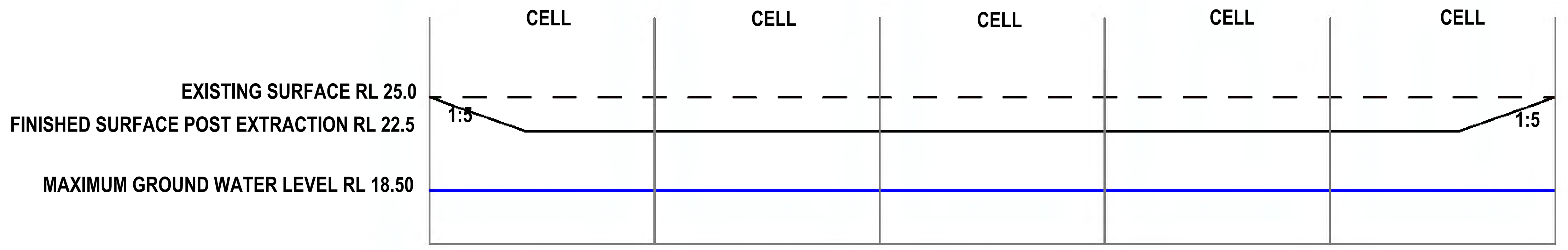
Home Address: 1/13 Warnerglen rd, WARNERGLEN WA 6288
Office Address: PO Box 375, BOYANUP WA 6237
PH: Ross (Mob) 0419 908 067
PH: Leisa (Office) 0419 908 033

March 13, 2024

To Whom it may concern,

In support of Harbeck gravel extraction in the Scott River from Lot 4154 Governor Broome Rd property.
We wish to provide assurance that our properties are not for sale in the forseeable future.
And if in the unlikely event that they were sold, a condition of the sale would be that the gravel extraction agreement would form part of that sale agreement.

APPENDIX C – SITE SURVEY



TYPICAL CROSS SECTION "A" - "B"

VOLUME SUMMARY

TYPICAL EXCAVATION DEPTH 2m
TOTAL NUMBER OF CELLS (2Ha) 29
TYPICAL CELL AREA 2Ha.
TOTAL AREA 56.9 Ha
TOTAL VOLUME 1138000m³
MAXIMUM EXCAVATION DEPTH RL 20.0
MAXIMUM GROUND WATER RL 18.5

Rev.	Description	Drawn	Date	Checked
A	INITIAL ISSUE	MR	26/1/24	

Scale: 1:2500 A1 ORIG — ALL DISTANCES IN METRES — 0 50 100 150

Surveyor: MR
Survey date: 8/8/23
Precal/Cad:

N

PROPOSED EXTRACTION INDUSTRY PLAN LOT 4154, GOVERNOR BROOME ROAD, SCOTT RIVER.

Client: HARBECKS TRANSPORT

Survcon SURVEYING SERVICES
PO Box 365
Dunsborough
WA 6281
Australia
Tel: (08) 9754 1188
Fax: (08) 9756 8000
mail@survcon.com.au
www.survcon.com.au

PROJ MNGR. Michael Riddle — DATUM MGA50

9288_EX_A (JOB NUMBER _ TYPE _ REVISION)

APPENDIX D – HYDROLOGY REPORT

Groundwater Level and Surface Water Interaction Assessment to support the Water Management Plan for Lot 4154 Governor Broome Road Scott River for Accendo Australia

Cat Hydro Services

Cat Hydro Services Pty Ltd

PO Box 432

Yallingup, 6282

[redacted]

W: http//www.cathydroservices.com.au

June 2025

1 TABLE OF CONTENTS

2 FIGURES

3 INTRODUCTION

Cat Hydro Services was contracted to provide supporting hydrogeological and hydrological assessment advice for the proposed excavation on Lot 4154 Governor Broome Road Scott River. This assessment involved providing evidence that the excavation would not intersect the groundwater table, impact surface water processes and impact the infiltration of rainfall or runoff into the unsaturated profile.

Hydrogeological assessment involved determining the highest groundwater level from surrounding monitoring bores, adding a vertical separation (evaporation buffer) and creating a surface across the site. This surface was compared to the maximum excavation level to determine the separation from groundwater.

Hydrological assessment involved determining the impact of rainfall and runoff processes and ultimately recharge to the unsaturated zone and the saturated zone (groundwater system).

The proposed excavation site is shown in Figure 1. The excavation area is approximately 51Ha and will be mined in stages. This hydrogeological and hydrological assessment will cover the entire excavation area.

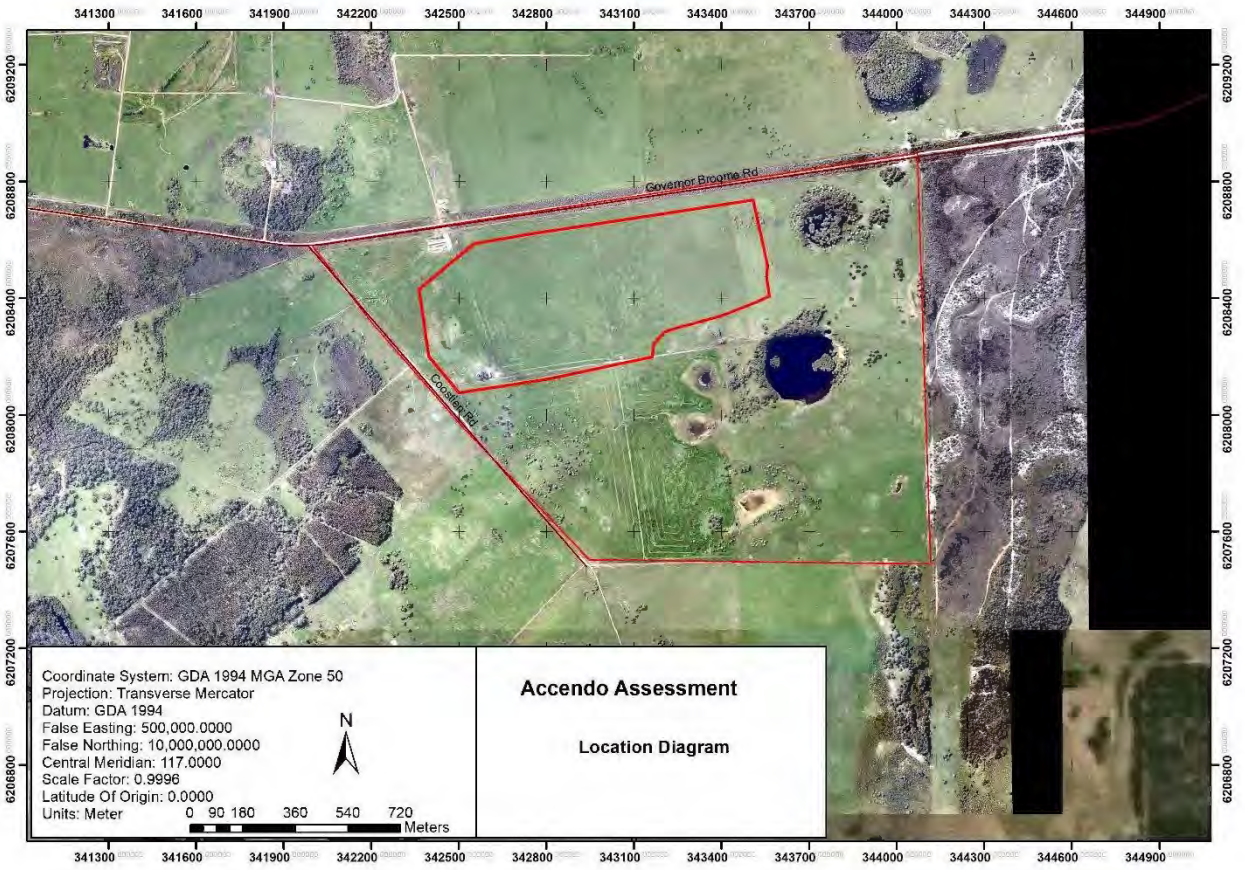


Figure 1 Location diagram

Cat Hydro Services

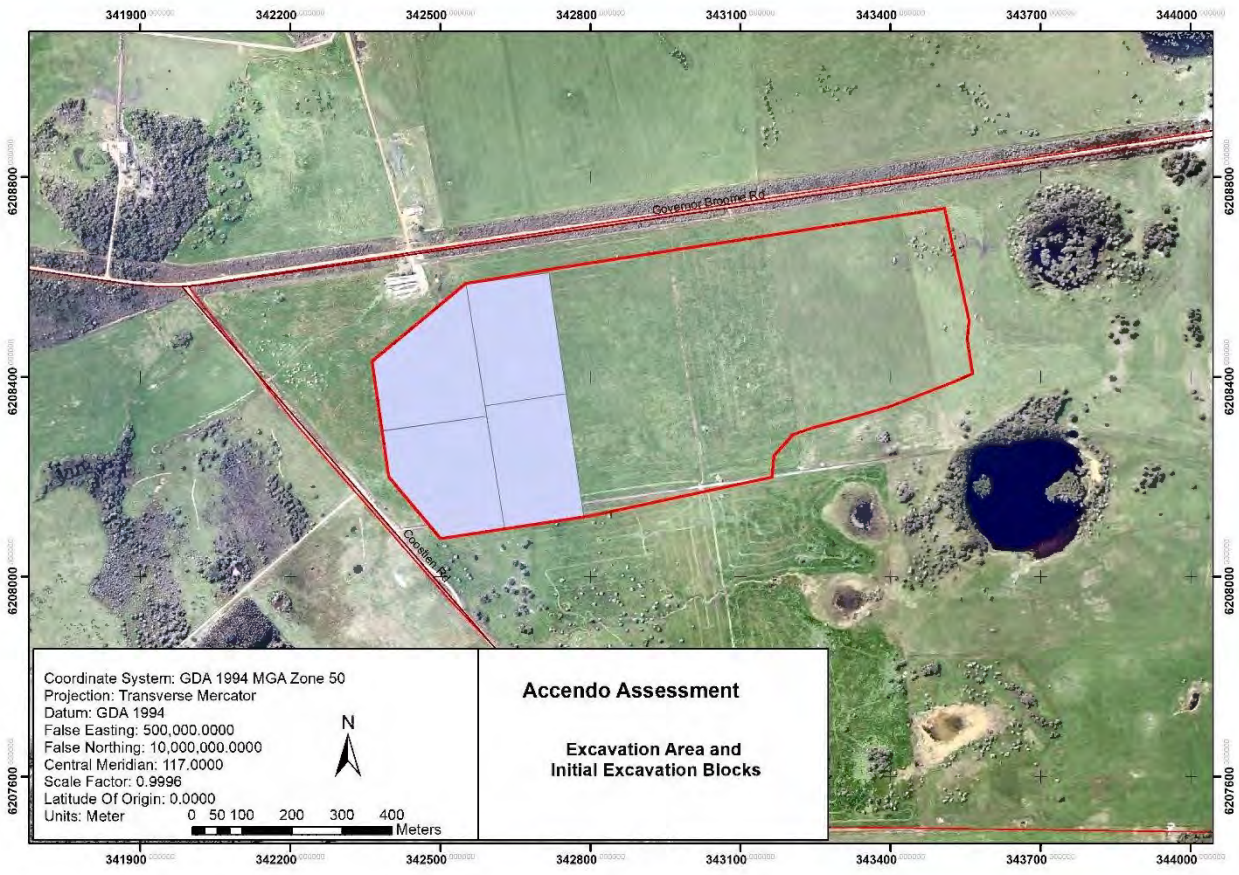


Figure 2 Excavation area and Initial excavation Blocks 1 to 4

4 HIGHEST GROUNDWATER LEVEL ANALYSIS

4.1 MONITORING BORE DATA LOCALLY TO DETERMINE THE HIGHEST GROUNDWATER LEVEL

Monitoring bores drilled on site have no data and are used primarily to assess surface water processes see section 5. It was decided to use the regional monitoring bores installed by DWER to determine the highest water levels. There are two monitoring bores residing on the same hydro-topographical location as the site. These are SC9B and SC5C both with long temporal (>20 years) water level data.

Regional monitoring bores SC5C and SC9B, installed by the Water and Rivers Commission now Department of Water and Environmental Regulation (DWER) between 1989 and 1993, were

constructed to monitor the shallow Superficial aquifer. Regional bores SC5C and SC9B locations are shown in Figure 3 and temporal water levels are shown in Figures 4 and 5, respectively.

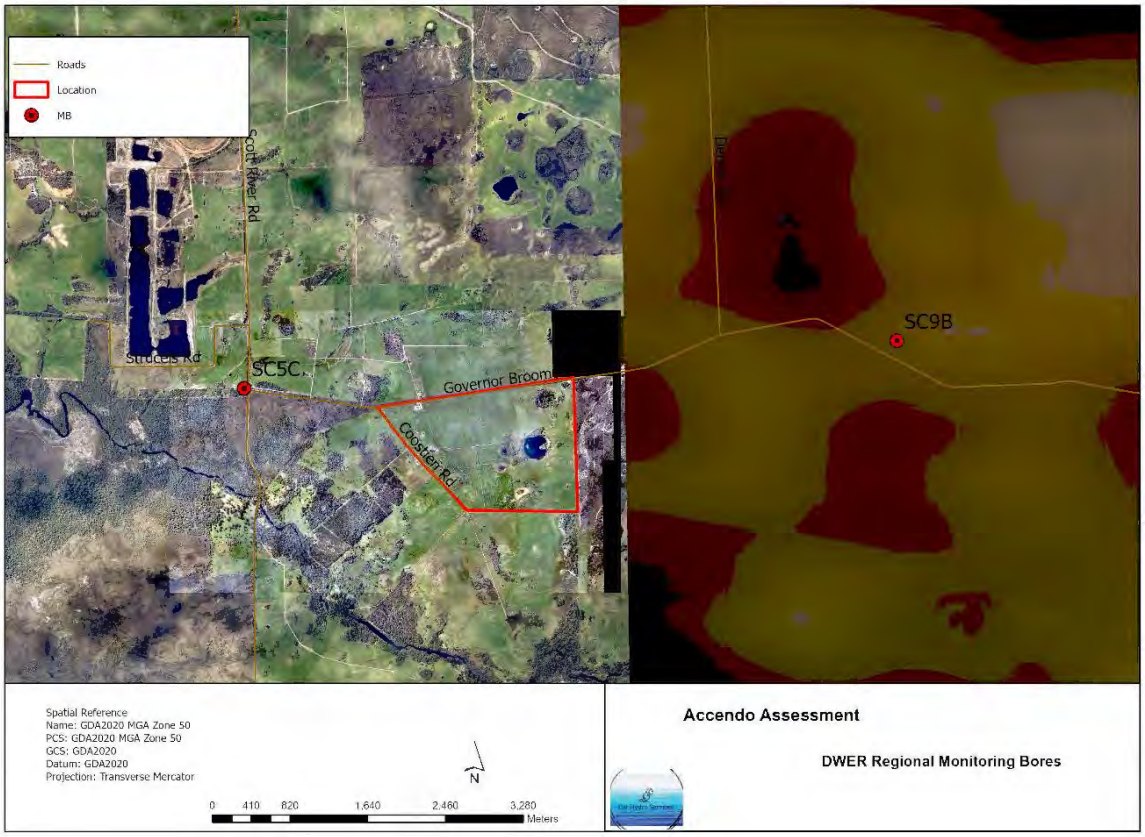


Figure 3 Monitoring Bore Locations

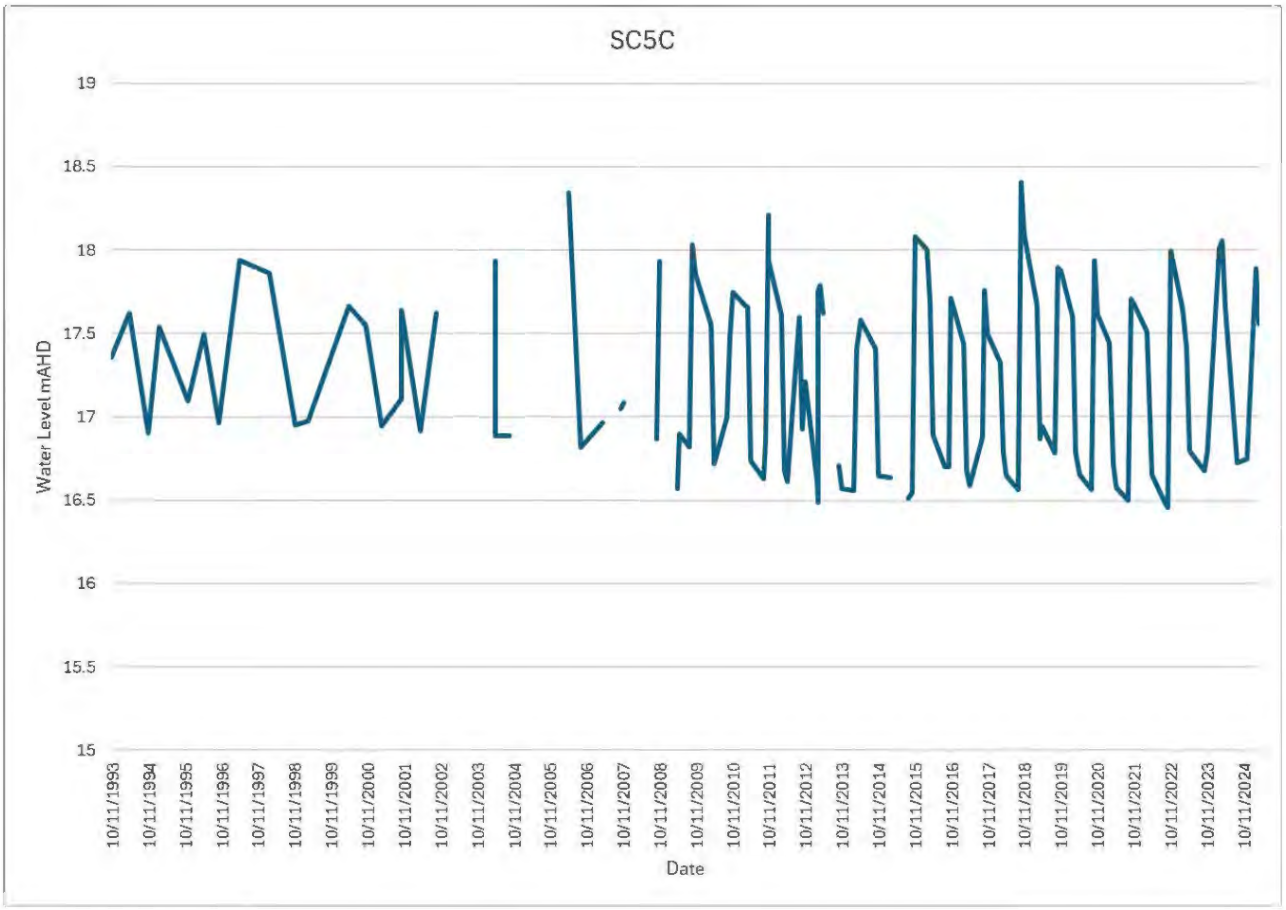


Figure 4 Water Levels for SC5C

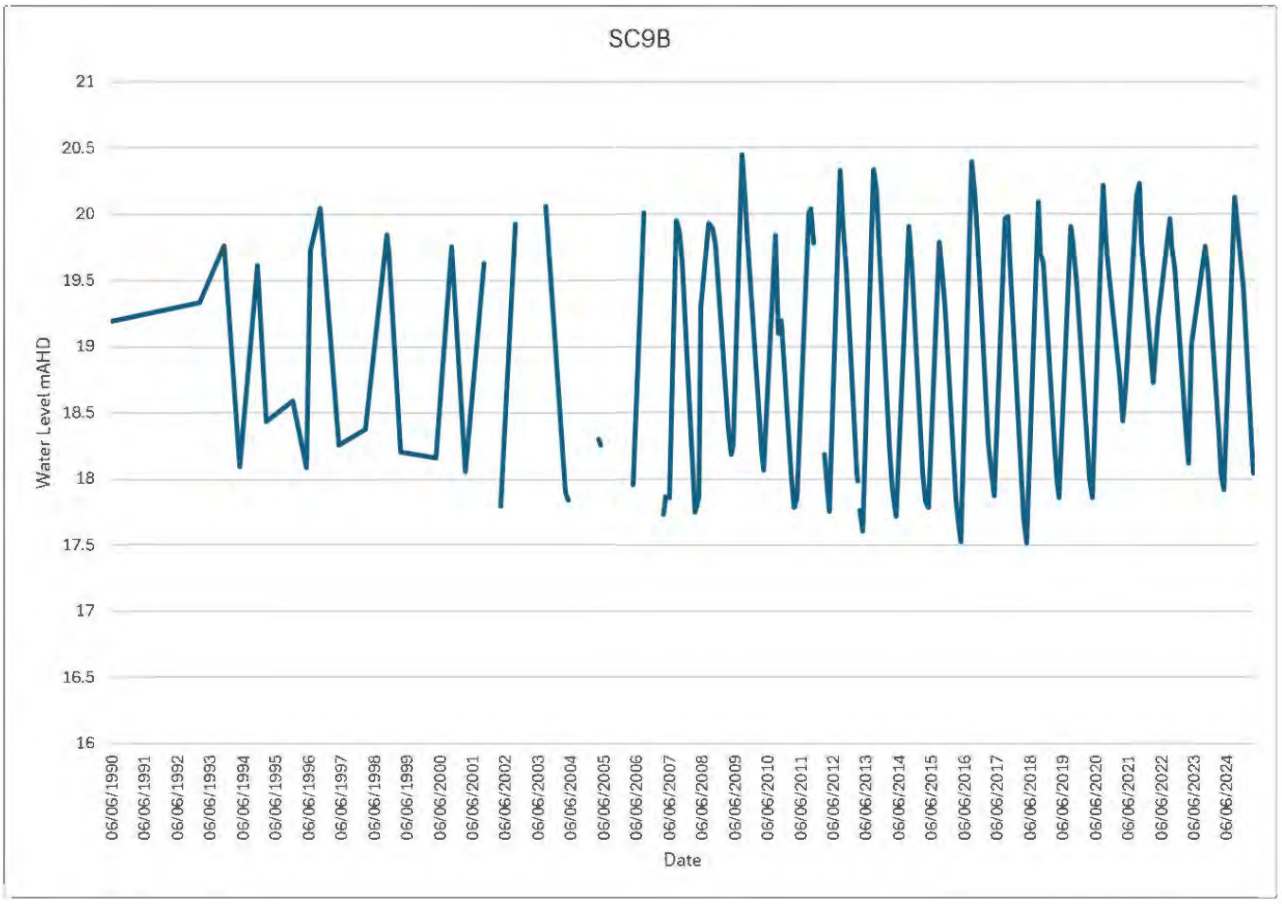


Figure 5 Water Levels for SC9B

4.2 Highest Groundwater Level And Evaporation Buffer Surface to Determine The Interaction with the Groundwater Level

The regional monitoring bores data was analysed, as per DWER policy WQPN-15, to determine the highest historic water levels. The highest historic water levels for SC9B occurred on the 3rd of September 2009 is 20.448mAHD and for SC5C on the 7th of September 2016 is 18.408mAHD. Considering the highest historic water level resides in SC9B this water level was used.

The DWER policy (WQPN-15,2019) methods and approval process determine that adequate vertical separation distance between the base of extraction and the highest groundwater level be 0.5m (WQPN-15, 2019). The 0.5m was added to the highest water level for SC9B. This highest water level plus the 0.5m vertical separation level is 20.948mAHD. Considering the proposed excavation depth surface is 22.5mAHD the water table isn't expected to be intersected.

The difference between the highest groundwater level plus the separation of 0.5m and the maximum excavation depth surface is shown in Figure 6. There is a minimum 1.552m clearance

between the 22.5mAHD excavation surface and the highest water level plus the vertical separation. This is shown in Figure 8 spatially across the Stage 1 excavation blocks 1 to 4.

Figure 7 shows the excavation depth across the site from the ground surface to the maximum excavation surface of 22.5mAHD.

The final land surface ready for pasture growth will be a surface starting at 22.5mAHD excavated 2m from topographic surface plus 0.2m topsoil.

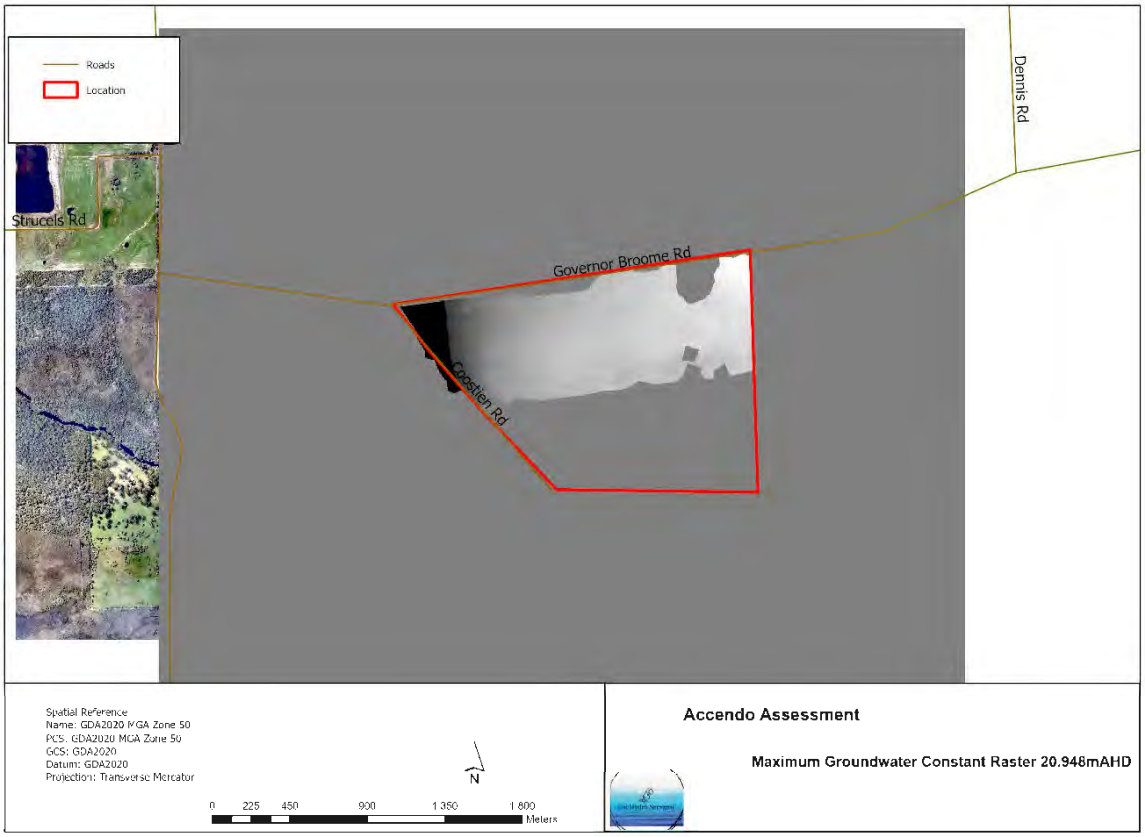


Figure 6 Maximum groundwater plus 0.5m separation level surface

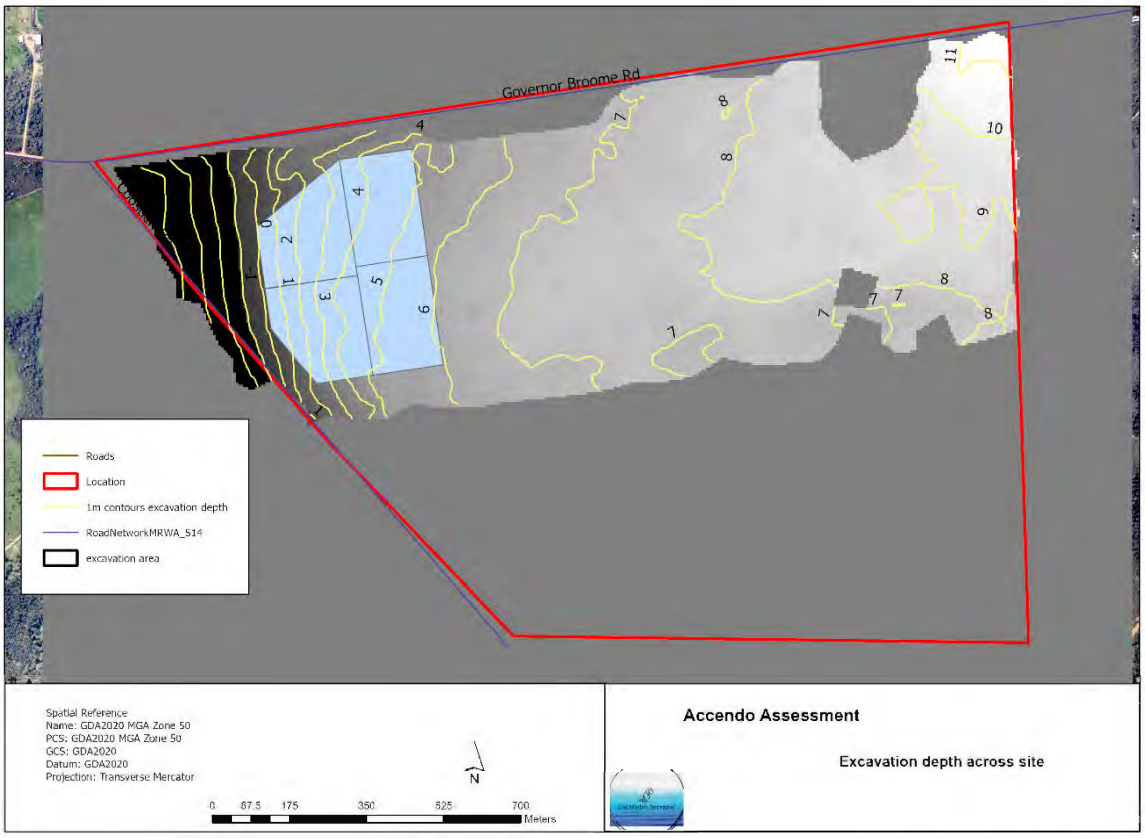


Figure 7 Contours of the difference between the ground surface and the maximum excavation level 22.5mAHD

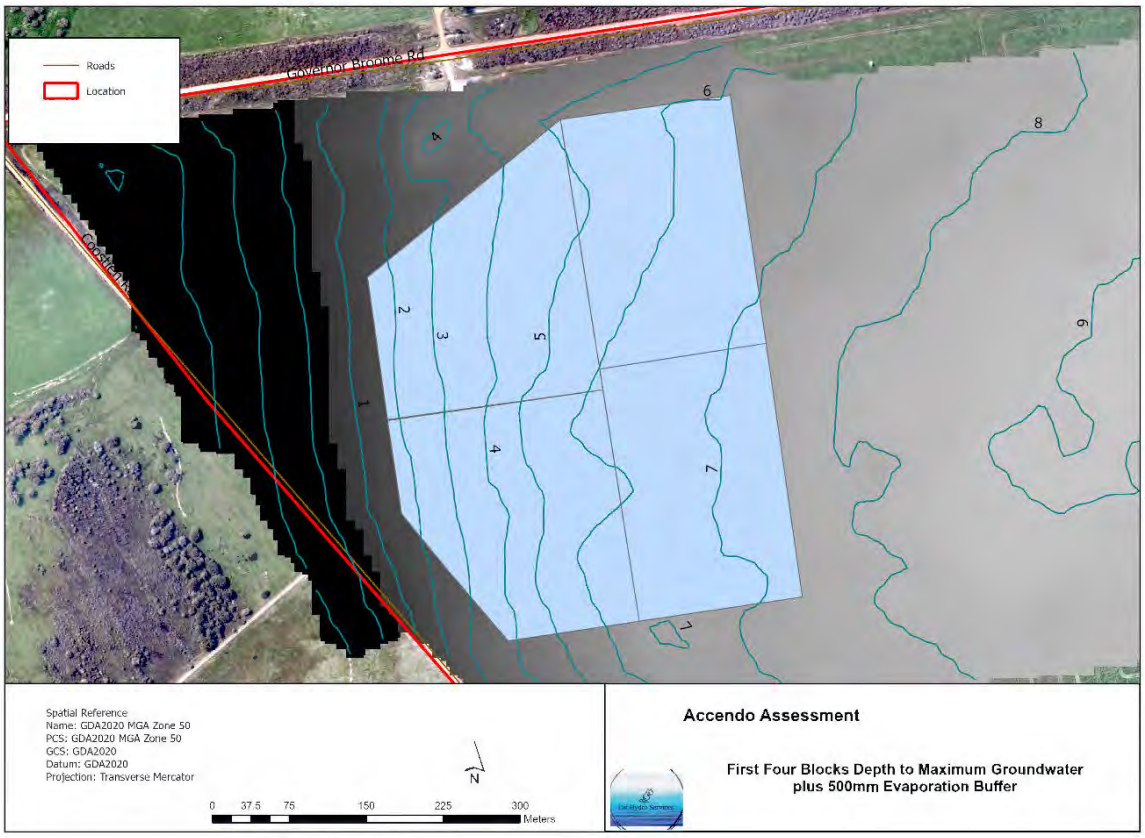


Figure 8 Stage 1 blocks showing separation from the highest groundwater level plus 0.5m vertical separation.

5 SURFACE WATER ASSESSMENT

Surface water interaction with the gravel extraction area was assessed to determine impacts to surface water flow, infiltration to the unsaturated zone and ground water and any water quality changes. The assessment determined the hydrological catchment areas that contribute runoff to the site area (Figure 9), the site local hydrology (Figure 10) and contribution to infiltration into the ironstone communities (Figure 12).

The site is located within the Scott River Catchment that drains into the Scott River. The site hydrological local subcatchment drains runoff in a North Westerly, South Westerly and Westerly direction towards the drainage areas (Figure 10). The North Westerly runoff discharges into the drainage system of the Governor Broome Road into the channel navigation through the downstream property to the Scott River. Westerly and South Westerly runoff accumulates around Coostein Road and follows the drainage channel toward Scott River. The flow direction arrows showing the direction of surface water flow is shown in Figure 11.

Recharge to the site and surrounding catchment occurs through direct rainfall infiltration during the winter months. Rainfall at the Scott River Brennans Ford long term annual rainfall gauge is captured in Figure 12. This data shows a slight decline over time with an average annual rainfall total of 947mm, a minimum of 655mm and a high of 1208mm.

Rainfall infiltrates into the soil profile percolating downward into the unsaturated zone connecting the saturated zone (groundwater) and groundwater is recharged. The initial volume of rainfall required to produce groundwater recharge is ~350mm. After the soil profile and unsaturated zone are saturated surface water runoff begins. This rainfall volume replenishes the ironstone profile and hence surface water runoff contributes a minor amount to replenish the ironstone as runoff flows away to discharge into the Scott River.

If rainfall does not reach 350mm annually ironstone recharge will be impacted. History shows this hasn't occurred to date.

In any case the site soil and ironstone profile consists of a soil profile of ~200mm thick and a 3m thick ironstone below. The excavation will remove the soil profile and stockpile for rehabilitation. The ironstone will be excavated 2m below the removed soil profile leaving an insitu 1m layer of ironstone. Post rehabilitation profile consists of 200mm topsoil then 1m of ironstone. This effectively does not change the surface hydrology or the rainfall recharge infiltration potential.

Runoff water quality will not change due to excavation processes as it will be diverted away from the excavation area through temporary drainage channels.

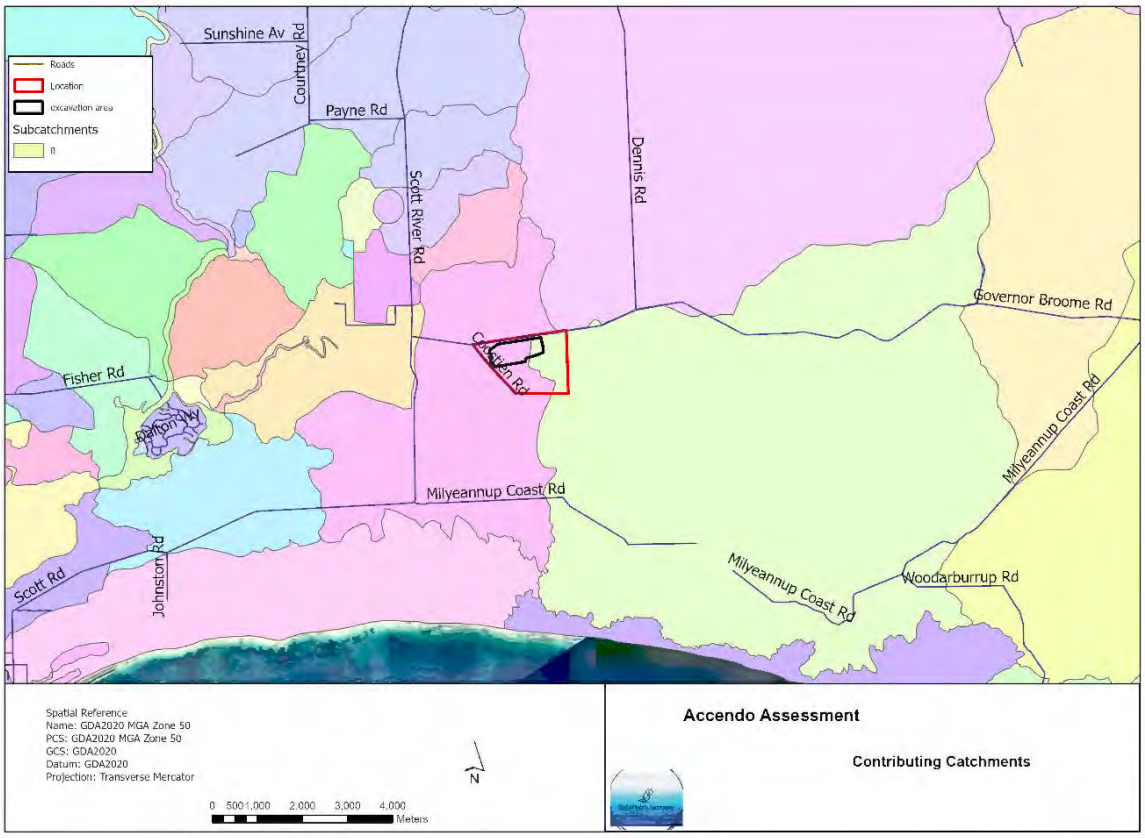


Figure 9 Scott River Subcatchments

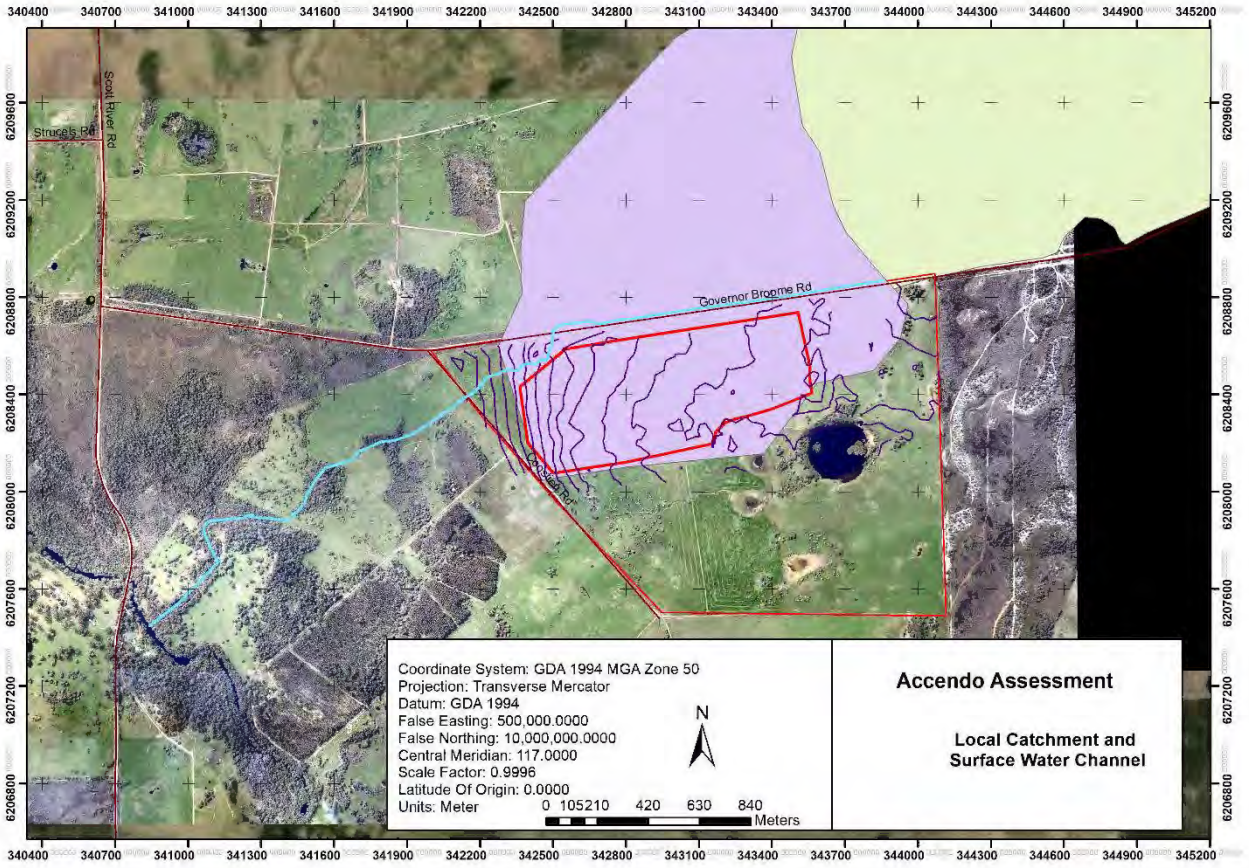


Figure 10 Local Catchment and Surface Water Channel

Cat Hydro Services

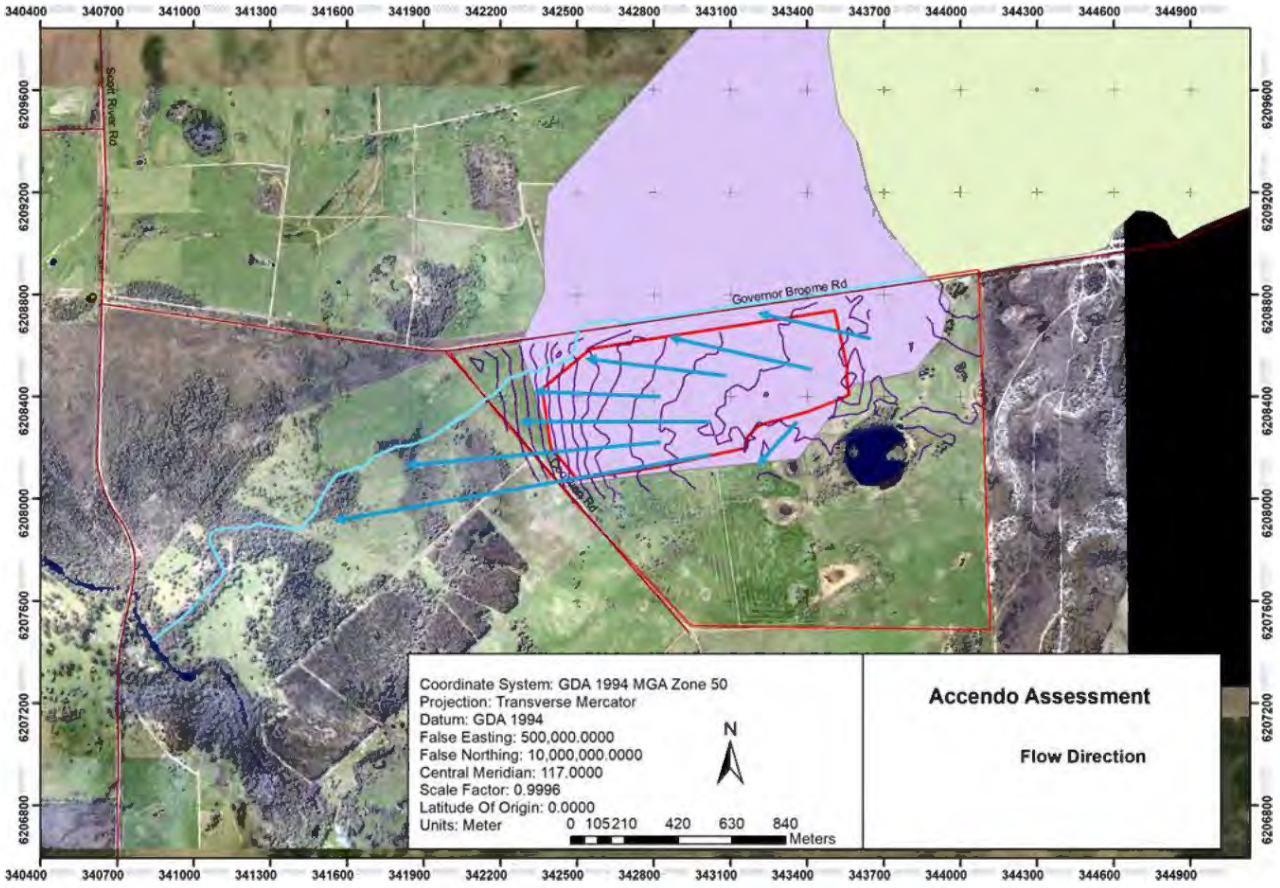


Figure 11 Flow Direction Arrows

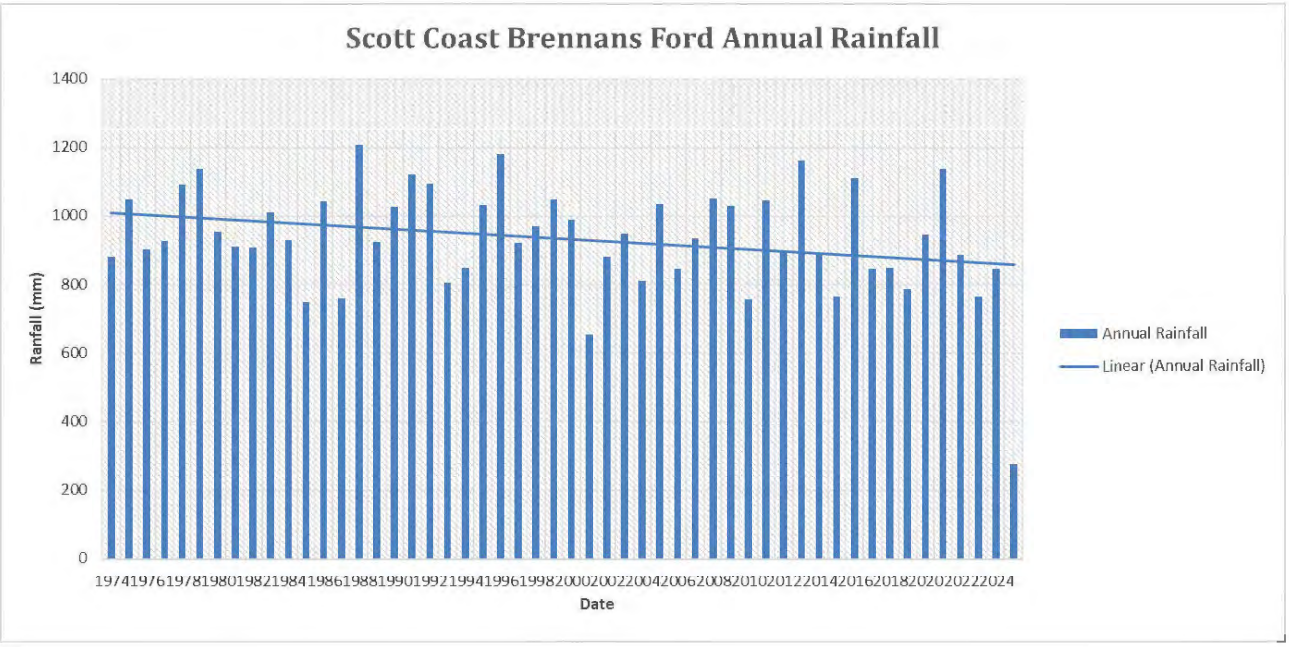


Figure 12 Historic Rainfall Scott River

6 CONCLUSIONS AND RECOMMENDATIONS

The difference between the highest groundwater level plus the 0.5m vertical separation (evaporation buffer) and the maximum excavation level is a minimum of 1.552m across the site. This is considered adequate to protect the Superficial aquifer from becoming a groundwater sink during excavation.

Rainfall is the main driver to soil profile and unsaturated profile saturation. Surface water runoff does not contribute to the main recharge processes. Surface water runoff is captured by the Governor Broome Road drainage and the local catchment drainage channel directed away to the Scott River. If rainfall is above ~350mm per year the ironstone unsaturated zone replenishment will occur. Historic annual rainfall totals suggest 350mm rainfall will fall at this point in time.

It is recommended to install two downgradient monitoring bores and utilise the synergy installed monitoring bore on the upgradient side of the property. This will allow monitoring of groundwater levels and seasonal changes in water levels depicting the rainfall recharge processes.

7 REFERENCES

Department of Water, 2009, Southwest Groundwater Allocation plan, Department of Water.

Department of water and Environmental Regulation, 2019, Water Quality and Protection Note 15 – Basic raw materials extraction.

APPENDIX E – DEVELOPMENT APPROVAL

Shire of Augusta Margaret River

Planning and Development Act 2005
Local Planning Scheme No. 1

Planning Approval No. P224245

Harbecks Transport
1 Chaplain Gdns
BUSSELTON WA 6280

Description	Extractive Industry
Use Class	INDUSTRY - EXTRACTIVE
Location	Lot 4154 Governor Broome Road, Scott River
Applicant	Harbecks Transport
Application No	P224245
File No	PTY/249
Officer	[redacted]
Received on	5 April 2024
Date of Approval/Consent	**16 April 2025**

The Shire has **approved** the abovementioned application subject to the following conditions:

1. The development is to be carried out in compliance with the plans and documentation listed below and endorsed with Council's stamp, except where amended by other conditions of this consent.

Plans and Specifications	Plan P1 received by the Shire on the 19 February 2025 – Officer Markups in Red dated 3 April 2025 Water Management Plan – Accendo Australia - February 2025 Environmental Management Plan – Accendo Australia – January 2025 Acoustic Assessment – Herring Storer Acoustics – January 2025

2. If the development, the subject of this approval, is not substantially commenced within two (2) years from the date of this letter, the approval shall lapse and be of no further effect. Where an approval has lapsed, development is prohibited without further approval being obtained.

3. This approval is valid for a period of five (5) years starting on the date this approval is granted.

4. The pit operations and extraction, including associated site construction, truck movement and rehabilitation, shall not operate outside of the hours of 7.00am to 5.00pm Monday to Friday and 8am to 1pm on Saturdays. The operations and extraction shall not operate on Sundays and public holidays.

5. The extraction area and all stockpiles are to be setback a minimum of 30m from the naturally occurring watercourse on the site. The 30m setback shall be clearly demarcated.

6. Storage of material excavated offsite is prohibited.

7. A surveyed plan of each stage is to be provided prior to extraction commencing. Each stage is to be clearly marked on site for the duration of extraction.

8. An Annual Audit of Compliance shall be prepared by a suitably qualified independent expert and submitted to the Shire annually. The Annual Audit of Compliance shall include:
   a) Details to demonstrate compliance with the conditions of this Development Approval;
   b) Tonnage of gravel removed from the site and the period within which the gravel was removed;
   c) Progress report on the approved Rehabilitation Management and Monitoring Plan including:
      i. Details of completed, ongoing and future rehabilitation areas
      ii. Photos of rehabilitated areas
      iii. Monitoring and reporting details, if available

Amenity

9. The extractive industry shall be conducted in accordance with any management controls detailed in the Environmental Noise Assessment undertaken by Herring Storer Acoustics dated January 2025. (refer to advice note c).

10. Noise emissions resulting from development/use of premises for the approved purpose shall not exceed the assigned levels in the Environmental Protection (Noise) Regulations 1997, and shall not unreasonably interfere with the health, welfare, convenience, comfort or amenity of an occupier of any other premises.

11. A Noise Management Plan shall be provided within 60 days of the date of this approval to the satisfaction of the Shire, to measure, verify and report on the sound power levels once operations commence, including any plant used as part of the approved works.

12. Noise bunds are not to exceed the heights set out by the Herring Storer Acoustics report dated January 2025 being 3-4m.

13. Stockpiles are not to exceed a height of 3m.

14. No crushing or blasting is permitted under this approval. Rock breakers, dozers and ripper picks will not be used

15. A Dust Management Plan shall be provided within 60 days of the date of this approval to the satisfaction of the Shire.

16. Works shall be conducted at all times in accordance with the accepted Dust Management Plan. (refer to advice notes ‘i, p, m’).

Infrastructure

17. The proponent shall be responsible for the cost of maintaining, and repairing damage to, the roads controlled by the local government which are used by haulage traffic associated with the development, to the extent that the traffic generated by the development contributes to the need for such maintenance and repair. Prior to the operation of the extractive industry commencing a Road Maintenance Plan (RMP) incorporating:
    - the abovementioned principle.
    - an audit of the condition of relevant roads.
    - maintenance standards and associated requirements and responsibilities as agreed with the Shire; and
    - the estimated cost of road maintenance and repairs for the life of the development.

shall be lodged with the Shire for approval within 60 days of the determination. The approved plan shall be implemented throughout the duration of the project.

18. Prior to the operation of the extractive industry commencing, the proponent is to pay to the local government a bond or equivalent acceptable to the Shire sufficient to secure the road maintenance and repair obligations contained in the approved Road Maintenance Plan (RMP), within 60 days of the determination.

19. No haulage is to be undertaken on haulage routes during school the times that school buses are operating. Operators must contact the relevant schools directly for school bus timetables; or where direct contact can be made with the school bus driver, operation is permitted once the school bus driver confirms all school drop-offs / pick-ups have been completed on the particular road.

20. Prior to the operation of the extractive industry commencing two (W5-22) advanced warning signs shall be installed at appropriate distances from the access and egress of the property. All signs shall indicate "Trucks Crossing or Entering" ahead and shall comply with Main Roads Warning signs- Category 2.

21. At all times, all stormwater and drainage run-off from the development shall be detained within the lot boundaries and managed to predevelopment flow regimes.

Environment

22. Prior to commencement of works, a Rehabilitation Plan shall be prepared to the satisfaction of the Shire and shall be submitted for the approval of the Shire (please refer to advice note 'b'). The Rehabilitation Plan shall indicate the following:
    a. the method of revegetation.
    b. any soil treatment including topsoil depth for rehabilitation areas.
    c. details of any weed control and maintenance; and
    d. completion criteria

23. All excavation and storage areas shall be rehabilitated to the satisfaction of the Shire within 12 months from the expiry date of this approval, or, within 12 months of depletion of the resource, whichever occurs first. (See advice note 'b').

24. The proponent shall pay a **rehabilitation bond** within 60 days of the date of this approval to be held against satisfactorily completion of rehabilitations works required as a condition of this approval. The rehabilitation bond shall be calculated on the basis that the site will be rehabilitated according to the rehabilitation plan. (See advice note 'h')

25. Excavation, stockpiles and associated earthworks shall not be undertaken within 200m of the Threatened Ecological Communities (TEC) located in the Governor Broome Road reserve until/unless a hydrology report has been submitted and approved by the Shire on advice from the Department of Biodiversity, Conservation and Attractions of (see advice note 'n').

26. Prior to commencement of works a Water Management Plan (dated February 2025 by Accendo Australia) shall be updated in accordance with the Stormwater Management Manual for Western Australia (DWER, 2022) to ensure stormwater is properly managed and does not adversely impact identified Threatened Ecological Communities and other areas of native vegetation. (please refer to advice note 'a,f, j-k')

27. Prior to commencement of works a Haulage Management Plan shall be prepared which is to include measures to minimise impacts on the identified Threatened Ecological Communities along Governor Broome Road.

28. Prior to the commencement of works, a Dieback Management Plan shall be prepared to the satisfaction of the Shire and shall be submitted for the approval of the Shire. Works shall be conducted on site at all times in accordance with the approved Dieback Management Plan.

29. Dewatering of the extraction area is not permitted and the excavation shall not intercept the water table. Extraction must be maintained above the seasonal ground water table as determined by the Department of Water and Environmental Regulation. Works must immediately cease in the event the water table is intercepted and remedial actions implemented to the satisfaction of the Shire (see advice note 'e').

30. There shall be no standing water occurring at the end of the extractive operation.

31. This approval allows for excavation to be no deeper than 22.5m AHD.

32. The proponent shall implement all measures necessary to prevent erosion, or airborne or waterborne transmission of soil and sediment from the development and tracking of soil by vehicle tyres onto the road during the extraction period.

Advice Notes

a) The proposed extraction is to be implemented in accordance with DWER's Water quality protection note (WQPN) no. 15 '*Basic raw materials extraction*' (July 2019) where appropriate to the site situation to ensure environmental risks are appropriately mitigated

b) In regard to rehabilitation of the site reference should be made to the 'Guidelines for Preparing Mine Closure Plans', Department of Mines and Petroleum and Environmental Protection Authority, June 2011'.

c) The Proponent is required to ensure that ongoing operational activities associated with the approved development including processing and transportation, and any other works that cannot be considered as construction site work, complies with the standard prescribed under the *Environmental Protection (Noise) Regulations 1997*.

d) Works in a road reserve, including any pruning or clearing of vegetation, are prohibited without first obtaining written approval of the Shire. The proponent will be required to submit and implement a Traffic Management Plan for all works in a road reserve. The TMP is required to be prepared by a licenced Traffic Manager in accordance with MRWA Traffic Management Code of Practice and Australian Standards AS1742.3-2002 for any works on or within the road reserve (including road)".

e) If interception of ground water occurs, the Shire shall be advised within 24 hours and agreed remedial action undertaken to the specifications of the Department of Water and Environmental Regulation and to the satisfaction of the Shire.

f) The proponent is advised to refer to the principles of best practice drainage design as described in the Stormwater Management Manual for Western Australia

g) The applicant is advised to refer to the information and Industry Regulation Guide to Licensing available at http://www.der.wa.gov.au/our-work/licences-and-works-approvals and / or if they have queries relating to works approvals and licences to contact DWER at info@dwer.wa.gov.au or 6364 7000

h) The proponent shall enter into a deed with the Shire to detail the rights of the Shire to call upon or retain the bond. The rehabilitation bond is to be made in a cash payment or a bank guarantee and is held against satisfactory completion of rehabilitation works. In the event remedial works are required, and not completed to the satisfaction of the

Shire, the Shire and/or its contractors may carry out the required works. The proponent may request a return of the bond following completion of rehabilitation works.

i) The development or use of the land shall not cause or permit to cause the escape of dust, smoke, fumes, offensive matter or foul odours in such quantity or of such nature as to unreasonably impact on the amenity of the locality. (EH)

j) The Water Management Plan shall address the following:
   a. The management of stormwater from the extraction area. No unmanaged stormwater is to leave the extractive areas and shall be managed at all times (via measures where appropriate such as the use of bunds, retention basins or drains).
   b. Details of the location of plant and equipment, including refuelling activities, which should be undertaken away from any waterways to minimise any risks to surface and ground water.
   c. A 'spill management plan' in the case of spills during refuelling.
   d. Sediment control measures i.e. sediment fences
   e. Monitoring of surface water quality adjacent to lot boundaries

k) The Water Management Plan shall cover the proposed extraction area, haulage routes and stockpiles within the property boundary, taking into account, but not limited to the following:
   - compliance with the 'Rights in Water and Irrigation Act 1914',
   - compliance with the 'Environmental Protection Act 1986',
   - sediment and erosion control,
   - waterway/wetland impacts,
   - management of road infrastructure (e.g. crossings).

l) The applicant is advised that they may meet the requirement for Prescribed Premises as per Schedule 1 of the 'Environmental Protection Regulations 1987' (Regulations) and as such, may require a works approval to construct/install the crushing/screening equipment (mobile or otherwise) and a licence or registration to operate. The applicant is therefore advised to refer to the information and Industry Regulation Guide to Licensing available at http://www.der.wa.gov.au/our-work/licences-and-works-approvals and / or if they have queries relating to works approvals and licences to contact the Department at info@dwer.wa.gov.au or 6364 7000.

m) The applicant is advised to contact the Department of Water and Environmental Regulation to ensure that any groundwater used for dust suppression, or otherwise used for the proposed EI, is (if necessary) appropriately authorised under the 'Rights in Water and Irrigation Act 1914'.

n) A map shall be prepared identifying the 200m & 50m Threatened Ecological Communities buffer and provided to contractors.

o) Acid sulfate soils (ASS) risk mapping indicates that the site is located within an area identified as representing a high to moderate risk of ASS occurring within 3 metres of the natural soil surface. Please refer to Department of Water and Environmental Regulation's (DWER) acid sulfate soil guidelines for information to assist with the management of ground and/or groundwater disturbing works: https://www.der.wa.gov.au/your-environment/acid-sulfate-soils/69-acidsulfatesoils-guidelines.

p) The Proponent is advised that the following dust minimisation practises should be included in the required Dust Management Plan:
   a. Stockpiles of processed material will be sprayed with water and compacted as required;

b. Green belts will be used to augment the adjoining road reserve in reducing wind-speed through the pit-operations and to assist with trapping any resulting dust;
c. Completed sections of the pit will be rehabilitated as soon as practicable to reduce the area of open ground and help reduce wind speed;
d. The top soil/root layer will not be removed until immediately prior to the commencement of sand extraction;
e. Covering of loads before leaving property;
f. Stabilisation of areas completed over summer (when vegetation stabilisation is impracticable) is to be achieved by spreading mulch;
g. Induction of employees and contractors includes awareness of dust generation and management measures;
h. Complaint response procedure.

q) The clearing of native vegetation is prohibited, unless clearing is authorised by a clearing permit obtained from the Department of Water and Environmental Regulation, or is of a kind that is exempt in accordance with Schedule 6, of Regulation 5 (contained in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*). Please note, any development which causes harm and can result in the death of vegetation may constitute clearing and be subject to the relevant clearing permit.

r) Broadband reversing alarms are recommended to be used on vehicles and plant equipment when in use on the site.

Please Note
Any change of use, amendment to plans or additional development may require further approval by the Shire.

Your Right of Appeal Against this Decision
You have the right to apply to the State Administrative Tribunal for a review of the Shire's decision.

Please note that under Rule 9 of the *State Administrational Rules 2004,* an Application for Review must be made within 28 days of notice of the Shire's decision.

Application for Review forms are available on the State Administrative Tribunal website at http://www.sat.justice.wa.gov.au or by contacting the Tribunal on [redacted].

The Shire wishes you well with your development and should you have any queries, please do not hesitate to contact [redacted]

Yours faithfully

[redacted]

Acting under delegated authority granted by the Council to the CEO pursuant to Clause 82(1) of the Deemed Provisions of LPS1 and delegated by the CEO pursuant to Clause 83(1) to the Director of Sustainable Development, Manager Planning and Development Services, Coordinator Statutory Planning and Senior Planning Officer.

APPENDIX F – WATER MANAGEMENT PLAN

accendo AUSTRALIA

WATER MANAGEMENT PLAN

Lot 4154 Governor Broome Road, Scott River

February 2025

Telephone +61 418 950 852

info@accendoaustralia.com.au
PO Box 5178 West Busselton WA 6280
ABN 11 160 028 642

www.accendoaustralia.com.au

[redacted]

Limitations

This report has been prepared by Accendo Australia Pty Ltd in accordance with the scope limitations provided in this report, or as otherwise agreed, between the Client and Accendo.

This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

This report has been prepared based upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report, which Accendo has not independently verified or checked beyond the agreed scope of work. Accendo does not accept liability in connection with such unverified information.

The conclusions and recommendations in this report are based on assumptions made by Accendo described in this report where and as they are required. Accendo disclaims liability arising from any of the assumptions being incorrect.

The report is based on site specific conditions encountered and information received at the time of preparation of this report or the time that site investigations were undertaken. Accendo disclaims responsibility for any changes that may have occurred after this time.

The preparation of this report has been undertaken and performed in a professional manner, in consideration of the scope of services and in accordance with environmental consulting practices. No other warranty is made.

CONTENTS

TABLES

1 INTRODUCTION

1.1 Background

Harbecks Transport (the applicant) is proposing to extract gravel from a 51.3 hectare (ha) area within Lot 4154 Governor Broome Road, Scott River. This Water Management Plan (WMP) only relates to Stage 1 which is comprised of 16.7 ha (herein referred to as the subject site) (refer to **Figure 1** and **2**)

The available volume of gravel within Stage 1 (*insitu* volume of approximately 210,800 m^3) is to be extracted, commencing in the west of the subject site and moving in an easterly direction. The subject site will be excavated to an approximate maximum depth of 22.5 metres Australian Height Datum (m AHD). The post extraction landform will be similar visually (minus the excavated material) and in form with the pre-excavation landform with batter slopes of 1:5 vertical to horizontal.

1.2 Purpose and Scope

The purpose of this Water Management Plan (WMP) is to review the risks and control measures to appropriately manage minimise the environmental impacts of the extractive industry on both groundwater and surface water in proximity to the subject site.

The scope of the WMP is to cover the following:

- Legislative and regulatory compliance;
- Existing environment;
- Risk assessment water quality impacts;
- Mitigation and measurement measures; and
- Roles and responsibilities in relation to water management.

2 EXISTING ENVIRONMENT

2.1 Location

The subject site is located within Lot 4154 Governor Broome Road, Scott River, approximately 13 km northeast of the Augusta town centre and approximately 39 km south of Margaret River.

2.2 Land Use

The subject site is zoned "General Agriculture" under the Shire of Augusta Margaret River's *Local Planning Scheme No. 2*. Properties abutting the boundaries of the subject site are likewise zoned 'General Agriculture' with a 'Parks and recreation' zoned parcel of land to the west of the subject site across the intersection of Coolstien and Governor Broome Roads.

2.3 Topography and Soils

The current topography of the subject site can be described as sloping with the elevation ranging from 28 m Australian Height Datum (AHD) in the east to 22 m AHD in the west (refer to **Appendix A**).

The subject site is located within the Scott Coastal Zone landform within the Scott River Plan system consisting of "*Poorly drained coastal plain, in the southern Donnybrook Sunkland. Non-saline wet soil and pale deep sand. Heaths, sedgelands and jarrah-marri-paperbark woodland*" (Tille 2006).

The subject site is located within the Scott River wet ironstone flat phase described as, "*Poorly drained flats with shallow sands over laterite* (bog iron ore)" (DPIRD, 2023).

2.4 Climate

The climate of the locality is classified as Mediterranean with warm to hot summers and cool wet winters.

The closest weather recording station is Cape Leeuwin (Station 009518). Temperatures are highest on average in February, at approximately 24.0°C. August has the lowest average temperature of the year of 13°C.

Rainfall for the area is approximately 876 mm per annum with approximately 89% of the rain falling during the winter months, April to October inclusive. Evaporation exceeds rainfall in all but the wettest winter months.

During the summer months the dominant wind in the mornings is from the south-east at 10-14 knots, swinging to the south-west at 20-25 knots in the afternoon. During winter, the winds are most commonly 10-14 knots with no dominant prevailing direction. During storms winds from the west and north-west can reach 40 knots (BoM 2020).

Rainfall intensity has been calculated using the Bureau of Meteorology (BoM) Intensity-Frequency-Duration (IFD) data system which yields the two hour 10 year average return interval storm event for the subject site as 36.9 mm/hr.

2.5 Hydrology

2.5.1 Groundwater

The subject site is located within the Beenup subarea of the *Rights in Irrigation and Water (RiWI) Act 1914* proclaimed Blackwood Groundwater Area.

The closest DWER groundwater monitoring bores are located approximately 1.7 km to the west (SC5C) and 4.8 km to the east (SC9B) of the subject site (refer to **Figure 3**). Data from these bores for the period from 1994 to 2024 shows that the highest groundwater levels in both bores was recorded in September 2016. Levels of 18.408 m AHD and 20.448 m AHD respectively were recorded at this time. Given that the distance between these bores is approximately 6,870 m, a groundwater gradient of approximately 1:3368 was calculated. Using an extrapolation of this gradient, groundwater levels at the western and eastern extremity of the pit can be calculated and were found to be 18.94 m AHD and 19.01 m AHD, respectively.

Given a maximum excavation depth of 22.5 m AHD, the minimum separation to groundwater will be in excess of 3 m (3.56 m in the west to 3.49 m in the east) in all areas of the subject site.

Furthermore, test pitting was undertaken in October 2024 to depths between 2 to 3.8 m BGL whereby no groundwater was encountered (refer to **Figure 3**). The base of all test pits was observed to be solid rock. The impermeable nature of this formation is likely to restrict the formation of aquifers and movement of groundwater and therefore no interaction with groundwater is expected.

2.5.2 Surface Water

The subject site is located in the Scott subarea of the RiWI Act proclaimed Lower Blackwood surface water area. The subject site is not proclaimed under the *Country Areas Water Supply Act 1947* as a public drinking water source area.

The subject site is located approximately 1.75 km north-east of the Scott River and approximately 1 km east of a tributary of the Scott River. A drainage channel is mapped to the north of the subject site, however, no features consistent with this are evident within the subject site. There are no other surface water features present within the subject site.

The current water cycle within the subject site consists of inputs from rainwater flowing downhill in a north westerly direction into the wider drainage system. The development is not proposing to alter this process.

2.5.3 Wetlands

Areas of wetlands in Western Australia have been mapped and this mapping has been converted into a digital dataset that is maintained by the Department of Biodiversity, Conservation and Attractions (DBCA) and is referred to as the '*Geomorphic Wetlands Augusta to Walpole'* dataset. Pursuant to this dataset, the subject site and the majority of the surrounding area is mapped as a palusplain (seasonally waterlogged flat). However, the subject site does not experience seasonal waterlogging. Three sumplands (seasonally inundated basins) are mapped as occurring within proximity to the subject site. A minimum buffer of 350m will be provided to these sumplands from the subject site (refer to **Figure 3**).

3.1.3 Equipment

All operational equipment will work on the quarry floor to provide maximum sound and visual screening. All equipment and infrastructure will be fully portable to facilitate movement throughout the site required for staged quarrying operations. The site will be secured by locked gates when it is not being actively worked. The boundary fencing will be maintained to prevent inadvertent and unauthorised entry.

Equipment and facilities that may be used onsite are provided in the Table below.

Table 1. Equipment.

Equipment	Description
Front End Loader	Loaders will be used for the movement of topsoil and loading road trucks.
Excavator	An excavator may be used for the removal of gravel material.
Rock grinder	Extraction and grinding of material
Grader	Grading of the surface post extraction
Scraper	Scraping of material post extraction
Fuel storage	No fuel will be stored onsite.
Light vehicles	Access to and around the site.
Haul truck	Removal of gravel from site.

3.1.4 Water Usage

Water is only required for dust suppression within the quarry and the access road. Water will be sourced from the property, as required.

4 POTENTIAL IMPACTS AND MANAGEMENT

The Section provides and overview of the potential impacts to water resources associated with the proposed land use, and the proposed management measures to address the identified impacts.

4.1 Surface Water and Drainage Plan

The current water cycle within the subject site consists of inputs from rainwater flowing downhill in a north westerly direction into the wider drainage system. The development will maintain this process, with all surface water being retained within the excavated areas before being directed to an infiltration pit to the west of the extraction area to ensure water quality is maintained.

The surface water and drainage within the extraction area is discussed within the Surface Water and Drainage Plan (refer to **Appendix B**). Locations of bunds and drainage basins are provided in **Figure 4** of **Appendix B**.

Table 2. Risk assessment associated with surface water and stormwater.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Erosion and sedimentation	Uncontrolled and contaminated stormwater runoff	Erosion and sedimentation resulting in poor surface water quality in surrounding waterways.	Construction of diversion drains around the excavation areas to divert clean water away from the pit and contain any potentially sediment laden surface water within the infiltration basin. Excavation undertaken with a gradient to ensure that stormwater is contained within the excavation footprint.	1	2	Low

4.2 Groundwater

Groundwater will not be extracted or dewatered during the operation of the quarry and therefore, no impacts to groundwater levels are proposed.

Maximum excavation levels have been determined to ensure at least 3 m separation from the maximum groundwater level will be maintained at all times. The final contours of the quarry will provide an undulating surface at approximately 22.5 m AHD which is consistent with the adjoining land.

The extraction and processing of gravel is a chemically free operation with the liquids used being lubricants for machinery and fuel. There will be no storage of chemicals or fuel on the subject site.

Table 3. Risk assessment associated with groundwater.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Contamination of groundwater	Machinery	Contamination of groundwater	Maintenance of at least 0.5 m (will be greater than 3 m) separation from groundwater at all times.	1	2	Low

4.3 Hydrocarbons and Dangerous Goods Management

Hydrocarbons are the only dangerous goods that will be utilised within the proposed subject site for the operation of machinery. However, storage of hydrocarbons on the subject site will not occur.

Servicing of machinery and equipment will not occur onsite further reducing the possibility of contamination.

There is the minor possibility for soil and water contamination as a result of incidental hydrocarbon leakages or spills during the operation of machinery. In such instances the management measures specified below will be implemented.

Table 4. Hydrocarbon and dangerous goods management measures.

Timing	Management Measure
During quarry operations	Mobile refuelling of equipment and vehicles will be undertaken on site by a truck on a hard stand area outside of the pit area.
	Spill kits containing appropriate equipment for control, containment and cleanup of hydrocarbon and chemical spills will be available in appropriate locations onsite and maintained.
	No vehicles or machinery are to be serviced or cleaned within the subject site.

A risk assessment to determine the residual risk associated with the uncontrolled discharge of contaminants is provided below. The risk assessment indicates that with the application of suitable management measures the potential risk associated with uncontrolled discharges is 'Low'.

Table 5. Risk assessment associated with the uncontrolled discharge of contaminants.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Uncontrolled discharge of contaminants to land	Machinery	Contamination of soils and/or water	Refer to Management Measures provided in **Table 4**.	1	2	Low

REFERENCES

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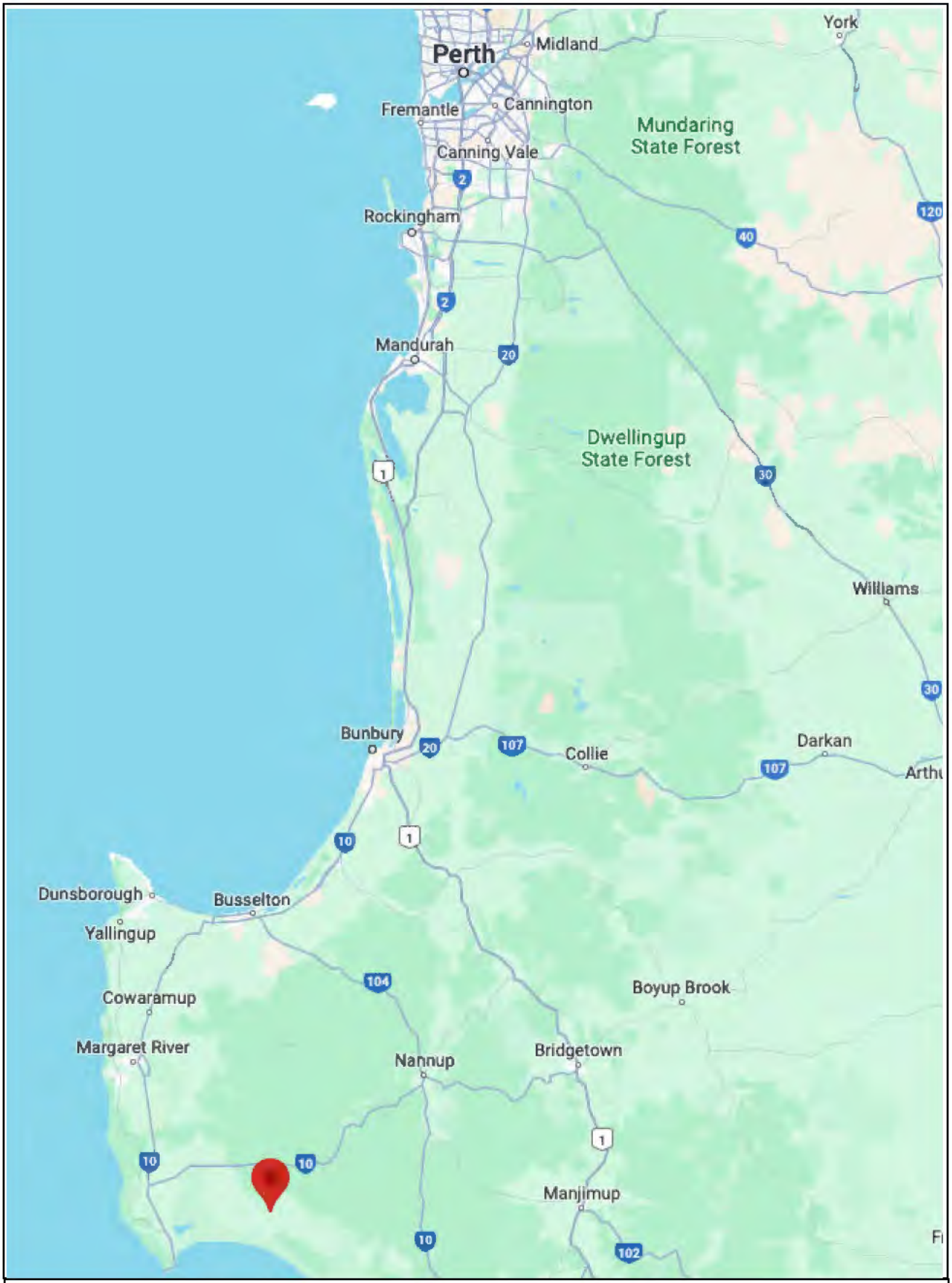
FIGURES



PROJECT	Lot 4154 Governor Broome Rd, Scott River	Project Number	Drawing Number	Revision
		2464	Figure 1	A
DRAWING TITLE	Figure 1 – Site Locality	Designed PN	Checked	
		Drawn PN	Approved	
CLIENT	Harbecks Transport	Date	7/8/2024	
		Local Authority	Shire of Augusta Margaret River	
		Sheet 1 of 1		

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Western Australia 6280
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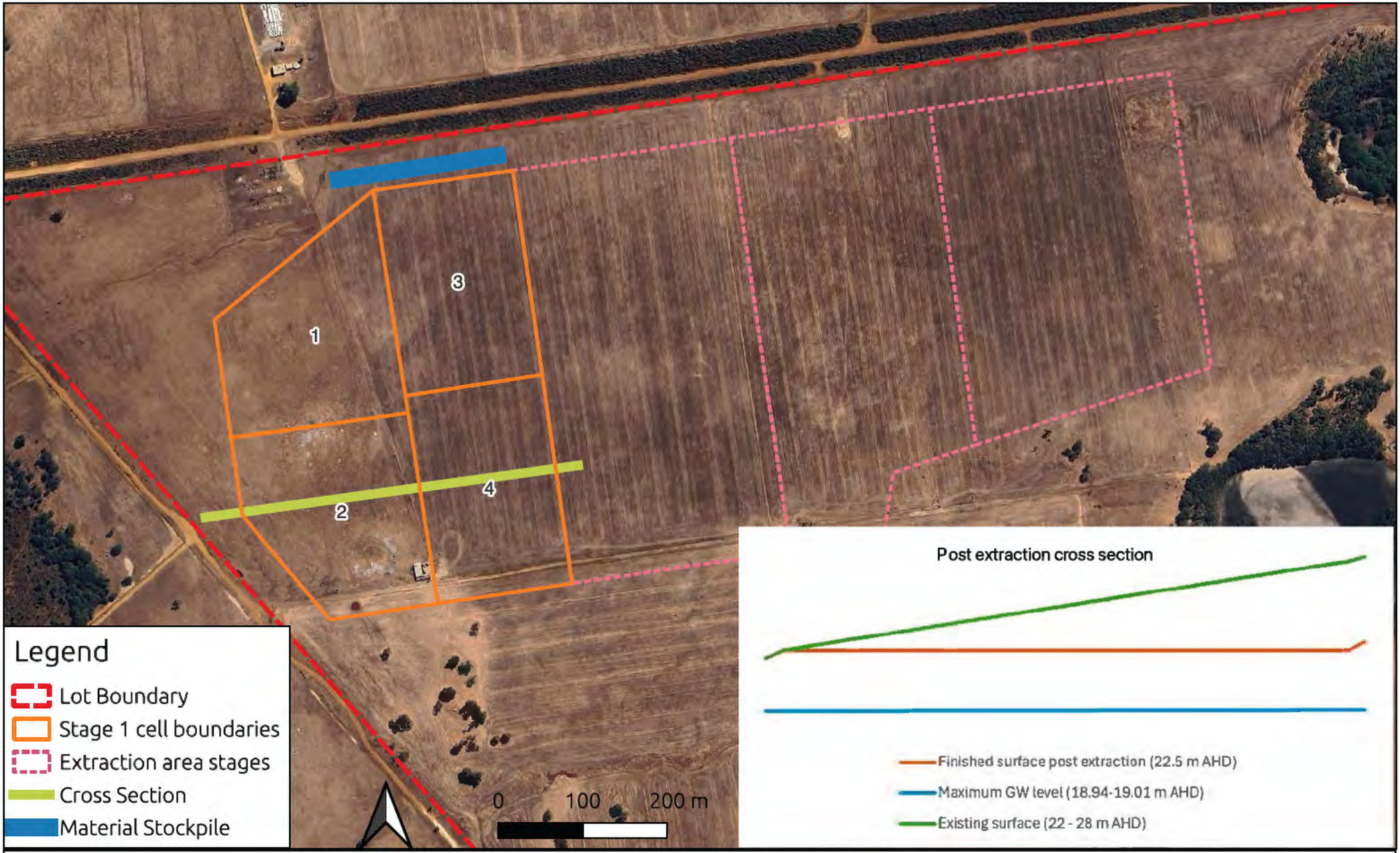

PROJECT	Lot 4154 Governor Broome Road,Scott River
DRAWING TITLE	Figure 2 - Site Extent
CLIENT	Harbecks Transport

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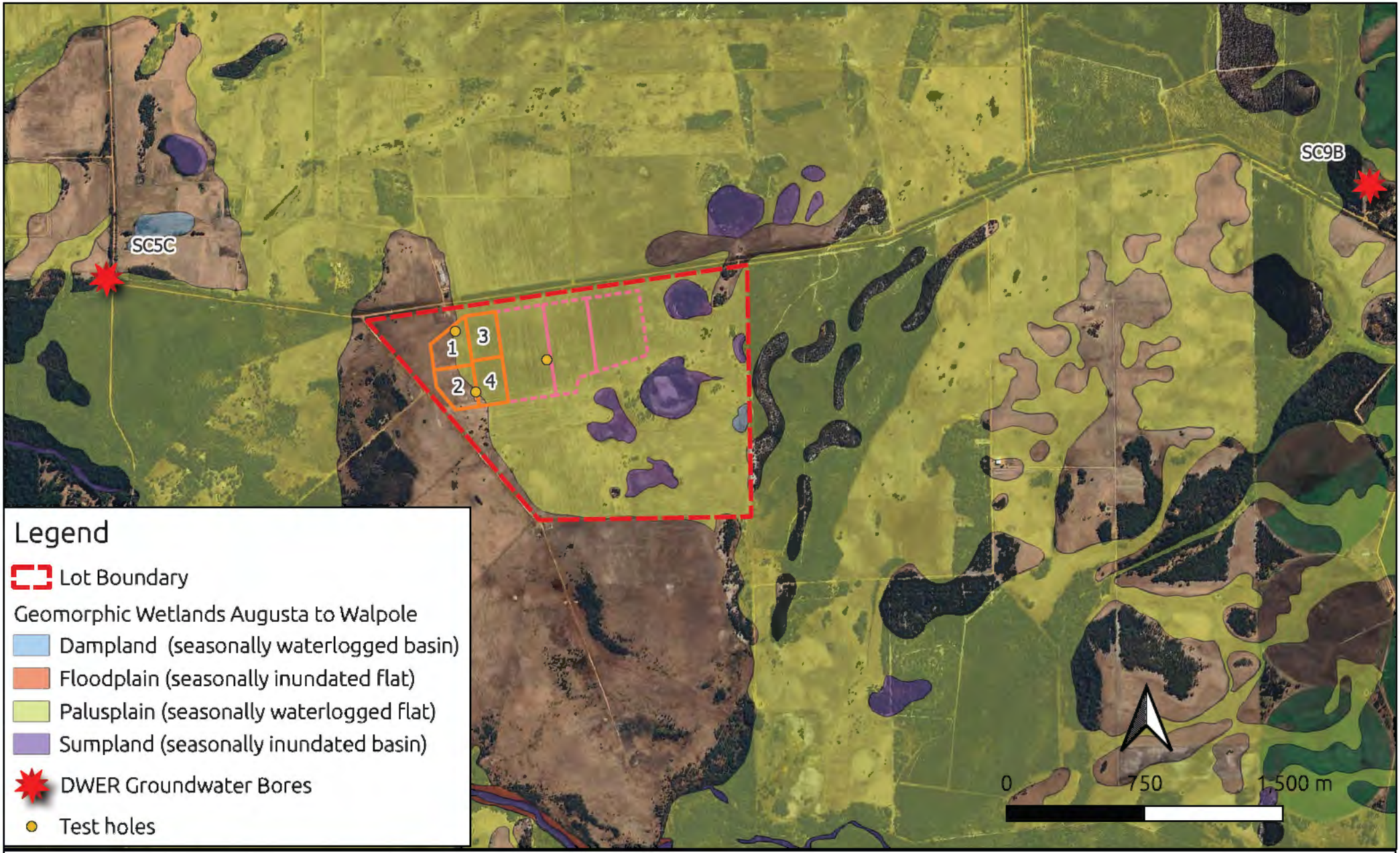
Project Number	2464	Designed	PN
Drawing Number	Figure 2	Drawn	PN
Revision	B	Checked	
Date	6/08/2024	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River



Legend

- Lot Boundary
- Geomorphic Wetlands Augusta to Walpole
- Dampland (seasonally waterlogged basin)
- Floodplain (seasonally inundated flat)
- Palusplain (seasonally waterlogged flat)
- Sumpland (seasonally inundated basin)
- DWER Groundwater Bores
- Test holes

PROJECT Lot 4154 Governor Broome Road, Scott River

DRAWING TITLE Figure 3 - Water Features

CLIENT Harbecks Transport

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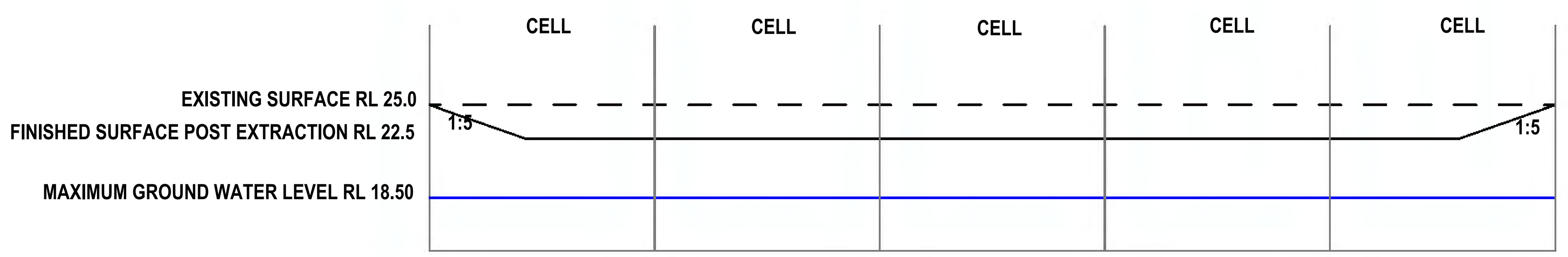
Project Number	2464	Designed	PN
Drawing Number	Figure 3	Drawn	PN
Revision	B	Checked	
Date	15/01/2025	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River

APPENDIX A – SITE SURVEY



TYPICAL CROSS SECTION "A" - "B"

VOLUME SUMMARY

TYPICAL EXCAVATION DEPTH 2m
TOTAL NUMBER OF CELLS (2Ha) 29
TYPICAL CELL AREA 2Ha.
TOTAL AREA 56.9 Ha
TOTAL VOLUME 1138000m³
MAXIMUM EXCAVATION DEPTH RL 20.0
MAXIMUM GROUND WATER RL 18.5

Rev.	Description	Drawn	Date	Checked
A	INITIAL ISSUE	MR	26/1/24	

Scale: 1:2500 A1 ORIG — ALL DISTANCES IN METRES — 0 50 100 150

Surveyor: MR
Survey date: 8/8/23
Precal/Cad:

The contents of this plan are date stated within the revision panel. All consultants and persons wishing to utilise this data should satisfy themselves of this plan's currency by contacting Survcon.

The boundaries depicted on this plan were not re-established as part of this survey, therefore this plan does not guarantee their accuracy. Re-establishment of the cadastral boundaries is recommended for any proposed works on or near existing boundaries.

N

PROPOSED EXTRACTION INDUSTRY PLAN LOT 4154, GOVERNOR BROOME ROAD, SCOTT RIVER.

Client: HARBECKS TRANSPORT

Survcon SURVEYING SERVICES
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PROJ MNGR. Michael Riddle — DATUM MGA50

9288_EX_A (JOB NUMBER _ TYPE _ REVISION)

APPENDIX B – Surface Water and Drainage Plan

Storm Water Runoff and Drainage Basin Design, Lot 4154 Governor Broome Road, Scott River Harbecks Transport

Cat Hydro Services

Cat Hydro Services Pty Ltd

PO Box 432

Yallingup, 6282

[redacted]

http//www.cathydroservices.com.au

February 2026

1 TABLE OF CONTENTS

2 FIGURES

3 INTRODUCTION

Cat Hydro Services was contracted to provide supporting hydrological assessment advice for the proposed excavation on Lot 4154 Governor Broome Road Scott River. This assessment will provide a detention basin and bund wall design to contain 2-year 1:10 ARI rainfall event (DOW, 2014). The design will incorporate the excavation process where one cell will be mined and rehabbed prior to the next cell. The storm runoff volume from one cell will be designed and contained within detention basins and a surrounding bund wall. Infiltration through the base of the detention basins will account for most of the runoff volume with the remainder evaporated.

The proposed excavation site is shown in Figure 1 and 2. The excavation area is approximately 51Ha and will be mined in cells of ~4Ha.

Figure 1 Location diagram.

Figure 2 Excavation area and Initial excavation cells 1 to 4.

4 Storm Water Runoff Design

4.1 Runoff Volume Estimate

All clean catchment generated surface water will be diverted around each mined cell into the local drainage system (Accendo, 2025). The location of the diversion bunds is captured in Accendo 2025.

DWER recommends a design storm of a 2 year 1:10 annual exceedance probability event to generate the surface water runoff volume (DWER 2019 and DOW 2014). The rainfall volume derived from the storm event is 36.2 mm (Figure 3). The area of each cell is ~4 hectares with the maximum size being 4.3Ha. The maximum cell volume will be used to design the detention ponds and bund wall height. The maximum volume required to detain is 1587m^3.

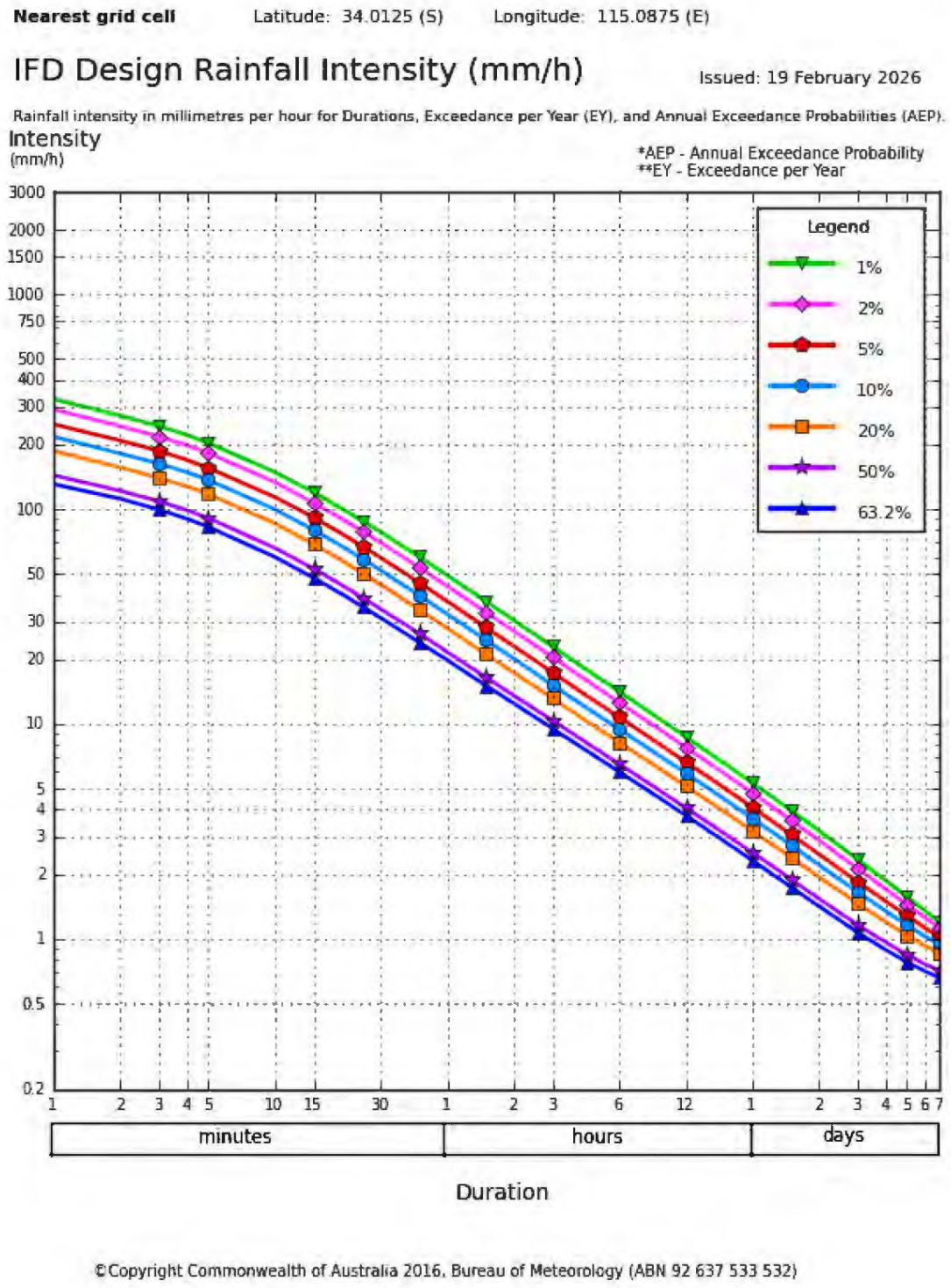

Figure 3 IFD for design rainfall volumes.

4.2 Detention Basin and Bund Wall Design

The two detention basins (DB1 and DB2) are designed 50m long x 30m wide with a bund wall 0.5m heigh. Surface water enters through the flow diversion channel into DB1 and is designed to settle the coarse suspended sediment with flow velocities of less than 200mm/sec (0.2m/sec). Water then flows into DB2 where the remaining finer sediment and turbidity has time to settle where flow velocities reduce to 2.3 – 0.011mm/sec (no flow). The design layout will represent good hydraulic efficiency of approximately 0.7 (Engineers Australia 2006). Water will either infiltrate through the permeable ironstone formation or evaporate.

The detention basins combined volume is 1550m^3. To ensure all surface water is adequately detained a bund wall will be constructed around the perimeter of the detention basins and daylight at 23.5mAHD level (Figure 4). The bund wall will be constructed to a minimum 1m height to contain all the design rainfall event volume.

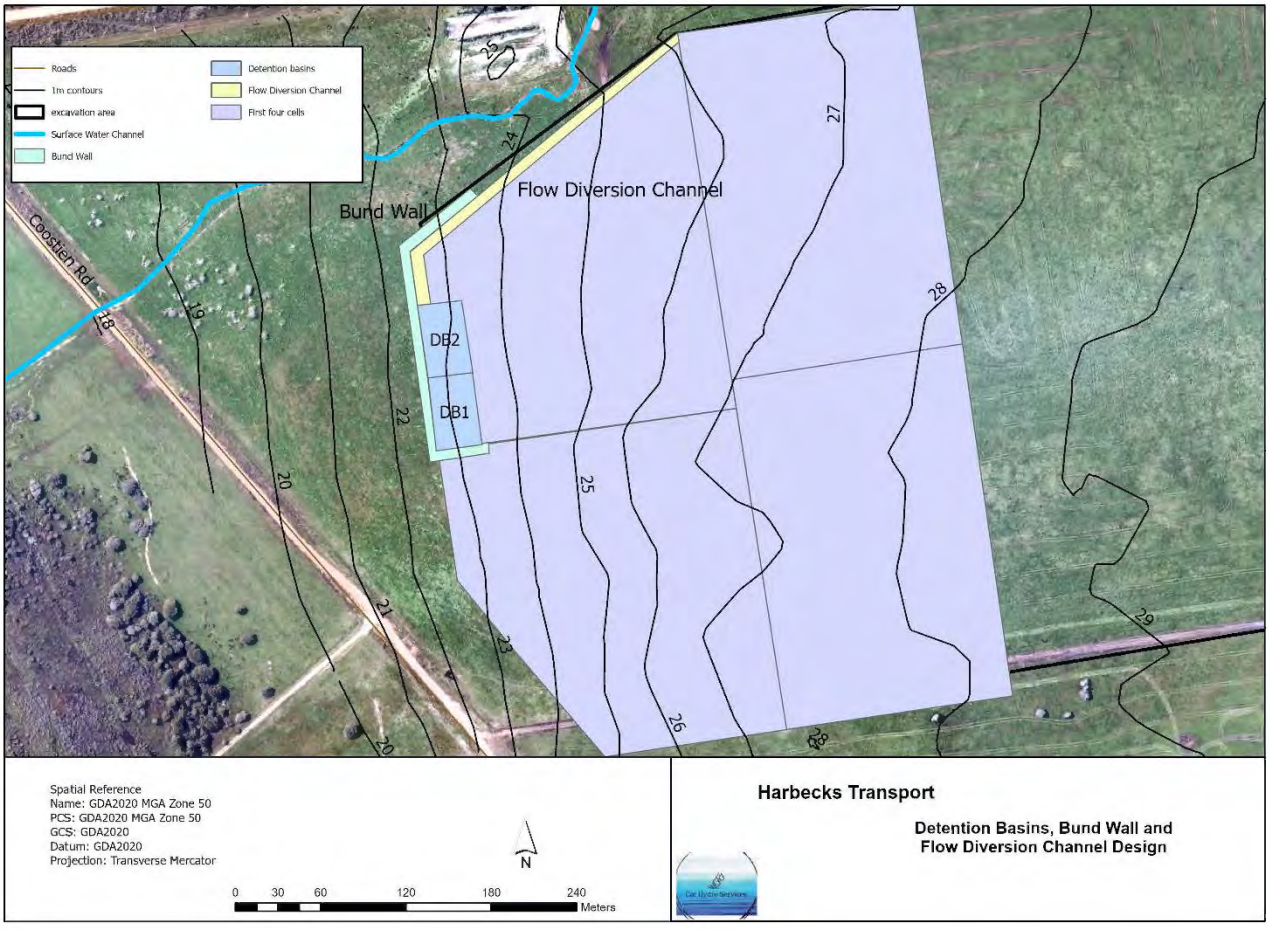

Figure 4 Design Bund Wall, Detention Basins, and Flow Diversion channel.

5 Conclusions and Recommendations

A design rainfall event consisting of a 2-year 1:10 annual exceedance interval event was used to design the detention basin and bund wall dimensions. The detention basins are 50m x 30m x 0.5m wall height and the bund wall is a maximum 1m heigh. This will detain the design event (DWER 2019 and DOW 2014) runoff volume.

6 References

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APPENDIX G – ACCOUSTIC ASSESSMENT

HARBECKS TRANSPORT

EXTRACTIVE INDUSTRY
LOT 4154 GROVERNOR BROOME ROAD, SCOTT RIVER

ACOUSTIC ASSESSMENT

JANUARY 2025

OUR REFERENCE: 33977-1-24430

Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
HERRING STORER ACOUSTICS
P.O. Box 219, Como, W.A. 6952
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DOCUMENT CONTROL PAGE

ACOUSTIC ASSESSMENT

LOT 4154 GROVERNOR BROOME ROAD, SCOTT RIVER

Job No: 24430

Document Reference: 33977-1-24430

FOR

[redacted]

REVISION HISTORY

Revision	Description	Date	Author	Checked

[redacted]

EXECUTIVE SUMMARY

Herring Storer Acoustics was engaged by Accendo Australia on behalf of Harbecks Transport to conduct an acoustic assessment for the proposed gravel extraction operations at Lot 4154 Governor Broome Road, Scott River. This assessment pertains to Stage 1 of the operations, encompassing four 4-hectare cells, with operating hours from 07:00–17:00 Monday to Friday and 08:00–13:00 on Saturdays.

The assessment evaluates compliance with the *Environmental Protection (Noise) Regulations 1997*, considering the nearest sensitive receivers, including existing residences and proposed future chalets, located within 170m to 2000m of the site. Key findings include:

Assessment Results

1. **Existing Residences:**
    - Predicted noise levels at the nearest existing residences comply with regulatory requirements, with maximum assessable noise levels recorded at 37 dB(A), well below the 45 dB(A) daytime limit.
    - Noise from operations, including the scraper and surface miner, is sufficiently mitigated by the distances from sensitive premises.
2. **Proposed Chalets:**
    - Noise levels from scraper operations during topsoil removal in Cells 1 and 2 may exceed the daytime noise limit (up to 50 dB(A) with tonal penalties).
    - Compliance is achievable with the implementation of one of two mitigation strategies:
        - Completing topsoil removal in Cells 1 and 2 before the chalets are operational.
        - Installing 3–4m earthen bunds along the western borders of Cells 1 and 2 during Scraper operations.

Key Recommendations

- Implement a noise management plan to ensure ongoing compliance.
- Adopt recommended mitigation measures to ensure future chalet noise levels meet the 45 dB(A) criterion.

The assessment concludes that, with the proposed mitigation measures, the gravel extraction operations will comply with the *Environmental Protection (Noise) Regulations 1997* during all operating hours. Noise levels will be effectively managed to minimise impact on surrounding sensitive receptors.

CONTENTS

APPENDICES

1. INTRODUCTION

Herring Storer Acoustics have been commissioned by Accendo Australia on behalf of Harbecks Transport to undertake an acoustic assessment of noise emissions from the proposed gravel extraction operations located at Lot 4154 Governor Broome Road, Scott River.

This assessment is for the Stage 1 operations, comprising of 4 cells which are approximately 4 ha each. The proposed extraction operations will operate from 07:00 – 17:00 Monday to Friday, and Saturdays 08:00 to 13:00. No operations would occur on Sundays or Public Holidays.

The extraction operations will use a Wirtgen Surface Miner to excavate, grind, crush and then stockpile the material to the stockpile area located in the north western portion of the subject site. The material will then be loaded on to waiting trucks for transport. It is noted that crushing and screening mat be required on a campaign basis dependant on the size of the stockpiled material. Inclusion of the crushing process has been allowed for in this acoustic assessment. A summary of the proposed gravel extraction activities is provided below:

- Prior to excavation commencing the site will be ground surveyed, the excavation footprint marked out and a 1 m contour plan developed.
- The topsoil/overburden will be stripped and used to construct earthen bunds using a scraper.
- A surface miner will be used to dig the gravel, grind and crush it and then transport it to a stockpile.
- Any areas of deeper sand will also be stripped and stockpiled for reuse.
- The gravel will then be picked up by a loader and loaded to trucks for transport.
- If required, campaign crushing and screen may occur. This is likely to be intermittent, as required.
- Excavation will commence in the west of the quarry and then move in an easterly direction.
- Upon completion of each section of quarry, the section will be reformed and back filled, where subgrade material is available, to achieve the proposed final contours.
- At the end of excavation, the floor of the quarry will be deep ripped, covered by overburden and topsoil, and rehabilitated to a constructed soil.

The nearest residential premise is located 170m and 580m to the north of the proposed operations, however this is the owner of the land the extractive industry is being conducted, hence having a vested interest, has been considered as part of the same premise, and not highly noise sensitive.

The nearest existing highly noise sensitive premises is 1260m to the southwest from the closet point of operations. Further residential premises are located between 1500 to 2000m from the operations.

Further to the above, it is understood there is a Development Application for proposed chalet development at 1165 Scott River Road, Scott. If constructed, the four chalets would be between 350 to 470m from the nearest operations. The future accommodation has been assessed in this acoustic study.

Figure 1.1 details the proposed operations.

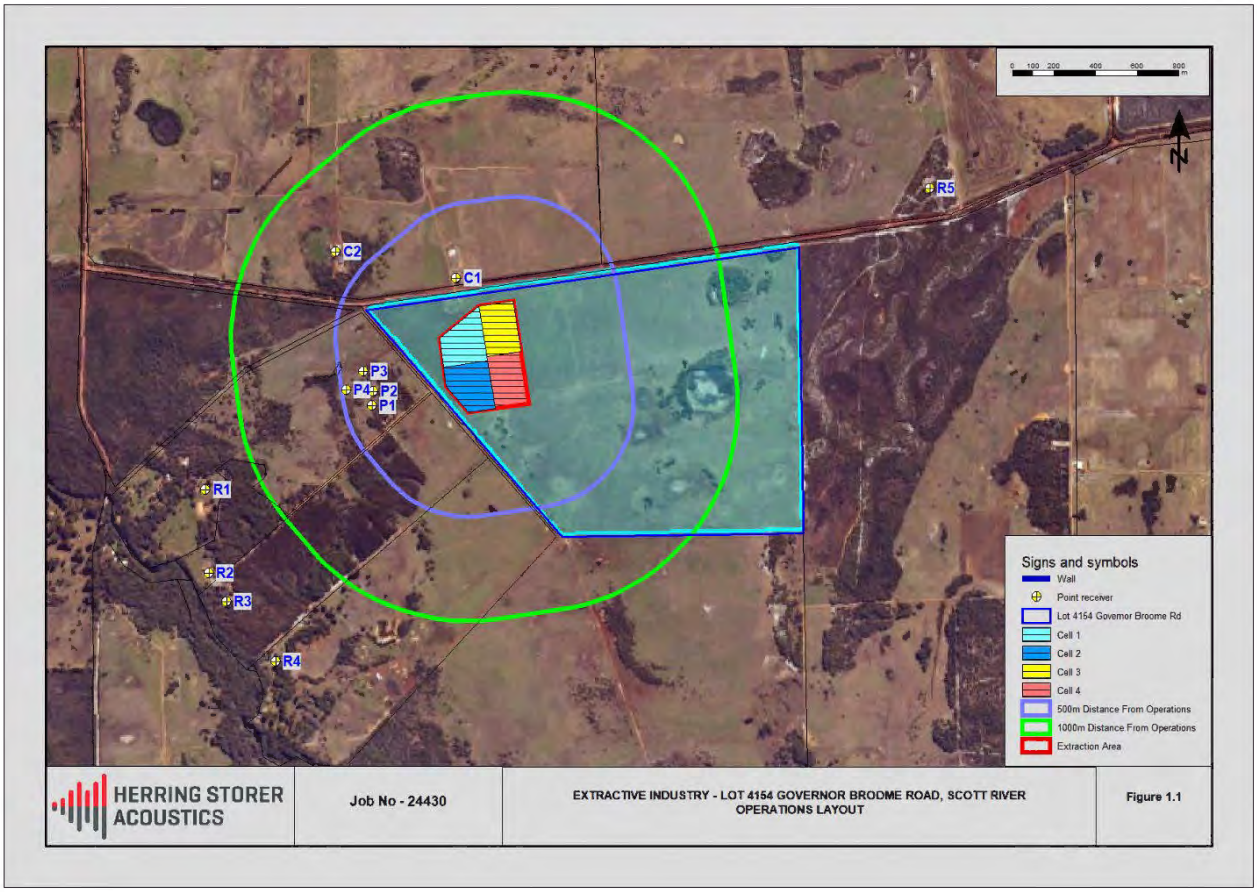


FIGURE 1.1 – EXTRACTION OPERATIONS

This assessment is provided to support the regulatory approvals processes and show that compliance with the requirements of the *Environmental Protection (Noise) Regulations 1997* can be achieved.

As part of the study, the following was carried out:

- Identification of individual operations and the associated noise levels.
- Assess the predicted noise levels at the nearest surrounding highly noise sensitive premises for compliance with the appropriate criteria.
- If exceedances are predicted, comment on possible noise amelioration options for compliance with the appropriate criteria.

For information, a locality plan is shown in Appendix A.

2. CRITERIA

The allowable noise level for noise sensitive premises in the vicinity of the proposed site is prescribed by the *Environmental Protection (Noise) Regulations 1997*. Regulations 7 and 8 stipulate maximum allowable external noise levels or assigned noise levels that can be received at a premise from another premises. For residential premises, this noise level is determined by the calculation of an influencing factor, which is then added to the base levels shown below. The influencing factor is calculated for the usage of land within two circles, having radii of 100m and 450m from the premises of concern. The base noise levels for residential premises are listed in Table 2.1.

TABLE 2.1 - BASELINE ASSIGNED OUTDOOR NOISE LEVEL

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises	0700 - 1900 hours Monday to Saturday (Day)	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays (Sunday / Public Holiday Day Period)	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days (Evening)	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays (Night)	35 + IF	45 + IF	55 + IF

Note: L_{A10} is the noise level exceeded for 10% of the time.
L_{A1} is the noise level exceeded for 1% of the time.
L_{Amax} is the maximum noise level.
IF is the influencing factor.

It is a requirement that received noise be free of annoying characteristics (tonality, modulation and impulsiveness), defined below as per Regulation 9.

"impulsiveness" means a variation in the emission of a noise where the difference between L_{Apeak} and $L_{Amax\ Slow}$ is more than 15 dB when determined for a single representative event;

"modulation" means a variation in the emission of noise that –

(a) is more than 3dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band;
(b) is present for more at least 10% of the representative assessment period; and
(c) is regular, cyclic and audible;

"tonality" means the presence in the noise emission of tonal characteristics where the difference between –

(a) the A-weighted sound pressure level in any one-third octave band; and
(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

The nearest potential noise sensitive premises to the proposed development have been identified using the area map in Figure 2.1.

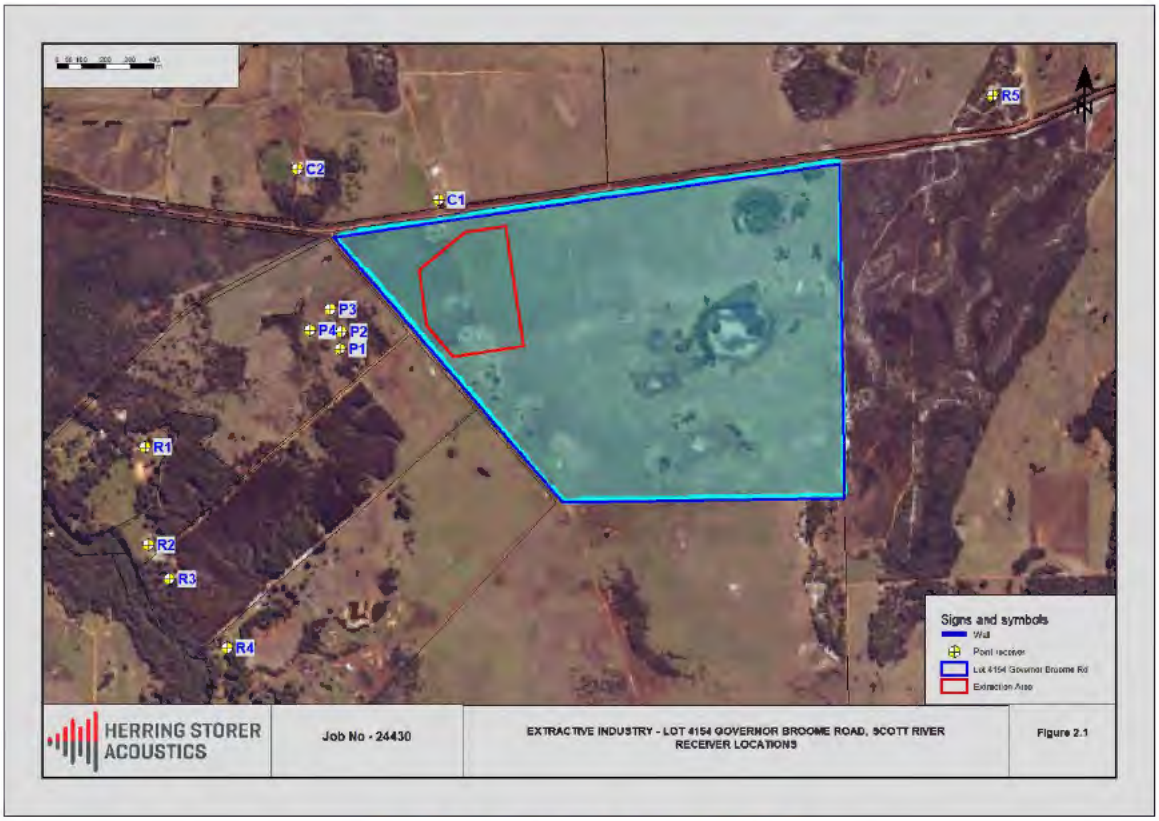


FIGURE 2.1 – RECEIVER LOCATION MAP

The nearest residential premise is located 170m and 580m to the north of the proposed operations, however this is the owner of the land the extractive industry is being conducted, hence having a vested interest, has been considered as part of the same premise, and not highly noise sensitive.

The nearest existing highly noise sensitive premises is 1260m to the southwest from the closet point of operations. Further residential premises are located between 1500 to 2000m from the operations.

Further to the above, it is understood there is a Development Application for proposed chalet development at 1165 Scott River Road, Scott. If constructed, the four chalets would be between 350 to 470m from the nearest operations.

Based on the above, the following receptors have been assessed for the noise emissions from the proposed extractive industry operations. The distance the receptors are from the noise sources have also been included for information purposes.

TABLE 2.1 – IDENTIFIED RECEIVERS

Reference	Description	Distance (Metres) From Nearest Operations			
		Cell 1	Cell 2	Cell 3	Cell 4
C1	Caretaker - Lot 4154 Governor Broome Rd	184	398	196	423
C2	Caretaker -Lot 4154 Governor Broome Rd	658	777	750	907
P1	Proposed Chalet – 1165 Scott River Rd	407	368	618	588
P2	Proposed Chalet – 1165 Scott River Rd	374	342	587	573
P3	Proposed Chalet – 1165 Scott River Rd	395	378	604	604
P4	Proposed Chalet – 1165 Scott River Rd	496	467	708	698
R1	Existing – 1165 Scott River Rd	1302	1260	1512	1461
R2	Existing – 50 Coostien Rd	1516	1460	1715	1609
R3	Existing – 52 Coostien Rd	1550	1482	1739	1612
R4	Existing – 140 Coostien Rd	1639	1524	1804	1633
R5	Existing – 399 Governor Broome Rd	2241	2291	2079	2122

The usage of the surrounding land use varies from intensive horticulture and residential land use. Therefore, the assigned noise levels for operational times are as noted in Table 2.2.

TABLE 2.2 – ASSIGNED NOISE LEVELS

Premises Receiving Noise	IF dB	Regulatory Time of Day	Assigned Level (dB)		
			$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Receiver R1 to R5	0	0700 - 1900 hours Monday to Saturday (Day)	45	55	65
Proposed Receiver P1 to P4	0	0700 - 1900 hours Monday to Saturday (Day)	45	55	65

3. CALCULATED NOISE LEVELS

Noise immissions[1] at the nearest neighbouring residential premises, due to noise associated with the proposed operations, were modelled with the computer programme SoundPlan. Sound power levels used for the calculations are based on measured sound pressure levels of similar equipment proposed for use on site.

Appendix C contains the measured noise levels of a similar Wirtgen Surface Miner as proposed in this assessment.

The modelling of noise levels has been based on noise sources and sound power levels shown in Table 3.1.

TABLE 3.1 – SOUND POWER LEVEL - NOISE SOURCES dB(A)

Source Name	Quantity	SWL dB(A)
Loader (Cat 980H or similar)	1	105
Excavator (PC300 or similar)	1	98
Surface Miner - Wirtgen 2500 or similar	1	98
Semi-trailer Truck	Any point	95
Scraper (CAT 627 or equivalent)	1	108
Crusher (Terex J1175 or equivalent)	1	113
Screen (McCloskey S190 Screener or equivalent)	1	104

Note: The above equipment models have been used to provide an indication of the size. Other models may be used although these have been assumed to have a similar sound power level.

It is understood that the operations would entail the scraper clearing the topsoil, the surface miner removing the ore and leaving in windrows, or stockpiles within each Cell. Then the loader and truck combination would then load and transport the material to the stockpiling area on where it will be transported off site. Therefore, the following scenarios have been considered:

Scenario 1 – Scraper Operations (Surface) Cells 1 to 4;
Scenario 2 – Surface Miner Cells 1 to 4;
Scenario 3 – Loader and Truck transporting material to stockpile area;
Scenario 4 – Material processing and Loading (Truck, Loader, Excavator, Crusher and Screen)– Stockpile Area.

It is noted that to allow for a worst case, Scenarios 1 to 3 include the cumulative noise from Scenario 4. This allows for each phase of the operations to include material loading from the stockpile area, if required. It is also noted bunding has been included around the crusher and screen (3m high).

1 Immissions – noise received at a source
2 Emissions – noise emanating from a source and / or location

Each of the above operations are conducted separately, as there are only 1 to 2 working personnel on site. Based on noise emissions from the above equipment, individual operating scenarios scenario have been developed with Figures 3.1 to 3.3 detailing the noise sources assumed in the predictive modelling for the worst case locations (proximity to receiver) along with the proposed development of the pit.

As can be seen, multiple point sources are used throughout the operating Cells, with the highest noise level calculated at the receiver and used for the assessable level. This is not the cumulative noise level of all operations, as discussed, each occurs separately, hence each operation requires individual assessment.

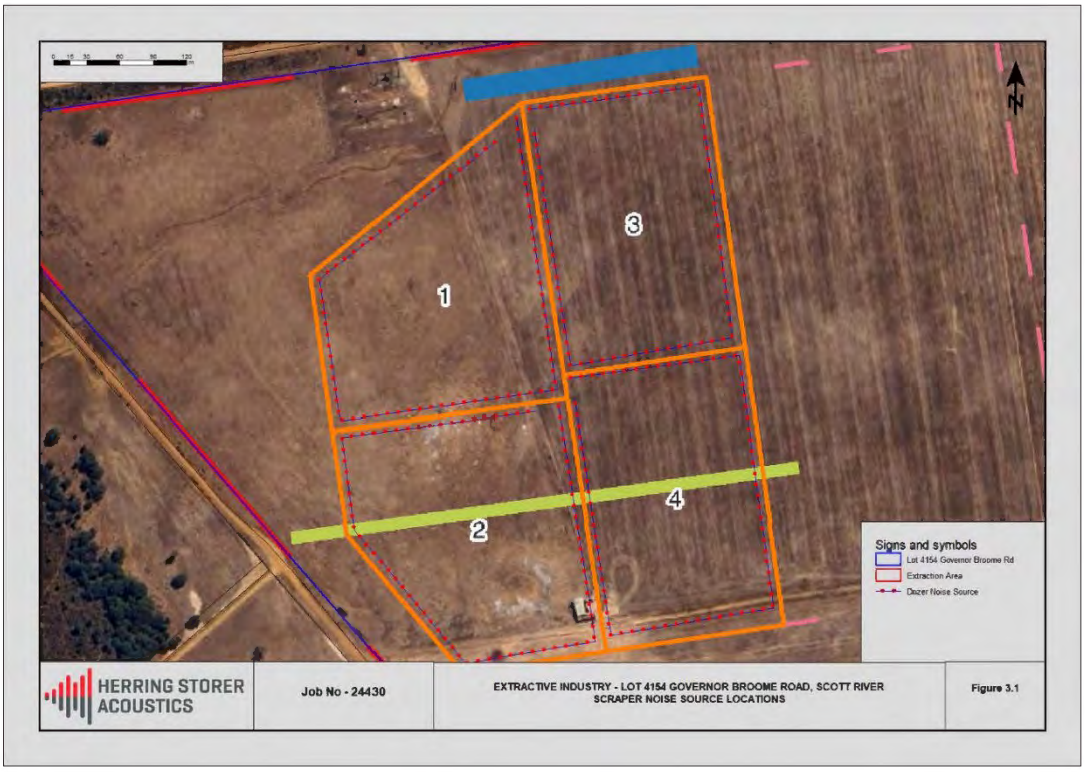


FIGURE 3.1 – SCRAPER SOURCE LOCATION AND PIT PROGRESSION

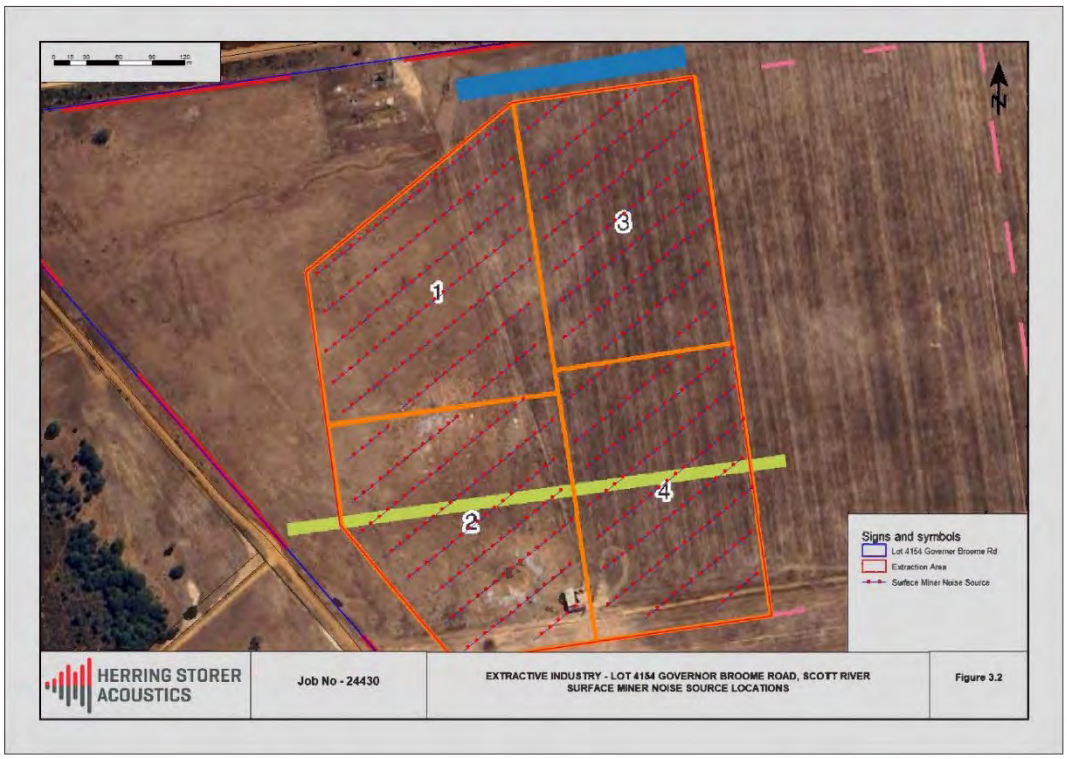


FIGURE 3.2 – SURFACE MINER SOURCE LOCATION AND PIT PROGRESSION

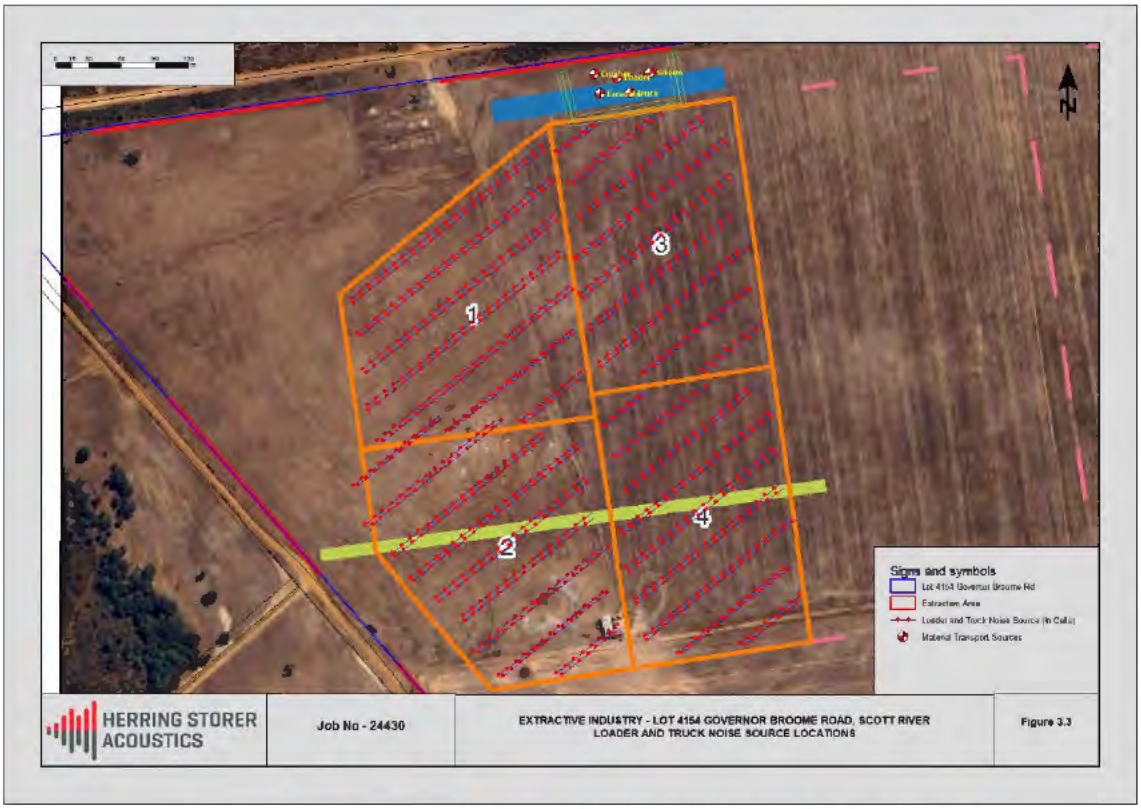


FIGURE 3.3 – TRUCK LOADING AND TRANSPORTING SOURCE LOCATION

For the initial modelling scenario, the noise sources have been placed at the existing surface level.

The following input data was used in the calculations:

a) Provided area plots.
b) Sound Power Levels listed in Table 4.1.
c) Ground contours and receiver point provided by client (Appendix A).

Weather conditions for modelling were as stipulated in the Environmental Protection Authority's *"Draft Guidelines on Environmental Noise for Prescribed Premises"* and for the day period are as listed in Table 4.2.

TABLE 4.2 – WEATHER CONDITIONS

Condition	Day
Temperature	20°C
Relative humidity	50%
Pasquill Stability Class	E
Wind speed	4 m/s*

* From sources, towards receivers.

4. RESULTS

Calculated noise levels associated with the noise emissions from the proposed operations for the assumed scenarios, are summarised below in Table 4.1. For ease of reporting, the highest noise level for each Cell has been noted however Appendix B contains the overall noise contour plots for each scenario based on operations in each Cell as well as the individual noise levels for each Cell / Receiver.

TABLE 4.1 – CALCULATED NOISE LEVEL

Receiver	Calculated Noise Level (L_{A10} dB(A))			
	Scenario 1 Scraper Operations	Scenario 2 Surface Miner	Scenario 3 Loader and Truck	Scenario 4 Loading materials Stockpile
C1	59	58	58	58
C2	44	42	42	42
P1	45	38	40	36
P2	46	39	40	37
P3	45	39	40	37
P4	43	37	38	35
R1	33	27	28	26
R2	31	26	26	25
R3	31	26	26	25
R4	31	26	27	26
R5	29	28	28	28

Notes: C1 and C2 are included for information purposes, however, are not assessable locations.

5. ASSESSMENT

5.1 EXISTING NOISE SENSITIVE RECEIVERS

For the daytime operations, based on calculated noise levels at the nearest existing premises, noise levels could be considered as containing tonal characteristics. therefore, a +5 dB(A) penalty has been included to allow for a tonal component for the residence.

Based on the assessable noise levels above, comparison against the relevant assigned noise level is contained in Table 5.1.

TABLE 5.1 – ASSESSMENT OF NOISE LEVELS – EXISTING RECEIVER5

Receiver	Premises Receiving Noise Assessable Noise Level dB(A)				Time of Day	Assigned Level (dB)	Compliance
	Scenario 1 Scraper Operations	Scenario 2 Surface Miner	Scenario 3 Loader and Truck	Scenario 4 Loading materials Stockpile			
R1	38	32	33	31	0700 - 1900 hours Monday to Saturday (Day)	45	Complies
R2	36	31	31	30			Complies
R3	36	31	31	30			Complies
R4	36	31	32	31			Complies
R5	34	33	33	33			Complies

5.2 PROPOSED FUTURE CHALETS

For the daytime operations, based on calculated noise levels at the proposed future chalets located at 1165 Scott River Rd, noise levels could be considered as containing tonal characteristics. therefore, a +5 dB(A) penalty has been included to allow for a tonal component for the residence.

Based on the assessable noise levels above, comparison against the relevant assigned noise level is contained in Table 5.2.

TABLE 5.1 – ASSESSMENT OF NOISE LEVELS – PROPOSED CHALETS

Receiver	Premises Receiving Noise Assessable Noise Level dB(A)				Time of Day	Assigned Level (dB)
	Scenario 1 Scraper Operations	Scenario 2 Surface Miner	Scenario 3 Loader and Truck	Scenario 4 Loading materials Stockpile		
P1	50	43	45	41	0700 - 1900 hours Monday to Saturday (Day)	45
P2	51	44	45	42		
P3	50	44	45	42		
P4	48	42	43	40		

6. DISCUSSION

The Extractive Industry would only operate during the day period (being Monday to Friday 07:00 to 17:00 hours, and Saturdays 08:00 to 13:00). Therefore, at the neighbouring residences, the applicable acoustic criterion for this assessment is the assigned L_{A10} day period noise level of 45 dB(A).

Noise received at the nearest existing residential premises has been determined, to be 37 dB(A) for the gravel extraction operations for the highest noise level being the Scraper operations for surface clearing. Topsoil /overburden operations are a relatively short process, with noise reducing to around 30 dB(A) for the extractive process and transportation.

The above assessable noise levels may be considered to contain tonal characteristics and therefore, a +5 dB(A) penalty for tonality would apply.

For operations of the mobile plant, including the surface miner, there is sufficient distance from receivers, such that noise control is not required.

It is understood that a noise management plan will be implemented to ensure ongoing compliance as outlined in the acoustic assessment.

Given these operating parameters, noise levels received at the nearest existing premises has been calculated to comply with the *Environmental Protection (Noise) Regulations 1997* for the operating times as outlined in this assessment, even with the inclusion of a +5 dB(A) penalty for tonality.

For the proposed future chalets at 1165 Scott River Rd, noise emissions form the Scraper operations (at the nearest point in Cell 1 or 2) could be as high as 50 dB(A) under maximum noise propagation conditions. Once the clearing of the top soil and overburden in Cell 1 and 2 is complete, operations noise will reduce to a level of compliance, i.e. 45 dB(A) with the inclusion of a tonal penalty.

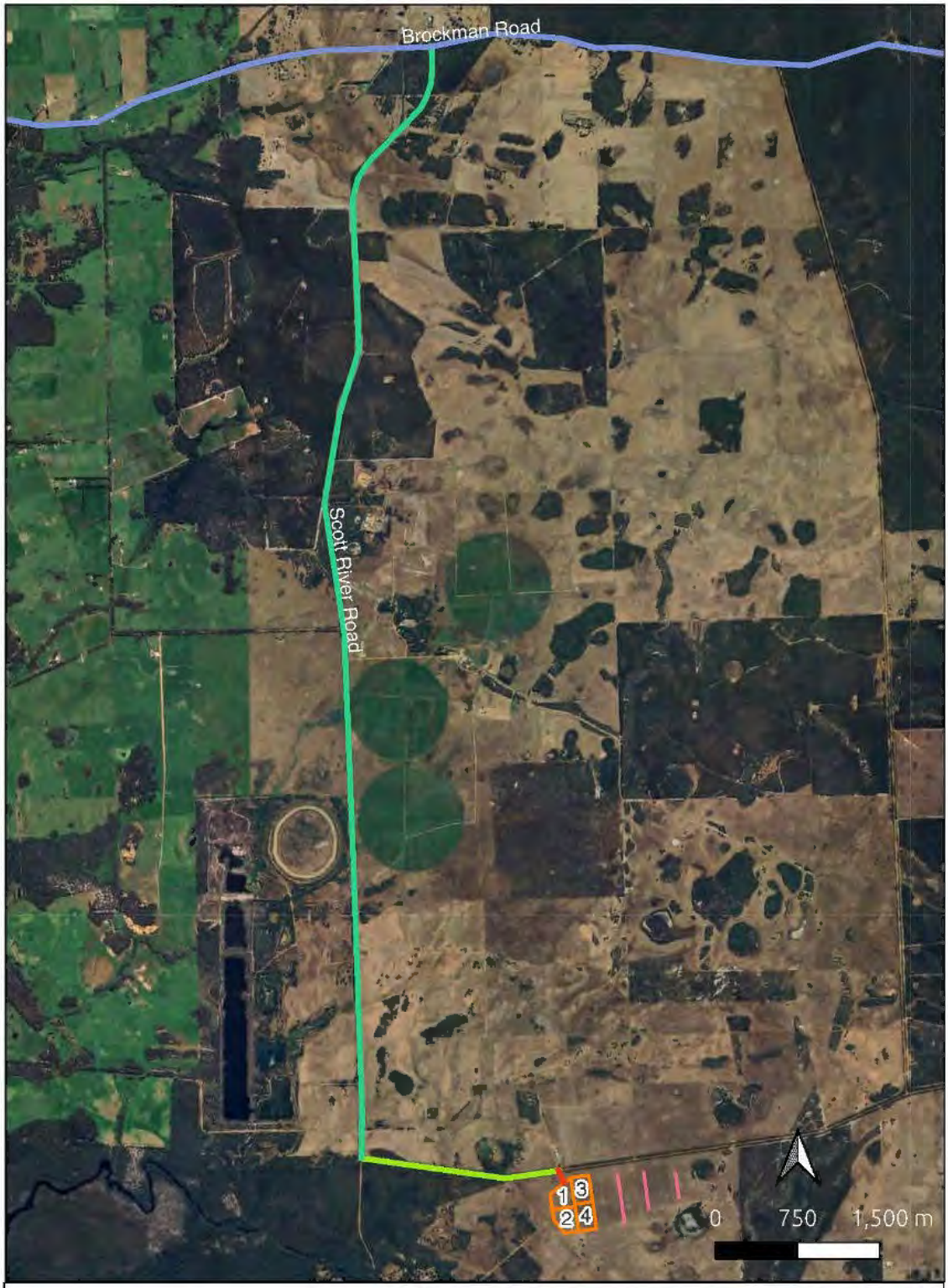
Based on this, there are two possible recommendations which would ensure compliance at the future chalets.
Option 1 – Complete Cell 1 and 2 topsoil and overburden removal with the Scraper, prior to the completion of the proposed chalets.

Option 2 – Institute 3 – 4m bunding on the western border of Cell 1 and 2 whilst Scraper operations are present (in Cell 1 and 2).

Given the above recommendations, noise levels received at the proposed future chalets have been calculated to comply with the *Environmental Protection (Noise) Regulations 1997* for the operating times as outlined in this assessment, even with the inclusion of a +5 dB(A) penalty for tonality.

APPENDIX A

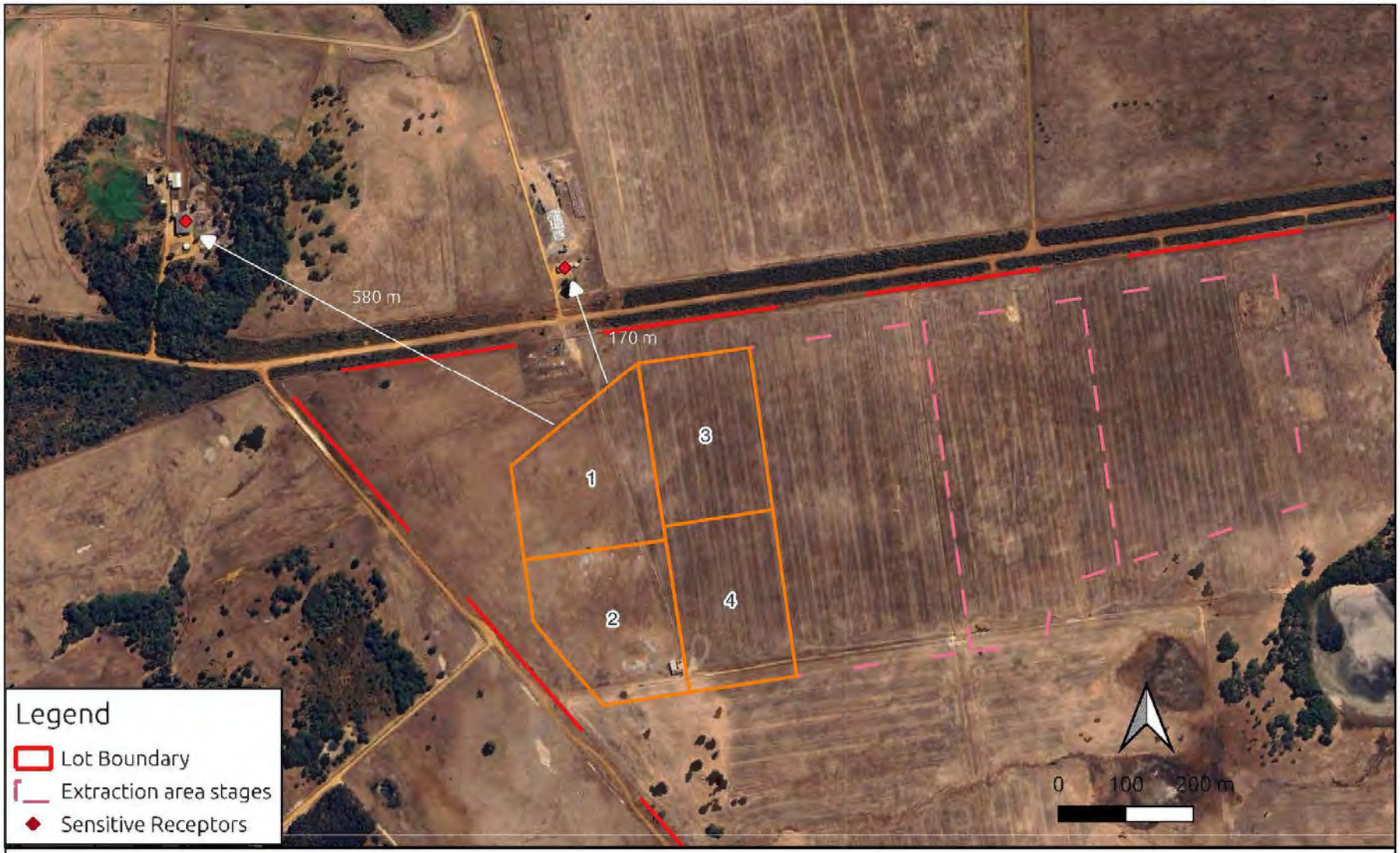
LOCATION MAP



PROJECT	Lot 4154 Governor Broome Road, Scott River	Project Number	Drawing Number	Revision
		2464	Figure 5	A
DRAWING TITLE	Figure 5 – Transport Route	Designed PN	Checked	
		Drawn PN	Approved	
CLIENT	Harbecks Transport	Date	11/07/2024	
		Local Authority	Shire of Augusta Margaret River	
		Sheet 1 of 1		

accendo AUSTRALIA

PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852



PROJECT Lot 4154 Governor Broome Road,Scott River

DRAWING TITLE Figure 6 - Sensitive Receptors

CLIENT Harbecks Transport

accendo AUSTRALIA
PO Box 5178
West Busselton
Western Australia 6280
Mobile 0418 950 852

Project Number	2454	Designed	PN
Drawing Number	Figure 6	Drawn	PN
Revision	A	Checked	
Date	6/08/2024	Approved	
Sheet 1 of 1		Local Authority	Shire of Augusta Margaret River

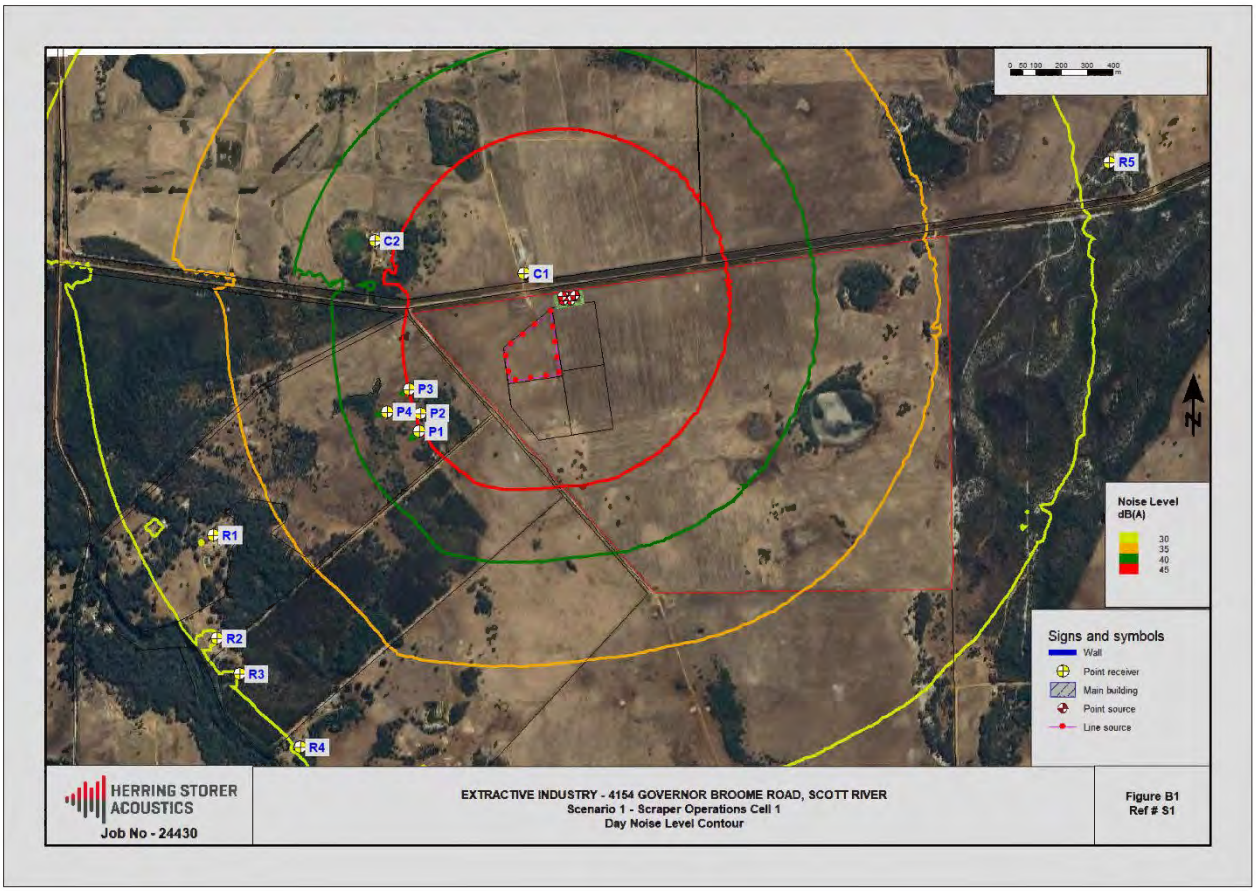
APPENDIX B

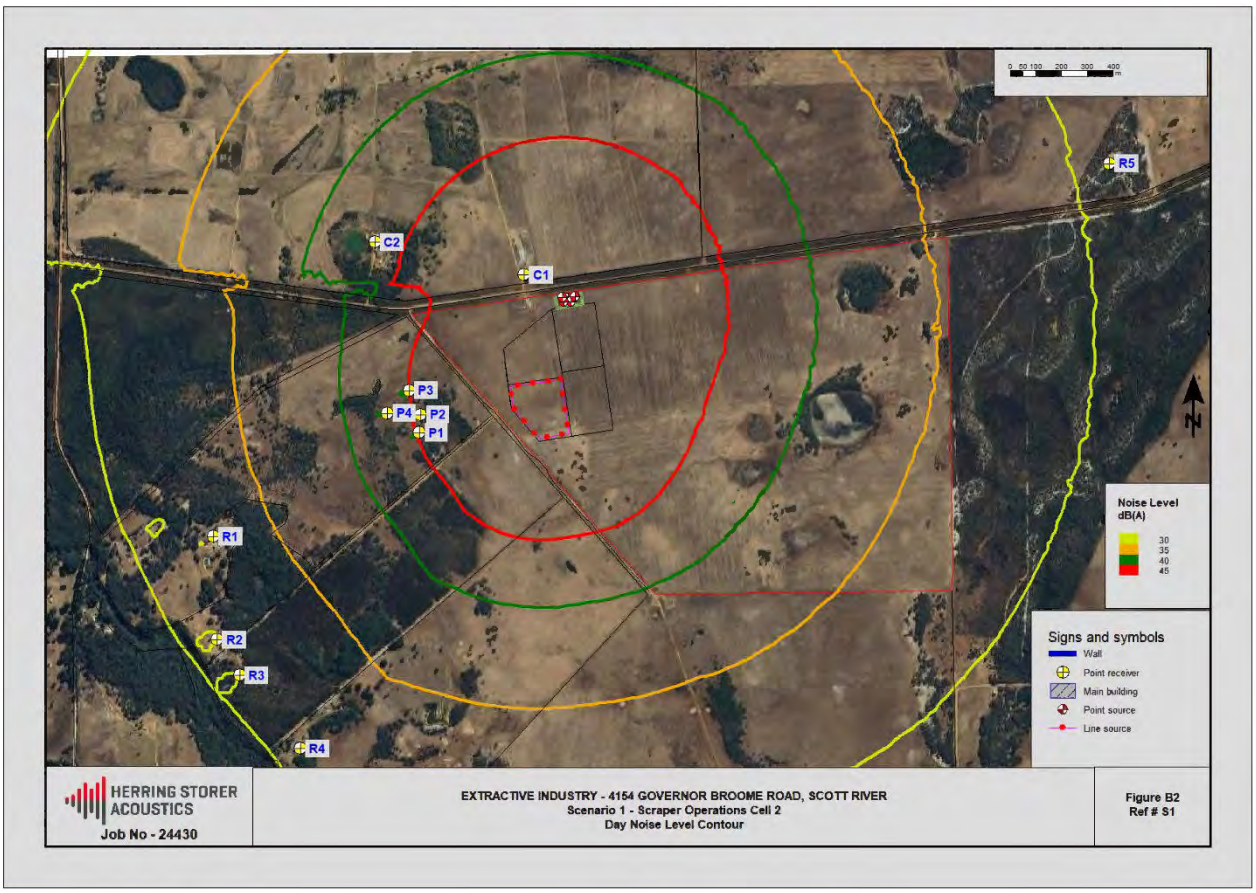
Noise Contours

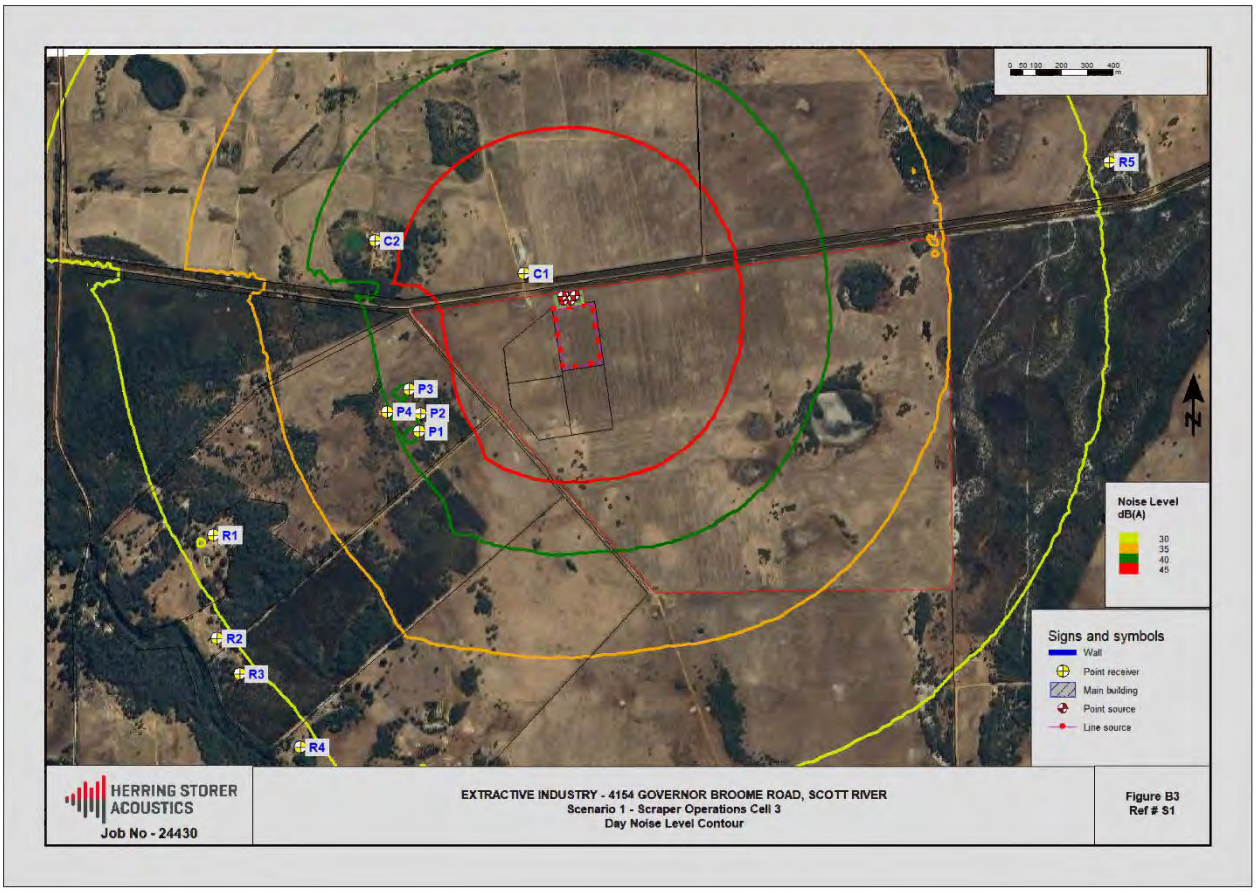
Error! Not a valid link. Calculated Noise Levels for Each Scenario Considered

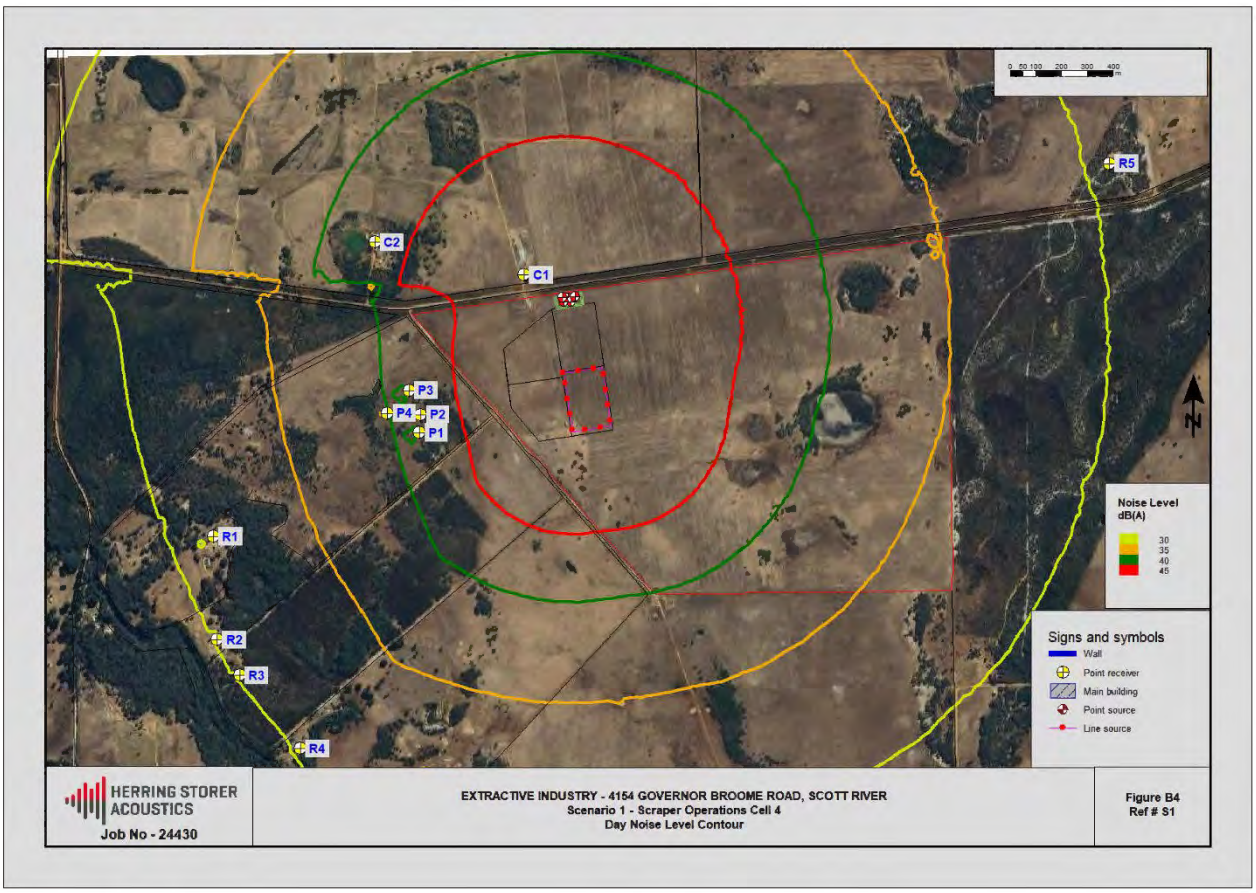
Receiver	Material Processing and Loading (Stockpile Area)	Cell 1 Surface Miner including Material Loading	Cell 1 Loader and Truck including Material Loading	Cell 1 Scraper including Material Loading	Cell 2 Surface Miner including Material Loading	Cell 2 Loader and Truck including Material Loading	Cell 2 Scraper including Material Loading	Cell 3 Surface Miner including Material Loading	Cell 3 Loader and Truck including Material Loading	Cell 3 Scraper including Material Loading	Cell 4 Surface Miner including Material Loading	Cell 4 Loader and Truck including Material Loading	Cell 4 Scraper including Material Loading
C1	58	58	58	59	58	58	58	58	58	59	58	58	58
C2	42	42	42	44	42	42	43	42	42	43	42	42	43
P1	36	38	39	45	38	40	45	37	37	41	37	38	42
P2	37	39	40	46	39	41	45	37	38	42	38	38	42
P3	37	39	40	45	38	40	45	37	38	42	37	38	42
P4	35	37	38	43	37	38	43	36	36	40	36	36	40
R1	26	27	28	33	27	28	33	27	27	31	27	27	32
R2	25	25	26	31	26	26	31	25	26	30	26	26	30
R3	25	26	26	31	26	26	31	25	26	30	26	26	30
R4	26	26	26	30	26	27	31	26	26	29	26	26	30
R5	28	28	28	29	28	28	29	28	28	29	28	28	29

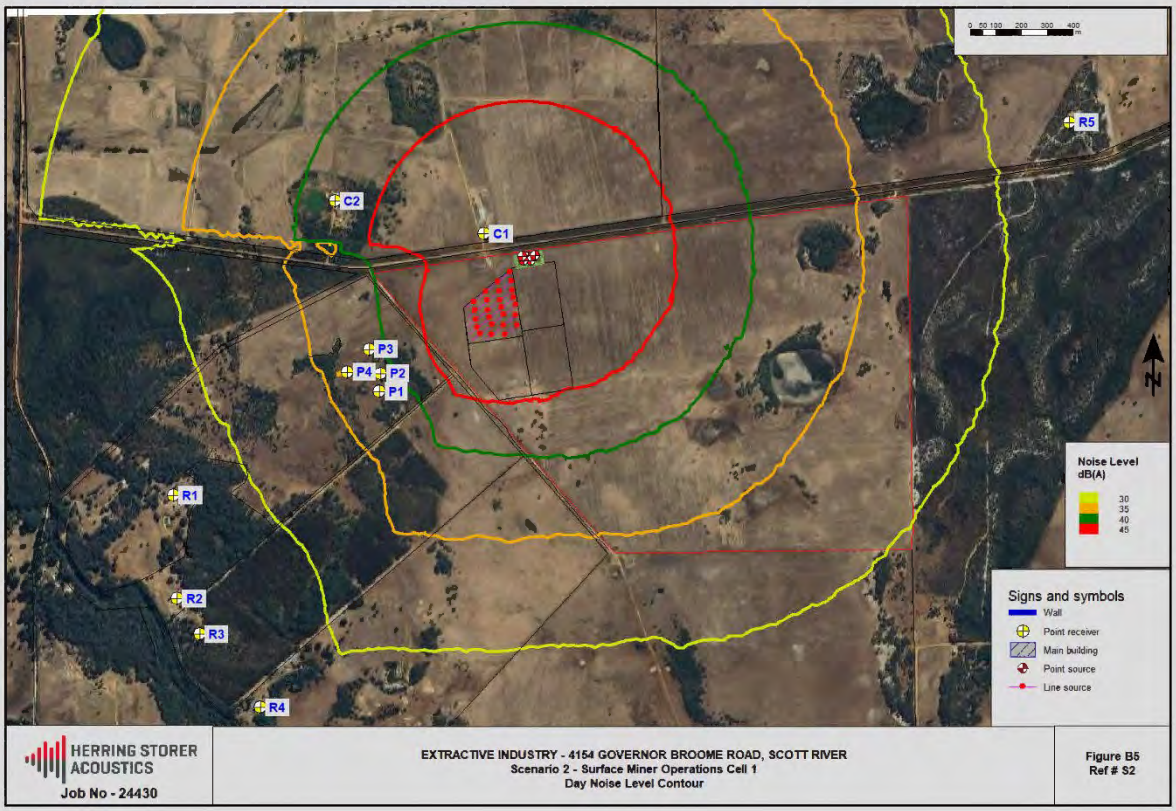
Note, above values are the received noise level without the inclusion of penalties for annoying characteristics.

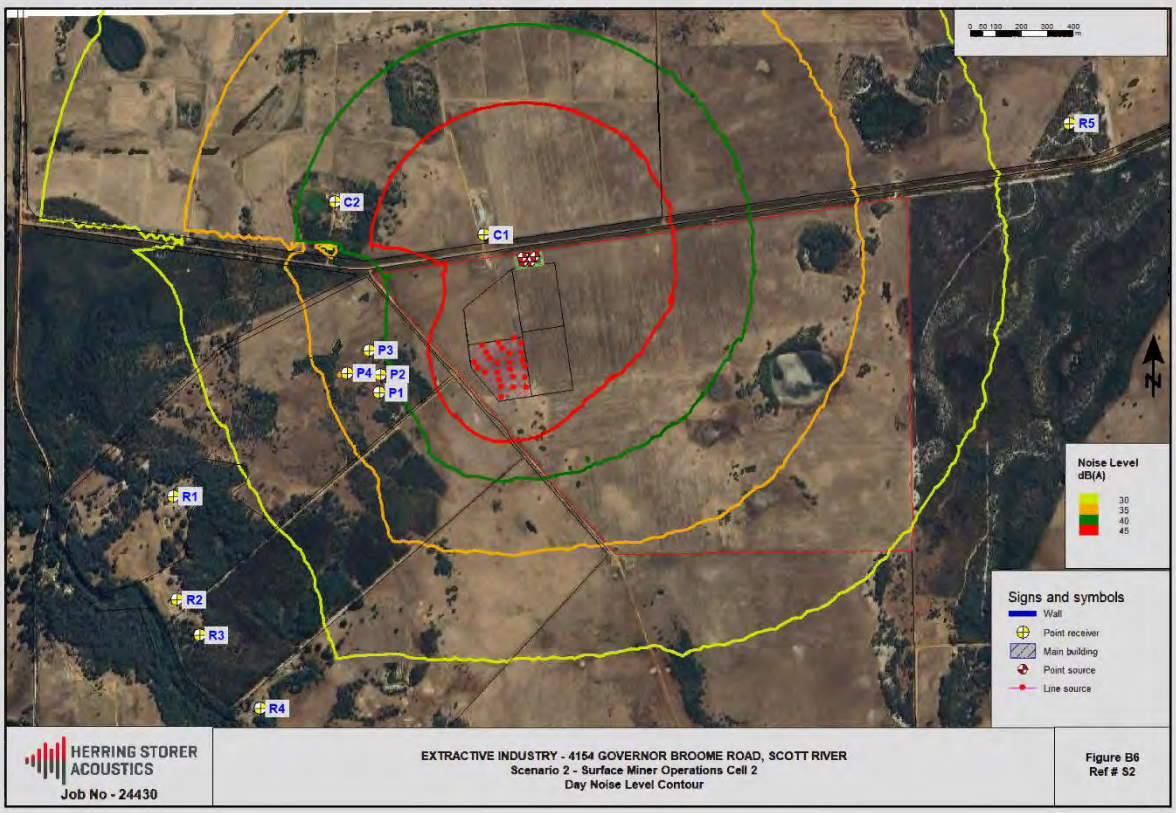

C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
R5
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 1 - Scraper Operations Cell 1
Day Noise Level Contour
Figure B1
Ref # S1

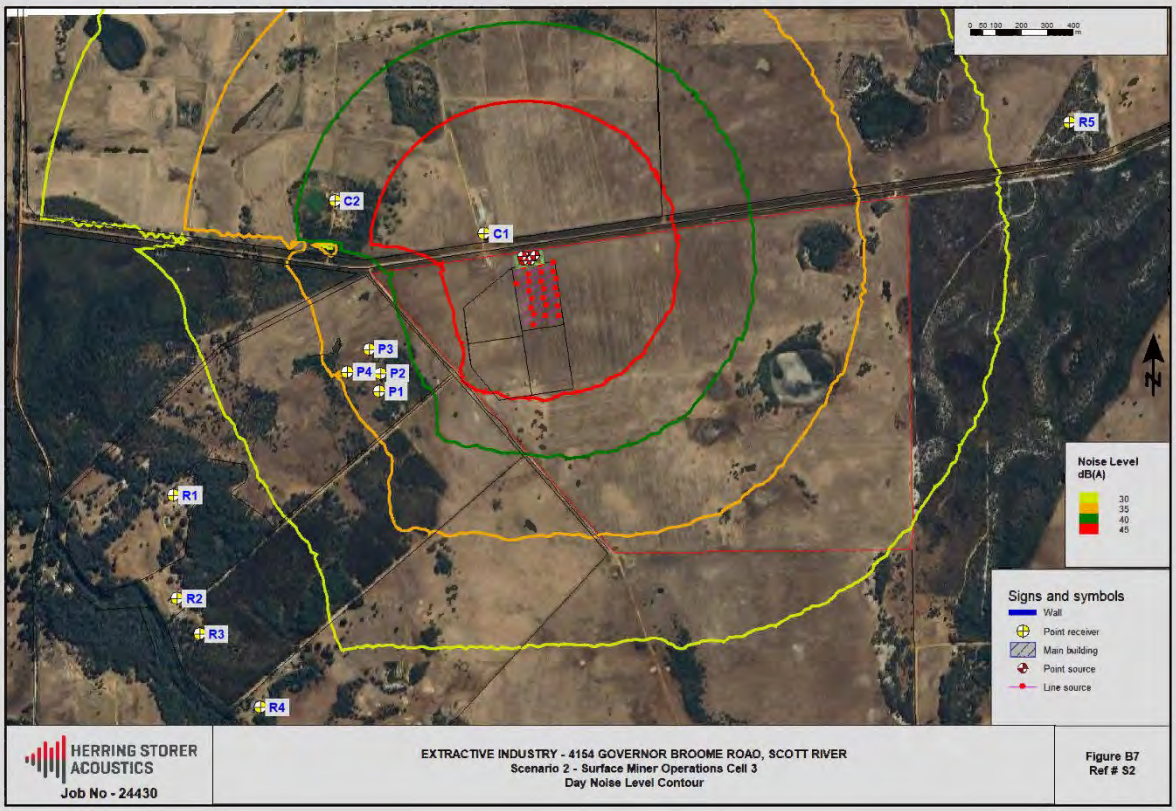

C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
R5
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 1 - Scraper Operations Cell 2
Day Noise Level Contour
Figure B2
Ref # S1

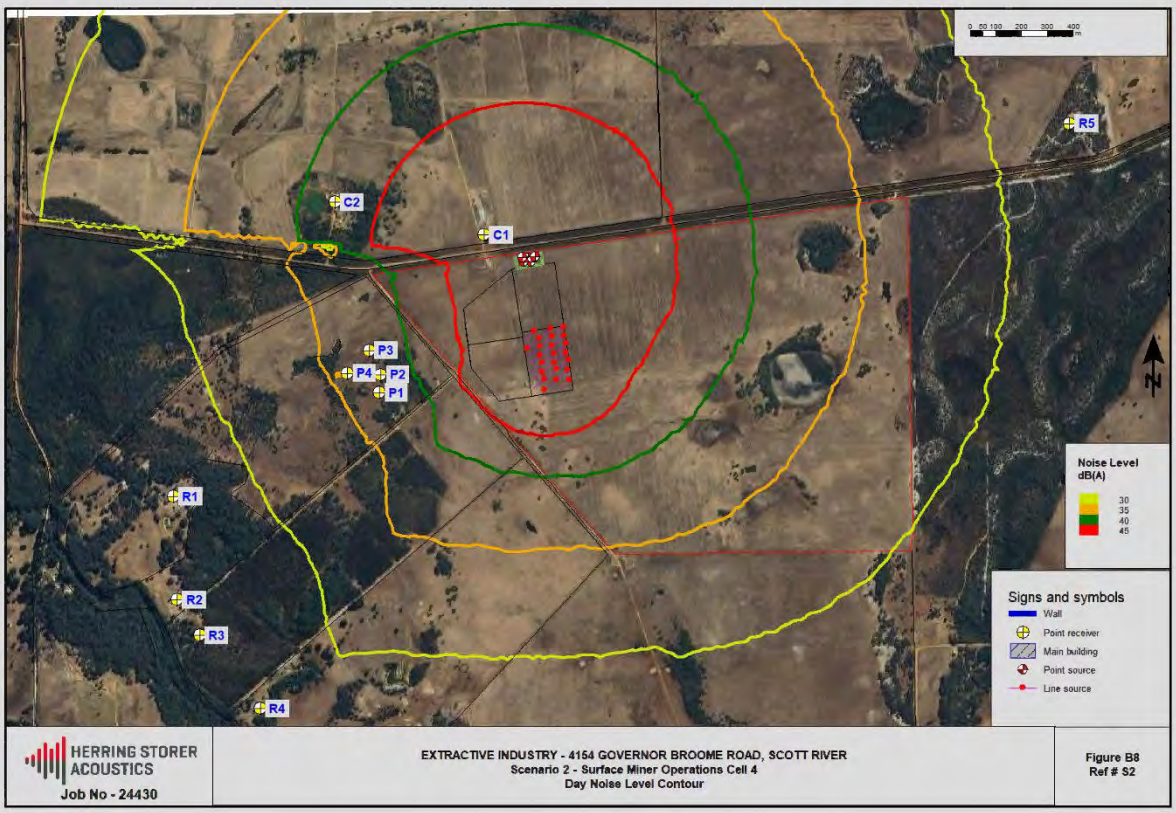

R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 1 - Scraper Operations Cell 3
Day Noise Level Contour
Figure B3
Ref # S1

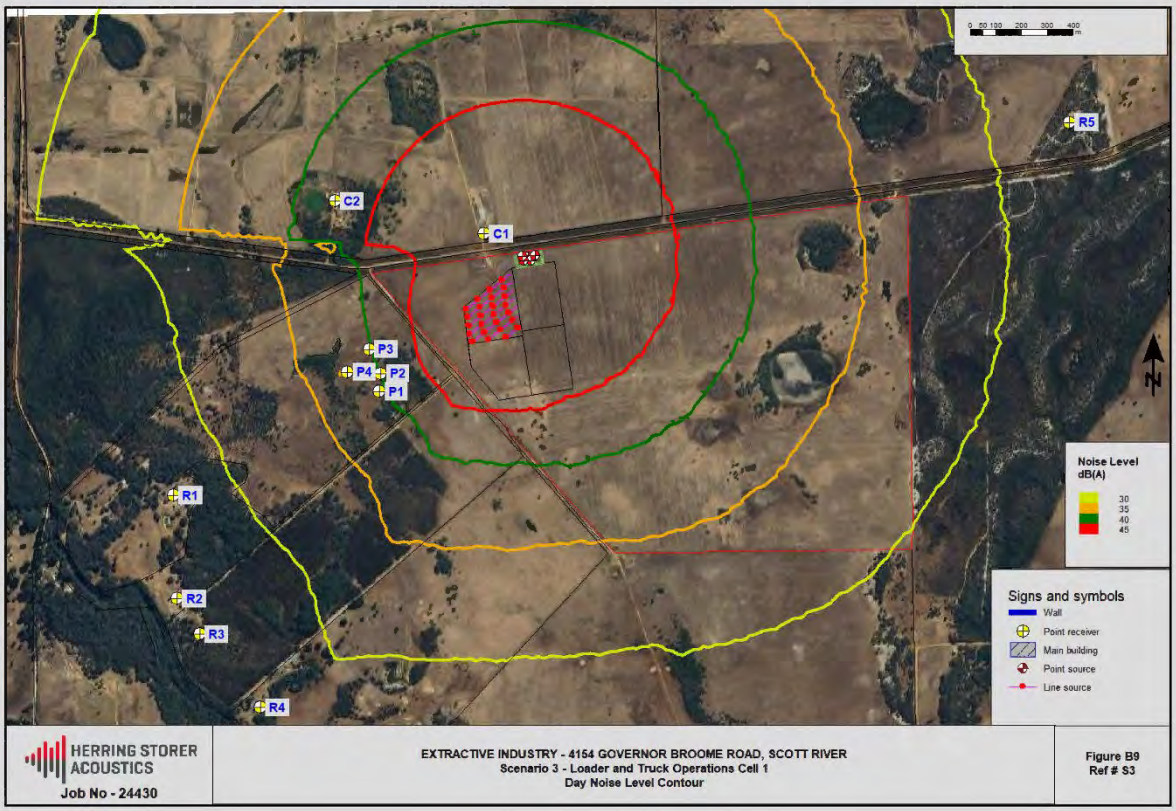

R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 1 - Scraper Operations Cell 4
Day Noise Level Contour
Figure B4
Ref # S1

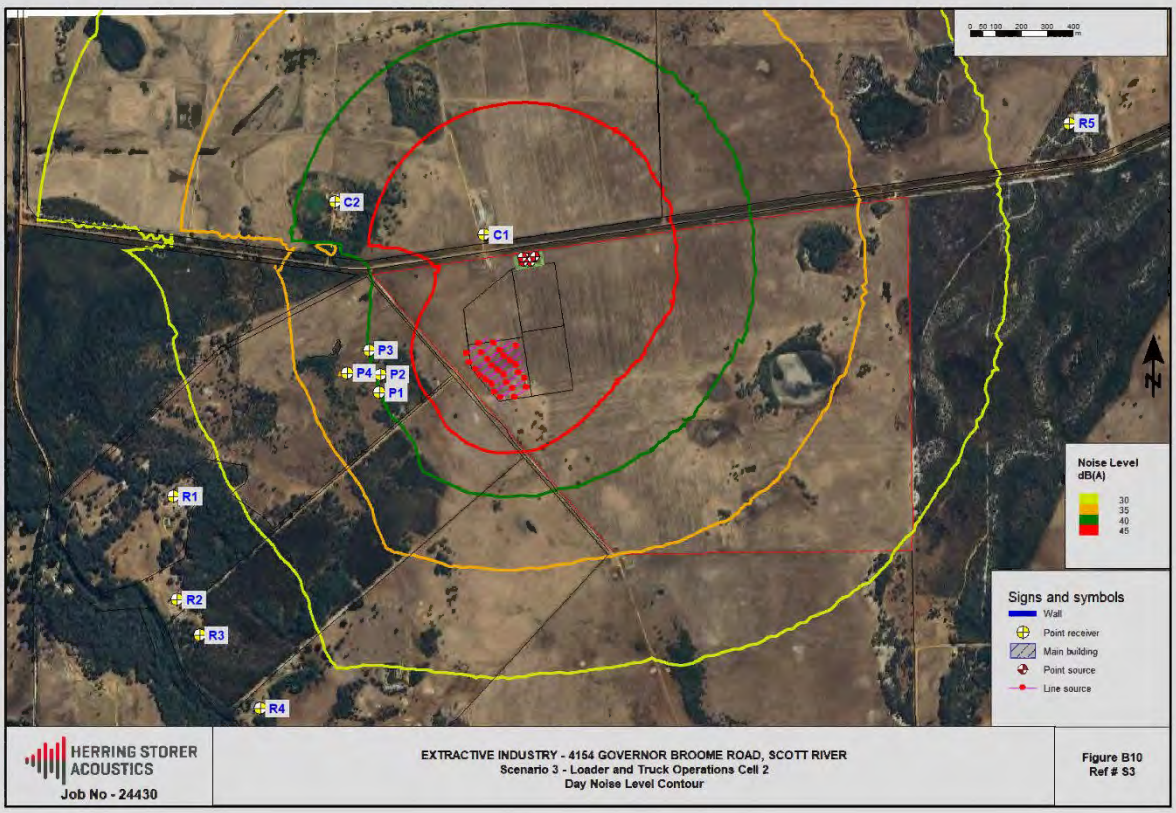

R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 2 - Surface Miner Operations Cell 1
Day Noise Level Contour
Figure B5
Ref # S2


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 2 - Surface Miner Operations Cell 2
Day Noise Level Contour
Figure B6
Ref # S2


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 2 - Surface Miner Operations Cell 3
Day Noise Level Contour
Figure B7
Ref # S2


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 2 - Surface Miner Operations Cell 4
Day Noise Level Contour
Figure B8
Ref # S2


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 3 - Loader and Truck Operations Cell 1
Day Noise Level Contour
Figure B9
Ref # S3


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 3 - Loader and Truck Operations Cell 2
Day Noise Level Contour
Figure B10
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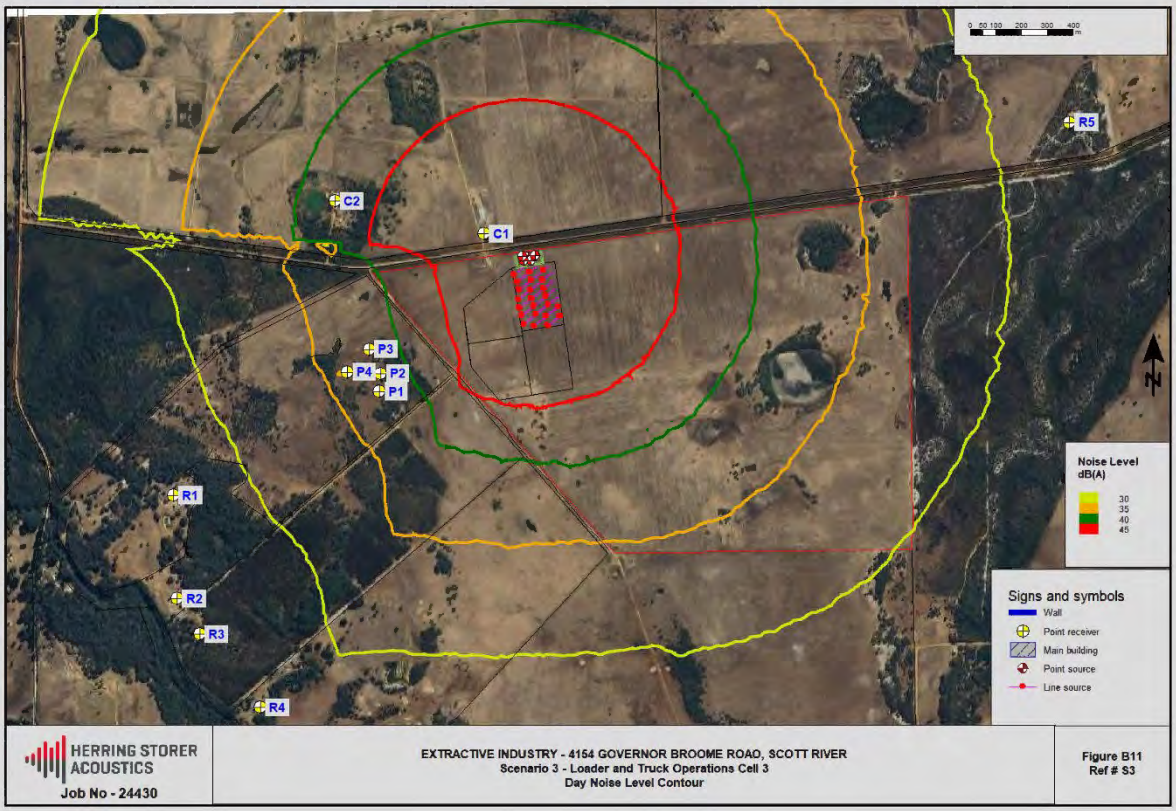
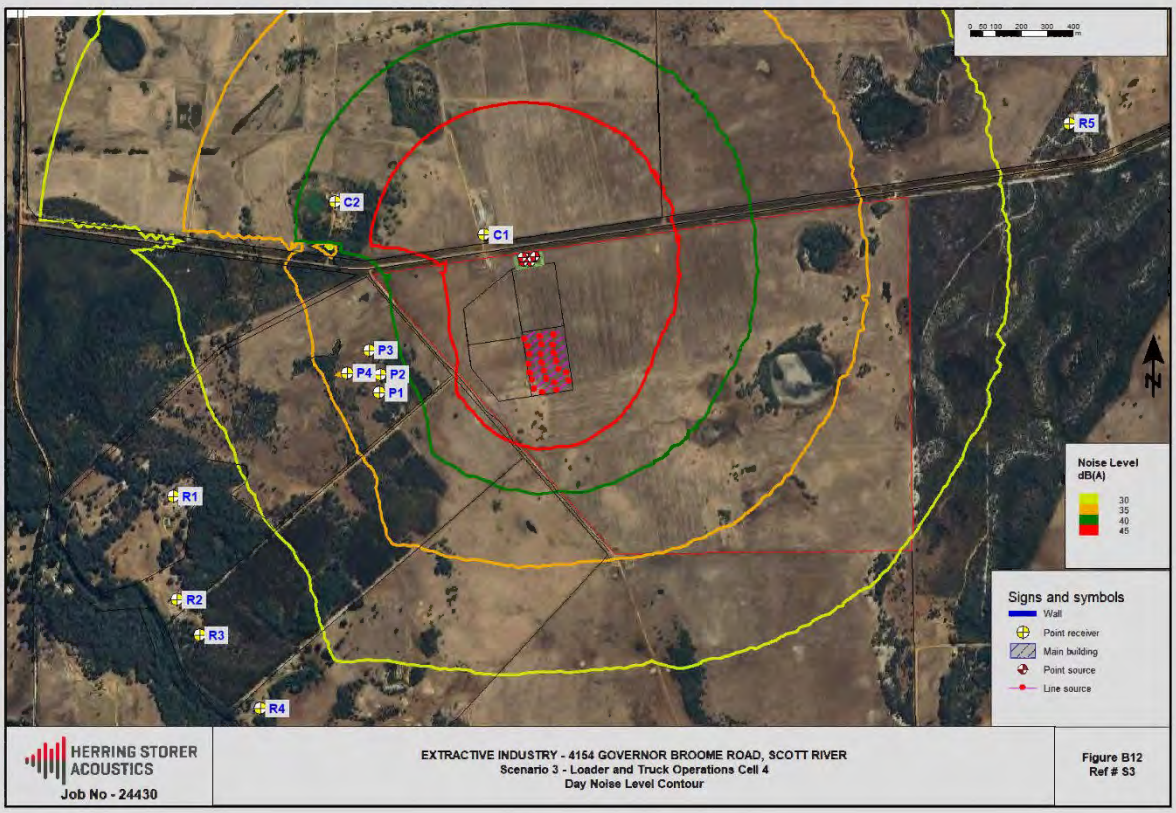
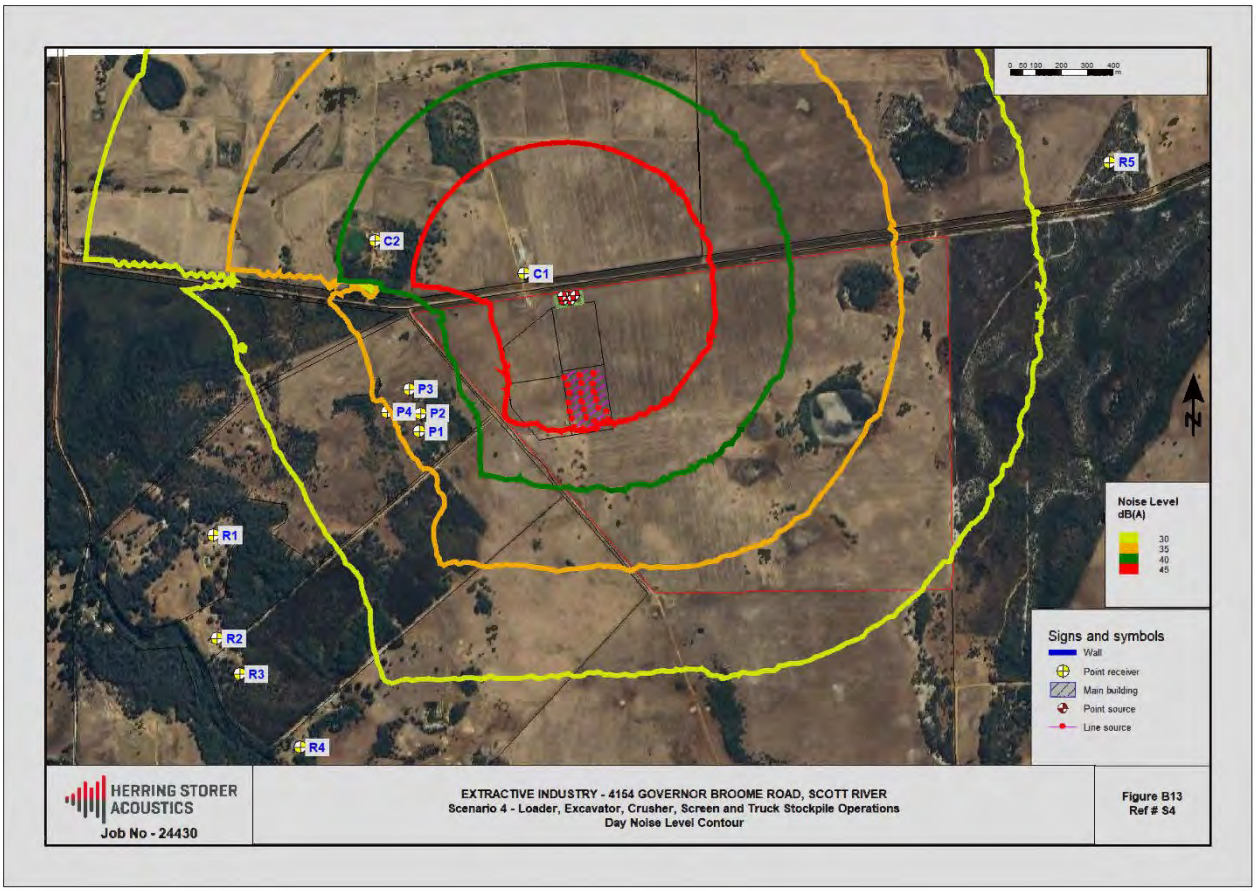

R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 3 - Loader and Truck Operations Cell 3
Day Noise Level Contour
Figure B11
Ref # S3


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 3 - Loader and Truck Operations Cell 4
Day Noise Level Contour
Figure B12
Ref # S3


R5
C2
C1
P3
P4
P2
P1
R1
R2
R3
R4
N
Noise Level dB(A)
30
35
40
45
Signs and symbols
Wall
Point receiver
Main building
Point source
Line source
HERRING STORER ACOUSTICS
Job No - 24430
EXTRACTIVE INDUSTRY - 4154 GOVERNOR BROOME ROAD, SCOTT RIVER
Scenario 4 - Loader, Excavator, Crusher, Screen and Truck Stockpile Operations
Day Noise Level Contour
Figure B13
Ref # S4

APPENDIX C

SURFACE MINER NOISE LEVELS

4.0 Results

TABLE 1. Short term sound pressure level measurements - 2500SM-Surface miner sampled (09/02/2012)

					OCCUPATIONAL EXPOSURE STANDARDS			
					Laeq 8h 85dB (A)	Laeq 10h 84dB (A)	Laeq 12h 83dB (A)	Lcpeak 140dB (lin)
					Sound Level Monitoring , 9 Feb 2012			
NOISE SOURCE	MEASUREMENT POSITION (appendix 1)	OPERATING CONDITIONS	SAMPLE TIME (Sec)	L_{Aeq} dB(A)	LAeq, 8h dB(A)	LAeq, 10h dB(A)	LAeq, 12h dB(A)	Lcpeak
Surface Miner	Background Noise	Curragh North-WA surface Mining Yard, Sunny	30	47	47	48	50	64
			30	44	44	45	46	48
			30	44	44	45	47	50
			AVE	45	45	46	48	54
Surface Miner	16m (centre of front)	Curragh North-WA surface Mining Yard, Sunny	30	67	67	68	70	76
			30	67	67	68	69	68
			30	67	67	67	69	68
			AVE	67	67	68	69	71
Surface Miner	16m (centre of RHS)	Curragh North-WA surface Mining Yard, Sunny	30	67	67	68	70	69
			30	67	67	68	69	68
			30	67	67	68	69	68
			AVE	67	67	68	70	68
Surface Miner	16m (centre of rear)	Curragh North-WA surface Mining Yard, Sunny	30	60	60	61	63	63
			30	61	61	62	63	62
			30	60	72	73	75	61
			AVE	60	60	61	63	62
Surface Miner	16m (centre of LHS)	Curragh North-WA surface Mining Yard, Sunny	30	68	68	69	71	69
			30	68	68	69	70	69
			30	68	68	69	70	68
			AVE	68	68	69	70	69
Surface Miner	Operators cabin	Engine Idle	30	69	69	70	72	72
			30	69	69	70	72	71
			30	70	70	70	72	70
			AVE	69	69	70	72	71
Surface Miner	Operators cabin	Engine Revving (approx 2000rpm)	30	77	77	77	82	77
			30	76	76	77	79	77
			30	76	76	77	79	78
			AVE	76	76	77	79	77

KEY	
	Greater than Laeq 8h 85dB (A)
	Greater than Laeq 10h 84dB (A)
	Greater than Laeq 12h 83dB (A)

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APPENDIX H – COMPLAINTS REGISTER

Complaints Register

Ref. No.	Date	Name & Address of Complainant	Time/Date of Complaint	Detail of Complaint	Summary of Actions Taken	Shire Notified	Person Responsible