



DIEBACK & WEED MANAGEMENT PLAN

**LOT 3938 & 7971 CATTERICK ROAD,
CATTERICK**

July 2026

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1 INTRODUCTION

1.1 Background

Jim Cross (the applicant) is proposing to extract gravel from an area approximately 11.7 hectare (ha) in size and extract hard rock from an area approximately 2 ha in size located within Lot 3938 (HSE 406) and Lot 7971 Catterick Road, Catterick (herein referred to as the subject site) (refer to **Figure 1**). The subject site is located within the municipality of the Shire of Bridgetown- Greenbushes approximately 5.7 km south east of Greenbushes.

The available volume of gravel/clay (*insitu* volume of approximately 350,000 m³) is to be extracted in six cells ranging from 1.9 to 2 ha in size to ensure that no more than 2 ha is disturbed at any time. Works will commence in the north east (cell 1) and then continue in a south-westerly direction (refer to **Figure 2**). The available volume of hard rock (*insitu* volume of approximately 300,000 m³) is to be extracted in one cell approximately 2 ha in size. Excavation of both gravel/clay and hard rock may occur concurrently.

The slope of the final contours of the quarry will be an undulating surface, mirroring the existing ground surface minus the excavated material at between approximately 260 m AHD and 202 m AHD for the gravel resource area and 225 m AHD to 190 m AHD for the hard rock resource area which is consistent with the adjoining land.

Where batters are required, they will be retained at 1:5 vertical to horizontal with the primary objective of ensuring a consistent landform across the property.

1.2 Purpose and Scope

This Dieback and Weed Management Plan (DWMP) has been prepared to fulfil the relevant requirements provided within the Shire of Bridgetown – Greenbush’s *Town Planning Scheme No. 4* and Shire of Bridgetown – Greenbushes’ *Land Use and Planning Policy No. 11 Extractive Industry Policy*. It has been prepared in accordance with guidelines prepared by the Department of Agriculture and Food WA (DAFWA) for weed control procedures for extractive industries and *Managing Phytophthora dieback. Guidelines for Local Government* (Dieback Working Group, 2000). This document has been prepared to support and should be read in conjunction with, the *Extractive Industry Operations Plan* prepared by Accendo Australia (2025) for extraction within the subject site.

It is intended to provide the Shire of Bridgetown - Greenbushes, the public and relevant government agencies with an understanding of the proposal and the environmental strategies and commitments proposed to control the human-vectored spread of weed species and diseases (including *Phytophthora cinnamomic*, *Phytophthora multivora* and *Neofusicoccum australe*) resulting from construction activities associated with the extraction of gravel from within the subject site and ongoing access.

The scope of this Plan is to:

- Describe the current weed and disease status of the site;
- Define responsibilities for disease and weed control; and
- Describe the management measures and monitoring programme to reduce the impact of disease and weed species during and after excavation.

2 EXISTING ENVIRONMENT

2.1 Land Use

The subject site is located within Lot 3938 (HSE 406) and Lot 7971 Catterick Road, Catterick. The subject site is located within the municipality of the Shire of Bridgetown- Greenbushes, approximately 5.7 km south east of Greenbushes (refer to **Figure 1**). The property is zoned 'Rural 2 – General agriculture' pursuant to the Shire of Bridgetown – Greenbushes' *Town Planning Scheme No. 4*. The proposed extractive industry is not permitted by the Scheme unless Planning Consent is granted by the council.

The subject site is located between land zoned Rural 2 – General Agriculture to the north, south and west. Blocks zoned as State Forest are located to the south east and north west of the Lots.

The subject site contains a recently cleared blue gum plantation along with areas of previously farmed land.

2.2 Topography and Soils

The current topography of the property can be described as sloping with the elevation ranging from approximately 280 m Australian Height Datum (AHD) in the south sloping to a gully containing the Hester Brook at approximately 190 m AHD. The topography to the north of the Hester Brook is relatively stable ranging between 190 m AHD to 200 m AHD in the north of the property. The subject site is located at elevations ranging from approximately 280 m AHD to 210 m AHD (refer to **Figure 3** and **Figure 4**).

The subject site is located within the Western Darling Range Zone landform consisting of "*moderately dissected lateritic plateau on granite with deeply incised valleys. Soils are formed in laterite, lateritic colluvium and weathered in-situ granite and gneiss*", and the Lowden Valleys System described as "*Deep gneissic valleys, in the south of the Western Darling Range containing loamy earth, loamy duplex, gravel and stony soils.*" (Tille 2006).

Within the Lowden Valleys System, the subject site is located within the following sub-systems:

- Grimwade Subsystem – Moderately deep valleys (30-70) in granite. Soils are loamy earths and loamy gravels.
- Ballingup moderate slopes phase (Balingup Subsystem) – moderate slope phase, slopes 15-35% relief 60-120 m.

2.3 Climate

The climate at the Site can be described as a mild climate with warm and dry summers and cold and wet winters. According to data from the closest weather station with the most recent available data, Bridgetown (Station number 9617, accessed at www.bom.gov.au), the annual average rainfall is approximately 724 mm, with the highest monthly rainfall of 127 mm recorded in July and the lowest, 12.9mm, recorded in February. The average monthly maximum temperatures range from 30.0°C in January to 15.8°C in July and the average monthly minimum temperatures range from 13.1°C in January to 4.8°C in July.

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 2022).

Rainfall intensity has been calculated using the Bureau of Meteorology (BoM) Intensity-Frequency-Duration (IFD) data system which yields the two hour 1 in 10 (10%) annual exceedance probability storm event for the subject site as 32.3 mm/hr.

2.4 Vegetation and Fauna

The vegetation within the subject site is in a 'completely degraded' condition (Keighery 1994) due to prolonged land degradation processes including land clearing, livestock grazing and recently a blue gum plantation.

A search for known rare and Priority flora within or in proximity to the subject site was undertaken through review of the following databases:

- DBCA's NatureMap database; and
- EPBC Act Protected Matters database.

A total of seven species of conservation significance have the potential to occur within the subject site based on the database mapping, four of which are orchids. In consideration of the previous and current land use (blue gum plantation) which has resulted in the complete absence of native vegetation, it is considered unlikely that the subject site contains flora species of conservation significance.

2.5 Hydrology

2.5.1 Groundwater

The subject site is located within the Karri Groundwater Area. The Archaen host rocks of the region are generally considered as relatively low yielding groundwater sources. Localised faults and fractures can provide increased yields and isolated aquifers but there is no evidence of large – scale water movement in fractured rocks at Greenbushes (GHD, 2018).

Groundwater resources are limited within the area due to the low permeability of the sub-surface materials and the elevation of the subject site. It is expected that groundwater may be present at depth below the weathered clays. This may be at between 15 to 20 m below ground level (BGL) at the base of the clay layer which is part of the laterite profile (De Silva *et al* 2000).

Information provided in the *Site Details Report* from the *Water Information Reporting* (WIR) website maintained by DWER for an onsite well named 'Catterick – Well 1685' indicates the presence of approximately 0-3 m topsoil and gravel, followed by very hard clay at 3-4 m with water beneath in the soft material. It is likely that this clay level is impermeable and groundwater is unlikely to be present within the gravel soils above. This well is located at an elevation of approximately 202 m AHD, which is at least 2m lower than the lowest elevation within the gravel extraction area, with the majority of the extraction area at much greater elevations. Given that the maximum depth of excavation proposed is 3 m below ground level (BGL), it is considered that adequate separation between groundwater and the maximum depth of excavation can be achieved.

Furthermore, test pitting in the gravel extraction area was undertaken in October 2024 to a depth of approximately 4 m BGL whereby no groundwater was encountered (refer to **Appendix A**). The base of all test pits was observed to be clay materials. As previously discussed, it is likely that the clay layer is the confining layer and groundwater is situated below in softer materials. Therefore, given the maximum depth of excavation is 3 m BGL, no interactions with groundwater area expected at any time of the year.

Test pitting undertaken in the proposed drill and blast area demonstrated loamy topsoils over clay and then gneiss, dolerite or saprolite (refer to **Appendix B**). The extraction area has been located to ensure

extraction is concentrated over the dolerite containing areas. The impermeable nature of this formation is likely to restrict the formation of aquifers and therefore no interaction with groundwater in this area is expected.

2.5.2 Surface Water

The subject site is located in the Hester Brook subarea of the Middle 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 Hester Brook is located within the property. A buffer of approximately 100 m will be maintained between the watercourse and the extraction area at all times.

3 EXTRACTION ACTIVITIES

The gravel and clay quarry will cover an area of approximately 11.7 ha, with a current maximum elevation ranging from 263 m AHD to 205 m AHD. It will be excavated to a maximum depth of approximately 3 m BGL commencing in the north east and moving initially in a southerly direction in stages less than 2 ha in size (refer to **Figure 2**).

The available volume of gravel (*insitu* volume of approximately 350,000 m³) is to be extracted in six cells ranging from 1.89 to 2 ha in size to ensure that no more than 2 ha is disturbed at any time. Works will commence in the north east (cell 1) and then continue in a south-westerly direction (refer to **Figure 2**). The available volume of hard rock (*insitu* volume of approximately 300,000 m³) is to be extracted in one cell approximately 2 ha in size. Excavation of both gravel and hard rock may occur concurrently.

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.

3.1 Operational Works

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

Typical operating hours for quarries will be adopted for the subject site which involves 0730 am to 1730pm each Monday to Friday and Saturdays 0730 am to 1300 pm, with no activities to occur on Sundays or public holidays. The site will be worked by 3 – 5 persons, depending on market demand.

3.1.1 Gravel/clay Extraction

The gravel and clay quarry will cover an area of approximately 11.7 ha, with a current maximum elevation ranging from 263 m AHD to 205 m AHD. It will be excavated to a maximum depth of 3.0 m BGL.

It is estimated that the total maximum volume of material to be removed from the six cells will be approximately 350,000 m³ with approximately 35,000 m³ excavated each year, depending on supply and demand.

The material within the subject site can be removed with an excavator or loader without the need for blasting. The material will then be crushed and screened to produce products of the correct size.

A summary of the proposed extraction activities is provided below:

- Prior to excavation commencing the site will be ground surveyed, the excavation footprint marked out and a 1 metre contour plan developed.
- All topsoil will be removed for spreading directly onto areas to be revegetated and screening or perimeter bunds. If direct spreading is not possible the topsoil will be stored in low dumps, for spreading at a later date.
- Soil and overburden will then be removed and either directly transferred to a rehabilitation area or stored in low dumps for later rehabilitation use.
- An excavator or front-end loader will be used to excavate the gravel material.
- A loader will then transfer the laterite rock into the crusher where it would be reduced to smaller sizes and transferred to an adjoining screener. The screener then sorts the gravel into various sizes for stockpiling. On an as needed basis, gravel product will be loaded on to road trucks of various configurations for transport off-site.

- An excavator or front-end loader will be then be used to excavate the clay material for stockpiling. On an as needed basis, clay product will be loaded on to road trucks of various configurations for transport off-site or combined with the hard rock excavated to produce required products.
- All static and other equipment, such as crushers and screens (where used), will be located on the floor of the quarry to provide visual and acoustic screening.
- Upon completion of each section of the 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 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 productive agricultural land.

3.1.2 Hard Rock Extraction

The hard rock quarry will cover an area of approximately 2 ha, with a current maximum elevation ranging from 240 m AHD to 205 m AHD. It will be excavated to a maximum depth of 15.0 m BGL.

It is estimated that the total maximum volume of material to be removed from the initial 2 ha cell will be approximately 300,000 m³ with approximately 30,000 m³ excavated each year, depending on supply and demand.

The material within the subject site will require blasting prior to removal with an excavator or loader. The material will then be crushed and screened to produce products of the correct size. Where required, the hard rock material will be mixed with clay sourced from within the onsite gravel/clay pit.

A summary of the proposed extraction activities is provided below:

- Prior to excavation commencing the site will be ground surveyed, the excavation footprint marked out and a 1 metre contour plan developed.
- All topsoil will be removed for spreading directly onto areas to be revegetated and screening or perimeter bunds. If direct spreading is not possible the topsoil will be stored in low dumps, for spreading at a later date.
- Soil and overburden will then be removed and either directly transferred to a rehabilitation area or stored in low dumps for later rehabilitation use.
- A 1m high perimeter bund will be constructed for safety and stormwater management purposes.
- Stormwater detention basins will be constructed on the north and eastern boundaries to contain water and protect onsite watercourses.
- A drill rig will be used to undertaken pattern drilling and then blasting of the face will occur.
- An excavator or front-end loader will be used to excavate the material.
- A loader will then transfer the blasted material into the crusher where it would be reduced to smaller sizes and transferred to an adjoining screener. The screener then sorts the material into various sizes for stockpiling. On an as needed basis, rock product will be loaded on to road trucks of various configurations for transport off-site.
- Depending on the product required, clay product may be combined with the hard rock excavated prior to being loaded on to road trucks of various configurations for transport off-site.
- All static and other equipment, such as crushers and screens (where used), will be located on the floor of the quarry to provide visual and acoustic screening where space permits.
- Upon completion of each section of the 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.

3.1.3 Final Contours

The slope of the final contours of the quarry will be an undulating surface, mirroring the existing ground surface minus the excavated material at between approximately 260 m AHD and 202 m AHD for the gravel resource area and 225 m AHD to 190 m AHD for the hard rock resource area which is consistent with the adjoining land.

Where batters are required, they will be retained at 1:5 vertical to horizontal with the primary objective of ensuring a consistent landform across the property.

Where benching has occurred within the hard rock extraction area, the benches will be left in place but back filled with overburden with the brow remaining as a rocky outcrop. Blasting will be used to break down the crest and some of the brows to give the appearance of a sloping landform with the rock being used for backfill. Approximately 600 mm of overburden and topsoil will be reinstated over the entire extraction area to ensure adequate soil is present for the successful rehabilitation to pasture.

4 ENVIRONMENTAL IMPACTS AND MANAGEMENT

4.1 Weed Management

4.1.1 Current Weed Status

The flora and vegetation within the subject site has been subjected to prolonged land degradation processes including land clearing and horticulture. Vegetation within the subject site has been cleared previously to accommodate the existing land use (blue gum plantation). Due to ongoing weed control as part of the horticultural activities, weed species present are limited to understorey species within the subject site.

4.1.2 Management Zones

For the purpose of this Weed Management Plan, as per the *Department of Agriculture and Food WA guidelines for weed control procedures for extractive industries licence*, the site has been separated into two management zones (refer to **Figure 5**) as follows:

- Zone A – defined as the quarry extraction area, including road ways, stockpiles and heaped soil.
- Zone B – defined as all land at natural ground level which extends 100 m beyond the perimeter of Zone A. This Zone will include the overburden pushed from the perimeter of the Zone A and stockpiled for future rehabilitation/ back fill.

4.1.3 Weed Monitoring

Monitoring of weeds within both Zones A and B will be undertaken by the applicant biannually. This will occur in April- May after the first autumn rains and again at the end of spring. All employees working on the site will be instructed to report any infestations to the Site Manager if observed.

4.1.4 Weed Control

The primary objective of a weed control program is to prevent weed species competing with pasture species for light, nutrients and moisture.

Pre-seeding weed control is only likely to be required where topsoils are used that contain weed species. Given the current land use, it is not anticipated that weed control will be other than normal agriculture practice. If required, weed control will only be conducted after overburden and topsoil have been spread and any seeds have been allowed to germinate.

Based on the location and species of weeds present, the recommended weed treatments are detailed in **Table 1**. The timing for weed control is specified within **Table 2**.

Table 1. Weed control treatment.

Treatment	Suggested Constituents	Target Species
Glyphosate spray	2% Glyphosate including Pulse®, wetting agent and Chlorsulfuron	Broadleaf species e.g. <i>Pelargonium capitatum</i> Woody weeds e.g. <i>Zantedeschia aethiopica</i>
Selective grass spray	Fusilade and approved adjuvant (e.g. Pulse®)	Grass species e.g. <i>Ehrharta longifolia</i>

The following weed and disease controls will be implemented within the subject site to assist in the control of invasive species and enhance the outcomes of the proposed rehabilitation works.

Table 2. Management actions for weed control.

Parameter	Action	Timing
Surface Material	Assess weed potential within topsoil material prior to removal and separate weed affected topsoil for treatment or disposal.	Prior to and during topsoil removal
	Store significantly weedy surface material separately to clean surface material.	Surface material removal
	Stockpile all surface materials in the general vicinity of its origin.	Surface material removal
Hygiene Measures	Avoid moving surface material or fill material from weed infected areas to non-infested areas.	At all times
	All earthmoving and ground engaging equipment will be cleaned of vegetation, mud and soil prior to entry and exit of the subject site.	At all times
	No soil and vegetation should be brought to the site apart from that to be used in rehabilitation.	At all times
Access	Control access within the quarry area to reduce the spread of weeds, especially off-road vehicle access, to prevent disturbance to vegetation and weed invasion.	At all times
	Restrict access to areas outside the subject site to reduce the spread of weeds into or out of the site.	At all times
Weed Control	Weed control is to be undertaken as per Section 4.1.4.	Refer to Section 4.1.3
Monitoring and Reporting	Monitoring and reporting work are required to ensure that the revegetation objectives are achieved.	

4.2 *Phytophthora* Dieback Management

Phytophthora dieback is an introduced soil borne plant pathogen that affects up to 50% of native plant species within Western Australia. In favourable conditions, *Phytophthora* dieback can result in the collapse of entire vegetation communities.

These pathogens are introduced to an area in a variety of ways but most commonly via transportation of infested soil on vehicles, machinery and equipment. Once introduced to an area the *Phytophthora* dieback will spread through soil via water movement and root to root contact resulting in large infestations causing significant impact to native vegetation communities. There is currently no practical method of eradication of the pathogen.

4.2.1 *Phytophthora* Dieback Status

Given that native vegetation has largely been altered within the subject site to enable the establishment of the plantation, dieback indicator species are 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 and ensuring vehicles are clean prior to entering the site.

4.2.2 Inductions

A site-specific hygiene induction will be provided to all staff and/or contractors entering the subject site. This will include an explanation of the construction works and associated schedule, and specific requirements with regard to *Phytophthora* dieback hygiene management.

4.2.3 Hygiene Control Measures

Effective clean down involves the removal of all soil and plant material from machinery, vehicles, equipment, tools and footwear so it cannot be transported. Attention needs to be given to removing soil and plant material from under vehicles and machinery. Prior to entering the subject site, clean down activities should be undertaken offsite at a suitable cleaning facility (i.e. work depot, machinery workshop or previous work site).

4.2.4 Monitoring

The site and documentation will be monitored regularly for compliance with hygiene procedures by the site manager or representative. Further training of personnel regarding *Phytophthora* dieback hygiene management will be provided if issues implementing hygiene are encountered by a suitably qualified hygiene expert.

4.2.5 Summary of 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 3**.

Table 3. Dieback management measures.

Timing	Management Measures
Topsoil removal, excavation and rehabilitation activities	Training will be provided to all personnel during an initial safety and environment induction course. This will include an explanation of the specific requirements with regard to <i>Phytophthora</i> dieback management.
	Fencing and lockable gates will be maintained and used to control unauthorised access to the excavation area.
	As far as reasonable and practicable haulage vehicles are to be cleaned of all loose external soil and plant material prior to entry and exit from the extraction area.
	Access to the subject site during operation will be restricted to the proposed roads. No other access points should be established. The access location and vehicle inspection point should be clearly sign posted.
	The extraction area will be managed to avoid ponding of surface water where vehicle access is required.
	Trucks will be loaded and covered to ensure there is no spillage of material during transport.

A risk assessment to determine the residual risk associated with dieback 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'.

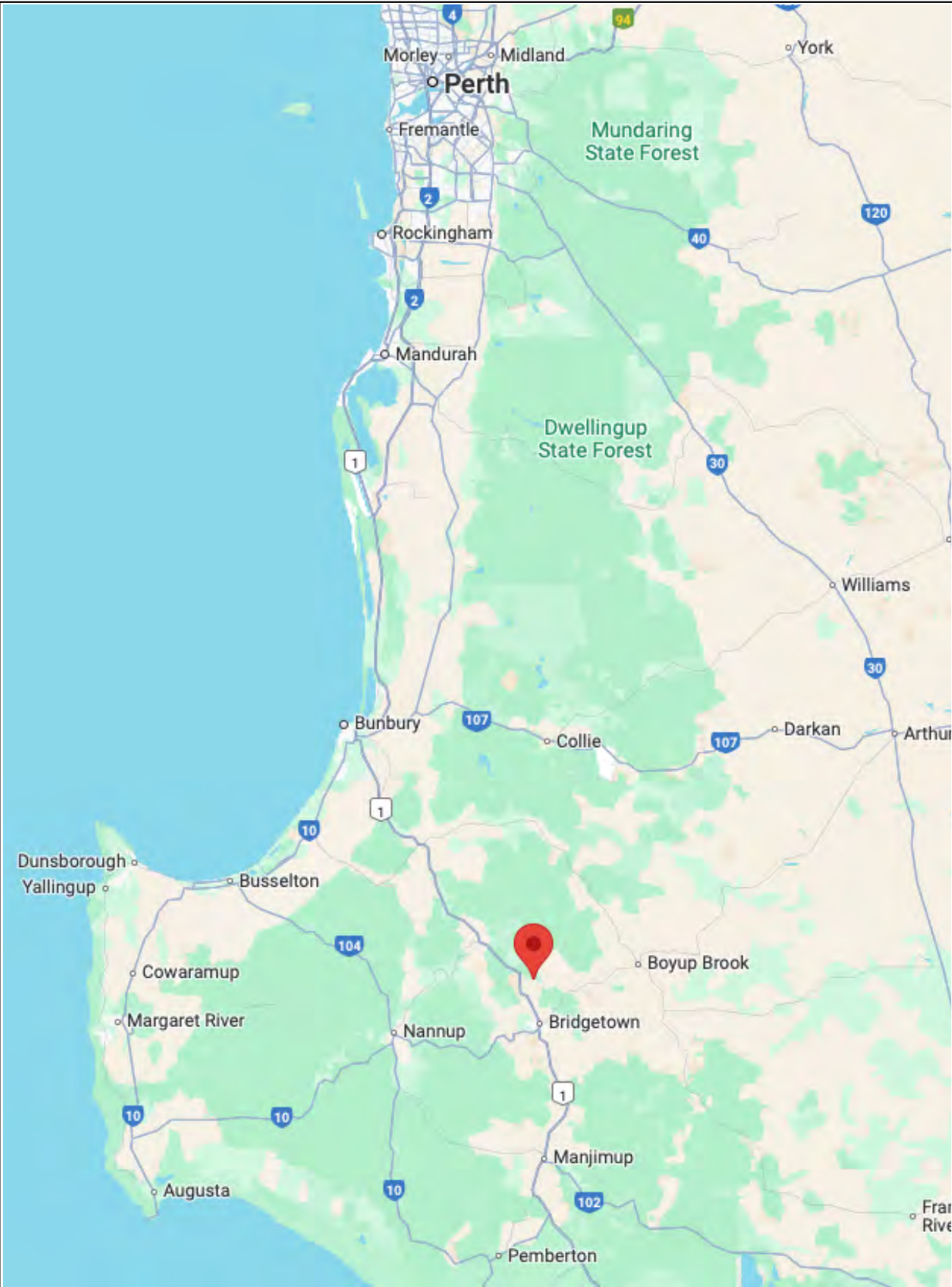
Table 4. Risk assessment associated with dieback.

Hazard	Source of Hazard	Potential Impacts	Mitigation	Likelihood	Consequence	Residual Risk
Introduction/ spread of dieback	Importation of soil/plant material. Onsite movement of soil.	Spread to offsite locations.	Refer to Management Measures provided in Table 3 .	1	2	Low

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FIGURES



PROJECT Catterick Road

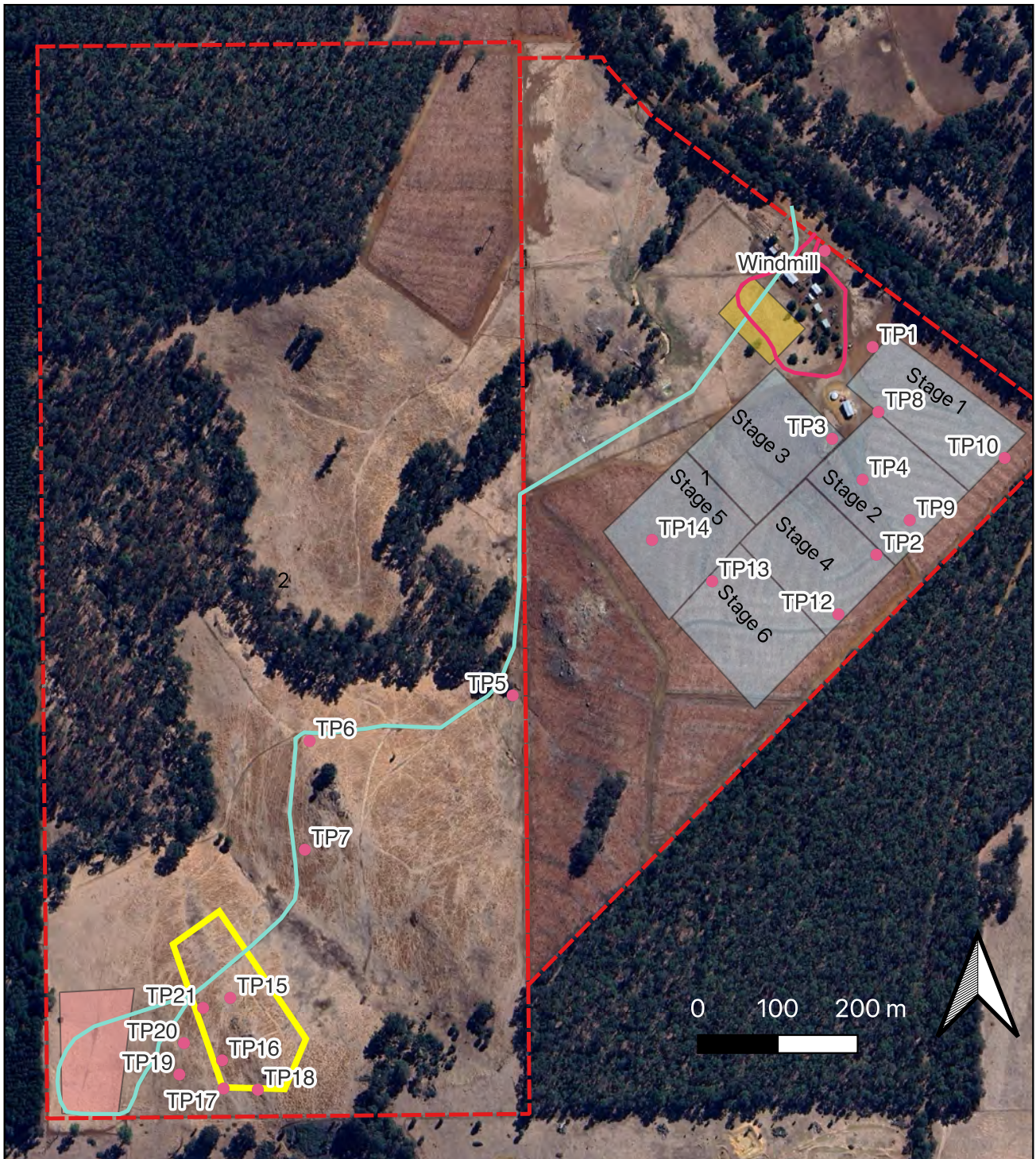
DRAWING TITLE Figure 1 – Site Locality

CLIENT Jim Cross



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Project Number	2409	Drawing Number	Figure 1	Revision	A
Designed	PN	Checked			
Drawn	PN	Approved			
Date	25/11/2024				
Local Authority	Shire of Bridgetown –				
Sheet 1 of 1	Greenbushes				



Legend

 Lot boundary	ROM, Stockpile and Laydown areas
 Gravel/clay extraction	 Gravel/clay ROM, stockpile and laydown areas
 Hard rock haulage route	 Hard Rock ROM, stockpile and laydown areas
 Gravel/clay haulage route	● Test Pits

PROJECT Caterick Road

DRAWING TITLE Figure 2 – Site Extent

CLIENT Jim Cross



Project Number	2409	Drawing Number	Figure 2	Revision	A
Designed	PN	Checked	PN		
Drawn	PN	Approved	PN		
Date	25/11/2024				
Local Authority	Shire of Bridgetown Greenbushes				
Sheet 1 of 1					



PROJECT Catterick Road

DRAWING TITLE Figure 3 – Site topography (gravel/clay)

CLIENT Jim Cross



Project Number
2409

Designed PN
Drawn PN

Date
Local Authority
Sheet 1 of 1

Drawing Number
Figure 3

Checked
Approved

25/11/2024
Shire of Bridgetown Greenbushes

Revision
A



PROJECT Catterick Road

DRAWING TITLE Figure 4 – Site topography (hard rock)

CLIENT Jim Cross



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

Project Number 2409

Designed PN
Drawn PN

Date 25/11/2024
Local Authority Shire of Bridgetown Greenbushes
Sheet 1 of 1

Drawing Number Figure 4

Checked
Approved

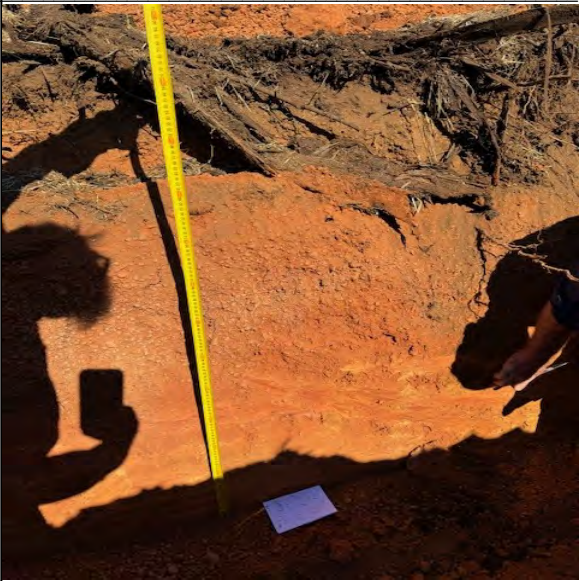
Revision A

APPENDIX A – SOIL LOG (GRAVEL AND CLAY)

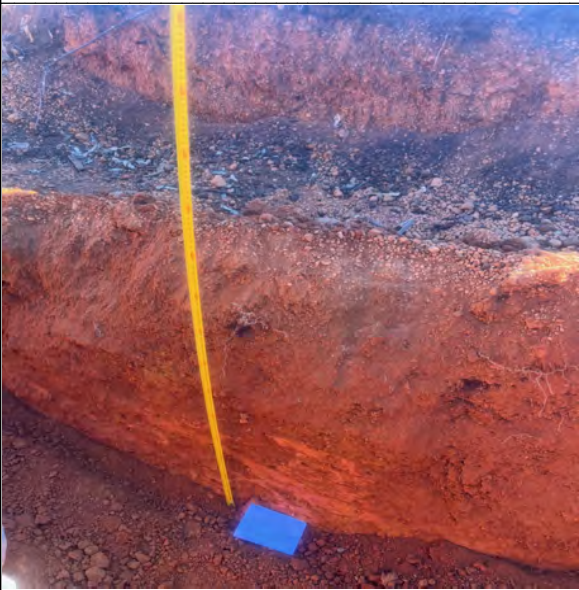
SOIL LOG

PROJECT NUMBER CAT1		BORE NAME CTP1		COORDINATES 418716.3E 6252805.9N		
PROJECT NAME CATTERICK		CONDITIONS Fine Sunny		COORD SYS MGA 94-50		
CLIENT		TOTAL DEPTH 1.5		LOGGED BY J Muir		
DATE 17/05/24		DEPTH TO WATER N/A				
METHOD Excavation						
COMMENTS						
Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture	Additional Observations
0.1				Brown Topsoil, well sorted medium grain size, Peozolite Stone composition		
0.2				Brown peozolite gravels uo to 25mm stone		
0.3						
0.4						
0.5						
0.6						
0.7						
0.8				Orrangy red coarse peosolite gravels upto 60mm		
0.9						
1						
1.1						
1.2						
1.3				Peozolitic clay		
1.4						
1.5				No groundwater encountered		
1.6						
1.7						
1.8						
1.9						
2						
2.1						
2.2						
2.3						
2.4						

SOIL LOG

PROJECT NUMBER CAT1		BORE NAME CTP2		COORDINATES 418716.3E 6252805.9N	
PROJECT NAME CATTERICK		CONDITIONS Fine Sunny		COORD SYS MGA 94-50	
CLIENT		TOTAL DEPTH 1.5		LOGGED BY J Muir	
DATE 17/05/24		DEPTH TO WATER N/A			
METHOD Excavation					
COMMENTS					
Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture Additional Observations
				Brown organic topsoil, well sorted medium grain some peozolite stone composition	NA
0.2				Loose res/brown peozolite gravels uo to 25mm stone	
0.3					
0.4					
0.5					
0.6					
0.7					
0.8					
0.9				Orrangy red coarse sparingly peosolite gravels upto 60mm	
1					
1.1					
1.2					
1.3					
1.4				Peozolitic clay No groundwater encountered	
1.5					
1.6					
1.7					
1.8					
1.9					
2					
2.1					
2.2					
2.3					
2.4					

SOIL LOG

PROJECT NUMBER CAT1		BORE NAME CTP3		COORDINATES 418665.7E 6252691.0N	
PROJECT NAME CATTERICK		CONDITIONS Fine Sunny		COORD SYS MGA 94-50	
CLIENT		TOTAL DEPTH 1.5		LOGGED BY J Muir	
DATE 17/05/24		DEPTH TO WATER N/A			
		METHOD Excavation			
COMMENTS					
Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture Additional Observations
				Brown organic topsoil, well sorted medium grain some peozolite stone compsiton	NA
0.2				Loose res/brown peozolite gravels uo to 25mm stone	
0.3					
0.4					
0.5					
0.6					
0.7					
0.8				Orrangy red coarse sparingly peosolite gravels upto 60mm	
0.9					
1					
1.1					
1.2					
1.3				Peozolitic clay	
1.4				No groundwater encountered	
1.5					
1.6					
1.7					
1.8					
1.9					
2					
2.1					
2.2					
2.3					
2.4					

SOIL LOG

PROJECT NUMBER CAT1		BORE NAME CTP4		COORDINATES 418703.7E 6252639.8N	
PROJECT NAME CATTERICK		CONDITIONS Fine Sunny		COORD SYS MGA 94-50	
CLIENT		TOTAL DEPTH 1.5		LOGGED BY J Muir	
DATE 17/05/24		DEPTH TO WATER N/A			
		METHOD Excavation			
COMMENTS					
Depth (m)	Samples	Analysed	Graphic Log	Material Description	Moisture Additional Observations
				Brown organic topsoil, well sorted medium grain some peozolite stone compstion	NA
0.2				Loose res/brown peozolite gravels uo to 25mm stone	
0.3					
0.4					
0.5					
0.6					
0.7					
0.8				Orrangy red coarse sparingly peosolite gravels upto 60mm	
0.9					
1					
1.1					
1.2					
1.3				Peozolitic clay	
1.4				No groundwater encountered	
1.5					
1.6					
1.7					
1.8					
1.9					
2					
2.1					
2.2					
2.3					
2.4					

CTP8

0-0.1m	topsoil with gravel and organics
0.1-1.3m	gravel
1.3-1.6m	gravelly clay
1.6-4.2m	red orange clay.

CTP9

0-0.1m	topsoil with gravel and organics
0.1-1.5m	gravel
1.5-1.9m	gravelly clay
1.9-4.1m	red orange clay.

CTP10

0-0.2m	topsoil with gravel and organics
0.2-1.6m	gravel
1.6-1.9m	gravelly clay
1.9-4m	red orange clay.

CTP12

0-0.2m	topsoil with gravel and organics
0.2-1.6m	gravel
1.6-1.9m	gravelly clay
1.9-4m	red orange clay.

CTP13

0-0.2m	topsoil with gravel and organics
0.2-1.6m	gravel
1.6-1.9m	gravelly clay

1.9-4m red orange clay.

CTP14

0-0.3m loamy topsoil with gravel and organics

0.3-2.2m red orange clay 1.6-1.9m

2.2-3.2m white clay rich saprolite (weathered Gneiss)

APPENDIX B – SOIL LOG (HARD ROCK)

Sample ID: CTP5

Co-ordinates

418266 mE

6252370 mN



Sample ID: CTP6

Co-ordinates

418012 mE

6252313 mN



Sample ID: CTP7

Co-ordinates

418006 mE

6252177 mN



CTP15

0.0-0.05	loamy top soil
0.05-0.4m	chocolate loam clay with blocky rubblely dolerite
0.4-0.9m	blocky saprock dolerite
0.9m	EOH – fresh dolerite - refusal



CTP16

0.0-0.05m	loam topsoil
0.05-0.3m	chocolate loam with Dolerite fragments
0.3-1.2m	orange brown clay
1.2-3.8m	tan green clay (Dolerite upper saprolite)
3.8-4.2m	green tan deeply weathered Dolerite



CTP17

0.0-0.05m	loam topsoil
0.05-0.4m	chocolate loam with Dolerite fragments
0.3-1.8m	red orange clay
1.8-2.6m	hard digging lower saprolite, sericite rich Gneiss
2.6m	EOH- couldn't dig deeper- refusal



CTP18

0.0-0.15m	loamy chocolate topsoil
0.15-0.5m	chocolate loam with Dolerite fragments
0.5-1.9m	green tan clay
1.9-2.4m	blocky weathered saprock dolerite
2.4m	EOH- fresh Dolerite.



CTP19

0.0-0.2m	loamy top soil
0.2-0.7m	red orange loamy clay
0.7-3.8m	tan orange clay
3.8-5.0m	gneiss lower saprolite, sericite (mica) rich.
5.0m EOH	



CTP20

0.0-0.4m loamy chocolate topsoil with blocks of fresh Dolerite

0.4-1.6m chocolate clay

1.6-1.9m tan clay - deeply weathered gneiss

1.9-2.8m lower saprolite gneiss



CTP21

0.0-0.4m	chocolate loam topsoil with minor dolerite fragments
0.4-0.8m	dark chocolate clay
0.8-1.9m	greeny tan clay
1.9-2.3m	Dolerite sap rock
2.3m	EOH refusal



APPENDIX F – WATER MANAGEMENT PLAN