

**Proposed Afforestation – 41.9 ha *Eucalyptus globulus* (Blue Gum)
Plantation – Lot 12 (RSN 876) Glentulloch Road, Sunnyside**

(Aerial Photograph – December 2017)

Scott Donaldson

From: BTNSHIRE
Sent: Thursday, 3 October 2019 8:20 AM
To: Scott Donaldson
Subject: FW: I-EML201954014 - RE: Proposed Afforestation - 41.9 HA Eucalyptus Globulus (Blue Gum) Plantation - Lot 12 (RSN 876) Glentulloch Road, Sunnyside

SynergySoft: I-EML201954014

Eileen Kneale

Records Officer
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From: Sue Barnett [<mailto:ls.barnett@bigpond.com>]
Sent: Wednesday, 2 October 2019 9:22 PM
To: BTNSHIRE
Subject: I-EML201954014 - RE: Proposed Afforestation - 41.9 HA Eucalyptus Globulus (Blue Gum) Plantation - Lot 12 (RSN 876) Glentulloch Road, Sunnyside

Chief Executive Officer

Shire of Bridgetown- Greenbushes

Ref: A32708/O-PA201929275/P73/2019

Dear Sir/Madam,

Thank you for providing documentation of the proposed afforestation of Lot 12 (RSN 878) Glentulloch Road.

The response to the application by the partners of Hazeloak Farm is to advise that we are against the application.

The main agricultural enterprise on Hazeloak Farm is the production of truffles. In order to produce truffles irrigation is required during the summer months and the source of the water on Hazeloak Farm for the irrigation is the dams on the property that fill with run off from rainfall. These dams had been previously fed by a spring with the source beginning on the property of the proposed afforestation.

The property has only just been cleared of Blue Gums that have been previously planted. Over the time that the Blue Gums had grown and developed there has been significant impact on the spring source, this no longer flows and the run off into our property whilst the blue Gums had been on the property has been negligible.

We had hoped that this would be rectified by the recent removal of the Blue Gum plantation and the return to pasture with the spring beginning to flow. The area and creekline that is the source of the spring on the property has had all native vegetation removed which also impacts on the function of the spring.

We note in the application that the applicants have said that the spring area has been dry in all inspections but in our experience the area has only been dry since the existence of the prior timber plantation. Prior to that time the area was fed by a permanent spring which only ceased to function after the previous Blue Gums were planted.

We also note on the application that the stated average rainfall is 823mm/annum. Records collected on Hazeloak Farm for 2019 and the previous 5 years are as follows.

2014	649.3mm
2015	488.5mm
2016	999.4mm
2017	569.5mm
2018	580.85mm
2019	483.8mm as at 19/9/2019

Whilst it is our preference that the proposal not be approved, in the event that it is we would ask that a substantial buffer be required around the spring area on the southern part of the property in order to help with the restoration of the original spring.

Kind Regards,

Sue Barnett (Partner)

On behalf of the Partners of Hazeloak Farm.



14th October 2019

Scott Donaldson
Shire of Bridgetown – Greenbushes
BRIDGETOWN WA

By email: sdonaldson@bridgetown.wa.gov.au

Dear Scott,

Notes to assist assessing proposal to create stream buffer on intermittent stream running from Lot 12 on Diagram 76285 into Lot 13 on Diagram D076285 (980 Glentulloch Rd) as part of the plantation development application

1. Thank you for the verbal advice that an objection had been received against the proposed plantation development on Lot 12 on Diagram 76285, Glentulloch Road, Sunnyside;
2. We accept that a plantation development will negligibly affect a 'spring' coming from the intermittent stream that arises on Lot 12 and passes through Lot 13 but that the flows will not be 'sensibly diminished';
3. We reject the assertion that creating a buffer around the stream will protect current stream flows;
4. We assert that trees in the buffer zone will positively influence water quality for downstream users;
5. The following sections deal with these items in detail:

Stream flow to neighbour not 'sensibly diminished'

6. [The Environmental Defenders Office of WA fact sheet #21 \(Rivers, Watercourses & Groundwater\)](#) says:
'... riparian owners outside a proclaimed area may take water for any other purpose provided the amount or flow of water in the watercourse is not "sensibly diminished".'
7. The current and proposed purpose is growing a tree plantation, which has not sensibly diminished the stream flows over the past several decades, as seen in the following section;

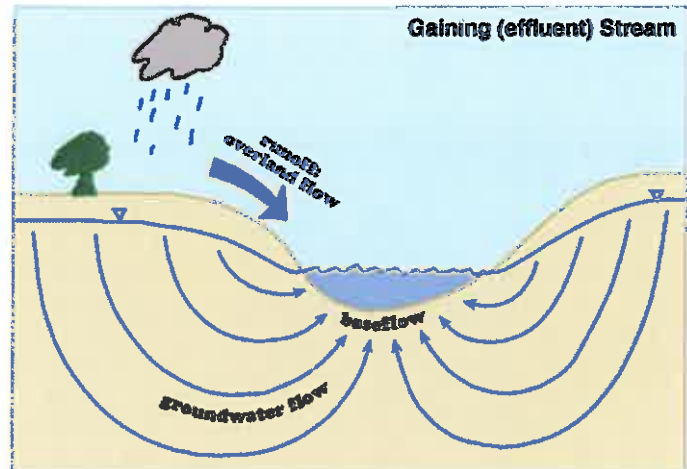
Stream flows will mirror the past ~ 27 years land use

8. A plantation was established on the site around 1992;
9. The first rotation was harvested around 2007;
10. The plantation was re-established in 2008;
11. The land has had continuous plantation land use for around 27 years;
12. Aerial photography (see Appendix 1) indicates that the three dams on Lot 13 appear to have had constant, full mid-summer/early-autumn water supply for the duration of the adjacent plantation land use;

13. As the continuous tree crop has not sensibly diminished stream flow to Lot 13 for the past two rotations we do not expect a new plantation will sensibly diminish stream flow to Lot 13 for the next two rotations;

A buffer to the stream will not reduce stream flows

14. Most water discharges to a stream from groundwater, rather than overland flow;
15. Water falls on recharge areas on the upper slopes and percolates into the ground until it reaches the water table;
16. The water table rises during winter and meets the open air at low points in the landscape (in streams and springs);
17. Deep-rooted perennials in the recharge zone (in this instance, the bulk of the plantation and the native forest behind) that influence stream flows in the intermittent creek;
18. This stream has had a plantation and native forest in the recharge zone for at least the last 27 years and should be considered to be in a 'steady state';
19. The trees immediately alongside the stream have very little effect on stream flows;
20. Creating a treeless buffer zone either side of the stream will therefore not influence stream flows, either positively or negatively;



Trees alongside the creek will improve water quality

21. Trees alongside the stream will assist in slowing any overland flow, thereby mitigating stream bank erosion and turbidity in the stream;
22. In other words, trees alongside the stream will have a positive effect on water quality downstream.

Please call if you have any further questions.

Regards,

Andy Wright
Managing Director

1 Aerial photography (2000 – 2017)

Aerial photo Manjimup (2129) – 23rd April 2000



Aerial photo Manjimup (2129) – 13th December 2004



Aerial photo Manjimup (2129) – 4th January 2009



Aerial photo Manjimup (2129) – 18th January 2014



Aerial photo Manjimup (2129) – 31st December 2017



Scott Donaldson

From: Robert Chittick <robert.chittick@raywhite.com>
Sent: Monday, 14 October 2019 12:45 PM
To: Scott Donaldson; BTNSHIRE
Cc: 'Tom Cottee'
Subject: IPC19120 - Lot 12 Glentulloch Road Sunnyside

SynergySoft: IPC19120

Hi Scott,

The owners of Lot 12 Glentulloch Road Sunnyside asked me to send you the below letter in regard to the meeting on the 31/10/19, They are currently overseas and unable to forward any correspondence.

Regards Rob Chittick Ray White Rural WA 0429 920267

Dear Sir,

We are the owners on Lot 12, Glentulloch Rd, Sunnyside, and have listed this property for sale.

An offer of purchase of this property has been made on condition that the property continues to be zoned for use as a tree plantation. The purchaser intends to coppice the trees and regrow the plantation following the recent harvest (June 2019).

We understand that a neighbour has opposed this land use, or at least part of the property for this land use, on the grounds that the water run off onto her property would be reduced by the plantation extending to the fire break on the boundary.

Owing to the firebreak, there is already a significant buffer from the boundary. To increase this buffer would considerably impact the economic value of the tree farm and the potential purchaser will not proceed with the purchase.

We wish to make the following points:

1. The land has been used continuously for forestry for 26 years (since 1993).
2. The neighbour purchased the current property after the plantation was well established and thus with the knowledge that a tree farm was adjacent.
3. Prior to listing the property with an estate agent, the neighbour was given the first option of purchasing the property (Lot 12).
4. Water run-off will not be altered from the status quo with continuation of the land use for forestry.
5. The chief source of water in the gully is a spring filled creek that rises on the property (Lot 12). There is a buffer of approximately 10m along the creek bed and 0.5ha of native forest and scrub immediately upstream of the neighbour's property.
6. The planting of trees and use of the land as a tree farm for the past 26 years has reduced salinity in this gully.
7. To deny the established land use for forestry, on the grounds of unproven reduced water run-off, would set a precedent in the shire which may greatly reduce this legitimate land use in the whole district.

We urge council to approve the application of the purchaser for continuation of the current land use (tree plantation) without the condition of an increased buffer zone.

Yours sincerely,

Tom Cottee. Jennifer Lynne Dale (on behalf of the estate of the late Graham Lindsay Dale).



Document:	Glentulloch Management Plan
Date:	Version 2 – 5 th September 2019
Author:	Andy Wright
Client:	Ents Forestry Pty Ltd
Contact:	0429 920 288

1 Land Evaluation

Summary

Title description:	Lot 12 on Deposit 076285
Shire:	Shire of Bridgetown
Road:	Glentulloch Road
Locality:	BRIDGETOWN-GREENBUSHES
Distance to Port:	112 km
Rainfall	823 mm/annum
NSA	Blue gum P2007 39.4 ha (coppice plantings covered by this plan) Blue gum P2020 2.5 ha (Ents Forestry proposal, covered by this plan)
Estimated MAI	20 m ³ /ha/yr

1.1 Introduction

Ents carried out a site evaluation in July 2019. The site evaluation was designed to assess the suitability of the land for a *Eucalyptus globulus* (blue gum) plantation. The evaluation included relevant available information (such as the distance to an appropriate port; climate records; land use history) as well as a field survey of the landscapes and soils. The field survey aimed to map the boundaries of areas estimated to have different capabilities in terms of the production of both species and to identify and investigate potential hazards to tree growth. Issues associated with managing remnant vegetation and any special cultural features were also considered. The collective information was used to prepare a map of the proposed planting area and to estimate timber yields.

Glentulloch is situated in the Bridgetown - Greenbushes rural area at the eastern end of Glentulloch Rd. The existing plantation was established by Casuarina Forest Services in 1993 and re-established with seedlings 2007. This plan addresses regrowth coppice and new plantings on a ridge of the subject land. The purpose of the plantings is to grow pulpwood for international markets.

It is a moderate haul to Bunbury, largely on bitumen roads built for heavy haulage.

1.2 Hazards to tree growth

The site evaluation included assessments of the potential hazards to tree growth. They include:

- frost, hail, flood, fire;
- nutrient deficiencies;
- weed competition;
- pests and diseases; and,
- wind and water erosion

These hazards are discussed below in relation to the plantation.

1.2.1 Frost, hail, flood and fire

Frost and hail risks are moderate for this gently undulating site.

Flooding is not expected to be an issue except for several small areas in the southern parts of the plantation. These have been excluded from PPA and woodlot maps but may be mounded and planted for ease of operations.

There is a risk of fire but the risk can be insured at reasonable cost.

The plantation will be included under the regional fire management strategy and a preliminary fire management plan is in place until a detailed plan is finalised prior to the first fire season. The Fire management plan consists of a map detailing critical information for fire fighters in the event of a fire: the net stocked area, access points, reliable water points, tracks and trafficability, hazards to fire-fighters, native vegetation and surrounding land use. The plan will be reviewed annually and updated at least every three years.

1.2.2 Weeds

The weeds and grasses identified during the survey are the pasture species present, kikuyu, plus a range of other agricultural broadleaf weeds such as sorrel.

Weeds can be effectively controlled with herbicides at the appropriate time before planting and with suitable herbicides post planting. Perennial and broadleaf weeds will be sprayed prior to planting, when they are growing vigorously and more effective control will be achieved.

1.2.3 Pests & disease

Under some conditions, pests can have a deleterious impact on plantations. The land capability survey identified no unusual pest risk; a monitoring program should identify potential problems. Control measures may be implemented if pest populations breach critical thresholds. The following pests have potential to influence tree growth and survival on this site:

Rabbits –are problems in two dimensions: they are attracted to freshly dug soil and dig out just planted seedlings; and they sharpen their teeth on young stems. Rabbits can be controlled by laying poison baits, fumigating burrows or by shooting. Seedlings can be protected with tree guards where control measures are inappropriate.

Spring beetles – kill seedlings in the year following planting when they emerge from soil-laid eggs during the warm spring months. Spring beetles can be controlled with systemic insecticides and contact insecticides sprayed from ground-based rigs or aircraft. The preference is to use targeted systemic insecticides.

Eucalyptus Weevils – attack adult blue gum foliage approximately age 3 years until harvest. Weevils can be controlled through injection of a systemic insecticide into the soil surrounding the tree roots. The insecticide only affects insects that browse on the treated trees.

1.2.4 Water and wind erosion

There is moderate risk of water erosion at the plantation due to the small sections of steeper topography, particularly in the northwest (the current pine planting). This area will not be cultivated when replanted with blue gums in the future.

Wind erosion is not likely to be a problem due to the nature of the gravely lateritic soils unless exceedingly high winds occur while bare dry soil is exposed. This risk is low due to the presence of harvest slash on the cutover area.

1.3 Wetlands

There are no significant wetlands located on the property. An intermittent creek flows SW-NE on the neighbouring property and finishes just inside the eastern boundary but has been dry during every inspection.

1.4 Cultural and European Heritage

No Indigenous cultural heritage sites were identified during the desktop study using the internet-based Aboriginal Heritage Inquiry System. No European cultural heritage site were identified.

1.5 Endangered/Threatened Species

Protected Matters, Nature Map searches, external surveys and site visit has confirmed there is no evidence of endangered/threatened species on the site.

No active management will occur in remnant vegetation apart from noxious weed control. All operations on the plantation area will be carried out per Ents Forestry procedures. The remnant veg has been heavily grazed in the past and is in poor condition.

1.6 Monitoring

Operational monitoring is carried out pre-, during and post-operation. The frequency of operational checks will be determined by the timing of operations. Formal plantation inspections will be carried out on the schedule detailed in Section 4.5.

1.7 Mineral surveys

There is no known mineralisation on the property (based on Geological Survey maps). There are existing gravel pits for on-farm use.

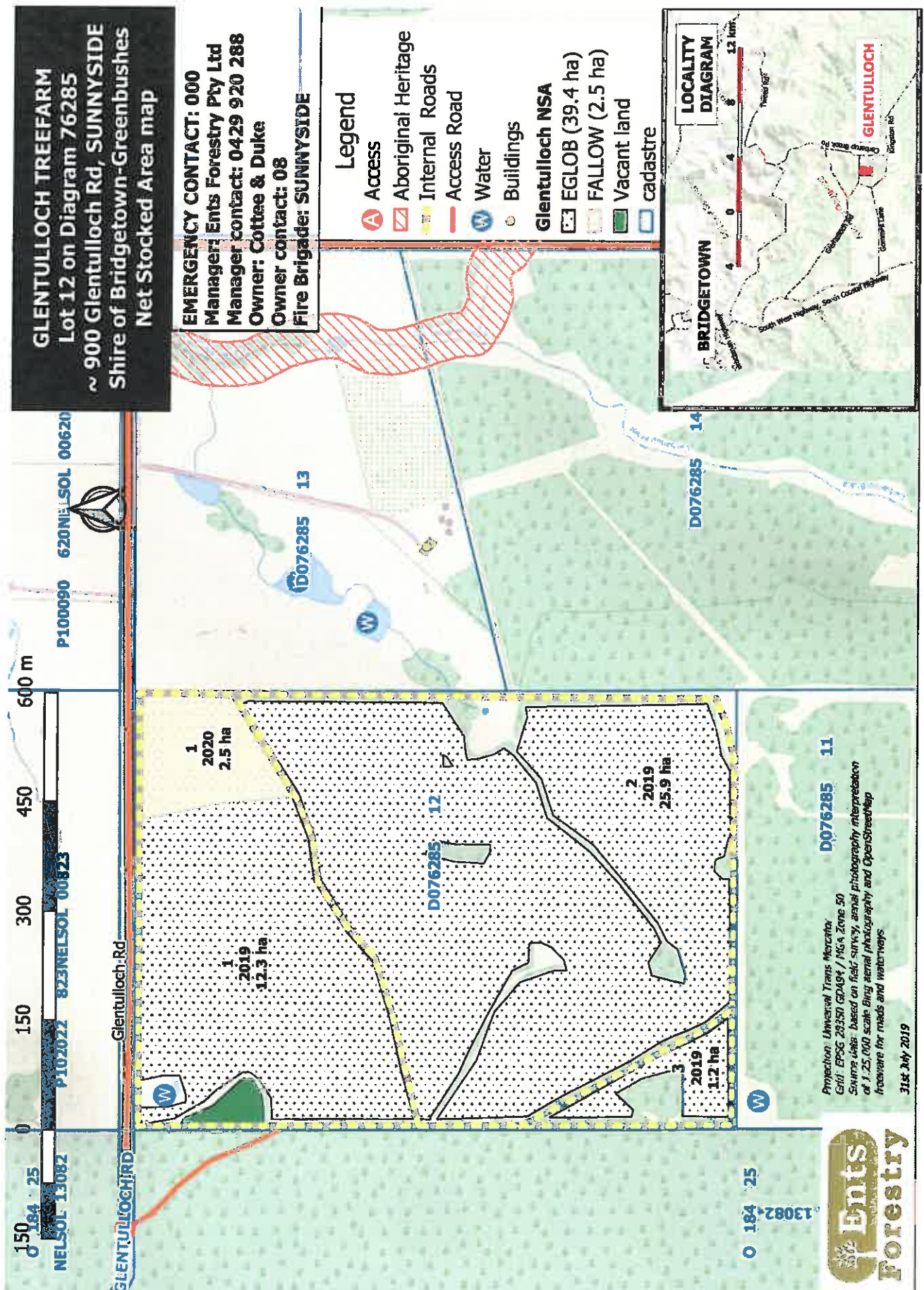
1.8 Proposed plantation development

A proposed plantable area (PPA) map showing plantation compartments is presented in Figure 1. The new blue gum planting comprises of 2.5 ha. The existing coppice area is 39.4 ha.

1.9 Shire Permits

Timber plantations are permitted in the Shire of Bridgetown-Greenbushes provided planning consent is granted.

Figure 1: Glentulloch proposed plantable area (PPA) map



2 Pulpwood Plantation Establishment Plan (SEEDLINGS)

2.1 Proposed plantation design and layout

The proposed plantation design is shown in the PPA map presented in Figure 1.

Row spacing: 5 metres

Tree spacing: 2.5 metres

Initial stocking: 800 stems per hectare

No roads are to be established as part of this plan. Access tracks for establishment, fire control and management purposes exist. Such tracks were designed and maintained to minimise the risk of water erosion. Existing tracks will be maintained and incorporated into the plantation design.

Compartments will be re-mapped following either mounding or planting to record any variations from the Proposed Plantable Area map and a final compartment map will be prepared.

2.2 Time of planting

Year of planting: 2020

Planned months of planting: June – August

2.3 Site preparation and tending to age 1 year

The following activities will be undertaken.

- | | |
|--------------|---|
| Rabbits | <ul style="list-style-type: none">• Rabbits will be controlled with baiting. In unusual circumstances, shooting may be undertaken. |
| Clean-up | <ul style="list-style-type: none">• Internal fences will generally be removed. In some circumstances there are benefits in retaining fences. Retained fences will be identified on the PPA map before establishment commences.• Paddock trees, shelter belts and remnant vegetation will be retained where practicable or as directed by landowner.• Piles of rocks may be consolidated or removed. |
| Rolling | <ul style="list-style-type: none">• Rocks that impede other operations or protrude more than 500 mm will be rolled or removed. |
| Cultivation | <ul style="list-style-type: none">• Planting lines will be cultivated with rip-moulder or rip-only. |
| Weed control | <ul style="list-style-type: none">• Prior to cultivation, if required, perennial weeds will be controlled with herbicides.• Prior to planting, herbicides will be sprayed in accordance with EF spray mixes as a swathe centred over the mound. Additional weed control will be undertaken in the 6 months after planting where weed competition is likely to affect tree growth. |
| Planting | <ul style="list-style-type: none">• Seedlings will be hand-planted. |
| Replanting | <ul style="list-style-type: none">• If the minimum planned stocking of healthy trees is not achieved after nine months over a contiguous area of 0.1 ha then those area(s) will be planted with supplementary seedlings (replanted) or re-established. |

2.4 Planned stocking

The planned stocking for the plantation is as follows:

Age	Stocking
At planting:	800 stems per hectare
0.75 years:	at least 700 stems per hectare

2.5 Nutrient management program

Tree nutrition will be managed to optimise growth and survival. The nutrient program involves an initial fertiliser application in the first year; a suitable blend of macro and trace elements banded on top of the mounds or incorporated in the mound.

A remedial application may be applied to correct any deficiencies if recommended by the manager and approved by the client. Assessment of the nutrient status of the plantation will be used to design the second fertiliser application, which will be spread onto the plantation.

Fertilisation Details

Area	Composition	Rate kg/ha	Method	Timing
Entire NSA area	N, P, K	150 – 200	Broadcast	Autumn of Yr 1
Entire NSA area	Mainly N	150 – 200	Broadcast	Around age 3 yrs

2.6 Second year weed control

Weeds will be managed to levels at which they are not expected to compete with trees for soil moisture and to minimise fire fuel hazard. Within the second year following planting, the inter-row will be sprayed with knockdown and residual herbicides.

2.7 Harvest schedule

Clearfall is scheduled for age 10-12 or as dictated by markets and tree health.

- Compartment 1 (new plant) - trees will be harvested after approximately ten years and will be allowed to coppice for a second rotation before a new planning approval is required.
- Compartments 1, 2 & 3 (coppice) – these trees will be harvested in approximately nine years, and the area will be replanted for one further rotation before a new planning approval is required.

3 Pulpwood Plantation Establishment Plan (COPPICED AREAS)

3.1 Proposed plantation design and layout

The original plantation design is shown in the Net Plantable Area map presented in **Error! Reference source not found.**

Row spacing:	5 metres
Tree spacing:	2 metres
Initial stocking (of the first rotation):	1000 stems per hectare

3.2 Coppice survival count

Coppice will regrow from a large percentage of the stumps following the cut-to-length harvest operation. A formal coppice survival survey was carried out in July 2019. Areas where coppice stool survival was greater than 650 evenly-spread live stools per hectare was deemed suitable for a coppice rotation.

Compartments will be re-mapped to record any variations from the Proposed Plantable Area map and a final compartment map will be prepared.

Compartments 1 – 3 will be coppiced (~39.4 ha).

The planned stocking for the plantation is:

Age	Stocking
0.5 years:	at least 650 live stools per hectare, evenly spread

3.3 Site preparation and tending to age 3.5 years

The following activities will be undertaken.

- | | |
|------------------|---|
| Weed control | <ul style="list-style-type: none">If required, herbicides will be sprayed in accordance with EFPL spray mixes to control perennial weeds (kikuyu). |
| Coppice thinning | <ul style="list-style-type: none">Coppice will be surveyed at approximately aged 2 years to determine number of stems per stoolWhere > 1400 stems/ha, coppice will be reduced to 2-3 dominant stems per stool at approximately age 2 years (when all stems have produced > 1 m adult foliage and stems are well attached to the stool). Around small gaps, 3 dominant stems per stool will be the norm.Where < 1400 stems/ha, coppice will not be thinned.It is anticipated that approximately half the coppice area will be thinned.It is anticipated that the final coppice stocking will be around 1,100-1,300 stems/ha |

3.4 Nutrient management program

Tree nutrition will be managed to optimise growth and survival.

Two mid-rotation fertiliser applications are planned.

Fertilisation Details

Area	Composition	Rate kg/ha	Method	Timing
Entire NSA area	Mainly N	200	Broadcast	Post coppice thinning (~Yr 3)
Entire NSA area	Mainly N	200	Broadcast	Autumn of Yr 5

4 General management (ALL AREAS)

4.1 Fire management

A detailed property map showing access and infrastructure for fire-fighting will be produced for the plantation and will be maintained on-site.

Compartments will be surrounded by strategic firebreaks as detailed in the relevant shire notice of firebreak guidelines in the year of establishment unless safety hazards or environmental conditions preclude this, in which case exemptions will be applied for. Firebreaks will be designed to allow through traffic and will be maintained in a trafficable condition during the fire season. Fuel on firebreaks will be maintained at a low level using herbicides, slashers and graders. Water points will be cleaned-out and signposted.

Ents maintains a small fleet of fire-fighting vehicles – 2 x Landcruiser fast attacks – but couples with the resources of the entire plantation industry for its on-call roster, trebling the amount of on-call equipment. In total, 1 x 2.4HD, 3 x dedicated fast-attack units, 2 x slip-on fast attack units. Ents is a signatory to the Plantation Fire Cooperative. The Coop agrees to fight fires on each others' estates with the aim to keep fires small.

During fire season, staff monitor fire radios and fire/vehicle movement ban notices. Contractors are obliged to carry fire units where applicable. Standby staff are available afterhours throughout the fire season for rapid response to an incident. Fire response procedures and preparedness are detailed in a Fire Manual, updated annually.

In the event of a fire, field staff call 000 to set in place the DFES emergency response processes. Firefighters then liaise with volunteer brigades/DBCA depending on who is the lead agency at the fire.

Specific comments with regard to fire management (including potential ignition sources and buffers) on this plantation are:

- House and truffle farm to E;
- Mature blue gum plantation to S;
- Grazed paddocks to the N, green year-round in a normal year;
- Native vegetation in patches to W.

4.1.1 Fire breaks

If not already existing the following will be implemented by removing plantation trees or stumps to comply with the Shire's Firebreak and Hazard Reduction Notice 2019/2020.

- a 15-metre firebreak between the first row of trees and Glentulloch Road
- a 10-metres firebreak on the east, south and west boundary as defined by the cadastre. Rock rubble will be introduced to a small stream crossing to allow vehicle access on the eastern boundary

4.1.2 Water points

An all-season water point is situated in the northwest corner of the property. A second water point is located on the adjoining property (Lot 11 to the south) where a section of fence has been removed for permanent access. Should this water point access be removed a 20,000 litres water will be installed as per shires recommendations.

4.2 Pest management

Ents Forestry Pty Ltd (EFPL) will monitor and record the tree farm for insect damage, especially during critical periods of plantation development and insect activity.

During the establishment phase (12 months following planting), EFPL will control insects where:

- i. the damage is likely to impact on the tree survival and productivity; and,

- ii. control is practical and possible.

Following the establishment phase, EFPL will monitor and record insect damage and take remedial action if required.

Insect control strategies in order of decreasing priority are:

CHEMICAL	DESCRIPTION	LIKELIHOOD
1. SHIELD INSECTICIDE:	Injected into soil around tree roots, control only insects browsing on crop trees and not any other predatory or non-target insect;	Almost certain in Yr 1 Almost certain ~ Yr 3-4
2. GROUND-BASED APPLICATION OF ALPHA-CYPERMETHRIN:	Knock-down insecticide used to kill browsing insects using tractor sprayer or similar. Also kills non-target insects. Registered for forestry. Used at label rates;	Rare occasions in Yr 2 – 4.
3. AERIAL APPLICATION OF ALPHA-CYPERMETHRIN:	Knock-down insecticide used to kill browsing insects using ag plane or helicopter. Also kills non-target insects. Registered for forestry. Used at label rates. If deployed, Ents will work with Denmark Shire to determine appropriate protocols for wind direction and buffers;	Extremely rare (almost never) occasions in Yr 2 – 7.

4.3 Grazing Strategy

Livestock may be brought onto the tree farm for short periods of intensive grazing to reduce fire fuel burden once the trees are older than two years. If livestock are introduced, native vegetation and recognised watercourses within the area of this plan will be fenced off to preclude stock.

4.4 Inventory and Reporting

An inventory program will commence when the plantation is aged 7 yrs. It will follow EFPL protocols to provide estimates of standing volume and be reported to growers. A follow-up measure will occur prior to T1.

EFPL will prepare at least one written report each year for the Grower.

4.5 Monitoring

Formal plantation inspections will be carried out on the schedule below:

PLANTATION AGE	INSPECTION FREQUENCY
0 – 6 MONTHS	Monthly or as required by operational need
6 MONTHS – 1 YEAR	Every two months
1 YEAR – 4 YEARS	Triannual
5 YEARS - HARVEST	Biannual

4.6 Machinery, trucks & noise

Machinery movement at the plantation will occur in peaks at establishment, thinning and clearfall. Machinery will exclusively operate during daylight hours.

Establishment works will require large tractors, loaders, a grader and hand-operated planting equipment. The larger machinery may be floated onto site on a low-loader.

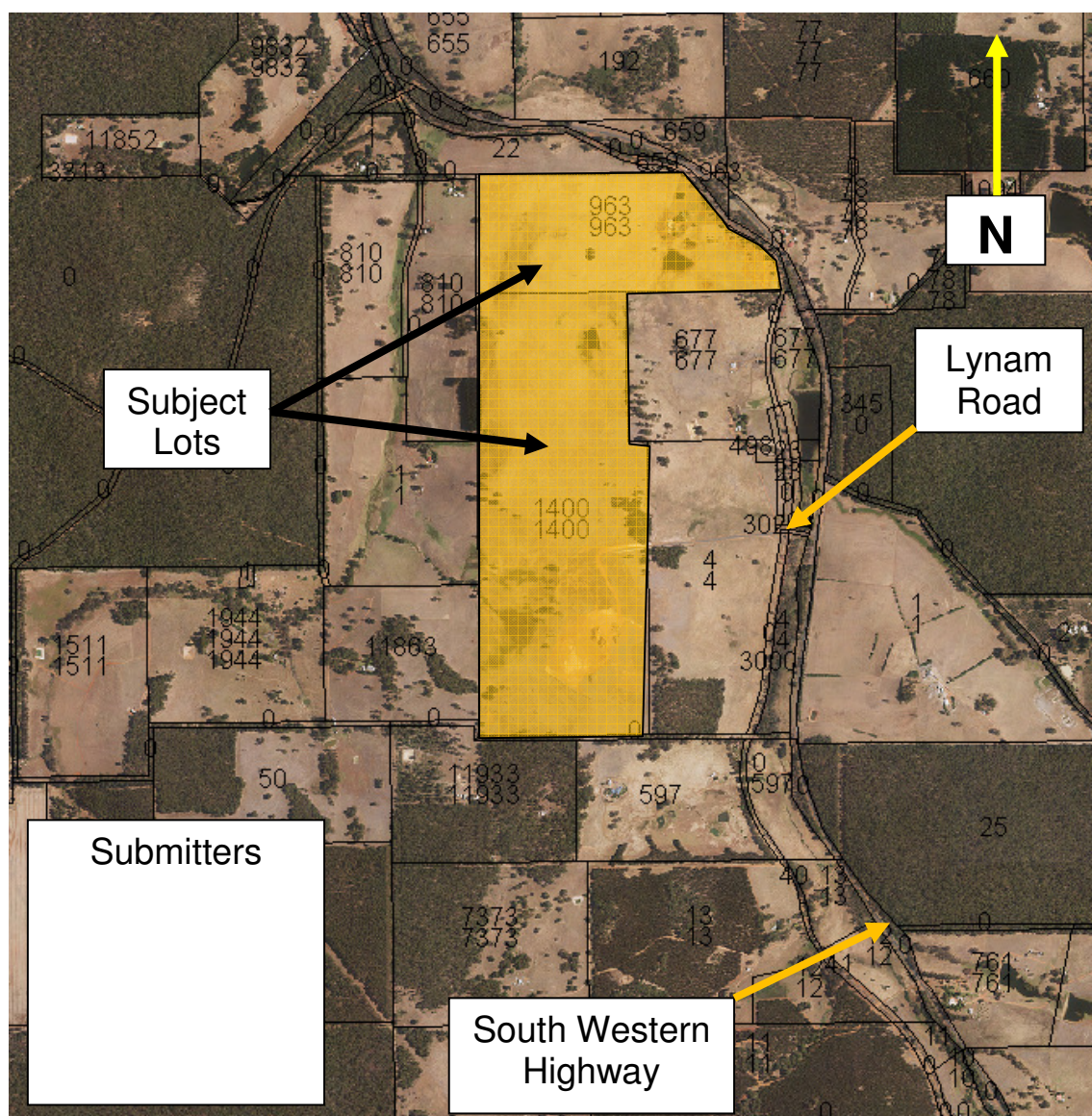
Noise will peak during harvest operations. Harvest will likely occur using specialised cut-to-length or in-field chip machinery with low noise emissions.

Residents within a reasonable affected zone of harvest operations will be notified of impending harvest.

4.7 Variations to this Plan

If it is found necessary to vary this plan, EFPL will advise of any material changes in an annual report.

Initial plan: 1st August 2019



**Proposed Extractive Industry – Large Operation (Gravel) -
Lots 963 and 1400 South Western Highway, Glenlynn**

(Shire of Bridgetown-Greenbushes Aerial Photo December 2017)

Our Reference: A47331/O-PA2019299116/P121/2018

Your Reference: SW019785

Contact: Jamie Champion

08-Aug-2019

Shire of Bridgetown-Greenbushes

Dear Sir / Madam

Lot 963 & 1400 South Western Hwy Glenlynn (Extractive Industry)

Further to your referral of the aforementioned development application, Western Power has reviewed the proposal in the context of its network assets and provides the following comments and recommendation:

Western Power has no objection to the proposed development. The proposed installation on the site is to comply with the following:

- (i) Any development on the subject site shall be designed and constructed to protect Western Power infrastructure and interests from potential land use conflict. Proponents should refer to <https://westernpower.com.au/safety/360-aware/industry-safety/>
- (ii) It is the landowner's responsibility to ensure that the design and construction of any new structure on the land complies with all applicable laws including, without limitation, clearance requirements of electrical infrastructure. We recommend that you engage a suitably qualified independent person (surveyor, architect, engineer) to undertake an assessment of the proposed development to ensure that best methods of construction are utilised and compliance with all applicable laws (including clearance requirements of electrical infrastructure in general and those specified under Occupational Safety and Health Regulations 1996 (WA)).

Further information regarding easement, network safety and clearance requirements can be found on Western Power's website at <https://westernpower.com.au/safety/360-aware>.

Should you require further clarification regarding our recommendations, please call us on 13 10 87 or e-mail wapc@westernpower.com.au

Yours sincerely

Lexie Robson
Customer Service Coordinator
Customer Service



363 Wellington Street Perth 6000
GPO Box L921 Perth WA 6842
e enquiry@westernpower.com.au
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† 13 10 87
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TTY 1800 13 13 51
TIS 13 14 50

Electricity Networks Corporation
ABN: 18 540 492 861

Scott Donaldson

From: David Chandler <david.chandler@jaxon.net.au>
Sent: Friday, 9 August 2019 11:19 AM
To: BTNSHIRE
Cc: Liesbeth Goedhart
Subject: I-EML201953538 - PROPOSED EXTRACTIVE INDUSTRY LOTS 963 and 1400

Chief Executive Officer

In response to letter dated 07 August from Scott Donaldson, I comment as follows:

1. This proposal is for a massive expansion of the current operation – as such it will have significant impacts on the local environment
2. 18 trucks a day leaving and entering SW Highway will be a significant impact on traffic and potentially a safety hazard – as a minimum, clear warning signage should be provided on the highway on both approaches to the site access road to warn vehicles of the hazard
3. the visual impact is not clear from the information provided – despite the assurances, I am concerned that it will be significant – further clarification on the view lines is required
4. dust control is of concern and I am not confident it will be adequately addressed
5. the noise impacts will exceed environmental regulations unless bunds are used and the exclusion zone maintained – I am not confident these requirements will be met if left solely to the operator
6. I do not understand why there should be a relaxation of the 7.30AM start time nominated by the Shire's Extractive Industry Policy and do not support the request for a 7.00AM start
7. I also do not support operation on Saturdays, particularly Saturday afternoon
8. I believe there is inadequate monitoring proposed – refer notes below
9. section 7.1 only notes that previous rehabilitation methods will be used – there should be reference to Table 6
10. annual monitoring of rehabilitation is inadequate.

My greatest concern is that monitoring of the environmental impacts will be inadequate. References to a "complaints system" and statements such as "...there have been no noise complaints..." and "...additional management measures will be considered..." do not provide confidence in the operators approach to monitoring. As a minimum, I think the Shire should insist that the operator installs active monitoring systems or carries out regular independent testing of noise and dust – with all results supplied to the Shire.

I seek confirmation from the Shire that the monitoring of the environmental impacts and the quality of rehabilitation will be actively managed by Shire Officers.

Regards

David Chandler
Owner: 73 Tillman Road Glenlynn [Residence #12]

Scott Donaldson

From: DAVIES Paul (Con) <paul.davies@mainroads.wa.gov.au>
Sent: Wednesday, 14 August 2019 10:19 AM
To: Scott Donaldson
Cc: NAUDE Daniel (RCPM)
Subject: I-PA201953568 - Development Application Lots 963 and 1400 South Western Highway Glenlynn Extractive Industry Gravel

SynergySoft: I-PA201953568

Hi Scott

I refer to your correspondence of 7 August 2019 and advise that Main Roads has no objection to the proposed extractive industry.

If you have any queries please phone Daniel Naude.

Regards Paul Davies

For Daniel Naude
ROAD CORRIDOR PLANNING MANAGER
Metropolitan and Southern Regions / South West
p: +61 9724 5724 | m: +61 4189 31078
w: www.mainroads.wa.gov.au



mainroads
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Western Australia.*



Scott Donaldson

From: Nadine Pitts <nadine1@bournet.com.au>
Sent: Sunday, 25 August 2019 12:27 PM
To: Scott Donaldson
Cc: 'Melissa Wright'; chriswright1976@outlook.com
Subject: IPC19100 - Proposed Extractive Industry - Lots 963 & 1400 South Western Highway, Glenlynn
Attachments: img20190825_12055536.pdf
SynergySoft: IPC19100

Hi Scott

Please find attached letter regarding Proposed Extractive Industry - Lots 963 & 1400 South Western Highway, Glenlynn.

Regards
Melissa, Chris and Nadine



Virus-free. www.avast.com

Melissa Wright
Christopher Wright
Nadine Pitts
PO Box 263
BRIDGETOWN WA 6255

20 August 2019

Shire of Bridgetown-Greenbushes
1 Steere Street
BRIDGETOWN WA 6255

Attn: Scott Donaldson

Dear Scott

Re: Proposed Extractive Industry
Lots 963 & 1400 South Western Hwy, Glenlynn


We, the undersigned support the proposed development application for the above locations.

We all reside on nearby property and have no concerns in regard to this activity.

Regards,



Melissa Wright



Chris Wright



Nadine Pitts

28/8/19.

Date

22/8/19

Date

23rd August 2019

Date

Scott Donaldson

From: BTNSHIRE
Sent: Thursday, 29 August 2019 7:38 PM
To: Scott Donaldson
Subject: IPC19103 - FW: Response to Extractive Industry Development Application

SynergySoft: IPC19103

Darren Wilson
Co-Ordinator Corporate Services
IT Manager
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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-----Original Message-----

From: Davina Jogi [<mailto:deejogi@gmail.com>]
Sent: Thursday, 29 August 2019 4:13 PM
To: BTNSHIRE
Cc: Steven Dean
Subject: Response to Extractive Industry Development Application

ATTENTION: CEO, SHIRE OF BRIDGETOWN-GREENBUSHES

Dear Sir,

We are writing in response to a letter we received recently concerning the Proposed Extractive Industry on Lots 963 and 1400 in Glenlynn.

As we are one of the residences located the furthest away from the development, we are not, in theory, opposed to the expansion or to the earlier start time of 7 am. According to the EMP, the development is expected to only have minor effects on our visual outlook and the noise, dust and traffic nuisance are for a limited time period. However, we would like to request that we are kept informed of the developments and be given clear guidelines on how to address potential issues should they arise. In particular, we would like to note that:

1. The first we have heard of the proposed expansion was about 2 weeks ago when we received the letter. We do understand that the first proposal which was approved in July 2018 (and previously in 2002) was most likely deemed outside the zone of influence for our residence which is why we may not have been informed earlier. We also understand that it is the responsibility of the Shire, not those writing the EMP, to consult with the community. Given this situation, we would have liked a bit more information from the Shire itself to guide our response and time to respond or ask questions when given such a technical document.

2. There does not seem to be any clear grievance redress mechanism. The EMP mentions that we can call and complain about the noise and/or dust but what then? What if nothing changes? And how can we prove/how will B&J Catalano know whether there are any significant impacts without including us beforehand and/or surveying our properties in some way? We do expect that noise will be more of an issue for us than our neighbours for example, because our property is higher up.

3. In this regard, there is no monitoring plan or authority outlined in the EMP. We would certainly like to receive any monitoring reports/updates to keep us informed of potential impacts to our property as the development takes place.

4. We note that the main concerns of the report, regarding adjoining residences are dust, noise and visual impacts. The report states that there will be no blasting, but should we be concerned about underground vibrations of any kind which could affect our buildings? We would like to have some input in this regard.

Thank you for considering our response and please could you confirm receipt of this email, so that we know it has been received.

Best Regards,

Steven and Davina Dean
61 Rifle Range Road
Glenlynn

0466578657

Scott Donaldson

From: BTNSHIRE
Sent: Friday, 30 August 2019 3:40 PM
To: Scott Donaldson
Subject: IPC19104 - FW: Submission against Proposed Extractive Industry- Large Operation Lot 963 and 1400 South Western Highway, Glenlynn
Attachments: 20180903_163645.jpg
SynergySoft: IPC19104

Darren Wilson

Co-Ordinator Corporate Services
IT Manager
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: Alston, Elsa [<mailto:Elsa.Alston@health.wa.gov.au>]
Sent: Friday, 30 August 2019 12:57 PM
To: BTNSHIRE
Subject: Submission against Proposed Extractive Industry- Large Operation Lot 963 and 1400 South Western Highway, Glenlynn

Dear Sir/Madam

RE: Proposed Extractive Industry- Large Operation Lot 963 and 1400 South Western Highway, Glenlynn.

My husband and I own the property at Lot 1, 34 Lowe Road, the closest property to the operation and would like to bring to your attention the following issues in response to the aforementioned proposal.

4.5 GATES, FENCES AND SIGNAGE

Both properties (Lot 1400 and Lot 963) are fully fenced around their perimeter. At the entrance to Lynam Road, just after the railway line, a gate exists which will be locked at all times when the pit is not being operated. There is also a gate for access into Lot 963, and when extraction occurs in Stage 8, this gate will be locked at all times when the pit is not being operated. The gate positions are marked on Figure 2.

After extraction and rehabilitation of Stage 8a, the fence at the boundary between Lot 1400 and Lot 963 will be rebuilt and a gate will be placed as illustrated on Figure 4.

There is no need to fence Stage 8 from Residence 1 as this is the caretaker's residence.

The proponent will ensure that appropriately spaced warning signs carrying the correct wording "DANGER EXCAVATIONS KEEP OUT" are situated along each of the boundaries of the proposed EIL area, in clear view. The signs will not be more than 200 metres apart and will be at least 1.8 metres high and 1 metre wide.

Contrary to the above there is no perimeter fencing in place on the eastern boundary between our property and that of the extraction pit apart from low livestock fencing in poor repair. There are also no warning signs. On investigation we have been able to walk from our property into the active area of the operations without impediment, demonstrating a serious breach in safety and a contradiction to the above outline.

--- reasons for the potential visual impact assigned. ---, including the

TABLE 5: Visual Impact on Residences *

Reference No. On Figure 5	Evidence	Potential Visual Impact	Comment
Res 1**	Profile A	Minor	Profile A shows the majority of the proposed EIL area will not be in a line of sight from Res 1, however 8m product stockpiles* along the northeastern border of the proposed EIL area may be visible from this residence.
Res 2	Profile E	No Impact	Profile E shows the proposed EIL area will not be in a line of sight from Res 2.
Res 3	Profile E	Minor	Profile E shows the majority of the proposed EIL area will not be in a line of sight from Res 3, however 8m product stockpiles* along the northwestern border of the proposed EIL area will be visible from this residence.
Res 4	Profile F	No Impact	Profile F shows the proposed EIL area will not be in a line of sight from Res 4.

Our residence is identified as Residence 4 in the above outline and clearly states that the Extraction area will not be in line of sight of the house. Whilst the pit area may not be seen from our house the large topsoil overburden piles are blatantly obvious and create a dramatic visual impact from a large area of our property As seen in the attached photograph..

The previous two examples show a disconnect between what the company states in the proposal and the actual conduct of operations. This creates some concern in relation to the additional proposal currently before the Shire in relation to the impacts on our property .

Kind Regards

Elsa Alston

Perinatal Mental Health Coordinator

Midwest Mental Health Service

W.A Country Health

Outpatients Centre Cleaver Street, CARNARVON WA 6701

T: (08) 99416 600 | F: (08) 99416 616

E: elsa.alston@health.wa.gov.au

W: www.health.wa.gov.au

Delivering a **Healthy WA**



Scott Donaldson

From: Brendan Kelly <brendan.kelly@dwer.wa.gov.au>
Sent: Wednesday, 11 September 2019 2:06 PM
To: Scott Donaldson
Cc: BTNSHIRE; Neville Welsh
Subject: IPC19109 - Lots 963 and 1400 South Western Highway, Glenlynn
Attachments: WQPN 15 Basic raw materials extraction.pdf; Reviewed run off figures - Pro~uth Western Highway, Glenlynn.msg

SynergySoft: IPC19109

11th September 2019

Our Reference: PA028809, DWERT1450~4

Your Reference: A47331

To: Shire of Bridgetown-Greenbushes

From: Department of Water and Environmental Regulation

Attention: Scott Donaldson

Re: Proposed Extractive Industry - Large Operation (Gravel) – Lots 963 and 1400 South Western Highway, Glenlynn.

Dear Scott,

The Shire of Bridgetown-Greenbushes (Sh.B-G) has referred this extractive industry proposal to the Department of Water and Environmental Regulation (DWER) for comment. The referral includes the consultant's report:

'Extractive Industry Application and Environmental Management Plan (EMP) - Lot 1400 & 963 South Western Highway, Glenlynn, Shire of Bridgetown-Greenbushes, Lundstrom Environmental Consultants Pty Ltd, June 2019' (Lundstrom).

Further to an extension provided for a response, including a review of runoff calculations negotiated with Lundstrom Environmental Consultants, please find the following comments..

BACKGROUND

DWER has provided advice to the Sh.B-G on an earlier extractive industry (EI) proposal for Lot 1400 South Western Highway (29th May 2018, your ref: A1671643, our ref: DWERT1450~2).

Although neither groundwater nor surface water resources in the area are proclaimed under the *'Rights in Water and Irrigation Act, 1914'*, it was noted that the proposal is located in the Blackwood River catchment of the Hardy Estuary.

The broad principals of the management of the EI operation are:

- to maintain an adequate vertical separation distance between the base of the pit/quarry and the highest groundwater level, and

- to manage stormwater runoff from the site during EI operations.

This new proposal (stages 5-8) is an extension to the existing EI operations (stages 1-4), extending north into Lot 963 and similar conditions should apply as with the existing EI licence.

It is understood that the proposal will result in a new EI licence being issued, to cover final rehabilitation of completed operations (stages 1-3) while stage 4 operations, where gravel extraction is still underway, will also be included in the new licence.

RISK

In assessing the proposed operations at Lots 963 and 1400, DWER has considered the level of risk to:

- groundwater resources as low (negligible), and
- surface water resources as moderate.

The following advice is offered.

o Groundwater

The risk to groundwater resources from this proposal has been evaluated by DWER as '**low**', however an appropriate risk management response is still required to water resource protection matters.

Recommendation it is recommended that the following conditions apply:

- The extractive industry shall not at any time intercept the water table.
- If any interception of groundwater occurs at any time during the extractive industry operation, work shall cease immediately and an advice notice provided to the Shire within 48 hours, followed by agreed remedial action.
- No dewatering of the extraction area shall be permitted without prior approval of DWER.

These conditions should be formally applied on any EI licence.

o Surface Water

The risk to surface water from this proposal has been evaluated by DWER as '**moderate**', however appropriate risk management responses should be included as conditions to any EI licence.

DWER has identified the moderate risk as being in surface water (stormwater) runoff from disturbed ground, particularly turbid runoff with the potential for sedimentation at downstream receptors.

Management of runoff from operations will be critical to ensure that offsite impacts - turbidity, sediment, hydrocarbons, or the like - are appropriately managed, prior to stormwater discharging to the receiving surface water environment.

In context, DWER supports best management practise for the gravel extraction operations, including specific management of runoff from disturbed areas, i.e. roads, laydown areas, pits and stockpiles.

In terms of surface water management, key to managing risk from the EI activities is the retention of stormwater in ponds in the active operational area

Practical management solutions should be applied using the objectives, principles and delivery approach outlined in the '*Stormwater management manual for Western Australia (Department of Water 2004–07)*'.

The '*Decision process for stormwater management in Western Australia, DWER, 2017*' provides a decision framework for the planning and design of stormwater management systems.

The detailed design and construction of diversion drains, contour banks/bunds, drainage channels, stormwater detention basins and associated works should be completed prior to the EI commencing.

Lundstrom p.10-12, s.5.3 'Water', including Figure 3, has provided stormwater management strategies, which are key to the proposal.

Lundstrom states that management of runoff generated within the extraction area will be contained via detention ponds designed to hold stormwater generated from a 2-hour rainfall event with a 10% Annual Exceedance Probability (AEP).

It was noted that Lundstrom had used a coefficient of 0.6 for run off calculations, when DWER's current guideline WQPN No. 15 '*Basic raw materials extraction, July 2019*' uses a coefficient of 0.8.

The proponent's consultant Mike Lundstrom has reviewed Table 2 (Lundstrom, p.11) and new runoff volumes with a revised coefficient (0.8) have been submitted (attached)

If the project is properly resourced and implemented, downstream impacts occurring to water resources from the extractive industry can be managed at low risk.

Recommendation it is recommended that the following conditions apply:

- Stormwater management measures as per Lundstrom p.10-12, s.5.3, be assigned as operational conditions on any EI licence approved by the Shire.
- Stormwater detention ponds shall include an overflow spillway, or acceptable alternative, to manage discharge of excess water during major rainfall events.
- Following the occurrence of a rainfall event greater than the 10% / 2 hour Annual Exceedance Probability, the proponent shall inspect the site and within 72 hours report to the Local Government, with details of impacts and remediation actions (if required).
- There will be no storage of hydrocarbons on-site,
- On-site refuelling of equipment will be from a mobile service vehicle carrying appropriate spill prevention and clean-up equipment,
- No major repairs or maintenance will take place on site.

DWER emphasises the need for strong regulatory measures, to ensure that the integrity of the extractive industry operations are upheld and therefore recommends that a condition be included for annual reports to be provided.

o Industry Regulation

In addition, DWER notes the proposed activities such as crushing and screening during extractive industry operations, make the premises become a 'prescribed premises' for the purposes of Part V Division 3 of the *'Environmental Protection Act 1986'* (EP Act).

This applies if carried out at a rate that meets or exceeds the specified production or design capacity of the relevant category under Schedule 1 of the *'Environmental Protection Regulations 1987'* (EP Regs).

Relevant categories that may apply to this proposal are:

- 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 (50 000 tonnes or more per year)
- Category 70 Screening etc. of material: premises on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated (more than 5 000 but less than 50 000 tonnes per year).

The operation of the crushing and screening plants must be compliant with the *'Environmental Protection (Noise) Regulations 1997'*.

The operation conducted by the proponent will not commence before 7:00am, as a variation to the Shire's Extractive Industry Policy.

A works approval and licence will be required.

Recommendation it is recommended that the applicant be advised to contact DWER to seek advice on the approval requirements for crushing and screening activities.

DWER can be contacted at info@dwer.wa.gov.au or 6364 7000 and applicants with queries relating to works approvals and licenses will be directed to the relevant industry regulation officer.

Finally, please note the attached (current) DWER Water Quality Protection Note No. 15 *'Basic raw materials extraction, July 2019'*, which provides recommendations to EI operators on how to limit the impacts of their operations on the environment and water resources.

Please contact this office as required.

Brendan Kelly
Senior Natural Resource Management Officer
Department of Water & Environmental Regulation,
Planning Advice, South West Region
Telephone: 08 97264194 | Mobile: 0407219515
Email: brendan.kelly@dwer.wa.gov.au

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SHIRE OF BRIDGETOWN – GREENBUSHES

PROPOSED EXTRACTIVE INDUSTRY – LARGE OPERATION (GRAVEL) LOTS 963 AND 1400 SOUTH WESTERN HIGHWAY, GLENLYNN SCHEDULE OF SUBMISSIONS

NO.	NAME/ADDRESS/ AFFECTED PROPERTY	SUMMARY OF SUBMISSION	ADMINISTRATION COMMENT
1.	Western Power	No objection a) Western Power has no objection to the proposed development. The proposed installation shall be designed and constructed to protect Western Power infrastructure and interests from potential land use conflict and all applicable laws including clearance requirements of electrical infrastructure.	a) Noted.
2.	David Chandler RSN 73 Tillman Road, Glenlynn	Objection a) This proposal is for a massive expansion of the current operation and as such it will have significant impacts on the local environment.	a) Noted. Compliance with EMP will address potential impacts in relation to noise, dust, water and visual amenity issues.
		b) 18 trucks a day leaving and entering South Western Highway will be a significant impact on traffic and potentially a safety hazard. As a minimum, clear warning signage should be provided on the highway approaches to the site access road to warn vehicles of the hazard.	b) The current operation has on average 16 truck movements (8 in and 8 out) per day, with the proposed operation to have on average 20 movements (10 in and out) per day. The combined total will be 36 truck movements (18 in and 18 out) per day. Access is via an internal access road leading to Lynam Road, which is a dedicated local road leading directly to South Western Highway. Main Roads WA has not raised any objections to the current extractive operation or the proposed operation. A condition of approval is recommended for the operator to install and maintain road signs on Lynam Road, warning other road users of trucks entering and using the public road system.

		<p>c) The visual impact is not clear from the information provided and despite assurances, I am concerned that it will be significant. Further clarification on the view lines is required.</p>	<p>c) A detailed assessment of visual impacts, including topographical modelling and photographic analysis, is provided in Section 5.4 of the EMP, taking into account view lines and locations of proposed overburden noise bunds. The applicant acknowledges some minor visual impact on a small number of residences. The objector's property is approximately 1000 metres to west-south-west east of proposed Stage 5 with the existing State Forest providing screening of the proposed extraction site. No detrimental visual impacts on the objector's property are anticipated. Given the relatively short time frame per stage of extraction, planting of screen vegetation is not considered practical or necessary.</p>
		<p>d) Dust control is of concern and I am not confident it will be adequately addressed.</p>	<p>d) The objector has not elaborated on reasons why dust management has not been addressed. The operation will generate varying levels of dust, influenced by weather condition and operation activities. The proposed dust management strategies in Section 5.4 of the EMP plus recommended conditions of approval are considered appropriate to address potential dust issues.</p>
		<p>e) The noise impacts will exceed environmental regulations unless bunds are used and the exclusion zone maintained – I am not confident these requirements will be met if left solely to the operator.</p>	<p>e) The EMP has been prepared based on a detailed noise assessment, determining the necessary height of noise attenuation bunds. The objector's property (shown as Residence 12 in the June 2019 Noise Assessment – Appendix Four) is located at least 1000 metres to the west-south-west of proposed Stage 5 and well outside of the acceptable 40 dBA noise contour compliance line. Any noise complaints should be directed to the proponent and/or the Shire for investigation and appropriate steps taken if necessary to ensure compliance, in accordance with the EMP and recommended conditions of approval.</p>

		f) I do not understand why there should be a relaxation of the 7:30am start time nominated by Shire's Extractive Industry Policy and I do not support the request for a 7.00am start of operations. I also do not support operation on Saturdays, particularly Saturday afternoon.	f) The Shire's Extractive industry Policy allows for extraction activity to occur on Saturdays between 7:30am and 5:30pm. The current operation on Lot 1400 commences at 6:30am and no objections were received from surrounding landowners in 2018 regarding that operation and no complaints have been received from the Shire since approval was granted in June 2018. The proposed operation seeks to commence at 7:00am and noting the concern of the objector, the 30 minute earlier start time is considered reasonable.
		g) Section 7.1 only notes that previous rehabilitation methods will be used and there should be reference to Table 6.	g) Section 7.1 confirms that previous rehabilitation methods used in the current extractive operation will continue and then describes those methods as ripping and smoothing the edges of excavation, then seeded with pasture grasses, with progressive rehabilitation to take place during winter. Table 6 is included in Section 7.3, as part of overall Section 7 Rehabilitation, so any reference to Table 6 in Section 7.1 is not considered necessary.
		h) Annual monitoring of rehabilitation is inadequate.	h) The proposed extractive industry is proposed over a five year period, with four stages, each with three or four sub-stages. Rehabilitation of the extractive area will be an ongoing activity with each sub-stage progressively rehabilitated.
		i) My greatest concern is that monitoring of the environmental impacts will be inadequate. References to a 'complaints system' and statements such as 'there have been no noise complaints' and 'additional management measures will be considered' do not provide confidence in the operators approach to monitoring. As a minimum, the Shire should insist that the operator installs active monitoring systems or carries out regular independent testing of noise and dust, with all results supplied to the Shire.	i) Shire staff are confident that the operator will abide by the very detailed EMP to prevent any detrimental environmental impacts. Shire staff can inspect rehabilitation progress as required. Noise and dust monitoring programs are to be established by the proponent with conditions recommended. Should issues of noise or dust arise the Shire and/or proponents can be contacted to investigate and address the concerns if required, with appropriate conditions recommended.

		j) I seek confirmation from the Shire that the monitoring of the environmental impacts and the quality of rehabilitation will be actively managed by Shire officers.	j) Shire staff are satisfied with the current operation and rehabilitation to date, and can seek to access the site at anytime to review the operation and/or investigate any received complaints.
3.	Main Roads Western Australia	No objection a) Main Roads has no objection to the proposed extractive industry.	a) Noted.
4.	Melissa Wright, Chris Wright and Nadine Pitts RSN 24189 South Western Highway, Glenlynn	No Objection a) We support the proposed development application and have no concerns in regard to this activity.	a) Noted.
5.	Steven and Davina Dean RSN 61 Rifle Range Road, Glenlynn	Concerns a) As one of the residences located the furthest away from the development, we are not in theory opposed to the expansion or to the earlier start time of 7am.	a) Noted.
		b) According to the EMP, the development is expected to only have minor effects on our visual outlook and the noise, dust and traffic nuisance are for a limited time period. We request being informed of the development and clear guidelines on how to address potential issues should they arise.	b) Noted. Should any nearby residents experience adverse impacts from the proposed operation the landowners can contact the operator, B & J Catalano or the Shire to investigate any issues. Should approval be granted the submitters will receive formal notification including a list of approved conditions. Progress updates however are not required to be provided to nearby landowners.
		c) We first hear of the proposed expansion two weeks ago when we received the letter. We do understand the first proposal approved in July 2018 (and previously 2002) was most likely outside of the zone of influence for our residence which is why we may not have been informed earlier. Given the situation, we would have liked a bit more information from the Shire itself to guide our response and time to respond or ask questions when given such a technical document.	c) Public consultation was undertaken in accordance with TPS4 and Shire Policies for a 21 day comment period. Correspondence and a full copy of the application report was forwarded to the landowners of thirteen surrounding private properties, including the submitters, plus four government agencies, Whilst acknowledging that the application report is very detailed it is not the Shire's role to provide guidance and how to review the information and/or provide a response.

		<p>d) There does not seem to be any clear grievance redress mechanism. The EMP mentions that we can complain about the noise and/or dust but what if nothing changes? How can we prove/how will B&J Catalano know whether there are any significant impacts without including us beforehand and/or surveying our properties in some way? We expect that noise will be more of an issue for us than our neighbours for example, because our property is higher up.</p>	<p>d) See Submitter 5, Comment b) above. Should the Shire find validity in complaints regarding environmental impacts, compliance action can be taken against the operator including modifications to the operation, temporary cessation of activity or worst case withdrawal of approval and closure of the operation. The applicant Lundstrom Environmental has prepared a detailed EMP supported by a detailed noise assessment, specifically considering the submitters' property, with recommendations to ensure the proposed operation complies with the applicable noise regulations so as not to adversely affect surrounding residences. Shire mapping shows the object's dwelling at an Australian Height Datum (AHD) contour of 253 metres, approximately 50 metres lower in the landscape than the AHD of the proposed Stage 8 extraction area. The property is well beyond the 40db noise contour compliance line and the operation is deemed to be fully in accordance with the applicable noise regulations for the rural zone having regard to topographical and weather issues.</p>
		<p>e) There is no monitoring plan or authority outlined in the EMP. We would certainly like to receive any monitoring reports/updates to keep us informed of potential impacts to our property as the development takes place.</p>	<p>e) The proposed extraction operation will progress from Stage 5 in the south to Stage 10 at the northern end over the proposed five year period. Should approval be granted subject to conditions and terms of the application there is no onus on the operator to provide monitoring reports or updates to the Shire until the conclusion of the five year operation, unless specifically requested. Only in the event of formal complaints being received and investigated, or submission of revised plans or substantial changes (ie. blasting) would the Shire provide further information to surrounding landowners.</p>

		f) We note that the main concerns in the report regarding adjoining residences relate to dust, noise and visual impacts. The report states that there will be no blasting, but should we be concerned about underground vibrations of any kind which could affect out buildings, we would like to have some input.	g) Adverse underground vibrations from the proposed operation are considered unlikely, particularly over a distance of over 700 metres and across the varied landscape between, with approximately 1.0 to 1.5 metres of gravel and rock being extracted, with any crushing to occur in a mobile crusher plant.
6.	Elsa and Andrew Alston RSN 34 Lowe Road, Glenlynn	Concerns a) We own Lot 1 (RSN 34) Lowe Road, the closest property to the proposed operation and would like to raise the following issues in response to the aforementioned proposal.	a) Noted.
		b) Contrary to the information in the EMP regarding Gates, Fences and Signage, there is no perimeter fence in place on the eastern boundary between our property and that of the extraction pit apart from a low livestock fencing in poor repair. There are also no warning signs. We have been able to walk from our property into the active operation area without impediment, demonstrating a serious breach in safety and a contradiction to the proposed EMP.	e) A livestock fence is in place along the eastern boundary, although in poor condition in the opinion of the submitters. The Shire's Local Law Relating To Fencing requires appropriate fencing to be in place for containment of livestock, meaning both the submitter and landowner are responsible for the shared fencing where livestock are kept on their land. Conditions of the current operation approved in 2018 require compliance with the Shire's Extractive Industry Policy and a four strand wire fencing along the perimeter of the property boundary, plus warning signs located every 200 metres surrounding the excavation area. Figure 2 and Section 4.5 of the EMP declares the property is fully fenced, plus internal fencing and gates. Shire staff have recently met onsite with the operators to discuss the concerns and will take action to install additional appropriate warning signage and discuss with the landowner the issue of boundary fencing. The operator is of the view that the depth of excavation for the gravel extraction is minor and would pose minimal risk to persons accessing the property.

		c) Our residence is identified as Residence 4 in the above outline and clearly states that the extraction area will not be in line of sight of the house. Whilst the pit area may not be seen from our house the large topsoil overburden piles are blatantly obvious and create a dramatic visual impact from a large area of our property as seen in the attached photograph.	f) Stage 5 of the proposed extraction area will be at AHD 280m with the submitters' dwelling much lower in the landscape at approximately 170m, with the view very unlikely of any proposed extraction area, topsoil piles or overburden piles, including the closest southern crusher plant location. The current overburden crusher plant is located to the east and in view of Residence 4, however the location generally reflects that shown in the 2018 approval.
		d) The previous two examples show a disconnect between what the company states in the proposal and the actual conduct of operations. This creates some concern in relation to the additional proposal currently before the Shire in relation to the impacts on our property.	d) The information provided by the applicant has been taken at face value. Other than referring to potential visual impact, The submitters have not elaborated on the potential impacts to their property. The submitter's property is well beyond the 40db noise contour compliance line and the operation is deemed to be fully in accordance with the applicable noise regulations for the rural zone having regard to topographical and weather issues.
7.	Department of Water and Environmental Regulation (DWER)	Supportive Comments a) Further to an extension provided for a response, including a review of runoff calculations negotiated with Lundstrom Environmental Consultants, please find the following comments.	a) Noted.
		b) DWER provided advice to the Shire on an earlier extractive industry proposal for Lot 1400 South Western Highway in May 2018. Although neither groundwater nor surface water resources in the area are proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> , it was noted that the proposal is located in the Blackwood River catchment of the Hardy Estuary.	b) Noted.

		c) The broad principles of the management of the operation are to maintain an adequate vertical separation distance between the base of the pit/quarry and the highest groundwater level; and to manage stormwater runoff from the site during operations.	c) Noted.
		d) This new proposal (Stages 5 to 8) is an extension to the existing operations (Stages 1 to 4) extending north into Lot 963 and similar conditions should apply. It is understood that the proposal will result in a new licence being issued, to cover final rehabilitation of completed operations (Stages 1-3) while Stage 4 operations still underway, will be included in the new licence.	d) The current application relates to a new approval for Stages 5 to 8 on both Lot 1400 and new Lot 963. Extraction and rehabilitation of Stages 1 to 4 is regulated under the development approval granted in June 2018 which relates only to Lot 1400. An extractive industry licence is not required as the Shire repealed the Extractive industries Local Law in 2016.
		e) In assessing the proposed operations DWER has considered the level of risk to groundwater resources as Low (negligible) and risk to surface water resources as Moderate, with the following advice provided.	e) Noted.
		f) The risk to groundwater has been evaluated as Low, however an appropriate risk management response is required for water resource protection. It is recommended that the following conditions be applied on any licence: i) The extractive industry shall not at any time intercept the water table. ii) If any interception of groundwater occurs at anytime during the extractive industry operation, work shall cease immediately and on advice provided to the Shire within 48 hours, followed by agreed remedial action. iii) No dewatering of the extraction area shall be permitted without prior approval of DWER.	f) The applicant has provided a revised report with the Section 5.3 Water updated using runoff coefficients to calculate detention pond storage compliant with the new WQPN No. 15. Given the depth of groundwater table is estimated to be 15 to 20 metres below the surface, the proposed (on average) 1.25 metre deep extraction is unlikely to intercept the groundwater. Conditions and/or advice notes are recommended.

		<p>g) The risk to surface water has been evaluated as a Moderate risk and appropriate management responses should be included in any approval. The moderate risk relates to surface water (stormwater) runoff from disturbed ground, particularly runoff with the potential for sedimentation at downstream receptors. Management of runoff from operations will be critical to ensure that offsite impacts such as turbidity, sediment, hydrocarbons, etc, are appropriately managed, prior to stormwater discharging to the receiving surface water environment. DWER supports best management practice for gravel extraction, including specific management of runoff from disturbed areas. (ie. roads, laydown areas, pits and stockpiles). The key to managing risk to surface water from extractive industry activities is the retention of stormwater in ponds in the active operational area. Practical management solutions should be applied using the objectives, principles and delivery approach outlined in the 'Stormwater management manual for Western Australia (Department of Water 2004-07)'. The 'Decision process for stormwater management in Western Australia (DWER 2017)' provides a decision framework for the planning and design of stormwater management systems. The detailed design and construction of diversion drains, contour banks/bunds, drainage channels, stormwater detention basins and associated works should be completed prior the extraction commencing.</p>	<p>g) Noted.</p>
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		<p>h) Section 5.3 Water, including Figure 3 of the Lundstrom EMP provides stormwater management strategies which are key to the proposal, stating that management of runoff generated within the extraction area will be contained via detention ponds designed to hold stormwater generated from a two hour rainfall event with a 10% Annual Exceedance Probability. Lundstrom used a coefficient of 0.6 for run off calculations, when DWER's current guideline WQPN No. 15 Basic raw materials extraction, July 2019' (attached) uses a coefficient of 0.8. Lundstrom has reviewed Table 2 and submitted new runoff volumes with a revised coefficient of 0.8. If the project is properly resourced and implemented, downstream impacts occurring to water resources from the extractive industry can be managed at low risk.</p>	<p>h) The EMP as advertised was finalised in June 2019 prior to release of the WQPN No. 15. A copy of WQPN No. 15 is available to elected members or the public Shire staff upon request or via the DWER website. See Submitter 7, Comment f) above.</p>
		<p>i) It is recommended that the following conditions be applied:</p> <ul style="list-style-type: none"> i) Stormwater management measures be assigned as operational conditions on any licence approved by the Shire. ii) Stormwater detention ponds shall include an overflow spillway, or acceptable alternative, to manage discharge of excess water during major rainfall events. iii) There will be no storage of hydrocarbons on-site. iv) On-site refuelling of equipment will be from a mobile service vehicle carrying appropriate spill prevention and clean-up equipment. v) No major repairs or maintenance will take place on site. 	<p>i) The EMP includes a detailed stormwater management plan. The EMP indicates there will be no hydrocarbons stored on the site and no major repairs or maintenance undertaken on the site.</p>

		j) DWER emphasises the need for strong regulatory measures, to ensure that the integrity of the extractive industry operations are upheld and therefore recommends that a condition be included for annual reports to be provided.	j) The Shire's Extractive industry Policy does not require annual reporting, as was the case under the previous local law and licence regime. A five year renewal or completion survey is required and no further conditions are recommended for annual reporting.
		k) DWER notes the proposed activities such as crushing and screening makes the operation a 'prescribed premises' for the purposes of Part V Division 3 of the Environmental Protection Act 1986. This applies if carried out at a rate that meets or exceeds the specific production or design capacity of the relevant categories 12 or 70 under Schedule 1 of the Environment Protection Regulations 1987. The operation of the crushing and screening plants must be compliant with the Environment Protection (Noise) Regulations 1997. DWER notes the operation will not commence before 7:00am, as a variation to the Shire's Extractive Industry Policy. A works approval and licence will be required and it is recommended the proponent be advised to contact DWER to seek advice on approval requirements for crushing and screening activities.	k) Noted. The application demonstrates compliance with the Noise Regulations. Advice note recommended for the proponent to contact DWER regarding prescribed premises and the potential need for a works approval.



**EXTRACTIVE INDUSTRY APPLICATION
&
ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

**LOTS 1400 & 963 SOUTH WESTERN HIGHWAY
GLENLYNN, SHIRE OF BRIDGETOWN-GREENBUSHES**

June 2019

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**EXTRACTIVE INDUSTRY APPLICATION
AND
ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

**LOTS 1400 & 963 SOUTH WESTERN HIGHWAY
GLENLYNN, SHIRE OF BRIDGETOWN-GREENBUSHES**

PREPARED FOR

B&J CATALANO PTY LTD



By

**LUNDSTROM ENVIRONMENTAL
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TABLE OF CONTENTS

1.	INTRODUCTION	1
1.1	PURPOSE	1
1.2	ADVERTISING & COMMUNITY CONSULTATION.....	1
2.	PROPERTY DESCRIPTION, OWNERSHIP AND LOCALITY	2
3.	DESCRIPTION OF THE SITE AND ITS SURROUNDS	3
3.1	PRESENT LAND USE	3
3.2	TOPOGRAPHY AND DRAINAGE.....	3
3.3	GEOLOGY AND SOILS.....	3
3.4	GROUNDWATER HYDROLOGY	4
3.5	VEGETATION.....	4
3.6	CURRENT ZONING	4
3.7	EXISTING PUBLIC INFRASTRUCTURE	4
4.	EXTRACTION ACTIVITIES	6
4.1	PREVIOUS EXTRACTION ACTIVITIES	6
4.2	PROPOSED NEW EXTRACTION ACTIVITIES.....	6
4.3	SITE ACCESS AND EGRESS ROADS	8
4.4	ESTIMATED TRAFFIC TO BE GENERATED	8
4.5	GATES, FENCES AND SIGNAGE	9
5.	POTENTIAL ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT	10
5.1	FLORA AND FAUNA.....	10
5.2	WEEDS.....	10
5.3	WATER.....	10
5.3.1	Potential Impacts.....	10
5.3.2	Water Management	10
5.4	DUST.....	12
5.4.1	Potentially Sensitive Receptors	12
5.4.2	Measures Proposed for Managing Dust.....	13
5.5	NOISE.....	14
5.6	LANDSCAPE IMPACT.....	15
5.6.1	Methodology.....	15
5.6.2	South Western Highway.....	16
5.6.3	Residences.....	17
5.6.4	Alteration of the Land Surface.....	18
5.7	DIEBACK.....	18
5.7.1	Potential Impacts.....	18
5.7.2	Dieback Management.....	19
5.8	HERITAGE SITES	19
5.9	BUSHFIRES	19
6.	ADDITIONAL REQUIREMENTS.....	20
6.1	OTHER PLANNING CONSIDERATIONS AND IMPACTS.....	20
6.2	DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION.....	21
7.	REHABILITATION.....	22
7.1	PROPOSED REHABILITATION MEASURES	22
7.2	MONITORING AND MAINTENANCE	22
7.3	COMPLETION CRITERIA.....	22
8.	REFERENCES	24

FIGURES

Figure 1:	Locality Plan
Figure 2:	Site and Surrounds
Figure 3:	Storm Water Management and Contours
Figure 4:	Stages of Extraction
Figure 5:	Visual Impact Assessment
Figure 6:	Profile Views South Western Highway
Figure 7:	Profile Views Residences

TABLES

Table 1:	Stages of the Extraction Operation
Table 2:	Surface Water Management Runoff Calculations
Table 3:	List of Surrounding Residences
Table 4:	Visual Impact on South Western Highway
Table 5:	Visual Impact on Residences
Table 6:	Closure Criteria, Objectives and Interim Targets

APPENDICES

Appendix 1:	Development Application Form
Appendix 2:	Dial Before You Dig Responses
Appendix 3:	Certified Survey 2018
Appendix 4:	Environmental Noise Assessments
Appendix 5:	Main Roads Correspondence
Appendix 6:	Weed Management Plan
Appendix 7:	Spill Management Plan
Appendix 8:	Visual Assessment Photographs
Appendix 9:	Bushfire Management Plan

1. INTRODUCTION

1.1 PURPOSE

The purpose of this report is to provide all the necessary information in support of a Development Application to the Shire of Bridgetown-Greenbushes (Shire) by the Proponent, B & J Catalano Pty Ltd. The Development Application Form is included with this report as Appendix 1.

This report sets out the details for the extraction of laterite gravel on Lots 1400 & 963 together with maps. It also provides an environmental assessment of the proposal and a rehabilitation plan. This application is additional to the existing approved extraction operation on Lot 1400 approved on 6 July 2018.

1.2 ADVERTISING & COMMUNITY CONSULTATION

In accordance with the Shire of Bridgetown-Greenbushes' updated Extractive Industry Policy, any community consultation and advertising will be undertaken by the Shire.

2. PROPERTY DESCRIPTION, OWNERSHIP AND LOCALITY

Property Description:	Lot 1400 on Plan 119617 & Lot 963 on Plan 102950 South Western Highway, Glenlynn
Area:	105.97ha (Lot 1400) & 45.89ha (Lot 963)
Ownership:	J. S. & E. J. Gifford

The property is situated approximately 5km by road south of Bridgetown. Figure 1 shows the location.

3. DESCRIPTION OF THE SITE AND ITS SURROUNDS

3.1 PRESENT LAND USE

Figure 2 contains a recent aerial photograph showing the site and surrounding area. Both Lots 1400 and 963 are largely cleared and used for agriculture. There are some remaining scattered trees and a small area (approximately 1ha) of remnant Jarrah forest on Lot 1400. The current extractive operation on Lot 1400 consists of:

Previously extracted/Rehabilitated Areas	6.40ha
Extracted portion Stage 1 (stockpiles/awaiting rehabilitation)	4.50ha
Awaiting extraction Stage 1	0.80ha
Stages 2 - 4	15.9ha

Extraction has been active on Lot 1400 for a period of 15 years and a renewed Development Approval was granted for Stages 1-4 in July 2018. The past and future operations are outlined on Figure 2.

3.2 TOPOGRAPHY AND DRAINAGE

The majority of the two properties comprises medium slopes of between 5 and 10%. The proposed extraction areas have medium slopes averaging 4% to 8%, with a small section of steeper slopes averaging 8 to 10% along the eastern boundary.

The proposed extraction areas have an elevation between 275mAHD in the south and 252mAHD in the north. Drainage within the extraction areas is largely towards the northeast and east, and forms part of a drainage network that is intersected by two farm dams at a lower elevation. This network drains towards a tributary of the Blackwood River. The tributary joins the Blackwood River approximately four kilometres to the North, near the Bridgetown townsite.

There are steep slopes of approximately 25% on the western boundary of the extraction area and extraction activities will be set back from these areas.

The topography and drainage patterns of the extraction area and surrounds are shown in Figure 3.

3.3 GEOLOGY AND SOILS

A thin veneer of topsoil overlies approximately 1m of laterite caprock and gravel. The indurated material grades into kaolinitic clays which are approximately 20 metres deep before fresh granitoid material is encountered.

3.4 GROUNDWATER HYDROLOGY

Groundwater resources are limited within the area due to the low permeability of the sub-surface materials. Small quantities may be obtained at some depth below the weathered clays. This may be at between 15 to 20m below ground level at the base of the clay layer which is part of the laterite profile (De Silva et al 2000). Due to the very low permeability of the clay materials below the laterite, it is unlikely that proposed gravel extraction will impact permanent groundwater.

Previous excavations confirmed that there is no permanent groundwater that occurs within 2 metres of the surface of the existing extraction areas, just south of the proposed EIL area.

Investigations within the initial footprint of the proposed EIL area were carried out on 22nd January 2019, with 16 test pits of 1m depth excavated. This resulted in a modification of the initial footprint due to potential water management and limited resource issues. All profile tests pits within the modified footprint of the proposed EIL area were dry and did not show mottling or other signs of seasonal wetness. Test pit positions are shown on Figure 4.

Whilst there may be temporary perching of rainwater during winter storms at the contact between the gravel and the clay layer below, this is very quickly dispersed by infiltration and evaporation.

3.5 VEGETATION

There is no clearing permit required to proceed with the proposed new extraction area.

The closest State Forest areas occur to the east and west of the subject properties and these are shown on Figure 2. These forest areas are managed by the Department of Biodiversity Conservation and Attractions and comprise vegetation of the Balingup Vegetation Complex described as Open Forest of *Eucalyptus marginata-Corymbia calophylla* on slopes and *Eucalyptus rudis* on valley floors (Mattiske and Havel 1998).

3.6 CURRENT ZONING

The area is zoned as “Rural 2 - General Agriculture” in terms of the Shire of Bridgetown-Greenbushes Town Planning Scheme No 4.

3.7 EXISTING PUBLIC INFRASTRUCTURE

A Dial Before You Dig (DBYD) application was submitted on 13 September 2018 and responses were received from the following:

- Western Power Corporation
- Water Corporation

- Telstra

These respondents indicated that no infrastructure exists that will be impacted by the proposed extraction activities. A copy of these responses is included in Appendix 2.

4. EXTRACTION ACTIVITIES

4.1 PREVIOUS EXTRACTION ACTIVITIES

Extraction has been occurring on Lot 1400 since 2002. The original approval for extractive industry on this property consisted of 7 stages of approximately 4ha each and totalled 26ha. Only a small portion of this area was extracted under the initial approval and this was rehabilitated to pastures (see Figure 2). The 2012 extraction application proposed extraction in 4 cells of 5.3ha each (totalling 21.2ha over substantially the same footprint as the original 2002 application). This was renewed in 2018, with the majority of Stage 1 having been extracted, with the exception of a small area and some stockpiles remaining on Stage 1. Approval for this was granted in July 2018.

On average, extraction activities have resulted in the ground surface being lowered by approximately 1 metre (which is the average depth of the gravel resource).

The rehabilitation method employed to date on this site has been to rip the ground and replace topsoil. Thereafter pasture seed has been sown and fertilized. This has occurred over an area of 6.4ha to date and has proven to be successful.

There has been no previous extractive activity on Lot 963.

4.2 PROPOSED NEW EXTRACTION ACTIVITIES

The Development Approval application is required for the following proposed extractive activities:

- Extraction over 19.3ha within 4 stages. Each stage will be between 4.0 and 5.7ha and yield approximately between 40,000 and 57,000m³ of gravel.
- These Stages are labelled Stages 5 – 8 (as shown on Figure 4).
- Total extraction from Stages 5 to 8 will be approximately 193,000m³ (in situ volume) or up to 405,000 tonnes.
- This extraction operation is in addition to the current development approval for the extraction of 166,500m³ of gravel on Lot 1400 from Stages 1-4.
- Stages 5 to 8 will be divided into 3 or 2 substages of 1.8 to 2ha each. Progressive rehabilitation of the extraction areas will occur as each substage is extracted.
- The extraction area has been surveyed and pegged out by a surveyor. A certified survey is attached as Appendix 3.
- Topsoil and overburden will be removed from the extraction areas in the substages, with only the areas targeted for immediate extraction being opened.
- Topsoil and overburden will be stockpiled separately along the edges of the extraction area, to a maximum height of 2m, in locations to give the greatest noise attenuation benefits. Where necessary, these will be stabilised with a soil binding

agent and planted.

- Extraction will result in the lowering of the ground level by on average 1.25 metres, but once topsoil and overburden is replaced, the final surface will be approximately 1 metre lower than the original ground level.
- Crushing and screening will be undertaken in 4 campaigns of around 48,250m³ (100,000 tonnes) each. It is anticipated that crushing will occur annually over a 6 week period.
- 7-metre-high product stockpile noise bunds will be constructed with extracted gravel material, around both crusher locations (identified in Figure 4) to ensure compliance with the *Environmental Protection (Noise) Regulations 1997*. The proponent will ensure these bunds are appropriately stabilised as described in Section 5.5.
- A November 2018 noise assessment (Appendix 4) identified an area along the western boundary of the original proposed extraction area where mobile plant equipment should be excluded unless a perimeter bund is installed. This resulted in a reduction of the proposed extraction by approximately 3.7ha, as an installation of bunding within this area was not practical and thus the area will be avoided.
- Measures to limit noise and dust from this part of the operation are discussed separately in 5.4 and 5.5 below.
- There will be no blasting.
- The completion of rehabilitation commitments will be undertaken.
- Extraction areas are setback at least 20 metres from the property boundaries.

Table 1 below summarises the actions that are to take place on the property over the next 5 year extraction period between 2019 to 2024. Table 1 refers to the stages of extraction that are illustrated on Figure 4.

TABLE 1: Stages of the Extraction Operation

Stage	Action	2019	2020	2021	2022	2023	2024
5	Rip, blade and crush gravel (53,000m ³)						
5	Remove gravel product (53,000m ³)						
5	Rehabilitate 5.4ha mined area						
6	Rip, blade and crush gravel (41,000m ³)						
6	Remove gravel product (41,000m ³)						
6	Rehabilitate 4.2ha mined area						
7	Rip, blade and crush gravel (57,000m ³)						
7	Remove gravel product (57,000m ³)						
7	Rehabilitate 5.7ha mined area						
8	Rip, blade and crush gravel (40,000m ³)						
8	Remove gravel product (40,000m ³)						
8	Rehabilitate 4.0ha mined area						
All	Monitoring and remediation of rehabilitated areas						

Batters of 1:6 will be maintained throughout the operation. Rehabilitation is described in Section 7 of this report.

When operations are carried out, the following equipment is present/used on site:

- D10/D9 Bulldozer
- CAT 980 Front End Loader (FEL)
- Striker 1320 Crusher
- Finlay Screen 693
- Striker 25m Stacker
- Standard Rigid Truck (14 tonnes)
- Single Semi-loader (24 tonnes)
- Truck and Dog (40 tonnes)
- Road Train (50 tonnes)
- Water Carts
- Amenities building with generator
- A mobile refueling vehicle will refuel all machinery on a daily basis. No fuel or lubricant will be stored on site.

4.3 SITE ACCESS AND EGRESS ROADS

It is proposed to continue to access the site from South Western Highway via Lynam Road, turning west through Lot 4 and then into Lot 1400. This road has been sealed from South Western Highway to the start of the existing extraction area and is the subject of a current formal agreement between B&J Catalano and the Shire of Bridgetown-Greenbushes.

The internal access road to the proposed extraction areas will begin at Lynam Road and will be an unsealed gravel road (Figure 4).

4.4 ESTIMATED TRAFFIC TO BE GENERATED

Trucks that will be entering and exiting the site will be a combination of sizes between 24 tonne (and less), 40 tonne and 50 tonne. The 40 tonne and under will make up approximately 70% of vehicle movements.

The currently approved extraction for Stages 1-4 estimated a total of 33,300m³ (66,000 tonnes) per year equating to between 6-16 total truck movements per day. The new extraction area is estimated to extract approximately 38,600m³ (81,000 tonnes) per year. The combined total extraction is estimated to be 71,900m³ (147,000 tonnes) per year.

The following estimates are made:

Approximate annual gravel removed Lots 1400 & 963: 71,900m³ (147,000 tonnes)

Number of working days per month: 24 days

The above factors suggest there will be on average 18 loaded truck movements out of the site per day while both EIL areas are operating concurrently, however this will be dependent on demand.

The site will operate Monday to Saturday and no work will be conducted on Sundays and Public Holidays. Operating times will be 7am to 5.30pm. The requested commencement

time of 7am is 30 minutes earlier than the Shire's Extractive Industry Policy of 7.30am, however, approval was granted for the operation at Lot 1400 to commence at 6.30am and there have been no noise complaints associated with this operation. The 7am start time will be adhered to over the entire operation for Stages 1 – 8 in order to ensure operations are complying with the *Environmental Protection (Noise) Regulations 1997* limits. A full assessment of the impacts of noise from this operation is included in Appendix 4.

Vehicle movements from the quarry will be to areas throughout the Bridgetown-Greenbushes Shire, with material being provided to local contractors as well as Main Roads contracts for use on the road network. B & J Catalano maintains a high standard of driver training and awareness and hold a Heavy Vehicle Accreditation (HVA) Certificate. Vehicles entering the quarry are required to abide by all relevant legislation and company policy requirements.

This proposal is classified under the Shire's Extractive Industry Policy as a large sized extractive operation, however, it is requested that the proponent be exempt from submitting a full Resource Haulage Plan and Traffic Impact Assessment, as the extracted material will be hauled directly from the access road to South Western Highway. As outlined in the Shire's Policy, operations that have direct access to South Western Highway may be exempt from this requirement. Main Roads have been provided with information regarding the potential truck movements likely to occur with this proposal and have confirmed that they have no objections to the proposed extractive industry operation (see Appendix 5).

4.5 GATES, FENCES AND SIGNAGE

Both properties (Lot 1400 and Lot 963) are fully fenced around their perimeter. At the entrance to Lynam Road, just after the railway line, a gate exists which will be locked at all times when the pit is not being operated. There is also a gate for access into Lot 963, and when extraction occurs in Stage 8, this gate will be locked at all times when the pit is not being operated. The gate positions are marked on Figure 2.

After extraction and rehabilitation of Stage 8a, the fence at the boundary between Lot 1400 and Lot 963 will be rebuilt and a gate will be placed as illustrated on Figure 4.

There is no need to fence Stage 8 from Residence 1 as this is the caretaker's residence.

The proponent will ensure that appropriately spaced warning signs carrying the correct wording "DANGER EXCAVATIONS KEEP OUT" are situated along each of the boundaries of the proposed EIL area, in clear view. The signs will not be more than 200 metres apart and will be at least 1.8 metres high and 1 metre wide.

5. POTENTIAL ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

Short term negative environmental impacts may be expected in the process of all extraction actions. However, these can largely be mitigated over the medium to long term, provided that operating procedures are in accordance with acceptable standards and that rehabilitation measures are implemented as proposed. The following listed potential impacts are used as a check list to ensure that all major potential impacts are addressed.

5.1 FLORA AND FAUNA

No clearing is required for the proposed extractive operations as the site is located within existing cleared agricultural land.

The closest areas of State Forest are located approximately 800m to the west and 900m to the east, from the boundary of the proposed extraction areas. It is unlikely that extraction activities will impact on these areas.

5.2 WEEDS

B&J Catalano acknowledge their responsibilities under the *Biosecurity and Agricultural Management Act 2007* and will continue to implement the Weed Management Plan as is described in Appendix 6 of this report.

5.3 WATER

5.3.1 Potential Impacts

Uncontrolled stormwater running through the pit has the potential to cause erosion on-site and sedimentation off-site. The water management strategies outlined below will ensure that these potential impacts do not occur.

5.3.2 Water Management

5.3.2.1 Stormwater Management

Storm water management is based on the Department of Water and Environmental Regulation (DWER) Water Quality Protection Note, "Basic raw materials extraction" (DWER 2019) which considers both runoff within the extraction area and runoff from adjacent catchments. Figure 3 outlines the measures that will be undertaken to manage stormwater on site. Stormwater management measures will include the installation of detention ponds, contour drains and cut-off bunding.

Management of runoff generated within the extraction area will be contained via detention ponds designed to hold stormwater generated from a 2-hour rainfall event with

a 10% Annual Exceedance Probability (AEP). The 2016 Intensity-Frequency-Duration data obtained from the Bureau of Meteorology (BoM) provides the rainfall intensity for this event. The total runoff (calculated using the Rational Method) over the proposed extraction areas for the two-hour period of the recommended design storm is 4,792m³. This runoff volume has been listed per stage in Table 2.

TABLE 2: Surface Water Management Area (Staged) and Runoff Volume

Extraction Stage	Total Area (m ²)	Design Storm Runoff* (m ³)	Detention Pond Storage (m ³)
Stage 5	53,605	1334	1340
Stage 6	41,549	1034	1040
Stage 7	57,159	1422	1430
Stage 8	40,292	1002	1010

*Calculated by Rational Method using a 2hr rainfall with a 10% AEP = 15.55mm/hr, obtained from the Bureau of Meteorology (BoM) website (BoM 2018). Runoff coefficients used for Rational Method calculations are 0.8 for gravel (DWER 2019).

Four detention ponds are proposed, one per stage. The storage capacities of each detention pond are detailed in Table 2, and add to a combined storage capacity of 4,820m³. The detention ponds will be excavated as part of the extraction process but deepened to approximately 1m lower than the base of the excavations, with the spoil being placed within the pit adjacent to the detention pond.

All detention ponds will be located on the north-eastern corner of each stage, and contour bunds will ensure all runoff is diverted into the ponds (Figure 3). The contour bunds will be constructed to a grade of 0.3 to 0.4% and will be spaced approximately 30 metres apart.

The DWER recommends that surface water runoff produced from areas outside the extraction area from the 2-hour 10% AEP storm event should be prevented from entering the pit (DWER 2019). As the pit is situated at the top of a ridge, only the southern boundary of the pit area will require cut-off bunding. The cut-off bunding is shown on Figure 3.

A 0.8ha area of Stage 5 drains south-westwards. Based on the 2 hour 10% AEP, this area will require management of approximately 50m³ storm flow. This volume will be managed using several contour bunds, the pit batter and perimeter cut off bunding (constructed of topsoil) as shown in Figure 3.

After completion of the extraction phase the rehabilitation process will be commenced. The ground will be ripped along the contour at six metre intervals, leaving low bunds which will attenuate surface water flow and prevent rill erosion during the period that the pastures are becoming established. Detention ponds and contour bunds will be retained as part of the final land surface, while pastures establish.

Regular monitoring of the erosion control measures will be undertaken, and repairs implemented where necessary throughout the approval period or longer if necessary.

With the implementation of the above storm water management measures, the surrounding landsurface and natural drainage channels should not be impacted upon by the extraction activities. The proposed management measures will also ensure that there

will be no significant impacts upon the water quality of any surrounding streams or tributaries of the Blackwood River. In line with the Shire of Bridgetown-Greenbushes' Extractive Industry Policy requirements, there is more than 40 metres separation distance between the proposed extraction operation and any water course.

5.3.2.2 Groundwater Management

The project does not involve abstracting ground water for operational purposes. No groundwater will be exposed as the floor of the pit will be at least 10 to 15 metres above the permanent water table level.

The extraction area is not in a declared Public Drinking Water Source Area (PDWSA), the closest Priority areas are approximately 10km north and 20km north west (Landgate 2018).

Due to the low scale nature of the operations, no groundwater contamination is anticipated. No fuel or lubricant storage will occur on the site. Refuelling will take place using a mobile refuelling vehicle which is equipped with a "snap-on snap-off, fast-fill and auto shut-off" facility. Additionally, a Fuel Spill kit will be available on site at all times.

The plant will be refuelled each morning, leaving the vehicles almost empty overnight. No major servicing, which could lead to fuel and oil spills, will take place on the site. B & J Catalano will implement the Spill Management Plan contained in Appendix 7.

The use of fertilisers will be necessary during the rehabilitation process. At this time, the Department of Agriculture and Food will be consulted as to the appropriate levels of fertiliser requirement. The correct application of these products will serve to control leaching of nutrients into the ground water.

Herbicides will be used only as required and their use is expected to reduce as vegetation is established. In choosing herbicides, preference will be given to substances that strongly adsorb to soil and have low potential to leach into ground water.

5.4 DUST

5.4.1 Potentially Sensitive Receptors

5.4.1.1 Residential Dwellings

The details of closest residential dwellings are listed in Table 3 and shown on Figure 2.

TABLE 3: Residential Dwellings within 1,000m of the Site*

Reference No. On Figure 2	Lot No.	Occupants Name	Distance to closest area of proposed pit (metres)	Distance to nearest crusher (metres)
Res 1 [#]	Lot 963	J & E Gifford	390	486
Res 2	810	P. & L. Whitney	420	486
Res 3	Lot 1 61 Rifle Range Rd	S. & D. Dean	750	820
Res 4	Lot 1 Lowe Rd	A & E Alston	300	483
Res 5	Lot 677	J & E Gifford	485	780
Res 6	Lot 677	J & E Gifford	740	991
Res 7	Lot 78	M. Brewis, C. Wright & N. Pitts	805	897
Res 10	Lot 11863	John Tillman	849	1249

*Res 8 & Res 9 have been removed from Table 3 and Figure 2 due to falling outside of the 1000m buffer, which was reduced by the new proposed extraction area.

[#]Res 1 is a caretaker residence.

5.4.1.2 Prevailing Winds

Winds are strongest in this area in the afternoon and data has been extracted for this time from the Bridgetown weather station (Bureau of Meteorology 2018). These data show that prevailing winds are from the west, north-west and north during the wetter months of winter and spring and from the south, south east and east during the drier months of summer and autumn. During the drier parts of the year, when there is potential for dust to be generated, it will mainly be blown towards the residences to the north and west of the proposed pit. B & J Catalano acknowledge that there is potential for a dust nuisance to be incurred during summer and intend to implement dust management measures identified below.

5.4.2 Measures Proposed for Managing Dust

The measures proposed to manage dust impacts are listed below:

- A 15kl water cart will be on site during all periods when earth is being moved or crushing is being conducted. If and when dust is caused to occur during these periods, the water cart will be employed to damp down the areas of concern. During crushing a spray-bar will be employed at all times.
- Employees and contractors working on site will be provided with information on how to minimise dust emissions.
- If the wind is blowing towards the closest residences and conditions are dusty, then operations will be stopped until such time as adequate wetting down has occurred.
- A polymer-based spray-on soil stabilizer will be applied to topsoil and overburden stockpiles and noise bunds if they do not stabilize by crusting and grass regrowth.
- Internal roads will be surfaced with gravel.
- Truck loads will always be covered so that no dust is generated in transit.

- A complaints system will be put in place and these will be recorded by the Quarry Manager and acted on promptly.
- A notice will be erected at the front gate and this will provide emergency contact details for the Quarry Manager.

5.5 NOISE

A noise assessment of Stages 5 to 8 was undertaken by Lloyd George Acoustics for the proposed extraction area (Appendix 4). The noise modelling estimated the sound levels which may be incurred from the operation under worst-case conditions. The modelling is not an average of the likely noise to occur at each residence but a process to determine whether the operation will comply at all times with the *Environmental Protection (Noise) Regulations 1997*.

There are eight residential dwellings within 1,000m of the proposed operations as shown on Table 3 and Figure 2. All residences except Res 1 are considered Noise Sensitive Premises: highly sensitive area, however Res 1 (located on Lot 963, where Stage 8 is proposed) is considered a Caretaker residence and is therefore regarded as an industrial premise (discussed further in Appendix 4).

During extraction of Stages 5 to 8, the crusher will be sited in either the north location or south location in different years of the operations. The two crusher locations are shown in Figure 4. The noise modelling showed that the construction of a 7-metre-high product stockpile bund around the north and south crusher will mitigate the impacts on residents and ensure the operation complies with the *Environmental Protection (Noise) Regulations 1997* (discussed further in Appendix 4).

A previous November 2018 Noise Assessment with a larger footprint (Appendix 4) determined that there was an area along the western boundary of the proposed extraction area where mobile plant should not operate without the installation of a perimeter noise bund. As the installation of this perimeter bund would be costly, time consuming and remove a significant area available for extraction, the extraction footprint was modified, resulting in a reduction of the initial extraction footprint by approximately 3ha.

B&J Catalano will apply the following noise management practices for the proposed operations:

- 7 metre high product stockpile noise bunds will be constructed for the north and south crusher locations as recommended by Lloyd George Acoustics. Bunds will be created with existing gravel product on site and a soil binding agent will be utilised to stabilise the bunding, which will be maintained until operations at that location cease.
- Topsoil and overburden will be stockpiled along the edges of the extraction area, to a maximum height of 2m, in locations to give the greatest noise attenuation benefits.

- The original proposed extraction area has been modified so that the mobile plant is not progressing as close to the western boundary of the property. This mitigates the need for a noise bund along the western boundary.
- All plant will be maintained in good condition with efficient mufflers and noise shielding.
- Mobile equipment will be fitted with broadband reversing alarms.
- A contact number for complaints will be advertised on the site notice board at the entrance to the property, and a complaints system will be in place with any complaints recorded by the Operations Manager and acted on promptly.

No noise complaints have been received from the existing EIL operations to date. In the event that the operation receives noise complaints from nearby residences, additional management measures will be considered.

5.6 LANDSCAPE IMPACT

The previous 2018 application for extraction within Stages 1-4 established that there would not be visual impacts from this portion of the operation on South Western Highway near the Lynam Road location. As the extraction is proposed to extend northwards toward the northern boundary of Lot 963 the visual impacts of this need to be considered.

The outcome of a Noise Assessment (Appendix 4) and further consideration of stormwater management has resulted in a reduction to the northern and eastern extents of the proposed extraction area, which will minimise potential visibility from South Western Highway and from a number of the residences.

The existence of roadside vegetation along this portion of South Western Highway, and the topography, renders the majority of the extraction area largely not visible from the Highway. However, it is possible that the extraction may create some minor short-term visual amenity impacts in a few areas where the topography does not block visibility, and roadside vegetation is sparse. An assessment of the potential visual impacts is described below.

Once rehabilitation has been completed and vegetation regrown, there will be little evidence that extraction has taken place.

5.6.1 Methodology

The following methods were utilised to assess the potential visual impacts from the proposed EIL on South Western Highway and the eight Residences within 1000m:

- To assess the topography, 5m contours of the area around the proposed EIL were captured (Figure 5) and turned into a surface using AutoCAD Civil 3D.
- Six profile views were created using AutoCAD Civil 3D to illustrate the topography and show the lines of sight (Figures 6 and 7).

- Twelve plates (photographs) looking from South Western Highway towards the proposed EIL area were sourced from Google Earth (Appendix 8).
- Satellite imagery was used to further assess vegetation buffers.

The AutoCAD Civil 3D surface created from the 5m contours captured in the area of interest was used to create six profile views. Four of these profile views show lines of sight from South Western Highway and western residences (Figure 6), two profile views were created to assess the visual impact from eastern residences (Figure 7).

The results of the assessment using the above methods showed limited to no visual impact on both residences and users of South Western Highway. The details of the assessment for each sensitive receptor follow in the two sections below.

5.6.2 South Western Highway

Four profiles (A to D) have been created to assess the line of sight from South Western Highway to the proposed EIL area. The profile locations are shown in Figure 5 and the profile views are included in Figure 6. Furthermore, photographs from South Western Highway towards the proposed EIL area have been sourced from Google Earth and are included in Appendix 8.

To assess the potential visual impact to South Western Highway, six view areas were chosen along the highway, from just south of the access road to directly north of the proposed EIL area. These views were chosen to be evenly spread out over the area of potential visual impact. Four views were chosen around profile views A to D, View North covers the area north of View D, and View South the area south of View C.

Table 4 lists the six view areas and describes the visual impact assessment at each, including the evidence and reasons for the potential visual impact assigned.

TABLE 4: Visual Impact on South Western Highway

View area on Figure 5	Evidence*	Potential Visual Impact	Comment
View North (Northwest of Plate 12)	Satellite imagery	No Impact	Just northwest of Plate 12 there is very good vegetation buffering along South Western Highway.
View D	Profile D; Plate 9, 10, 11 & 12	Minor	Profile D shows the northern boundary of the EIL may be seen from South Western Highway and the 8m product stockpiles# proposed at the north of Stage 8 may be visible (Plate 10 shows the view at Profile D). The hill seen in Plate 8 is not visible in Plate 9, and vegetation cover becomes scarce from Plate 10 until just north of Plate 12. However, Profile D shows no line of sight impact behind the product stockpiles. The vast majority of the proposed operation will be hidden.
View A	Profile A; Plate 7 & 8	Minor	Profile A shows that the northeastern boundary of the EIL may be seen from South Western Highway, in particular the 8m product stockpiles# proposed at the north of Stage 8 may be visible. However, Plate 8 shows a hill along the western edge of South Western Highway which is not evident from the 5m

			contours. This helps to block the view at this location. Plate 7 shows good vegetation coverage at the access road to Res 1. The combination of the hill and vegetation buffering will minimise visual impact in this area.
View B	Profile B; Plate 6	No Impact	Plate 6 shows the view at the access road to Res 6, which shows an area with sparse vegetation cover. The photo shows a ridge that blocks the line of sight to the proposed EIL area as can be seen in Profile B.
View C	Profile C; Plate 4 & 5	No Impact	Plates 4 and 5 show areas of no vegetation buffer along the western border of South West Highway, however a ridge blocks sight of the EIL areas (existing and proposed). This ridge can also be seen on Profile C blocking the line of sight to the proposed EIL area.
View south (Access Road)	Plate 2 & 3	No Impact	Plate 2 shows there is a good vegetation buffer along the western border of South West Highway going south from the Access Road. Plate 3 shows there is no vegetation buffer just north of the Access Road, however a ridge blocks sight of the EIL areas (existing and proposed).

*All plates were taken from South Western Highway looking towards the proposed EIL area.

#Due to the earthy red colour of stockpiles, they represent only a minor visual disturbance.

As can be seen from Table 4, all six South Western Highway views were assessed as having minor to no visual impact from the proposed EIL project.

5.6.3 Residences

Six profiles (A to F) have been created to assess the line of sight from Residences within 1000m of the proposed EIL area. The profile locations are shown in Figure 5 and the profile views are included in Figures 6 and 7. Furthermore, photographs from South Western Highway towards the proposed EIL area at the location of two residences have been sourced from Google Earth and are included in Appendix 8.

Table 5 shows the visual impact assessment at each residence location, including the evidence and reasons for the potential visual impact assigned.

TABLE 5: Visual Impact on Residences *

Reference No. On Figure 5	Evidence	Potential Visual Impact	Comment
Res 1**	Profile A	Minor	Profile A shows the majority of the proposed EIL area will not be in a line of sight from Res 1, however 8m product stockpiles# along the northeastern border of the proposed EIL area may be visible from this residence.
Res 2	Profile E	No Impact	Profile E shows the proposed EIL area will not be in a line of sight from Res 2.
Res 3	Profile E	Minor	Profile E shows the majority of the proposed EIL area will not be in a line of sight from Res 3, however 8m product stockpiles# along the northwestern border of the proposed EIL area will be visible from this residence.
Res 4	Profile F	No Impact	Profile F shows the proposed EIL area will not be in a line of sight from Res 4.

Res 5	Profile C	No Impact	Profile C shows the proposed EIL area will not be in a line of sight from Res 5.
Res 6	Profile B & C; Plate 5	No Impact	Plate 5, taken from South Western Highway, shows Res 6 and the view behind Res 6. The photo shows the line of sight ends at the row of trees behind and to the left of Res 6, the proposed EIL will be located behind this ridge. Furthermore, Profiles B & C (just north and south of Res 6) show no visual impact.
Res 7	Profile A & B; Plate 1	Minor	Res 7 is located east of South Western Highway. Plate 1 is taken from South Western Highway, in front of Res 7, and shows that while there is vegetation along South Western Highway in front of Res 7, it is still possible at certain points to see the edge of the ridge on which the proposed EIL will be located, through this vegetation. However, Profiles A & B (just north and south of Res 7) show Minor or no visual impact, as the EIL area will be located over the ridge. It is possible 8m product stockpiles [#] along the northeastern border of the proposed EIL area may be visible from this residence, but it would be viewed through the vegetation.
Res 10	Previous EIL; Satellite imagery; Topography	No Impact	Extraction has occurred since 2012 in the approved Stages 1 to 4 without any complaints from Res 10, which is the residence located furthers from the proposed EIL area. The topography shows the new EIL areas, from Res 10, will be behind and below the existing EIL Stages. Furthermore, satellite imagery shows a vegetation buffer around Res 10.

*Res 8 & Res 9 have been removed from Table 5 and Figure 5 due to falling outside of the 1000m buffer, which was reduced by the new proposed extraction area.

**Res 1 is a caretaker residence.

[#]Due to the earthy red colour of stockpiles, they represent only a minor visual disturbance.

As can be seen from Table 5, all residences were assessed as having minor to no visual impact from the proposed EIL project.

5.6.4 Alteration of the Land Surface

No steep slopes will remain after extraction and this will ensure that the extraction area will blend into the surrounding landscape. The final land surface will be approximately 1 metre below the original ground level after topsoil and overburden are replaced and the edges will be battered down at a gradient of 1:6. As the gravel resource is only on average 1 metre deep, the extraction process does not significantly impact upon the land surface and there are no deep pits created in the process of extracting gravel on this site.

5.7 DIEBACK

5.7.1 Potential Impacts

Since the extraction area has been completely cleared, the dieback status of this area could not be readily ascertained. On the basis of this, the site should be classified as uninterpretable and managed as such. Guidelines for the management of the pit and the movement of vehicles in and out of the pit are contained in the guideline document available from the Department Biodiversity, Conservation and Attractions website

(<https://www.dpaw.wa.gov.au/management/pests-diseases/phytophthora-dieback>, accessed 2018).

5.7.2 Dieback Management

The following management measures will be put in place to minimise future spread of dieback:

- The site will be fenced at all times.
- Access to the site will be via a single entrance gate.
- All machinery, trucks and other vehicles will arrive in a clean condition free of soil and organic matter that may contain dieback.
- Any soil and plant material brought to the site for rehabilitation purposes should be from dieback free sources.
- Employees and contractors working on the site will be informed of the purpose of the above measures and their responsibilities in relation to dieback prevention.

5.8 HERITAGE SITES

A search of the State Heritage Register showed no heritage places within the Glenlynn locality (Heritage Council 2018).

A search of the Department of Planning, Lands and Heritage (DPLH), Aboriginal Heritage Inquiry System (Accessed September 2018 via: <https://maps.daa.wa.gov.au/AHIS/>) shows no sites of aboriginal significance on Lots 1400 or 963. The tributary located along South Western Highway (which a portion of the extraction operating drains towards) forms part of the Blackwood River registered site. The proposed stormwater management actions on site will ensure that this tributary is not impacted upon from by the extractive operation.

In the event that during the course of extraction an Aboriginal cultural heritage site is discovered, the proponent will immediately advise the DPLH and abide by the *Aboriginal Heritage Act 1972*.

5.9 BUSHFIRES

The threat of bushfire from this operation is considered to be low, with the majority of the proposed extraction area outside the bushfire prone areas (Figure 2) as designated by the Fire and Emergency Services (FES) Commissioner on 1 June 2018. Furthermore, no habitable building, or any other structure, is to be developed.

However, as there is a chance that a bushfire may occur, a Bushfire Management Plan is included as Appendix 9, to ensure appropriate preventative measures and emergency responses.

6. ADDITIONAL REQUIREMENTS

6.1 OTHER PLANNING CONSIDERATIONS AND IMPACTS

A number of additional planning matters were requested to be considered by the Shire of Bridgetown-Greenbushes, these are listed and addressed below:

- Local economy and employment opportunities and surrounding attractions (none to shires knowledge) -
The proposed gravel extraction operation will provide access to gravel resources for the surrounding area to meet local demand for this product at a low cost. The majority of operational staff are direct employees of B&J Catalano.
- Community services and health and local amenity including landscape values -
The placement of the operation will have minimal impact upon landscape values and local amenity, due to its placement within the landscape. As the operation is situated on the plateau of a ridge, there will be little visible evidence of the extraction. In Section 5.6 potential visual impacts to residences within 1000m of the proposed EIL and users of South Western Highway have been assessed and showed limited to no visual impacts. Potential noise and dust pollution to residences within 1000m of the proposed EIL have been addressed in Sections 5.4 and 5.5.
- State Planning Policy (SSP) 2.0 Environment and Natural Resources -
Potential environmental impacts arising from this operation are addressed in Section 5. The proposed management measures should ensure that there will be no unacceptable impacts on the environment, including impacts on biodiversity and water. This SPP also takes into account the management of resources such as basic raw materials and the need to ensure these are in ready supply close to developments to keep costs down, as is the case for this extractive operation.
- State Planning Policy 2.5 Rural Planning -
This operation will only result in a short term impact on a small area of rural land. The affected area will be returned to its pre-existing usage at the completion of extraction, as the area will be rehabilitated to pastures and be available as grazing land.
- Warren-Blackwood Rural Strategy –
The extractive operation is located within a rural, grazing and commercial tree planting area and is not in conflict with this strategy, as the area will be returned to grazing land.
- State Planning Policy 2.7 Public Drinking Water Source Policy -
The extractive operation is not situated within or near a proclaimed Public Drinking Water Source Area, as addressed in section 5.3.2.2.

- **State Planning Policy 2.9 Water Resources -**
The measures to manage potential impacts on water resources from this development have been addressed in Section 5.3. Appropriate management measures have been developed to prevent impacts upon the drainage system. There is minimal risk of encountering acid sulphate soils. There is no fuel or contaminants stored on site and machinery will be well maintained. Fertiliser spread during pasture establishment will be applied at an acceptable rate to prevent excess nutrient load in the soil entering the drainage system.
- **State Planning Policy 3.7 Planning in Bushfire Prone Areas -**
This policy is not applicable to this application. The majority of the proposed extraction area is outside the bushfire prone areas as designated by the Fire and Emergency Services (FES) Commissioner on 1 June 2018. Furthermore, no habitable building, or any other structure, is to be developed under this application.
- **State Planning Policy No. 4.1 State Industrial Buffer Policy –**
The Shire is to have due regard to this policy in their approvals process. The Environmental Protection Authority, Draft Environmental Assessment Guideline for Separation distances between industrial and sensitive land uses, 2015 has been considered as part of this application. This Guideline recommends for extractive industry a separation distance of 300-500 metres where there is only extraction, and a separation distance of 500-1000 metres where grinding, milling or separation is undertaken. There is a least 300 metres separation between the closest residences and the boundary of the extraction area. There are 3 residences that have a separation distance of just less (approximately 15m) than 500 metres from the nearest crusher location. All dust and noise management measures will be implemented to ensure that there are no adverse effects on surrounding residents. Extraction from the existing operation has been undertaken with similar separation distances and has been managed without any complaints from surrounding residents.

6.2 DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION

A Works Approval and Licence Application will be submitted to the Department of Water and Environmental Regulation (DWER) for a *Category 12: Screening etc of material* operation.

7. REHABILITATION

7.1 PROPOSED REHABILITATION MEASURES

The following steps will be implemented to rehabilitate the landsurface and establish pastures:

- The rehabilitation method used for the previous extraction on Lot 1400 will continue to be used for this proposed extraction area.
- Rehabilitation will be progressive and no more than 2ha will be open at one time.
- Stormwater management will be undertaken by the construction of contour drains and storm water detention ponds which will be extended from existing rehabilitated areas.
- Once stockpiles have been removed, the area will be ripped and smoothed with the edges of the excavation being blended into the adjacent land and seeded with pasture grasses.
- During each winter that the extraction activities are operational, progressive rehabilitation of previously extracted areas will take place.

7.2 MONITORING AND MAINTENANCE

Monitoring of rehabilitated areas will ensure that any areas requiring remedial work are identified. Monitoring will be carried out on an annual basis to assess:

- The physical stability of the landform in the rehabilitated areas;
- The success of the sown pasture grasses; and
- The emergence of weeds.

Monitoring will continue until the completion criteria presented in Section 7.3 have been fulfilled. Maintenance procedures will be carried out where necessary and may include:

- Repair of any erosion damage;
- Reseeding areas that may not have regenerated; and
- Weed control.

7.3 COMPLETION CRITERIA

Completion criteria must be sufficiently stringent to ensure that the overall objectives of the rehabilitation have been met. These criteria must also be designed to allow effective reporting and auditing to define an endpoint for the rehabilitation activities.

The completion criteria proposed for extractive operations are presented in Table TABLE 6.

TABLE 6: Closure Criteria, Objectives and Interim Targets

Criteria	Objective	Interim Targets
1. Safety	The site is safe to humans.	<ul style="list-style-type: none"> Site is safe to humans during operations.
2. Sustainability	The site is sustainable in the long term without additional management inputs.	-
3. Suitability	The site is suitable for the agreed land uses.	-
4. Visual amenity and heritage	The rehabilitated extraction area blends into the surrounding environment.	-
5. Off-site impacts	Significant adverse off-site impacts are prevented.	-
6. Hydrology	a. Site hydrology does not prevent the establishment of desired vegetation. b. Site hydrology does not reduce the stability of the landform. c. Stormwater is contained within the site.	<ul style="list-style-type: none"> Stormwater is contained within the site during operations. Identification and mitigation of any hydrology related issues during operations.
7. Soils and stability	a. Soil profiles and structures are sufficient to ensure vegetation establishment. b. The landform is stable.	<ul style="list-style-type: none"> Topsoil is respread in all rehabilitation areas. Identification and mitigation of potential erosion scars and scours during operations.
8. Vegetation	a. Pasture grasses cover the entire extraction area. b. Pasture grass cover is sufficiently resilient to sustain grazing pressure.	-
9. Weeds	a. Declared pest weeds are absent. b. The level of weed species should not be detrimental to the planted seedlings or pasture grasses.	<ul style="list-style-type: none"> Declared weed species removed systematically during operations.

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FIGURES



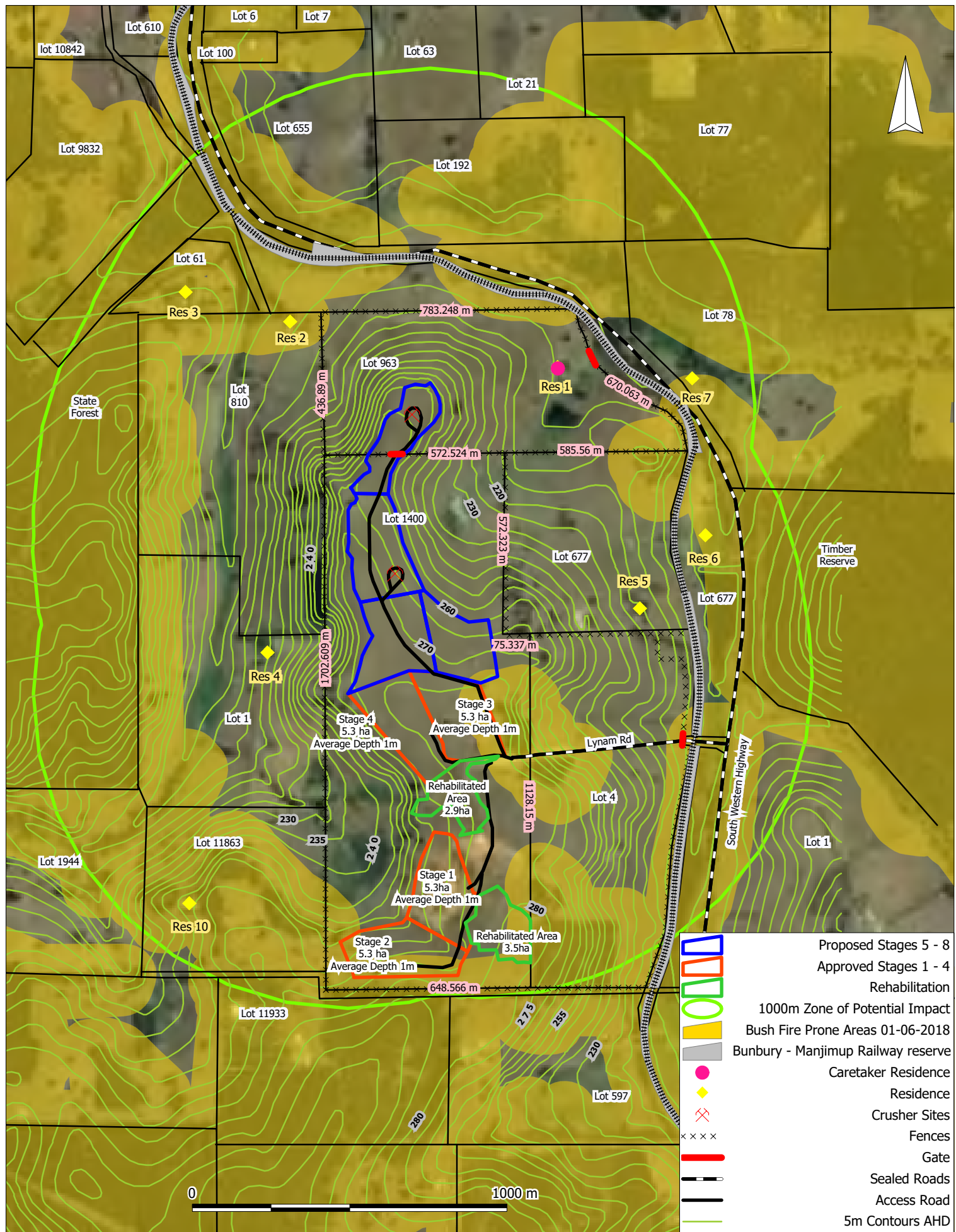
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www.Lundstrom-Environmental.com.au

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Source: NATMAP Digital Maps 2008
Datum: Australian Geocentric 1994 (GDA94)

B&J Catalano Pty Ltd
Lot 1400 South West Highway
Glenlynn
Shire of Bridgetown Green bushes
Gravel Extraction

Locality Plan

Figure 1



**LUNDSTROM ENVIRONMENTAL
CONSULTANTS PTY LTD**

21 Sellen Court Leeming WA 6149
mike@Lundstrom-Environmental.com.au
0417934863
www.Lundstrom-Environmental.com.au

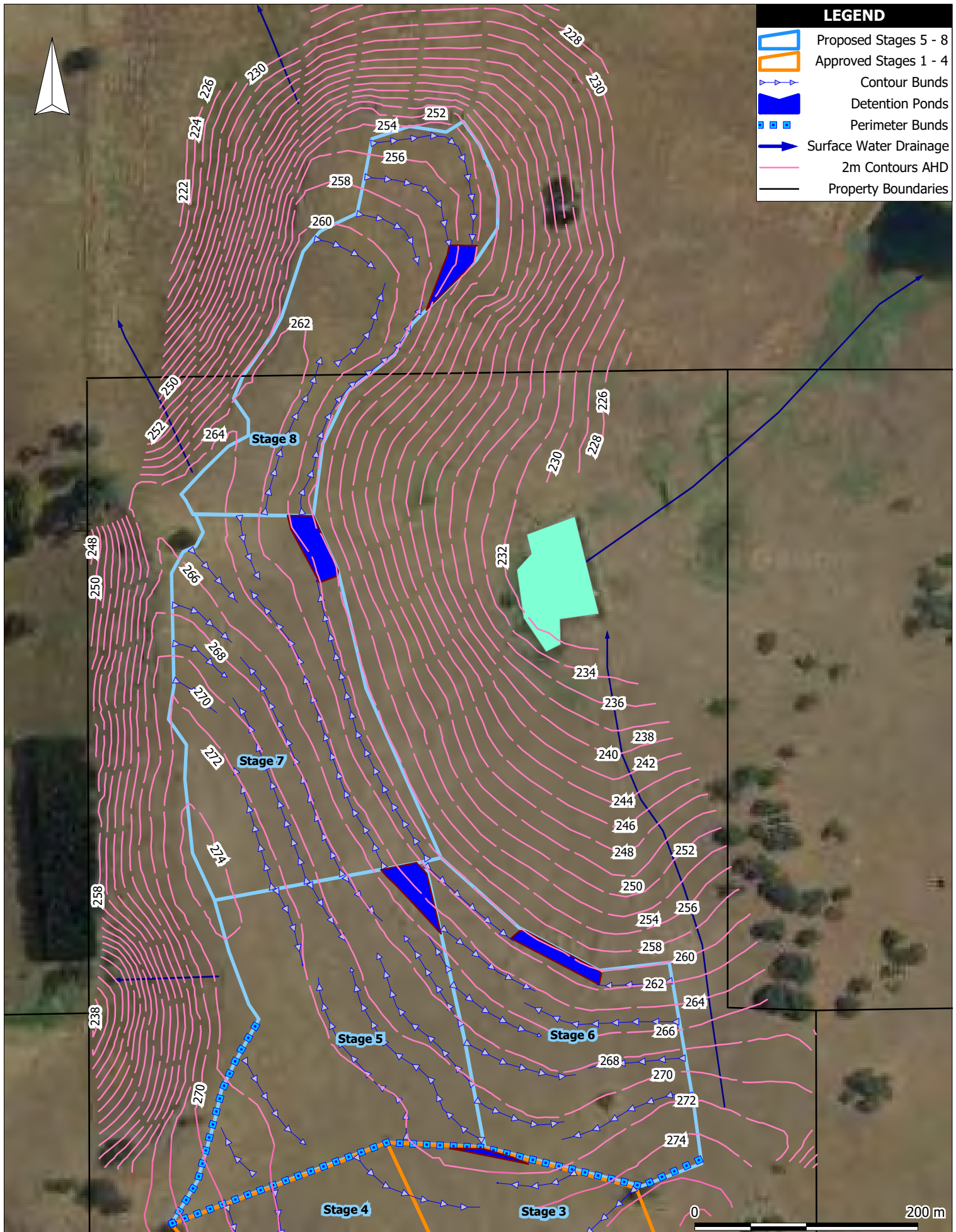
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Air Photo Date: Nearmap (with Google 2015)
Datum: Australian Geocentric 1994 (GDA94)

B&J Catalano Pty Ltd

**Lot 1400 South West
Highway, Glenlynn
Gravel Extraction**

Site and Surrounds

Figure 2



**LUNDSTROM ENVIRONMENTAL
CONSULTANTS PTY LTD**

21 Sellen Court, Leeming WA 6149
mike@Lundstrom-Environmental.com.au
0417934863
www.Lundstrom-Environmental.com.au

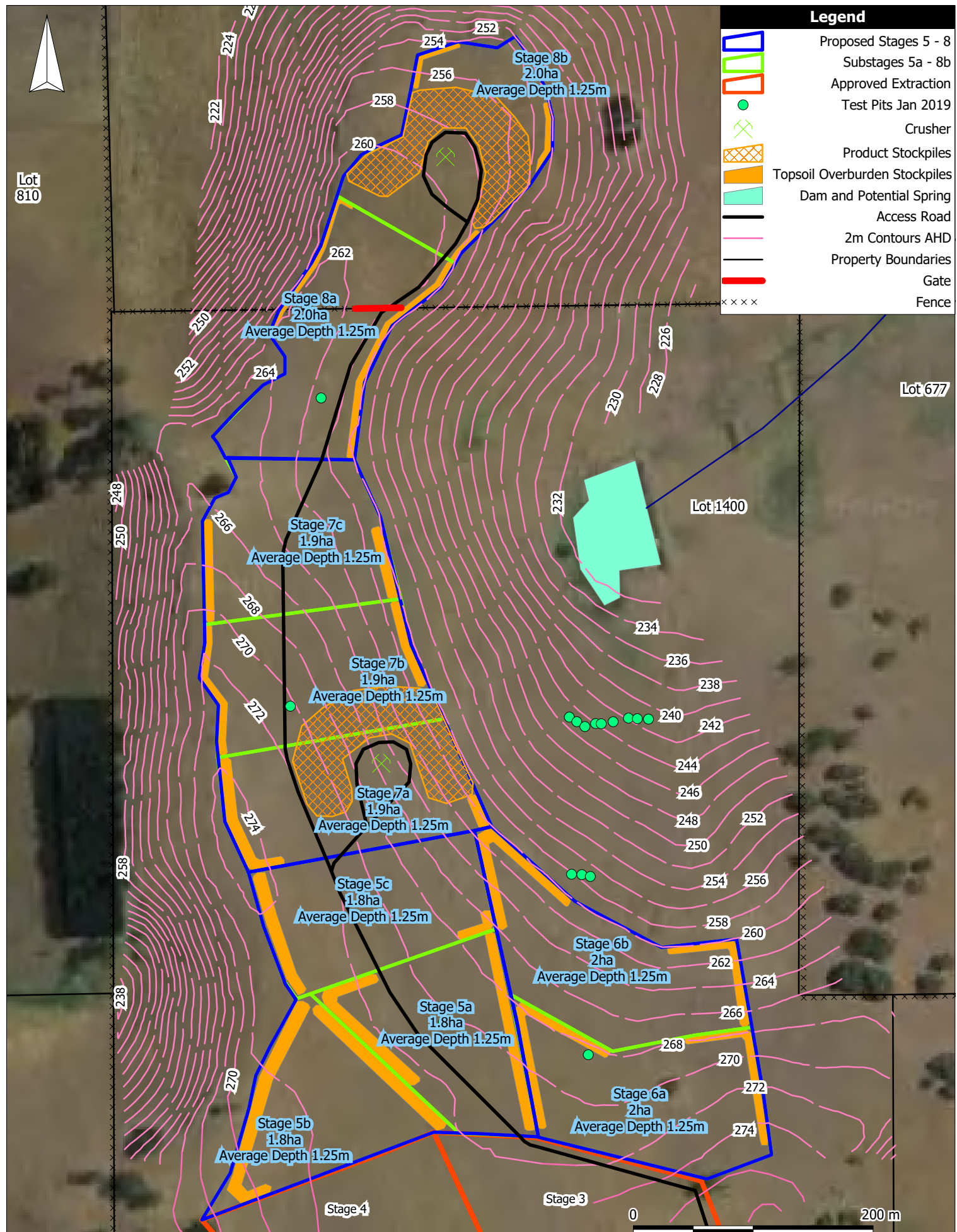
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(using Google 2015)
Datum: Australian Geocentric 1994 (GDA94)

B&J Catalano Pty Ltd

**Lot 1400 South West
Highway, Glenlynn
Gravel Extraction**

Stormwater Management

Figure 3



**LUNDSTROM ENVIRONMENTAL
CONSULTANTS PTY LTD**

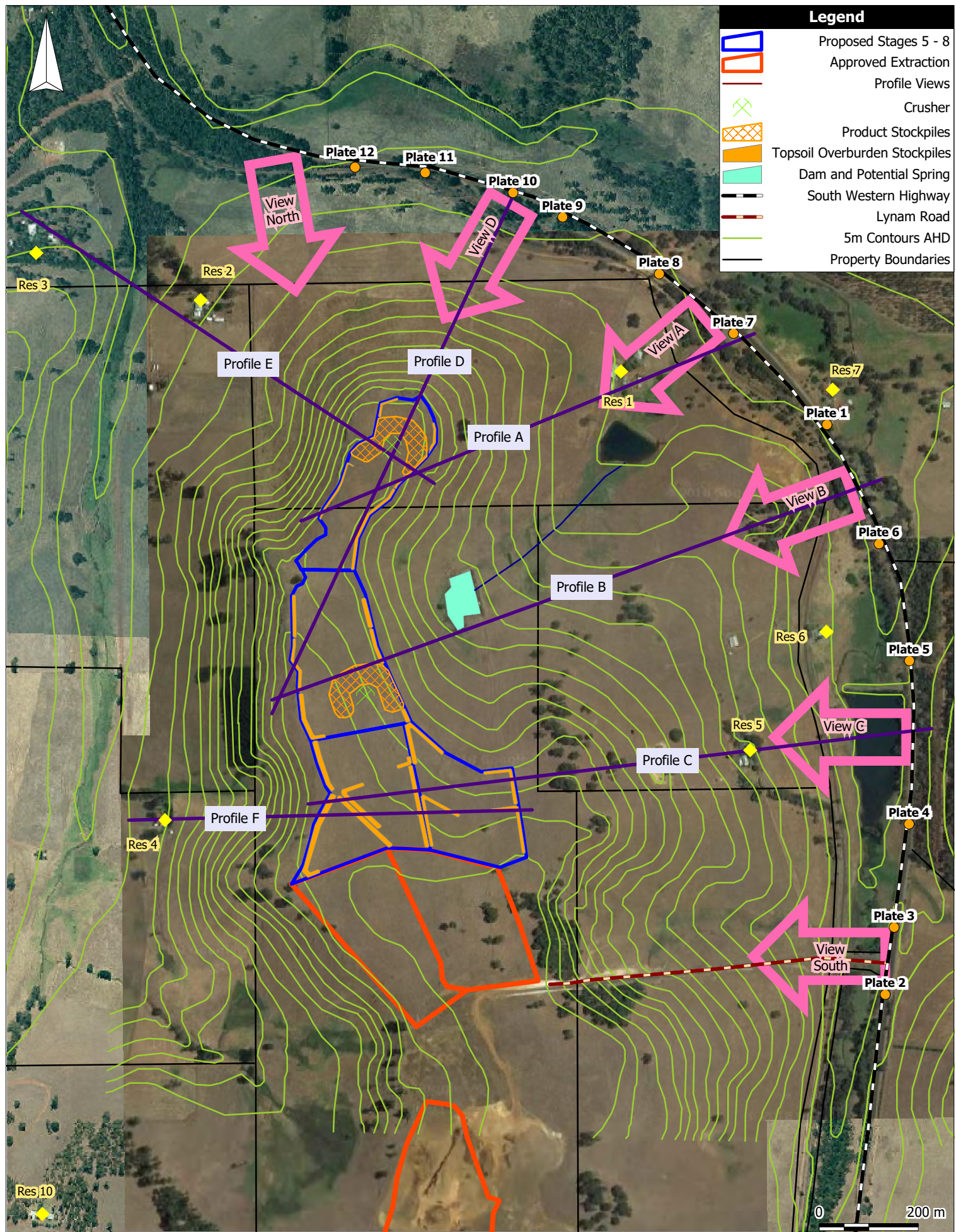
21 Sellen Court Leeming WA 6149
mikelund1@bigpond.com
0417934863
www.Lundstrom-Environmental.com.au

Scale: 1:4000
Original Size: A4
Air Photo Date: Nearmap
(with 2015 Google image)

B&J Catalano Pty Ltd
Lot 1400 South West Highway
Glenlynn
Gravel Extraction

**Proposed New Extraction
Stages 5 - 8**

Figure 4



**LUNDSTROM ENVIRONMENTAL
CONSULTANTS PTY LTD**

21 Sellen Court Leeming WA 6149
mikelund1@bigpond.com
0417934863
www.Lundstrom-Environmental.com.au

Scale: 1:9600
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Air Photo Date: Nearmap
(with 2015 Google image)

B&J Catalano Pty Ltd
Lot 1400 South West Highway
Glenlynn
Gravel Extraction

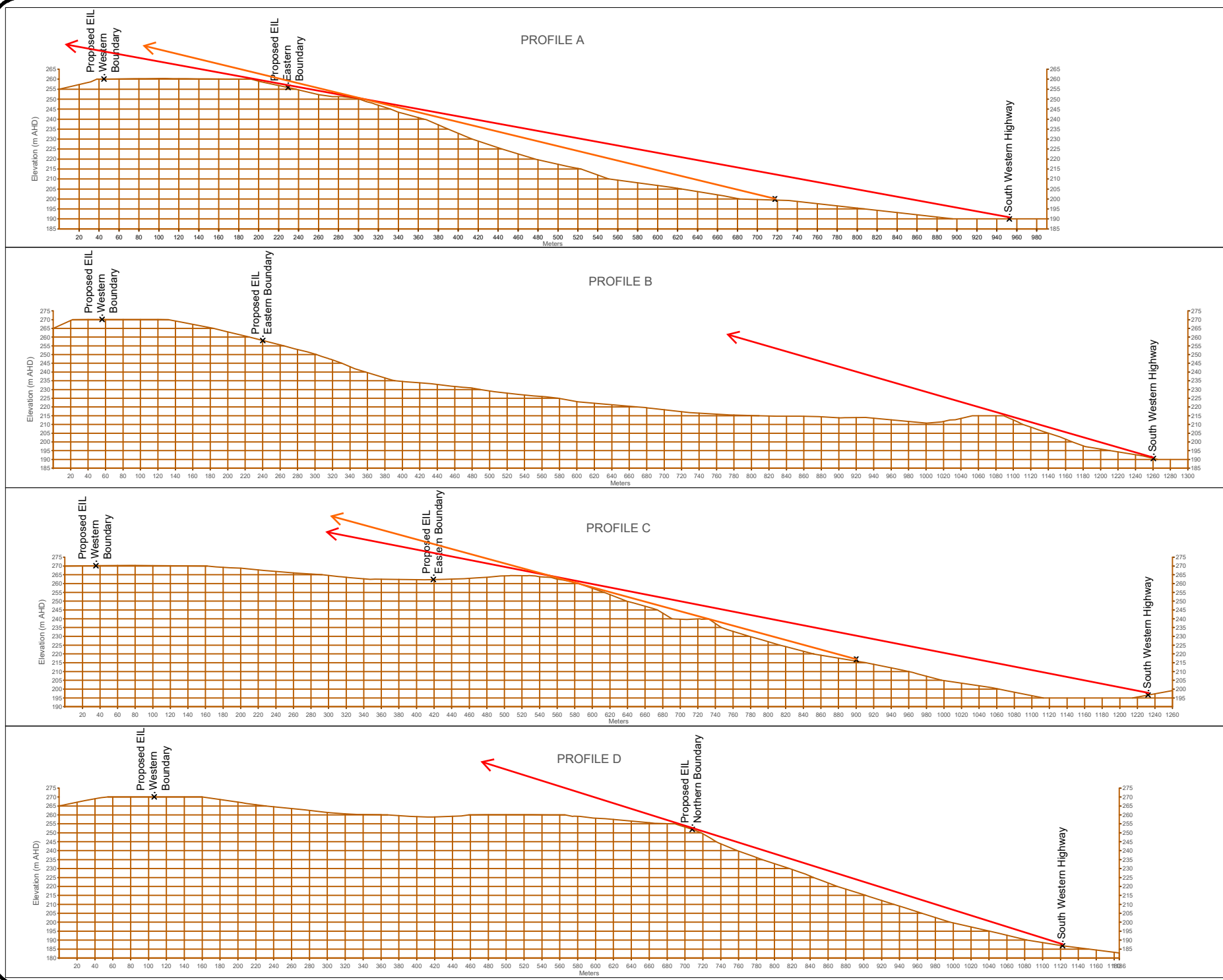
**Visual Impact
Assessment**

Figure 5

Visual Assessment_Part 2.dwg

06/03/2019

LEC



Lines of Sight from East of proposed EIL area.

Refer to Figure 5 for Profile locations.

No.	Revision/Issue	Date

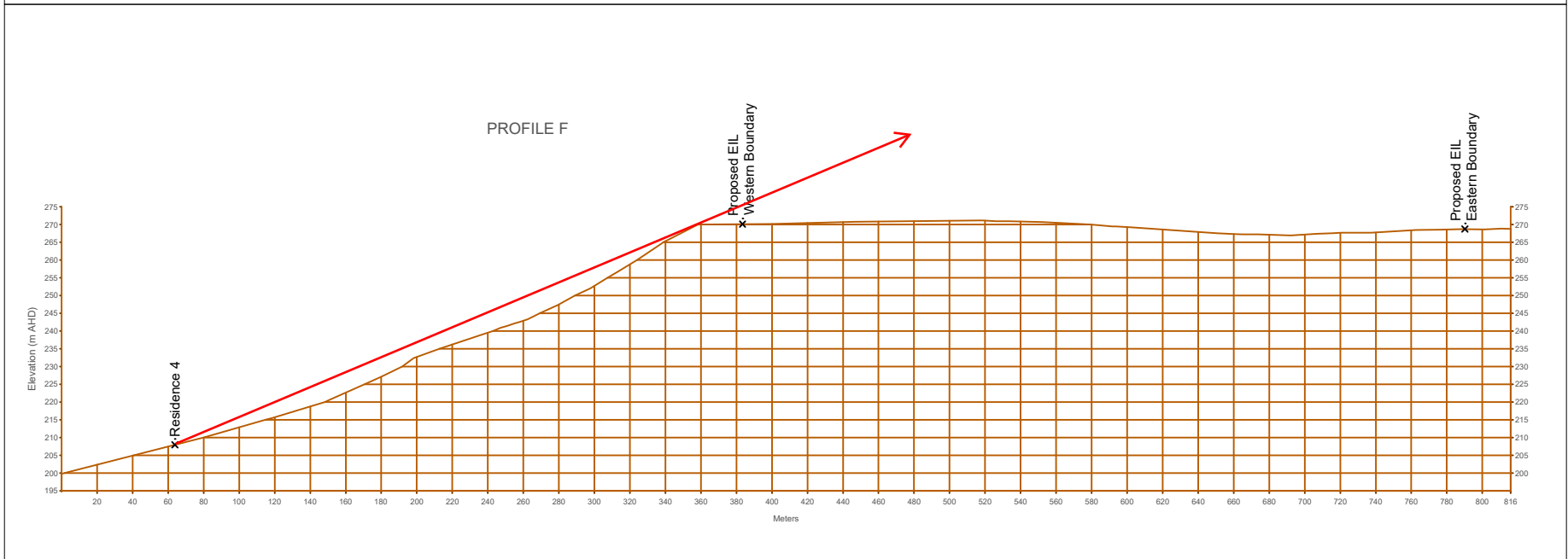
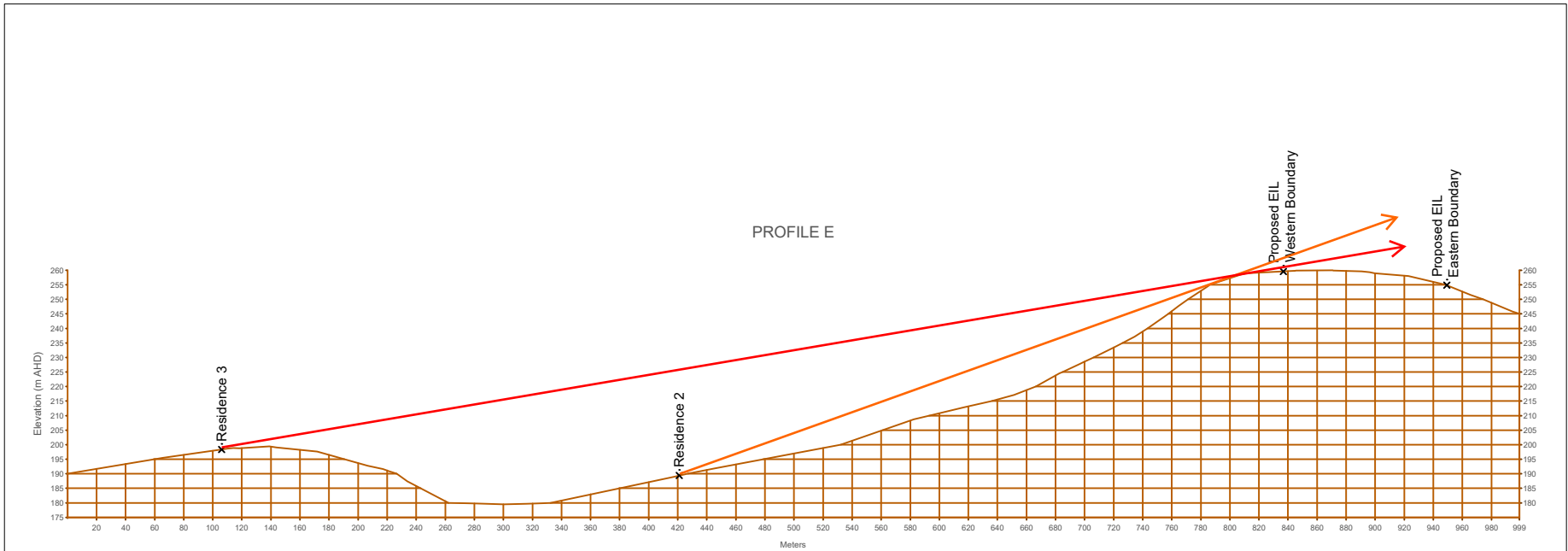
Prepared by:
LUNDSTROM ENVIRONMENTAL CONSULTANTS PTY LTD
21 Baker Court Leeming WA 6149
info@lunde.com.au
0417954863
www.Lundstrom-Environmental.com.au

Project Name and Address:
B&J Catalano Pty Ltd
Lot 1400 South Western Hwy
Glenlynn
Gravel Extraction

Profile Views	Page
05/03/2019	6

1:4000

Visual Assessment_Part 2.dwg
07/03/2019
LEC



General Notes



Lines of Sight
from West of
proposed EIL
area.

Refer to
Figure 5 for
Profile
locations.

No.	Revision/Issue	Date

Prepared by:
**LUNDSTROM ENVIRONMENTAL
CONSULTANTS PTY LTD**
21 Salter Court Leeming WA 6149
info@lundecon.com.au
08 97924863
www.lundstrom-environmental.com.au

Client Name and Address:
B&J Catalano Pty Ltd
Lot 1400 South Western Hwy
Glenlynn
Gravel Extraction

Profile Views	Sheet
05/03/2019	7
1:4000	

APPENDICES

APPENDIX 1:
DEVELOPMENT APPLICATION FORM



DEVELOPMENT APPLICATION FORM

OWNER DETAILS		
Names(s): James Stephen Gifford & Eleanor Jean Gifford		ABN (if applicable):
Postal Address: RMB 388 South Western Hwy, Bridgetown		State/Post Code: WA 6255
Home Phone: 08 9761 1140	Work Phone: 9761 1140	Mobile Phone: 0429 925 738
E-mail Address: Jamesgifford@bigpond.com		Fax:
Owner's Signature(s):		Date: 24 Oct 2018
Contact person for correspondence: James & Eleanor Gifford		

APPLICANT DETAILS (IF DIFFERENT FROM OWNER)		
Name(s): B&J Catalano		ABN (if applicable): 68 008 961 975
Postal Address: South Western Hwy, Brunswick Junction		State/Post Code: WA 6224
Home Phone:	Work Phone: 9726 8100	Mobile Phone: 0407 857 026
E-mail Address: peterbennett@catalano.com.au		Fax:
Applicant's Signature:		Date: 31/10/2018
Contact person for correspondence: (must be signed) Peter Bennett		
The information and plans provided with this application may be made available by the local government for public viewing in connection with the application. <input type="checkbox"/> Yes <input type="checkbox"/> No		

PROPERTY DETAILS		
Location No(s):	Lot No(s): 1400 & 963	Street No(s)(urban or rural):
Diagram or Plan No: P119617 & P102950	Certificate of Title Volume/Folio: 826/15	Title Encumbrances (if any):
Street Name: Lynam Road		Suburb/Locality: Glenlynn
Nearest Street Intersection: Lynam Rd & South Western Hwy		Total Land Area (m ² or ha): 105.97ha & 45.89ha

PROPOSED DEVELOPMENT			
Nature of development: Works <input type="checkbox"/> Use <input type="checkbox"/> Works and Use <input checked="" type="checkbox"/>			
Description of proposed works and/or land use: As per development approval application and accompanying environmental management plan			
Nature of any existing buildings and/or use: Sheds & house (Lot 963)			
Is an exemption from approval claimed for part of the development? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, is the exemption for: Works <input type="checkbox"/> Use <input type="checkbox"/>			
Description of exemption claimed (if relevant):			
Approximate cost of proposed development: No additional costs of development		Estimated time of completion: 5 years	
Services known to be available:	Y	N	Development already commenced or completed? <small>Extension of existing approved operation</small> * Y <input type="checkbox"/> N <input type="checkbox"/> * Penalty fees may apply
Electricity			
Scheme water			
Reticulated sewer			
Stormwater drainage			
Sealed road access			

OFFICE USE ONLY:	Date received: _____	Shire Reference: _____
Checked (Officer's Initials): _____	Fee received: _____	Plans Attached: Y <input type="checkbox"/> N <input type="checkbox"/>

- The signature of the owner(s) is required on all applications. This application will not proceed without that signature. For the purposes of signing this application and owner includes the persons referred to in the Planning and Development (Local Planning Schemes) Regulations Schedule 2 clause 62(2).
- All registered proprietors must sign the application form. If signing on behalf of a Company authority must be signed by: one director of the company accompanied by the company seal; or two directors of the company; or one director and one secretary of the company, or one director if a sole proprietorship company. Applications made by either private owners or companies that have recently changed names must provide supporting documentation showing the change of name.
- Applications made by prospective purchasers under contract of sale must be accompanied by a letter of consent from the current owners of the property giving the purchaser authority to make the application; or a copy of the Landgate transfer lodgement approval to make the application; or contract(s) of sale or offers and acceptances expressly including a provision of consent by the Vendor to the application proposed.
- The executor(s) of a deceased estate must provide evidence of grant of probate.
- Applications made by a State government agency must be signed by an 'authorised officer,' clearly stating their name and position held.
- An 'authorised officer' of Landgate must sign applications made on Crown Land.
- Where the Crown Land has been vested in a local/government authority, an 'authorised officer' of that local authority can sign the application form, stating his/her full name and position held.



DEVELOPMENT APPLICATION CHECKLIST

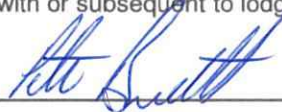
All sections to be ticked ✓ where relevant or crossed X where not applicable

- ☐ **Development Application Form**
 - ☐ All required sections completed
 - ☐ Signature of Applicant
 - ☐ Signature(s) of each Owner/Registered Proprietor(s) of subject land
- ☐ **Covering Letter** (may be waived for compliant or minor proposals)
 - ☐ Addressed to the Chief Executive Officer
 - ☐ Thoroughly, accurately and truthfully outlines details of the proposal
 - ☐ If applicable, justification why the proposal does not comply with requirements of the Residential Design Codes (see Part 3 of the R-Codes), relevant Town Planning Scheme or Shire Policy
- ☐ **Development Application Checklist** (this form)
 - ☐ All required section completed
 - ☐ Signature of Applicant
- ☐ **Site Plan x 2 (A4 or A3 only)**
 - ☐ For Residential zoned development see application information matrix in Part 3 of R-Codes
 - ☐ Scale not less than 1:100 or 1:200 (Residential, Commercial, Industrial), 1:1000 (Rural)
 - ☐ Full Address: Lot No, Street No. (urban or rural), Street Name and Suburb/Locality
 - ☐ North Point and Scale Bar
 - ☐ Natural features (e.g. streams, lakes, rock outcrops)
 - ☐ Setbacks of all structures from lot boundaries or building envelope
 - ☐ Stream or Landscape Protection Area
 - ☐ Full site area and all lot boundaries
 - ☐ Dimensions of all boundaries (Rural and Special Rural zones exempt)
 - ☐ Site area by survey
 - ☐ Location of any easements and services (ie. power lines, water lines, service lines)
 - ☐ Vehicle entrance and exit points
 - ☐ Vehicle access ways and parking bays, all pedestrian areas
 - ☐ Location and description of open space areas, landscaped areas, types of screening or fencing
 - ☐ Proximity of adjoining buildings and their uses
 - ☐ Existing and proposed buildings and structures
 - ☐ Structures and vegetation proposed to be removed
 - ☐ Height Contours and Spot Levels
 - ☐ Finished Ground Levels and Finished Floor Levels
 - ☐ Height of Cut and Fill and Location of Embankments
 - ☐ Onsite effluent disposal system
- ☐ **Floor Plan x 2 (A4 or A3 only)**
 - ☐ For Residential zoned development see application information matrix in Part 3 of R-Codes
 - ☐ Scale not less than 1:100
 - ☐ Finished Floor Levels
 - ☐ Proposed and existing buildings
 - ☐ All windows, doors and other entryways
 - ☐ Use of buildings clearly indicated

- ☐ **Elevations x 2 (A4 or A3 only)**
 - ☐ For Residential zoned development see application information matrix in Part 3 of R-Codes
 - ☐ Scale not less than 1:100
 - ☐ All elevations (views)
 - ☐ Proposed buildings and signage
 - ☐ Windows, doors and other entryways
 - ☐ Materials, colours and finishes of exterior construction
 - ☐ Natural and Finished Ground Levels (cross section)
 - ☐ Wall and Roof Heights (above natural and finished ground levels)
 - ☐ Dimensions of Patios, Verandahs and Balconies, etc
- ☐ **Heritage Issues**
 - ☐ Desktop assessment of Aboriginal Heritage Issues (any findings)
 - ☐ Desktop assessment of Post-Settlement Heritage Issues (any findings)
- ☐ **Bushfire Issues**
 - ☐ Desktop assessment of property located within bushfire prone area
 - ☐ Desktop assessment of development site located within bushfire prone area
 - ☐ Bushfire Attack Level (BAL) Assessment (including BAL Basic)
 - ☐ Bushfire Management Plan/Statement
- ☐ **Development Application Fees**
 - ☐ Refer to Town Planning section of the Shire's Schedule of Fees and Charges

By signing the development application form and the development application checklist, the applicant acknowledges, without prejudice, the accuracy and content of the forms, plans and supporting information submitted with or subsequent to lodgement of the development application.

Applicant's Signature: _____



Date: 31/10/2018

Faxed or email copies of applications may be accepted initially however an original copy bearing all signatures is required, unless otherwise agreed.

Incomplete applications may be returned or suspended pending receipt of all required information. Additional information not stipulated above may also be required.

The information is required as part of the assessment process for an application and compliance with the checklist does not necessarily mean that a proposal will be supported.

APPENDIX 2

DBYD RESPONSES



Job No 14932601

Phone: 1100
www.1100.com.au

Caller Details

Contact: Mrs Julia Stewart
Company: Lundstrom Environmental Consultants
Address: 21 Sellen Court
Leeming WA 6149

Caller Id: 1784823
Mobile: 0403063327
Email: julia@lundstrom-environmental.com.au
Phone: 0893315789
Fax: Not Supplied

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.



User Reference: Lot 1400 & Lot 963
Working on Behalf of: Private
Enquiry Date: 13/09/2018
Start Date: 01/01/2019
End Date: 01/01/2024

Address:
Lots 1400 & 963 South Western Hwy
Glenlynn WA 6256

Job Purpose:

Excavation

Onsite Activity:

Mechanical Excavation

Location of Workplace:

Private Property

Location in Road:

Not Supplied

- Check the location of the dig site is correct. If not submit a new enquiry.
- If the scope of works change, or plan validity dates expire, resubmit your enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:

Extractive Industry, Gravel extraction less than 2 metres depth.

Your Responsibilities and Duty of Care

- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at www.1100.com.au
- For more information on safe excavation practices, visit www.1100.com.au

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Dial Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.

** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.

Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
	e		
	e o o o		
	e e owe		

L L



To: Mrs Julia Stewart
Company: Lundstrom Environmental Consultants
Phone Details: 0893315789
Email Address: julia@lundstrom-environmental.com.au

Western Power
363 Wellington Street
Perth WA 6000
T: 13 10 87 F: (08) 9326 6079
www.westernpower.com.au
Electricity Networks Corporation ABN 18 540 492 861

Sequence Number: 75495642
Job Number: 14932601
Dig Site Location: South Western Hwy
Glenlynn
WA, 6256

DIAL BEFORE YOU DIG 1100 INFORMATION SHEET

This information relates to both underground and overhead network assets
and is valid for 30 days from date of issue - 13/09/2018 2:35 PM

- The **Energy Operators (Powers) Act 1979** makes it an offence to damage Western Power's network.
- The **Occupational Safety and Health Regulations 1996** establish restrictions for working safely around the Western Power network.
- **Western Power Easements and Network Policy and Standards** establish restrictions for development around the Western Power network.

It is the duty of care of persons planning to work or develop around Western Power's network to comply with the requirements of these statutory obligations and any other legislation, standard or guidance relevant.

Western Power's network assets are classified below:

Network Asset	Classification
Transmission line	66kV, 132kV, 220kV and/or 330kV
Distribution line	6.6kV, 11kV, 22kV and/or 33kV
	240V/415V (insulated / uninsulated)
Communication cable and other cables	communications, pilot cables, fibre optics

A danger zone, Western Power easement and restriction zone represents an area of high risk when working and developing around the Western Power network. Danger zones apply only to work around the network, whilst easement and restriction zone areas apply only to development and land use.

It is a requirement to work and develop outside of these areas so as far as is reasonably practicable. If you propose to work and/or develop within these areas, refer to the Western Power website for available information, services and lead times at <http://www.westernpower.com.au/safety-working-near-electricity.html> or by contacting Western Power's **Customer Service Centre** on 13 10 87.

**IN THE EVENT OF DAMAGE
TO A WESTERN POWER ASSET
CALL WESTERN POWER FAULTS AND EMERGENCIES ON 13 13 51**

GENERAL INFORMATION

- In the event that you discover a cable NOT shown on your map or you wish to clarify the construction status of assets in Design Areas, contact Western Power on 1300 769 345 (7:00 to 16:30 weekdays).
- Western Power underground **communications pipes** are also known as Perth Fibre Network: These pipes are typically 3 – 4.2m from property boundary but may vary.
- The typical alignment for underground assets is 0 - 0.6m and 2.4 – 3m from the property boundary.
- It is mandatory for the customer/excavator/contractor to physically locate all services before excavating.
- Never assume depth and alignment of cables.
- Check Utility Providers Code of Practice for Western Australia requirements for work in road and rail reserves at this Main Roads Western Australia site: https://www.mainroads.wa.gov.au/BuildingRoads/StandardsTechnical/RoadandTrafficEngineering/RoadsideItems/GuidelinesforRoadsideServices/Pages/Utility_Providers_Code_of_Practice_for_Western_Australia.aspx
- Please note the following lead times apply for Western Power to provide advice in working safely around the network:
 - **Transmission** – at least **30** business days
 - **Distribution** – at least **20** business days
 - **Communication and other cables** – at least **30** business days
- Work within Danger Zones is prohibited under the *Occupational Safety and Health Regulations 1996*, unless exemptions apply. Danger Zone areas are defined under *Regulation 3.64*.
- Development within easement and restriction zone areas is required to comply with restrictions under Western Power's standard easement conditions. These conditions are established under the relevant easement on Certificate of Title, or if an easement does not exist, they are established under Western Power Network Policy and Standards. You can request standard easement conditions from Western Power or access them from the [Western Power website](#).

MAP LEGEND INFORMATION

Proposed Construction Assets* means that overhead/underground assets may possibly be found in the Design Area* shaded on the plan.

Design Area* means field-works are possibly in progress or just completed and the plans supplied may differ from the current state in the ground or overhead.

UG Crossing* means that there could be multiple underground ducts at that location.

NOT depicted on Western Power Dial Before You Dig Plans are:

- Cables within a private property, for example, from pillar (green dome) to your electric meter. A cable-locating company will have to be contacted for on-site locations in your private property.
- Private cables belonging to government authorities, for example, Main Roads, Transperth, etc.
- Private streetlight cables belonging to local government, private estates etc.

STATE UNDERGROUND POWER PROGRAMME (SUPP) IN PROGRESS OR COMPLETED

Retrospective large scale undergrounding of power and/or communications assets has been identified in the vicinity of your enquiry.

Please refer to the attached plan(s), for instructions or additional information.

- **Large Scale Undergrounding in Progress**

There may be uncommissioned underground assets installed. Attached plan does not depict all Western Power underground activity.

- **Attention!**

Not all underground assets shown, for more information contact Western Power on 1300 769 345 (7:00 to 16:30 weekdays).

- **Large Scale Undergrounding Completed**

Default Alignments are used: - 0 to 0.6m & 2.7m but may vary.

Some cables can range up to 7.0 m from the property boundaries caution is advised.

DISCLAIMER

The provisions of this Disclaimer cannot and do not purport to limit or otherwise exclude the application of, or any warranties, rights, powers or remedies under, any Commonwealth or Western Australian legislation that does not permit or otherwise makes void any such exclusion or limitation provisions, including but not limited to, section 18 of the Competition and Consumer Act 2010 (Cth)

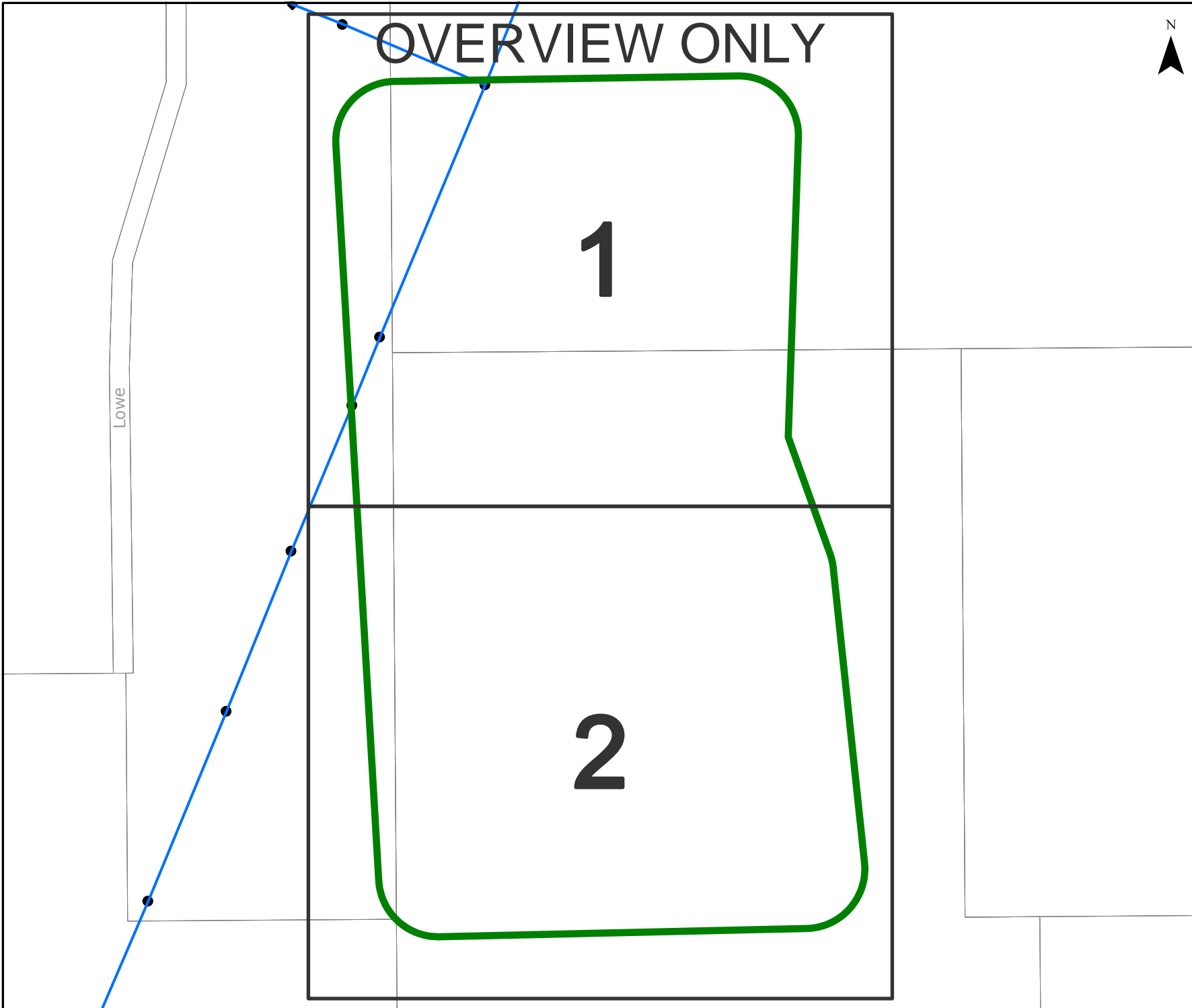
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Western Power and each of its Associates:

1. do not make or give any representation or warranty, express or implied, as to the accuracy, reliability, currency, timeliness or completeness of;
2. disclaim to the fullest extent the law permits and will not be liable or responsible for, any liability, loss or damage, whether direct or indirect (and whether or not arising out of negligence, breach of duty or statutory duty, or lack of care, of Western Power and its Associates or of any of them) Users may suffer or incur arising out of, or in connection with, any use or reliance on; and
3. are under no obligation to correct, update or revise, the Information.





OVERHEAD LEGEND

Structures

● Power Pole

■ Transmission Poles

Transmission Overhead Powerline

Transmission (33kV - 330kV)

Distribution Overhead Powerline

High Voltage (1kV - 33kV)

Low Voltage (< 1kV)

Proposed Construction Assets

Design Area *

High Voltage Overhead Powerline

Low Voltage Overhead Powerline

Power Pole

Communications Assets

Overhead Pilot Cable

Feature

Area of Interest

* Please refer to coversheet

Privately owned cables NOT SHOWN
(including house services)

This map is INDICATIVE ONLY.
Check that you have enough
clearance from the DANGER ZONES
near overhead powerlines.

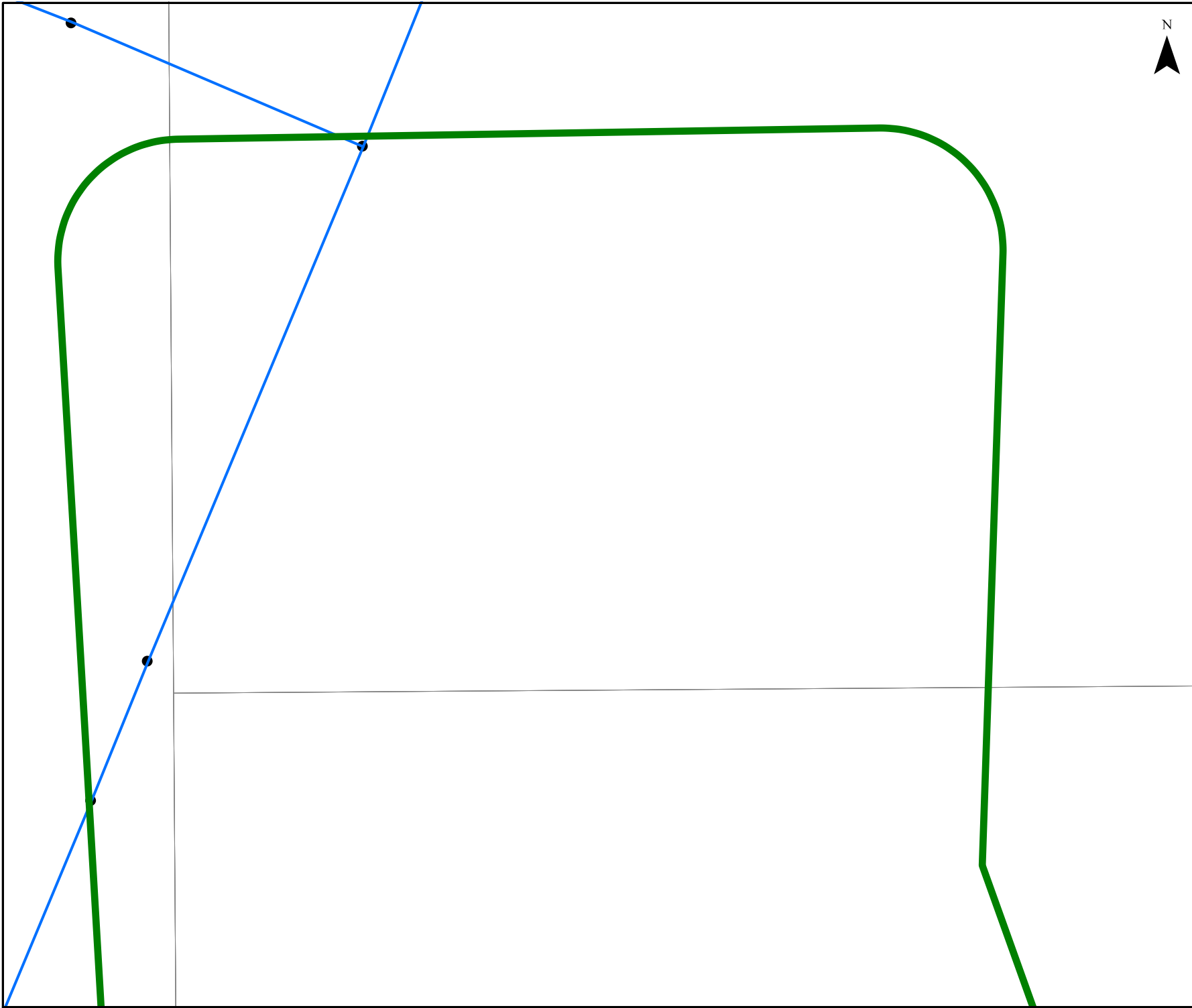
Telephone Support: 1300 769 345
Mon to Fri - 08:00 to 16:30

Information valid for 30 days
from date of issue

A4

Scale : 1:5125

WARNING! Look out for
overhead power lines



OVERHEAD LEGEND

Structures

- Power Pole
- Transmission Poles

Transmission Overhead Powerline

- Transmission (33kV - 330kV)

Distribution Overhead Powerline

- High Voltage (1kV - 33kV)
- Low Voltage (< 1kV)

Proposed Construction Assets

- Design Area *
- High Voltage Overhead Powerline
- Low Voltage Overhead Powerline
- Power Pole

Communications Assets

- Overhead Pilot Cable

Feature

- Area of Interest

* Please refer to coversheet

Privately owned cables NOT SHOWN
(including house services)

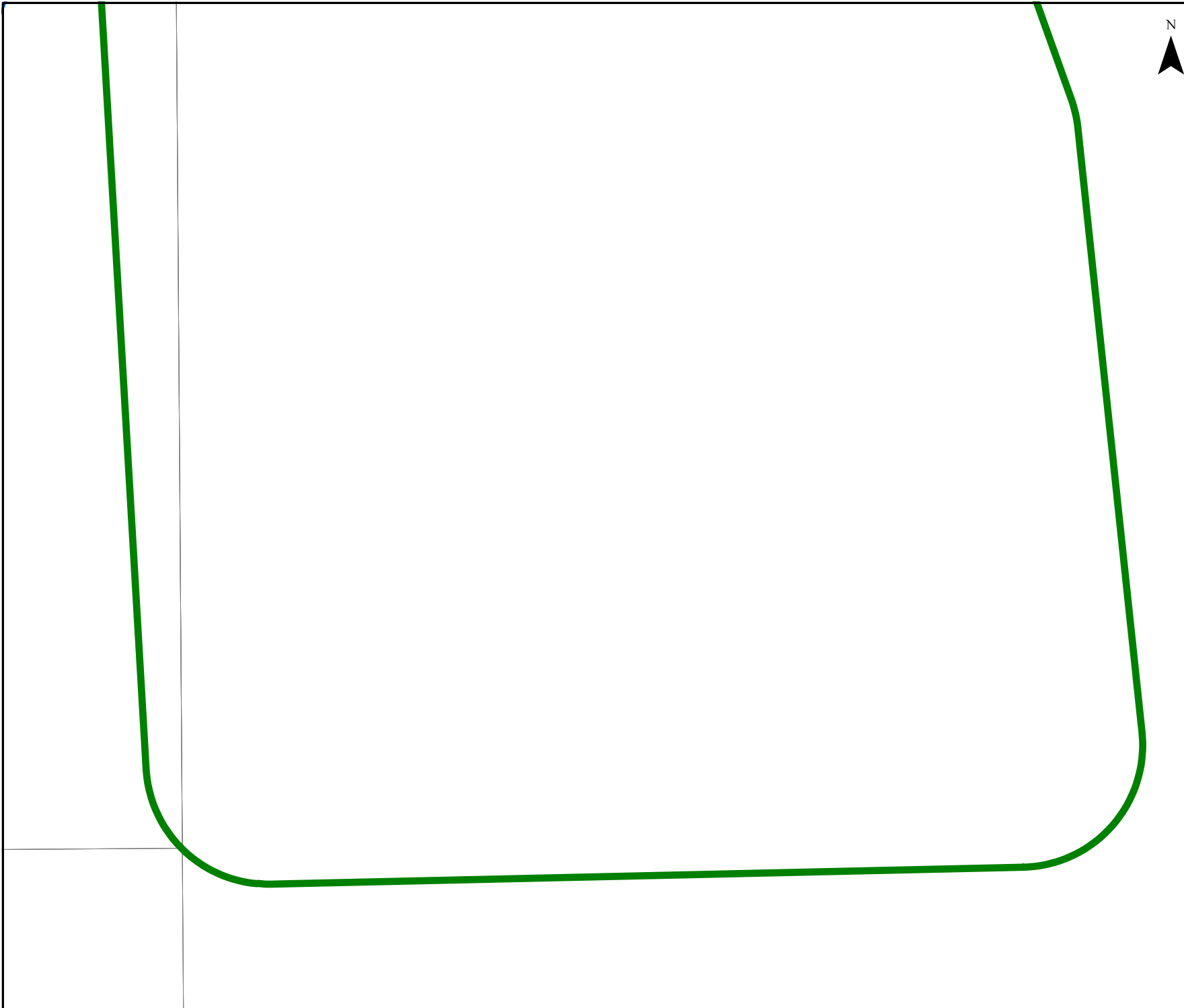
This map is INDICATIVE ONLY.
Check that you have enough
clearance from the DANGER ZONES
near overhead powerlines.

Telephone Support: 1300 769 345
Mon to Fri - 08:00 to 16:30

Information valid for 30 days
from date of issue

A4 | Scale : 1:2500

WARNING! Look out for
overhead power lines



OVERHEAD LEGEND

Structures

- Power Pole ■ Transmission Poles

Transmission Overhead Powerline

- Transmission (33kV - 330kV)

Distribution Overhead Powerline

- High Voltage (1kV - 33kV)
— Low Voltage (< 1kV)

Proposed Construction Assets

- Design Area *
— High Voltage Overhead Powerline
— Low Voltage Overhead Powerline
● Power Pole

Communications Assets

- Overhead Pilot Cable

Feature

- Area of Interest

*** Please refer to coversheet**

**Privately owned cables NOT SHOWN
(including house services)**

This map is **INDICATIVE ONLY**.
Check that you have enough
clearance from the **DANGER ZONES**
near overhead powerlines.

Telephone Support: 1300 769 345
Mon to Fri - 08:00 to 16:30

Information valid for 30 days
from date of issue

A4 Scale : 1:2500

**WARNING! Look out for
overhead power lines**

WATER CORPORATION UNDERGROUND ASSET DETAILS



629 Newcastle Street
Leederville, WA, 6007

PO Box 100
Leederville, WA, 6902

www.watercorporation.com.au
(08) 9424 8115

Requestor details

Mrs Julia Stewart
Lundstrom Environmental Consultants
21 Sellen Court
Leeming WA 6149

Phone: 0893315789
Mobile: 0403063327
Fax: Not Supplied
Email: julia@lundstrom-environmental.com.au

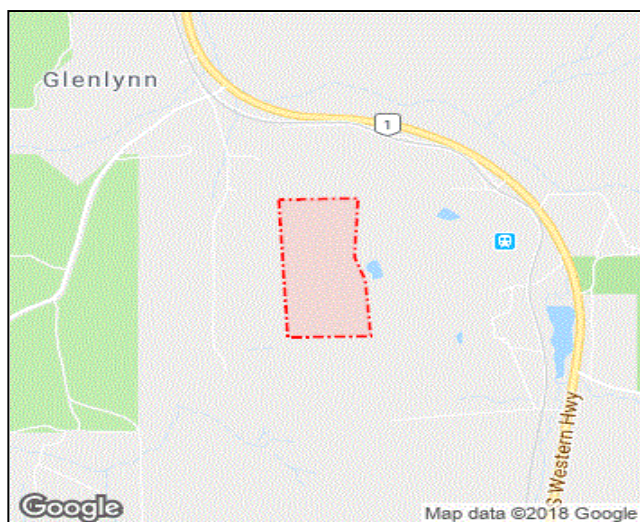
Sequence No: 75495646

DBYD Job No: 14932601

Enquiry Date: 13/09/2018

Issue Date: 13/09/2018

Requested location details



Address South Western Hwy
Glenlynn WA 6256

GPS X Coordinate

GPS Y Coordinate

Map Ref 18A1

Note: The response for this enquiry has been interpreted from details in the picture location only.

Water Corporation asset impact

NO PIPELINES FOUND

No underground pipes were identified. However be aware that pipes may still exist in your work area.

NOTE: For best results use the polygon function to define your work area. Point and line requests only generate a limited search of the surrounding area.

Important

1. Plans show approximate location only – verify location by potholing before using powered machinery.
2. Please read all information and attachments.
3. All documents must be kept together and retained on site by the work team.
4. This information is valid for 30 days from date of issue.

APPENDIX 3

NOISE ASSESSMENT

Environmental Noise Assessment

**Lot 1400 South West Hwy, Glenlynn
Stages 5 to 11**

Reference: 18044378-02

Prepared for:
B & J Catalano

Report: 18044378-02

Lloyd George Acoustics Pty Ltd

ABN: 79 125 812 544

PO Box 717
Hillarys WA 6923

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This report has been prepared in accordance with the scope of services described in the contract or agreement between Lloyd George Acoustics Pty Ltd and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client, and Lloyd George Acoustics Pty Ltd accepts no responsibility for its use by other parties.

Date:	Rev	Description	Prepared By	Verified
28/11/18	-	Final issued to client	Daniel Lloyd	Terry George

Table of Contents

1	INTRODUCTION	1
2	CRITERIA	2
3	METHODOLOGY	4
3.1.1	Meteorological Information	5
3.1.2	Topographical Data	5
3.1.3	Ground Absorption	5
3.1.4	Source Sound Levels	5
3.2	Operating Scenarios	6
4	RESULTS	6
4.1	Noise Modelling	6
5	RECOMMENDATIONS	7
6	CONCLUSION	13

List of Tables

Table 2-1	Adjustments for Intrusive Characteristics	2
Table 2-2	Baseline Assigned Noise Levels	3
Table 3-1	Modelling Meteorological Conditions	5
Table 3-2	Source Sound Power Levels, dB(A)	6
Table 4-1	Noise Level Predictions Assuming No Noise Mitigation	7
Table 5-1	Noise Level Predictions Assuming Recommended Mitigation	10

List of Figures

Figure 1-1 Proposed Pit Stages	1
Figure 2-1 Sensitive Receiver Locations	4
Figure 5-1 Bund Around Crusher Area Located in Stage 7	8
Figure 5-2 Bund Around Crusher Area Located in Stage 10	8
Figure 5-3 Extent and Height of the Proposed Noise Bund on the Western Perimeter	9
Figure 5-4 Area Where Mobile Plant is Not Permitted Without the Proposed Bund	9
Figure 5-5 Noise Level Contours for Stages 5 to 8 With Noise Mitigation	11
Figure 5-6 Noise Level Contours for Stages 9 to 11 With Noise Mitigation	12

Appendices

A	Terminology
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1 INTRODUCTION

B & J Catalano have been operating an extraction pit on Lot 1400 South West Highway, Glenlynn, for a number of years. It is proposed to open up additional production stages of the pit, which are labelled Stages 5 to 11 in *Figure 1-1*, with operations to occur between 7.00 a.m. to 7.00 p.m. Monday to Saturday. Lloyd George Acoustics have been commissioned to assess the likely noise impacts from these stages of the pit and compares the predicted noise levels against the *Environmental Protection (Noise) Regulations 1997*.

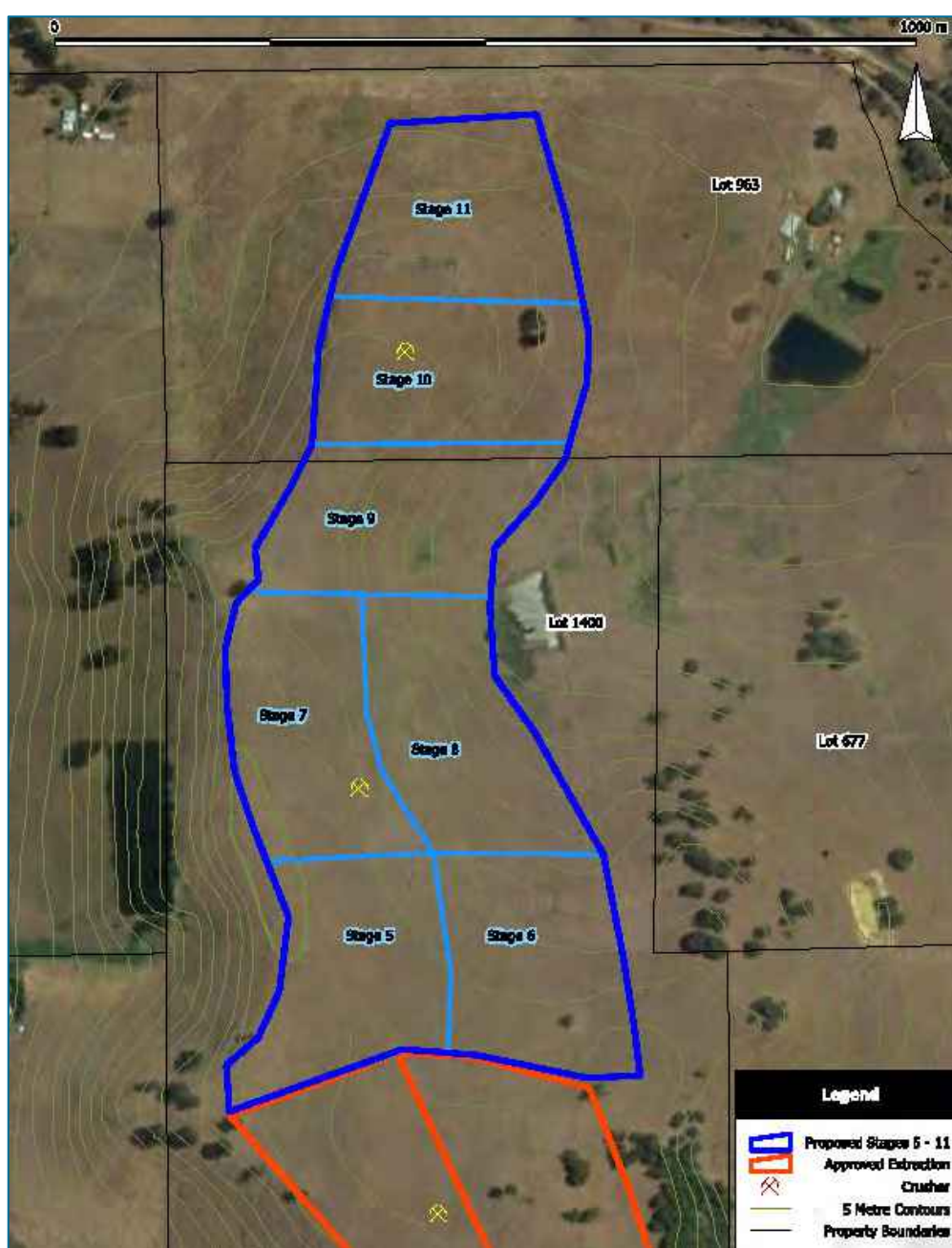


Figure 1-1 Proposed Pit Stages

Appendix A contains a description of some of the terminology used throughout this report.

2 CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (the Regulations).

Regulation 7 defines the prescribed standard for noise emissions as follows:

“7. (1) Noise emitted from any premises or public place when received at other premises –

- (a) Must not cause or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and
- (b) Must be free of –
 - i. Tonality;
 - ii. Impulsiveness; and
 - iii. Modulation”.

A “...noise emission is taken to *significantly contribute to* a level of noise if the noise emission exceeds a value which is 5 dB below the assigned level...”

Tonality, impulsiveness and modulation are defined in Regulation 9. Noise is to be taken to be free of these characteristics if:

- (a) The characteristics cannot be reasonably and practicably removed by techniques other than attenuating the overall level of noise emission; and
- (b) The noise emission complies with the standard after the adjustments of *Table 2-1* are made to the noise emission as measured at the point of reception.

Table 2-1 Adjustments for Intrusive Characteristics

Tonality	Modulation	Impulsiveness
+ 5dB	+ 5dB	+ 10dB

Note: The above are cumulative to a maximum of 15dB.

The baseline assigned levels (prescribed standards) are specified in Regulation 8 and are shown in *Table 2-2*.

Table 2-2 Baseline Assigned Noise Levels

Premises Receiving Noise	Time Of Day	Assigned Level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area ¹	0700 to 1900 hours Monday to Saturday (Day)	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays (Sunday)	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days (Evening)	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	35 + influencing factor	45 + influencing factor	55 + influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial	All hours	60	75	80
Industrial	All hours	65	80	90

1. **highly sensitive area** means that area (if any) of noise sensitive premises comprising —

- (a) a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
- (b) any other part of the premises within 15 metres of that building or that part of the building;

As the area is predominantly rural residential, the influencing factor applicable at the noise sensitive premises is 0 dB. Therefore it is the baseline assigned levels in *Table 2-2* that will apply.

The noise sensitive receivers considered in this assessment are shown in *Figure 2-1*. It should be noted that the receivers labelled “Caretaker 1, 2 and 3” are on the same property as the pit and therefore considered to be industrial.



Figure 2-1 Sensitive Receiver Locations

3 METHODOLOGY

Three-dimensional computer modelling has been used to predict the noise levels resulting from operations at the pit to sensitive receivers. The software used was *SoundPLAN 8.0* with the CONCAWE algorithms selected. These algorithms have been selected as they include the influence of wind and atmospheric stability. Input data required in the model are:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

3.1.1 Meteorological Information

Meteorological information utilised (*Table 3-1*) is based on that specified in the *draft EPA Guidance for the Assessment of Environmental Factors No.8 Environmental Noise*. These conditions are considered the worst-case for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

Table 3-1 Modelling Meteorological Conditions

Parameter	Night (1900-0700)	Day (0700-1900)
Temperature (°C)	15	20
Humidity (%)	50	50
Wind Speed (m/s)	3	4
Wind Direction*	All	All
Pasquil Stability Factor	F	E

* Note that the modelling package used allows for all wind directions to be modelled simultaneously.

The EPA policy is that compliance with the assigned noise levels needs to be demonstrated for 98% of the time, during the day and night periods, for the month of the year in which the worst-case weather conditions prevail. In most cases, the above conditions occur for more than 2% of the time and therefore must be satisfied.

3.1.2 Topographical Data

Topographical data was based on that provided by Lundstrom Environmental Consultants. The contours are in 5 metre intervals and cover the noise sensitive premises of concern.

3.1.3 Ground Absorption

Ground absorption varies from a value of 0 to 1, with 0 being for an acoustically reflective ground (e.g. water or bitumen) and 1 for acoustically absorbent ground (e.g. grass). In this instance, a value of 1.0 has been used across the study area.

3.1.4 Source Sound Levels

The sound power levels used in the modelling are provided in *Table 3-2*.

Table 3-2 Source Sound Power Levels, dB(A)

Description	Centre Octave Frequency (Hz)								Overall
	63	125	250	500	1k	2k	4k	8k	
CAT D9 Dozer ¹	79	95	93	103	105	105	97	86	110
Front-end Loader	79	93	96	103	106	103	98	93	110
Excavator	75	83	87	91	94	92	87	77	98
Mobile Jaw Crusher	81	97	104	108	108	106	100	92	113
Screen	83	86	86	95	102	101	99	90	106
Stacker	69	80	87	93	96	97	97	95	103
Truck moving at 25 km/h	74	86	85	95	94	95	88	80	100

3.2 Operating Scenarios

For the proposed future stages, the crushing and screening plant will be located within stage 7 for excavation of Sages 5 to 8 and then moved to a location in Stage 10 for excavation of Stages 9 to 11. This is illustrated in *Figure 1-1*. A dozer, excavator and trucks will operate throughout the excavation area.

The management procedure for truck movements in and out of the site already in place will continue to apply. Therefore the noise emissions from trucks on site is not expected to change.

4 RESULTS

4.1 Noise Modelling

The results of the noise modelling assuming no noise mitigation are presented below in *Table 4-1*. It should be noted that the predicted noise level depends on the location of the mobile plant and these result are representative of the worst-case noise level.

Table 4-1 Noise Level Predictions Assuming No Noise Mitigation

Residence Location Number (refer Fig 2-1)	Predicted Noise Level L_{A10} dB	
	Stages 5 to 8	Stages 9 to 11
1	31	29
2	37	33
3	38	33
4	38	36
5	31	34
6	34	36
7	52	26
8	28	48
9 (Caretaker Residence)	47	53
10	43	46
11	40	40
12 (Caretaker Residence)	46	44
13 (Caretaker Residence)	40	45
14	35	31

As the noise is likely to contain tonal characteristics, a 5 dB penalty would apply. The shaded cells in *Table 4-1* indicate where noise levels would exceed the assigned levels under the Regulations.

5 RECOMMENDATIONS

As the noise is predicted to exceed the assigned levels under the Regulations, noise mitigation measures are required.

To address the noise resulting from the plant located in the crushing area, a bund, similar to the bund currently in place around the crushing area, would be required. The bund height and location for each of the crushing areas is shown in *Figures 5-1 and 5-2*.



Figure 5-1 Bund Around Crusher Area Located in Stage 7



Figure 5-2 Bund Around Crusher Area Located in Stage 10

Noise from the mobile plant (dozer, excavator and trucks) is also predicted to result in the noise at sensitive receivers exceeding the assigned levels. To address this, a noise bund on the western perimeter of the extraction area is required. The extent and height of the noise bund is shown in *Figure 5-3*. Care is required to ensure the bund is not constructed on land that is on the downward slope i.e. it should be constructed on ground that has a level similar to where the extraction plant is operating.

It should be noted that the bund is only required when plant is operating near to the western border. The area where plant would not be able to operate without the bund is shown shaded in red in *Figure 5-4*.

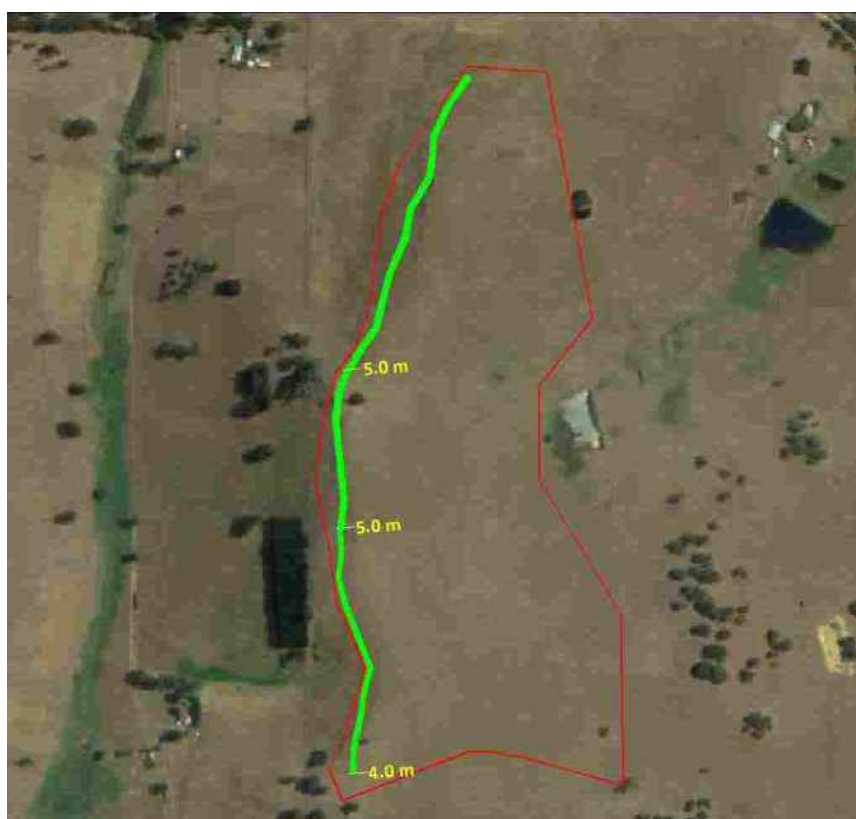


Figure 5-3 Extent and Height of the Proposed Noise Bund on the Western Perimeter



Figure 5-4 Area Where Mobile Plant is Not Permitted Without the Proposed Bund

The predicted noise levels assuming the recommended noise mitigation for Stages 5 to 8 and Stages 9 to 11 are presented in *Table 5-1*. The results are also presented as noise level contours in *Figures 5-5 and 5-6*.

Table 5-1 Noise Level Predictions Assuming Recommended Mitigation

Residence Location Number (refer Fig 2-1)	Predicted Noise Level L_{A10} dB	
	Stages 5 to 8	Stages 9 to 11
1	32	29
2	38	33
3	39	33
4	40	36
5	31	34
6	31	36
7	37	26
8	21	40
9 (Caretaker Residence)	29	40
10	35	38
11	28	36
12 (Caretaker Residence)	42	44
13 (Caretaker Residence)	34	45
14	35	32

As the noise is likely to contain tonal characteristics, a 5 dB penalty would apply.

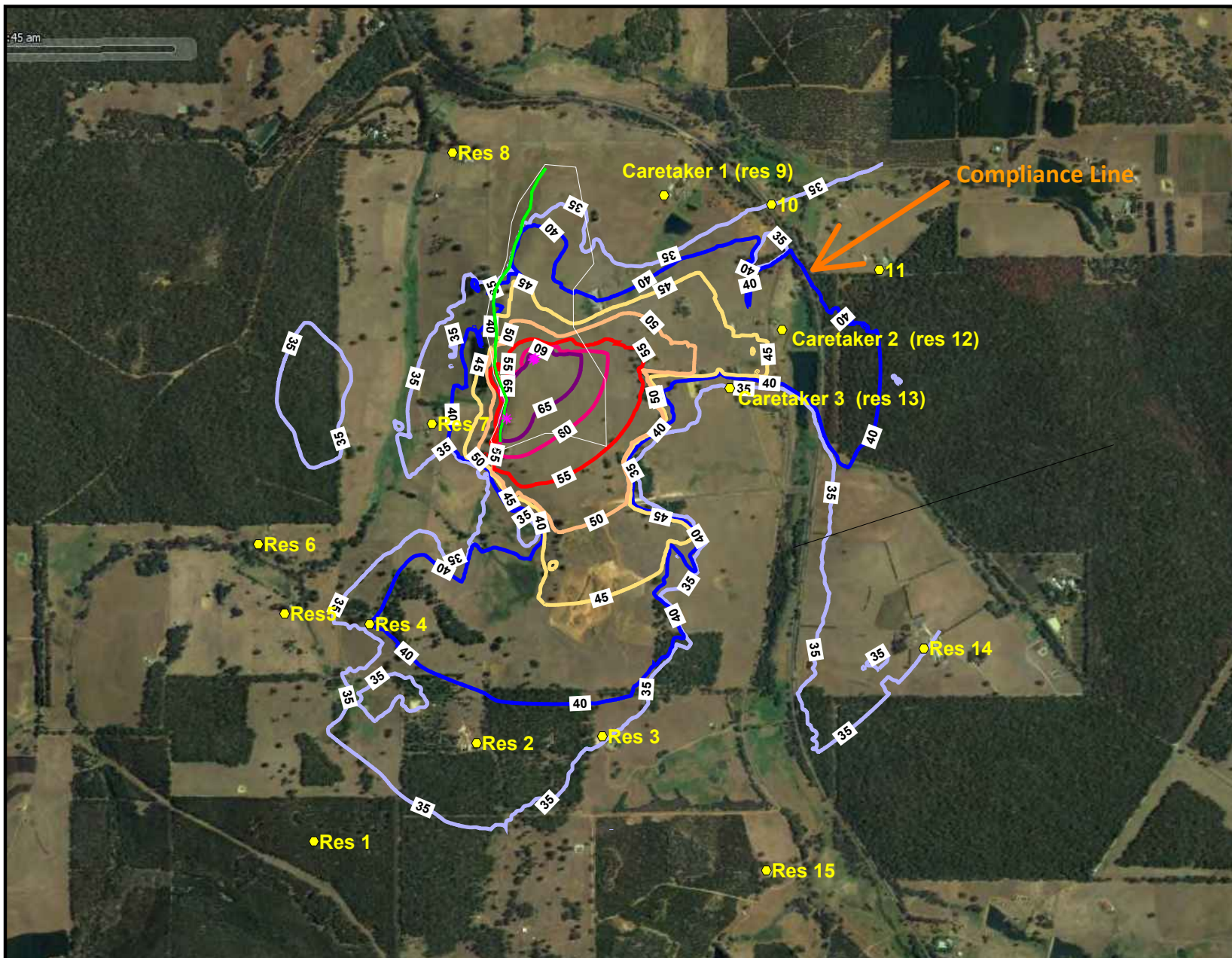


Figure 5-5

B&J Catalano Gravel Pit - Lot 1400 SW Highway, Glenlynn
 Predicted Noise Levels With Recommended Noise Bunds - Crusher Plant in Stage 7
 LA10 Noise Level Contours



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 by Daniel Lloyd
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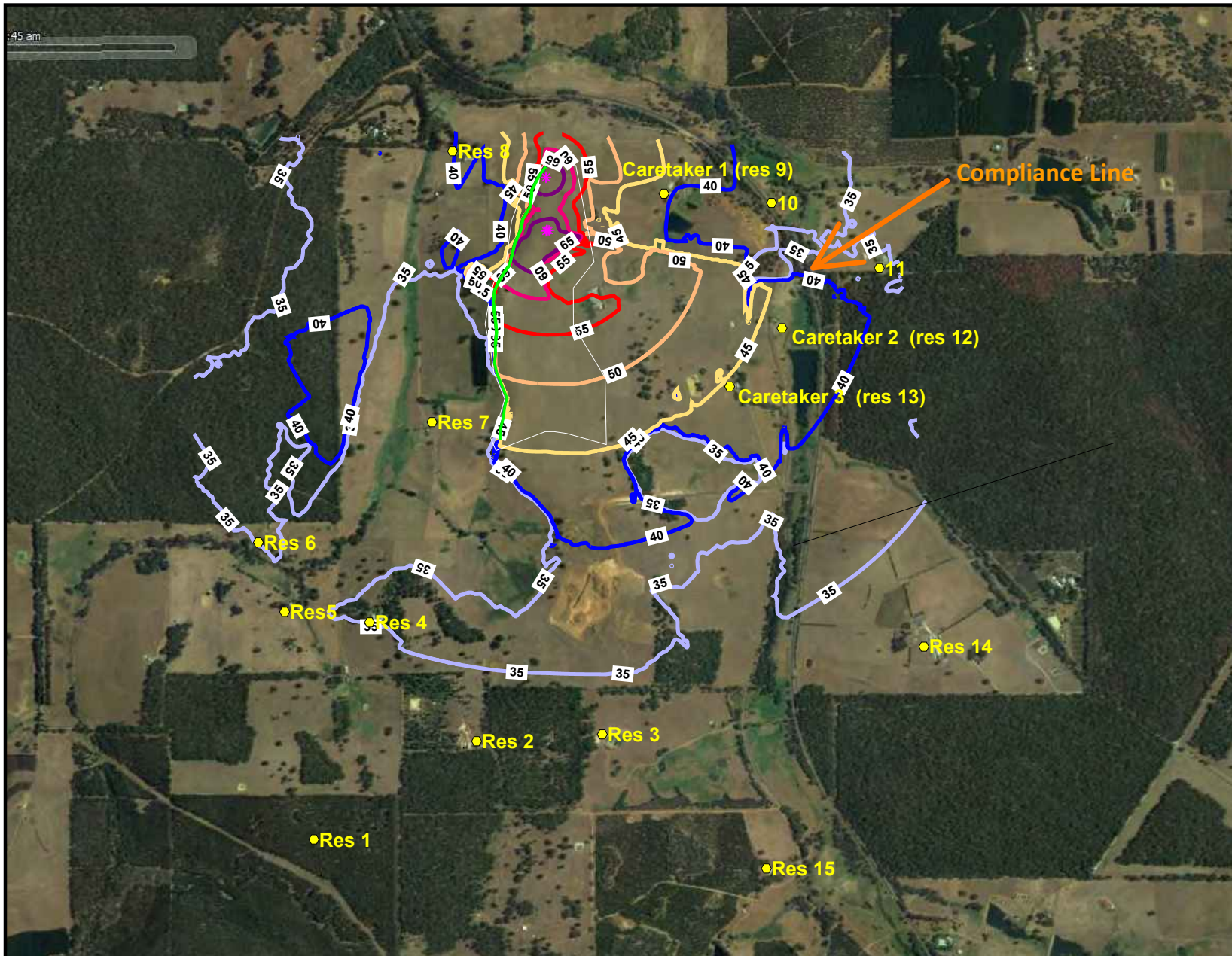
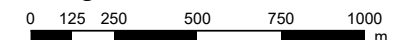


Figure 5-6



Length Scale



B&J Catalano Gravel Pit - Lot 1400 SW Highway, Glenlynn
 Predicted Noise Levels With Recommended Noise Bunds - Crusher Plant in Stage 10
 LA10 Noise Level Contours



Lloyd George Acoustics
 by Daniel Lloyd
 daniel@lgacoustics.com.au
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6 CONCLUSION

The results from this assessment show that with the construction of the recommended noise bunds, extraction operations on Lot 1400 South West Highway, Glenlynn, for the proposed Stages 5 to 11, can comply with the *Environmental Protection (Noise) Regulations 1997* between 7.00 a.m. to 7.00 p.m. Monday to Saturday.

Appendix A

Terminology

The following is an explanation of the terminology used throughout this report.

Decibel (dB)

The decibel is the unit that describes the sound pressure and sound power levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

A-Weighting

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as L_A dB.

Sound Power Level (L_w)

Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure levels at known distances. Noise modelling incorporates source sound power levels as part of the input data.

Sound Pressure Level (L_p)

The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

L_{ASlow}

This is the noise level in decibels, obtained using the A frequency weighting and the S time weighting as specified in AS1259.1-1990. Unless assessing modulation, all measurements use the slow time weighting characteristic.

L_{AFast}

This is the noise level in decibels, obtained using the A frequency weighting and the F time weighting as specified in AS1259.1-1990. This is used when assessing the presence of modulation only.

L_{APeak}

This is the maximum reading in decibels using the A frequency weighting and P time weighting AS1259.1-1990.

L_{Amax}

An L_{Amax} level is the maximum A-weighted noise level during a particular measurement.

L_{A1}

An L_{A1} level is the A-weighted noise level which is exceeded for one percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

L_{A10}

An L_{A10} level is the A-weighted noise level which is exceeded for 10 percent of the measurement period and is considered to represent the “intrusive” noise level.

L_{Aeq}

The equivalent steady state A-weighted sound level ("equal energy") in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the "average" noise level.

 L_{A90}

An L_{A90} level is the A-weighted noise level which is exceeded for 90 percent of the measurement period and is considered to represent the "background" noise level.

One-Third-Octave Band

Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20 000 Hz inclusive.

 L_{Amax} assigned level

Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded at any time.

 L_{A1} assigned level

Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded for more than 1% of the representative assessment period.

 L_{A10} assigned level

Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded for more than 10% of the representative assessment period.

Tonal Noise

A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

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.

This is relatively common in most noise sources.

Modulating Noise

A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

a variation in the emission of noise that —

- (a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band;
- (b) is present for at least 10% of the representative.

Impulsive Noise

An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness is:

a variation in the emission of a noise where the difference between $L_{A\text{ peak}}$ and $L_{A\text{ Max slow}}$ is more than 15 dB when determined for a single representative event;

Major Road

Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

Secondary / Minor Road

Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

Influencing Factor (IF)

$$= \frac{1}{10} (\% \text{ Type A}_{100} + \% \text{ Type A}_{450}) + \frac{1}{20} (\% \text{ Type B}_{100} + \% \text{ Type B}_{450})$$

where:

% Type A₁₀₀ = the percentage of industrial land within
a 100m radius of the premises receiving the noise

% Type A₄₅₀ = the percentage of industrial land within
a 450m radius of the premises receiving the noise

% Type B₁₀₀ = the percentage of commercial land within
a 100m radius of the premises receiving the noise

% Type B₄₅₀ = the percentage of commercial land within
a 450m radius of the premises receiving the noise

+ Traffic Factor (maximum of 6 dB)

= 2 for each secondary road within 100m

= 2 for each major road within 450m

= 6 for each major road within 100m

Representative Assessment Period

Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

Background Noise

Background noise or residual noise is the noise level from sources other than the source of concern. When measuring environmental noise, residual sound is often a problem. One reason is that regulations often require that the noise from different types of sources be dealt with separately. This separation, e.g. of traffic noise from industrial noise, is often difficult to accomplish in practice. Another reason is that the measurements are normally carried out outdoors. Wind-induced noise, directly on the microphone and indirectly on trees, buildings, etc., may also affect the result. The character of these noise sources can make it difficult or even impossible to carry out any corrections.

Ambient Noise

Means the level of noise from all sources, including background noise from near and far and the source of interest.

Specific Noise

Relates to the component of the ambient noise that is of interest. This can be referred to as the noise of concern or the noise of interest.

Peak Component Particle Velocity (PCPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and in one of the three orthogonal directions (x, y or z) measured as a peak response. Peak velocity is normally used for the assessment of structural damage from vibration.

Peak Particle Velocity (PPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and is the vector sum of the PCPV for the x, y and z directions measured as a peak response. Peak velocity is normally used for the assessment of structural damage from vibration.

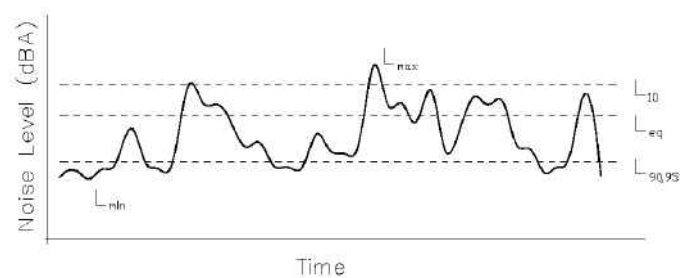
RMS Component Particle Velocity (PCPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and in one of the three orthogonal directions (x, y or z) measured as a root mean square (rms) response. RMS velocity is normally used for the assessment of human annoyance from vibration.

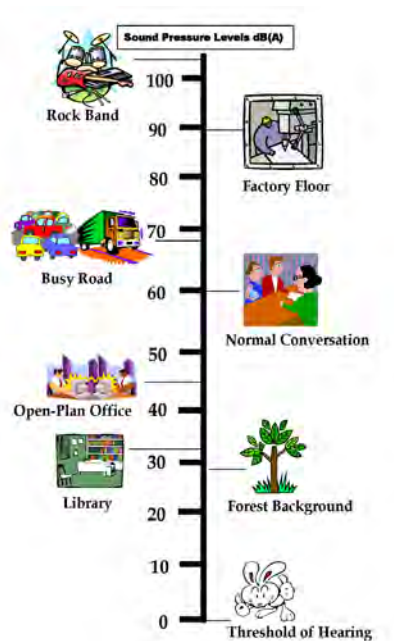
Peak Particle Velocity (PPV)

The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and is the vector sum of the PCPV for the x, y and z directions measured as a root mean square (rms) response. RMS velocity is normally used for the assessment of human annoyance from vibration.

Chart of Noise Level Descriptors



Typical Noise Levels



APPENDIX 4

MAIN ROADS CORRESPONDENCE

Julia

From: DAVIES Paul (Con) <paul.davies@mainroads.wa.gov.au>
Sent: Wednesday, October 24, 2018 2:12 PM
To: julia@lundstrom-environmental.com.au
Cc: NAUDE Daniel (RCPM)
Subject: RE: Lot 1400 & 963 South Western Highway - Extended gravel extraction operation

Hi Julia

I refer to your email below and advise that Main Roads has no objection to the proposed extractive industry operation.

If you have any queries please phone Daniel Naude

Regards Paul Davies

For Daniel Naude

Road Corridor Planning Manager
Metropolitan and Southern Regions / South West
p: 08 9724 5724 | m: 0418931078
w: www.mainroads.wa.gov.au



mainroads
WESTERN AUSTRALIA



From: julia@lundstrom-environmental.com.au <julia@lundstrom-environmental.com.au>
Sent: Wednesday, 3 October 2018 1:47 PM
To: WEB South West Region <swreg@mainroads.wa.gov.au>
Subject: FW: Lot 1400 & 963 South Western Highway - Extended gravel extraction operation

Please find attached correspondence relating to proposed heavy vehicle movements that may result from an extension to an existing gravel extraction operation on Lots 1400 & 963 South Western Highway, Glenlynn, Shire of Bridgetown-Greenbushes. The previous email attachment did not contain Figure 1. Please find attached correspondence containing Figure 1.

Kind regards

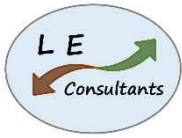
Julia Stewart (LLB BSc. Hons)

Environmental Consultant

LUNDSTROM ENVIRONMENTAL CONSULTANTS PTY LTD

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Main Roads
South West Region
PO Box 5010
Bunbury WA 6231

Dear Sir/Madam

EXTRACTIVE INDUSTRY LICENCE APPLICATION, LOTS 1400 & 963 SOUTH WEST HIGHWAY GLENLYNN, SHIRE OF BRIDGETOWN GREENBUSHES

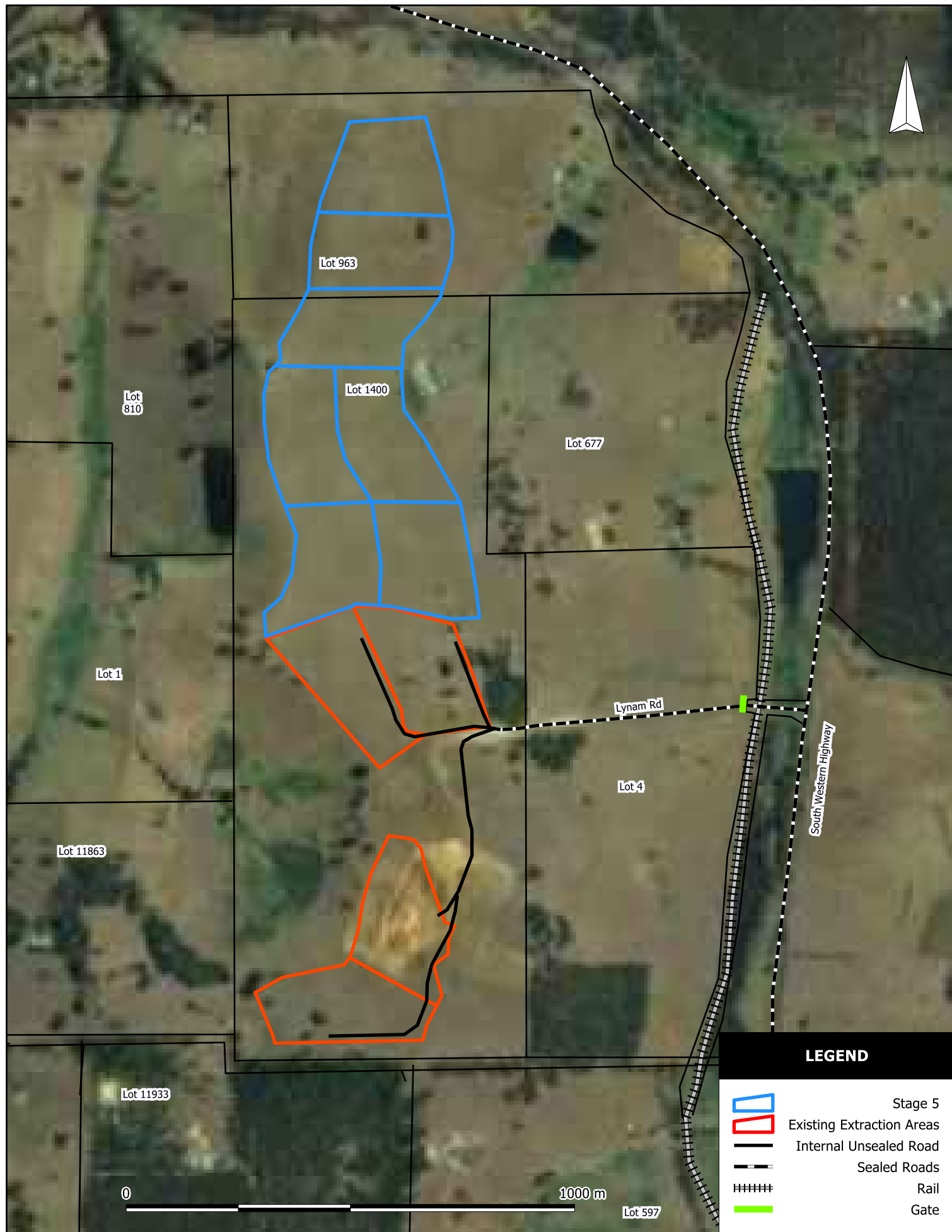
B & J Catalano Pty Ltd of South West Highway, Brunswick Junction have conducted gravel extraction on Lot 1400 South Western Highway for the past 5 years and development approval was issued by the Shire of Bridgetown-Greenbushes in July 2018 to continue operating the existing gravel extraction operation on Lot 1400. This recent approval was referred to Main Roads in February 2018, as haulage of the gravel is carted from the site access road (Lynam Road) directly onto South Western Highway. This approved project estimated that approximately 66,000 tonnes per annum of gravel would be removed off site over a period of 5 years, using a combination of 24, 40 and 50 tonne vehicles, with over 70% of vehicle movements being made by the 40 tonne and under vehicles. This equated to approximately 6 to 16 truck movements in total per day of operation.

B&J Catalano are proposing an extension to this extraction operation on Lot 1400 and into Lot 963 (see Figure 1) which would result in an increase in annual gravel removal offsite to an estimated total of 209,400 tonnes per annum over 5 years. The size and ratio of truck usage would remain the same and this would equate to approximately 18 truck movements offsite per day (36 total truck movements in and out per day) of operation.

Please direct any comments regarding this proposed extension to the gravel extraction operation to the Shire of Bridgetown-Greenbushes.

Yours faithfully

Michael Lundstrom
Principal Environmental Consultant
3 October 2018



**LUNDSTROM ENVIRONMENTAL
CONSULTANTS PTY LTD**

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mike@Lundstrom-Environmental.com.au
0417934863
www.Lundstrom-Environmental.com.au

Scale: 1:11000
Original Size: A4
Air Photo Date: Nearmap (with Google 2015)
Datum: Australian Geocentric 1994 (GDA94)

B&J Catalano Pty Ltd

**Lot 1400 South West
Highway, Glenlynn
Gravel Extraction**

**Main Roads
Consultation**

Figure 1

APPENDIX 5

WEED MANAGEMENT PLAN



LUNDSTROM ENVIRONMENTAL CONSULTANTS PTY LTD

ACN 600 398 945

21 Sellen Court
LEEMING WA 6149

Tel 08 93395482 MOB:0417934863
email: mikelund1@bigpond.com
www.Lundstrom-Environmental.com.au

WEED MANAGEMENT PLAN

Prepared for B&J Catalano Pty Ltd

On Lots 1400 & 963, South Western Highway, Glenlynn

1. INTRODUCTION

This Weed Management Plan (WMP) has been prepared in accordance with guidelines published by the Department of Agriculture and Food (DAF) (DAF 2014). This WMP should be read in conjunction with the report entitled "Extractive Industries Licence Application, Lots 1400 & 963 South Western Highway, Shire of Bridgetown-Greenbushes", prepared for B&J Catalano Pty Ltd by Lundstrom Environmental Consultants Pty Ltd, November 2018.

2. LOCALITY AND OWNERSHIP

Locality: Lots 1400 & 963 South Western Highway, Glenlynn, Shire of Bridgetown-Greenbushes

Ownership: J.S and E.J. Gifford

Figure 1 is an aerial photograph showing the property and its surrounds.

3. THE DEVELOPMENT PROPOSAL

B&J Catalano Pty Ltd intend to continue with gravel extraction from the area that is indicated on Figure 1 over a period of 5 years. The total area to be disturbed is 32ha and it is intended that the area will be rehabilitated back to pastures. Access will be via the existing access route for the current extraction area from Lynam Rd.

4. RESPONSIBILITIES

B&J Catalano Pty Ltd accept responsibility for weed management within the extraction areas and any areas identified within the conditions of approval set by the Shire of Bridgetown-Greenbushes. All other areas on the property will remain the responsibility of the landowner. B&J Catalano acknowledge their responsibilities under the *Biosecurity and Agricultural Management Act 2007*.

5. CURRENT WEED STATUS OF THE PROPERTY

It is acknowledged that the proposed ground disturbance may result in the germination of certain weeds, but the species will not be known until emergence. Current weed management has worked to control the spread of emerging weeds on Lot 1400.

6. PROPOSED WEED MANAGEMENT ACTIONS

The following is a general description of the actions that will be implemented by B&J Catalano Pty Ltd for weed management:

6.1 Weed Management Zones on the Subject Land

For the purpose of this WMP, the subject land has been allocated zones as follows:

Zone A: This is all the land within the quarry and includes the base of the excavation, roadways and stockpiles of topsoil, overburden and all product stockpiles.

Zone B: This is all land that is at natural level and which extends 100 meters beyond the perimeter of the quarry and includes any stockpiles of soil or overburden created by the excavation.

6.2 Weed Emergence Monitoring

Monitoring of the emergence of weeds in Zones A and B will be undertaken by an experienced and licenced weed management contractor on a 6 monthly basis i.e. after the first seasonal rains and at the end of spring. In addition, B&J Catalano personnel on the site will be instructed to report any infestations that may occur on other occasions. Based on the type of weeds that emerge, a control plan will be formulated by the licenced weed management contractor.

6.3 Import and Export of Weeds

B&J Catalano will ensure that all plant and equipment is clean and free of any soil when moving any equipment to or from the site. B&J Catalano will also ensure that any quarry products imported to the site will be free of weeds.

6.4 Weed Control Program

If a weed infestation occurs within Zones A or B, the licenced weed management contractor will apply the appropriate method of control, in accordance with the guidelines published by the DAF, whether chemical or mechanical, at the appropriate time. The weed management contractor will keep a record of all treatments.

7. REFERENCES

DAF (2014). Department of Agriculture and Food guidelines for weed control procedures for extractive industries licences.

Biosecurity and Agricultural Management Act (WA) 2007



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Scale: 1:11000
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B&J Catalano Pty Ltd

**Lot 1400 South West
Highway, Glenlynn
Gravel Extraction**

Weed Management

Figure 1

APPENDIX 6

SPILL MANAGEMENT PLAN

Safety Practice

SAF-SP-029 HYDROCARBON SPILL RESPONSE

PURPOSE

This procedure summarises the safety practice of B & J Catalano to control the personal and environmental hazard posed by hydrocarbon spills. It outlines the correct procedure for controlling, recovering and reporting hydrocarbon spills to ensure compliance with West Australian legislative requirements.

SCOPE

This safety practice will apply to all B & J Catalano areas and employees.

DEFINITIONS

MSDS: Material Safety Data Sheet - A document which describes the properties and use of a substance, i.e., its identity, chemical and physical properties, health hazard information, precautions for use and safe handling information.

Hydrocarbon: An organic compound containing only carbon and hydrogen including diesel, oil, petrol, grease, solvent-based degreasers, hydraulic fluids and transformer oils.

Hydrocarbon Spill: Any uncontrolled release of hydrocarbon products.

Bund: An embankment or wall that may form part or the entire perimeter of a compound. Usually made of concrete, bunds are placed around storage tanks to contain spills.

INFORMATION

Under the general and specific provision of duty of care an employer shall, so far as is practicable, provide and maintain a working environment in which his employees are not exposed to hazards existing in the workplace. This requirement includes the hazards associated with hydrocarbons spills.

It is the responsibility of ALL employees and contractors to manage hydrocarbon spills as they occur. Supervisors are accountable if their immediate areas are found to have poor hydrocarbon management practices (this includes the clean-up of minor spills).

Spills involving hydrocarbons have the potential to produce adverse consequences to human health and/or the environment. Environmental spills can lead to contamination of water (both surface and aquifers), soil and habitats. The effect is higher closure costs, loss of a potable resource, death of flora and fauna, requirement for remediation, classification into Western Australia's Contaminated Sites database and prosecution by the Department of Environment and Conservation (DEC).

Document No.	Doc Type	Approved	Rev. No.	Rev. Date	Page
SAF-SP-29	SAF	May 2011	1.0	May 2012	1 of 4

This safety practise outlines:

- Action required when a spill is identified
- Techniques to restrict the extent of the contamination
- Techniques to collect spilled material
- Techniques to collect and dispose of contaminated material
- Techniques to treat soils contaminated by hydrocarbon
- Reporting requirements in regard to hydrocarbon spills

REQUIREMENTS

1 Action required when a spill is identified

- 1.1 Isolate the spill area
- 1.2 Identify the spilt substance
- 1.3 Identify hazards and PPE requirements – consult the appropriate MSDS.
- 1.4 If safe to do so, the source of the spill should be restricted or stopped (i.e. shutdown machinery, switch off pumps, close valves).
- 1.5 If suitable equipment is readily available and can be operated in a safe manner, the extent of the spill is to be contained.
- 1.6 Contact immediate Supervisor as soon as possible and advise of spill.

2 Techniques to restrict the extent of the contamination

- 2.1 If possible restrict the source of the spill to ensure the flow of hydrocarbon is stopped.
- 2.2 If the spill is occurring outside a containment bund, use earthmoving equipment to construct additional earthen bunds to contain the extent of the flow.
- 2.3 Isolate drains.
- 2.4 On advice of Environmental Department, pump source material from either or both of the source container or the bunded containment into a safe container.

3 Techniques to collect spilled hydrocarbon

- 3.1 On advice of Environmental Department, pump source material from either or both of the source container or the bunded containment into a safe container.
- 3.2 Use absorbent materials to soak up residual hydrocarbon.
- 3.3 If the spill occurs in an area where a water body has become contaminated, use mini air booms to contain the spread of hydrocarbon on the surface of the water.
- 3.4 Use a skimmer to collect contained hydrocarbon in a triple oil separator or retain on the surface of the water body and pump to a waste oil tank or other safe container.
- 3.5 Hydrocarbon absorbents are to be collected and disposed of as decided by the Environmental Department and according to site requirements.

Document No.	Doc Type	Approved	Rev. No.	Rev. Date	Page
SAF-SP-29	SAF	May 2011	1.0	May 2012	2 of 4

4 Techniques to treat soils contaminated by hydrocarbon

- 4.1 Dependent on site requirements and on advice from the Environmental Department, contaminated soils may be treated in the following ways:
- Collected and disposed of
 - Encapsulated in the waste dump
 - Collected or remain in situ and treated by bioremediation to breakdown the hydrocarbon.
- 4.2 On completion of the rehabilitation program the Environmental Department must inspect and verify that the spill has been successfully remediated.

5 Reporting requirements in regard to hydrocarbon spills

- 5.1 All incidents of hydrocarbon spills are to be reported to the immediate Supervisor as soon as possible and followed up with the completion of the B&J Catalano Incident Report Form which requires an incident investigation to determine root cause and assists in the prevention of a reoccurrence.
- 5.2.1 The immediate Supervisor must then report the incident to the Environmental Department to determine what reporting to external departments is required i.e. Department of Conservation.

Table 1: Suggested Spill Equipment

Type of Spill	Recommended Spill Equipment				
Spill on rocks / dirt	<ul style="list-style-type: none"> • Use earthen bunds or booms to contain spill • Polypropylene pads to mop up excess oil at the outset • Global Peat or Enretec to treat contaminated soil in-situ 				
Spill on concrete / hardstand area e.g. workshop	<ul style="list-style-type: none"> • Polypropylene pads (easiest and quickest) • Floorsorb / kitty litter if pads not available (this must be swept up and disposed of in hydrocarbon bins immediately, as these products are not hydrophobic and will not contain the spill if they become wet) 				
Spill in containment bund	<ul style="list-style-type: none"> • Polypropylene pads or pillows • Bund can be drained or sucked out to waste oil receptacle if the spill is large 				
Spill occurs when raining or on a water body	<ul style="list-style-type: none"> • Polypropylene pads 				
Document No.	Doc Type	Approved	Rev. No.	Rev. Date	Page
SAF-SP-29	SAF	May 2011	1.0	May 2012	3 of 4

RELATED DOCUMENTS

- a. B&J Catalano Incident Report Form

REFERENCES

- a. Occupational Safety and Health Act (WA) 1984
- b. Occupational Safety and Health Regulations (WA) 1996
- c. Mines Safety and Inspections Act (WA) 1994
- d. Mines Safety and Inspections Regulations (WA) 1995
- e. Environmental Protection Act 1986
- f. Environmental Protection (Unauthorised Discharges) Regulations 2004
- g. AS 1940 : 2004 Storage and handling of flammable and combustible liquids

DOCUMENT CONTROL

Approval			
Role		Name	Date
General Manager		Nunzio Giunta	Sept 2011
HSE/HR Manager		Doriann Walls	Sept 2011
Revision Events			
Rev.	Author	Changes	Date
1.0	Nic Henley		May 2011
2.0	Ian Prosser	Definitions / Table 1	March 2012

Document No.	Doc Type	Approved	Rev. No.	Rev. Date	Page
SAF-SP-29	SAF	May 2011	1.0	May 2012	4 of 4

APPENDIX 7

BUSHFIRE MANAGEMENT PLAN



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FIRE MANAGEMENT PLAN

**Prepared for B & J Catalano Pty Ltd
On Lots 1400 & 963 South Western Highway, Glenlynn**

1. INTRODUCTION

This Fire Management Plan (Fire MP) details the Fire Management methods and requirements that will be implemented within the expanded gravel extraction operations on Lots 1400 & 963 South Western Highway, as required by the Shire of Bridgetown-Greenbushes (The Shire) Extractive Industries Policy 2016. This Fire MP should be read in conjunction with the report entitled "Extractive Industry Application and Environmental Management Plan (EMP), Lots 1400 & 963 South Western Highway, Glenlynn, Shire of Bridgetown-Greenbushes", prepared for B & J Catalano Pty Ltd by Lundstrom Environmental Consultants Pty Ltd, November 2018.

1.1. LOCALITY AND OWNERSHIP

Locality: Lot 1400 on Plan 119617 and Lot 963 on Plan 102950
South Western Highway, Shire of Bridgetown-Greenbushes

Ownership: J.S. & E.J. Gifford

The properties are situated approximately 5km south of Bridgetown and are accessed directly from South Western Highway, via Lynam Road.

Figure 1 shows the site and surrounds and indicates the proposed area covered by this application.

2. SITE DETAILS

The existing extraction area is situated along the plateau of a ridge and comprises gentle slopes averaging between 3% (Stages 3 and 4) and 7% (Stages 1 and 2). The expanded extraction area will continue northward with medium slopes ranging from 4 – 8% in Stages 5 and 7 and medium to steep slopes averaging 8 – 13% in Stages 6 and 8 – 11. The proposed extraction area has an elevation between 275mAHD and 215mAHD. There are steeper slopes to the east and west of the extraction area that range between 10 – 25%. The soils in the extraction area comprise of a thin layer of topsoil overlying approximately 1m of laterite caprock and gravel.

Drainage of the existing extraction area is towards the west into a tributary of the Blackwood River. Drainage within the proposed new extraction area is primarily towards north east, forming part of a drainage channel which is intercepted by two farm dams and drains towards another tributary of the Blackwood River.

The extraction area and surrounding lots comprise largely of cleared farm land with areas of scattered remnant vegetation. State Forest lots are located approximately 1km to both the east and west, and another area 1500m to the south west. Lot 11933 to the south of Lot 1400 is largely uncleared and adjoins a timber plantation area to the north of the southern State Forest (No. 9).

The area is zoned as “Rural 2 - General Agriculture” in terms of the Shire of Bridgetown-Greenbushes Town Planning Scheme No 4. It is anticipated that the extraction area will be returned to grazing and pastures on completion of extraction.

3. THE DEVELOPMENT PROPOSAL

B & J Catalano Pty Ltd intend to expand their gravel extraction operation as shown in Figure 1 and continue to extract over a period of 5 years from 2018 to 2023. Figure 2 shows the approved and proposed extraction Stages. It is intended that this area will be progressively rehabilitated to pastures as each stage of extraction is complete.

4. FIRE RISK

The rainfall pattern for the area is such that the majority of the rain falls between late autumn and early spring. This rainfall supports substantial vegetation growth which dries off in summer/early autumn.

Bush fires in the area are generally fast moving, with many fires running up the trees into the canopy, sending out embers to start spot fires ahead of the main ground fire, making suppression and containment difficult. Smoke is a major hindrance to fire fighters in such fast moving fires.

Fire risk assessment for the proposed development will take into account existing site conditions (WA Planning Commission, FESA 2010), which include:

- Topography and slope with reference to accessibility
- Remnant vegetation cover and likely revegetation
- Surrounding land use patterns

The bush fire risk level for the proposed development area is *Low*, due to the extensive clearing in and around the extraction area. Areas of remnant vegetation adjacent to the proposed development can be classified as *Moderate to Extreme*. Figure 3 illustrates the relative fire hazards within the proposed development and its immediate surrounds.

5. PROPERTY LAYOUT AND CIRCULATION PATTERN

The extractive operation occurs over Lots 1400 & 963 and access is via a sealed road with one separated stand of remnant vegetation near the access road. The extraction area is cleared of native vegetation and has been used for grazing. The property is classified as ‘managed land’ under the Bridgetown-Greenbushes Firebreak Order 2017/18 and fire management measures including installation and maintenance of Firebreaks outside the extraction area will be undertaken by the property owners.

Emergency assembly areas will be determined based on the extraction stages and will be communicated as required to all operational staff on site.

6. FIRE MANAGEMENT PLAN

It is generally recognized that bush fires are an inevitable occurrence in the spring, summer and autumn months in the south west.

The aim of this Fire MP is to reduce the threat to life, property and the environment in the event of a bush fire within or near the site.

This Fire MP is designed to take into account fire protection measures including access roads, firebreaks, equipment on site, water supplies, fire contacts, action in the event of a bush fire on site and brigade familiarization of site, which are detailed below.

6.1 Access Roads

The site is directly accessed from South Western Highway, via Lynam Road. The gates to access the site remain locked when the site is not in operation.

6.2 Firebreaks

The gravel extraction area is cleared and equipment operated on site will be well separated from any remnant vegetation. The extraction area and the remainder of Lot 1400 are to comply with the Shire of Bridgetown-Greenbushes Firebreak Order 2017/18.

6.3 Equipment on Site

When operations are carried out, the following equipment is generally present/used on site:

- D10/D9 Bulldozer
- CAT 980 Front End Loader (FEL)
- Striker 1320 Crusher
- Finlay Screen 693
- Striker 25m Stacker
- Standard Rigid Truck (14 tonnes)
- Single Semi-loader (24 tonnes)
- Truck and Dog (40 tonnes)
- Road Train (50 tonnes)
- Water Carts
- Amenities building with generator
- A mobile refueling vehicle will refuel all machinery on a daily basis. No fuel or lubricant storage will occur on the site.

6.4 Water Supplies

There is a large farm dam in the northern portion of Lot 1400 and a water cart will be onsite during operations.

6.5 Contacts

The Site Supervisor will be the main point of contact for any fire related queries. The Supervisor's contact number will be displayed on the sign at the main access gate.

6.6 Action in the Event of a Bush Fire on Site

The following actions will be taken in the event of a bush fire:

- All personnel on site to be notified immediately of fire;
- Report fire to FESA Operations by ringing '000' and providing all known details on the fire including location, type of vegetation burning, intensity, smoke level;
- If safe to do so, onsite personnel and equipment to be used to extinguish the fire using fire extinguishers, water cart, plant and equipment;
- Relocate personnel and equipment to a safe area;
- Create a fire break around the fire if possible, only if it is safe to do so. Do not put any personnel or equipment at risk;
- On arrival of Fire Brigade, site supervisor to take directions from the most senior Brigade Officer (Incident Controller) on site. B&J Catalano personnel to follow their own chain of command (site supervisor/team leader);
- Communications on all plant and equipment is UHF Radio Channel 30;
- Mobile phones are to be available to most operators;
- Fire extinguishers are to be fitted to all plants; and
- The water cart is to be fitted with a fire hose facility.

6.7 Brigade Familiarization of Site

Each year prior to the wildfire season (commencing September/October), B&J Catalano should familiarize the local Bush Fire Brigade of site access, firebreaks, water supplies, equipment available on site and contact details of authorized personnel for the site. This will enable the Brigade to plan their actions in the event of a fire on site, as well as provide them with enough background information in the event of a wildfire on or near the site.

7. SHIRE FIRE PROTECTION PLAN

The Shire of Bridgetown-Greenbushes has contact details on its website for bushfire control officers located in 10 different localities within the Shire. The nearest localities for bushfire control officers are Bridgetown, Wandillup, Yornup, Sunnyside and Kangaroo Gully. The Department of Fire and Emergency Services (DFES) launched the Emergency WA website in October 2016, which provides up to date information and warnings on bushfires.

The Shire shall develop and maintain district firefighting facilities under their control and where necessary provide advice on appropriate techniques to achieve bushfire hazard reduction for individual properties. The Shire shall also ensure annual compliance with their firebreak order and shall maintain in good order the condition of the district water tanks, hydrants and apparatus for firefighting purposes, as well as public emergency access ways and strategic firebreaks within the district.

Extractive industry operators should seek clarification from the Shire of Bridgetown-Greenbushes if they have any uncertainties regarding their responsibilities and the requirements contained within their Fire Management Plan, as well as the Firebreak Order 2017/18 published on the Shire's website.

8. EMERGENCY PROCEDURES

In the event of a fire on site, emergency procedures shall be followed as outlined in Section 6.6 of this Fire MP.

9. MAINTENANCE

All equipment used on site (as listed under Section 6.3 of this document) will be maintained and serviced on a regular basis. This will ensure that there will be minimal fire threats from equipment malfunctions due to lack of maintenance.

All responsible personnel on site will be trained on fire drill procedures and on how to respond in the event of a fire. Regular fire drills will be carried out on site to ensure that all ground staff are familiar with the emergency assembly procedure and the chain of command to be followed.

10. SUMMARY

10.1 Overall Fire Threat

The bush fire risk level for the proposed development area and cleared areas of the property is *Low*, and *Medium-High* in the remainder of the site.

10.2 Fire Management Plan

This Fire MP lists all fire protection measures that will be undertaken by B&J Catalano to reduce the threat to workers and fire fighters in the event of a bush fire within or near the site.

10.3 B&J Catalano's Responsibility

B&J Catalano shall implement all fire protection requirements as outlined in Sections 6.1 – 6.7 of this Fire MP, while carrying out gravel extraction operations on site.

10.4 Shire of Bridgetown-Greenbushes' Responsibility

The Shire of Bridgetown-Greenbushes shall develop and maintain district firefighting facilities under their authority and shall ensure that property owners and operators shall maintain compliance of their Fire Management Plans.

11. REFERENCES

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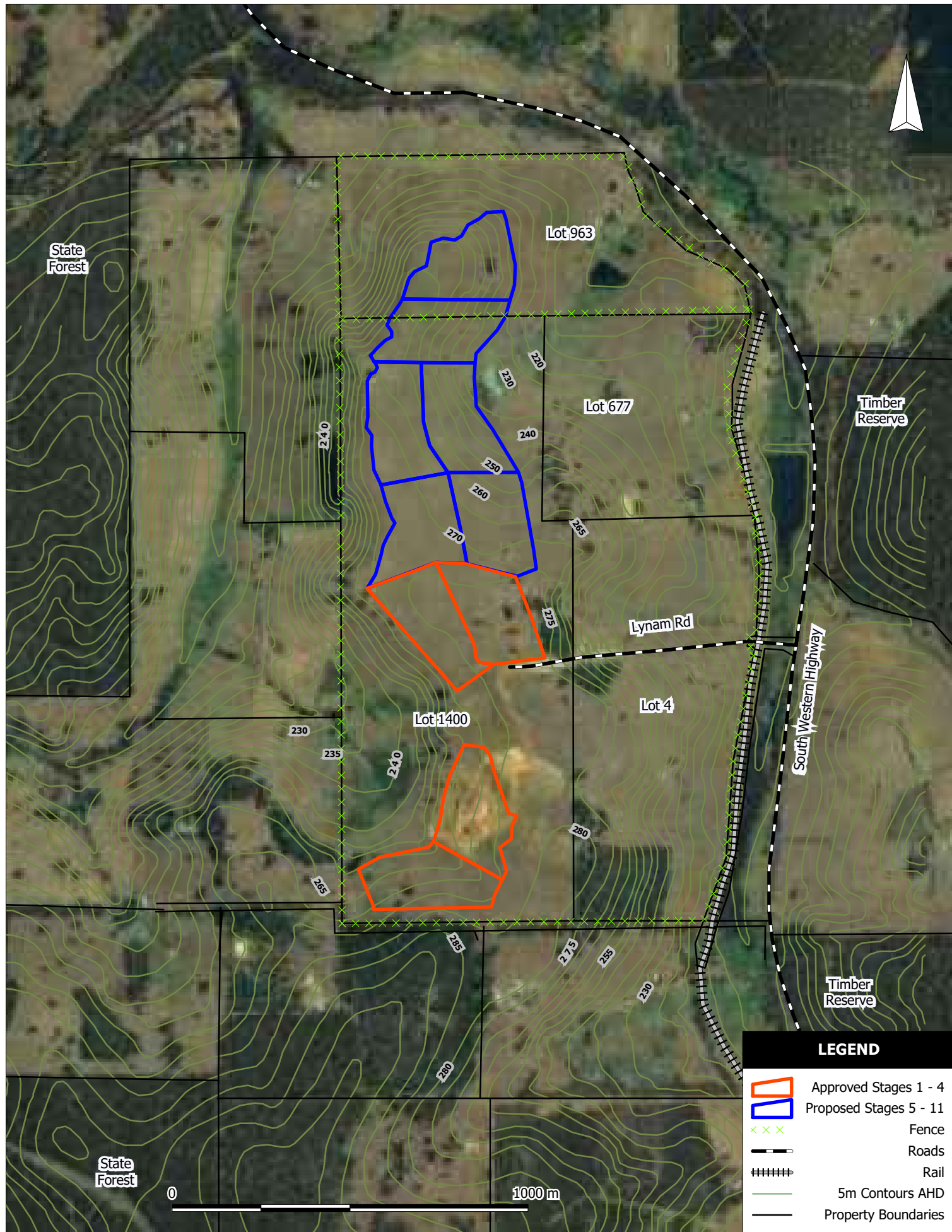
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<https://maps.slp.wa.gov.au/landgate/bushfireprone/>

FIGURES



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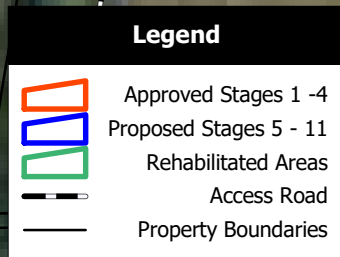
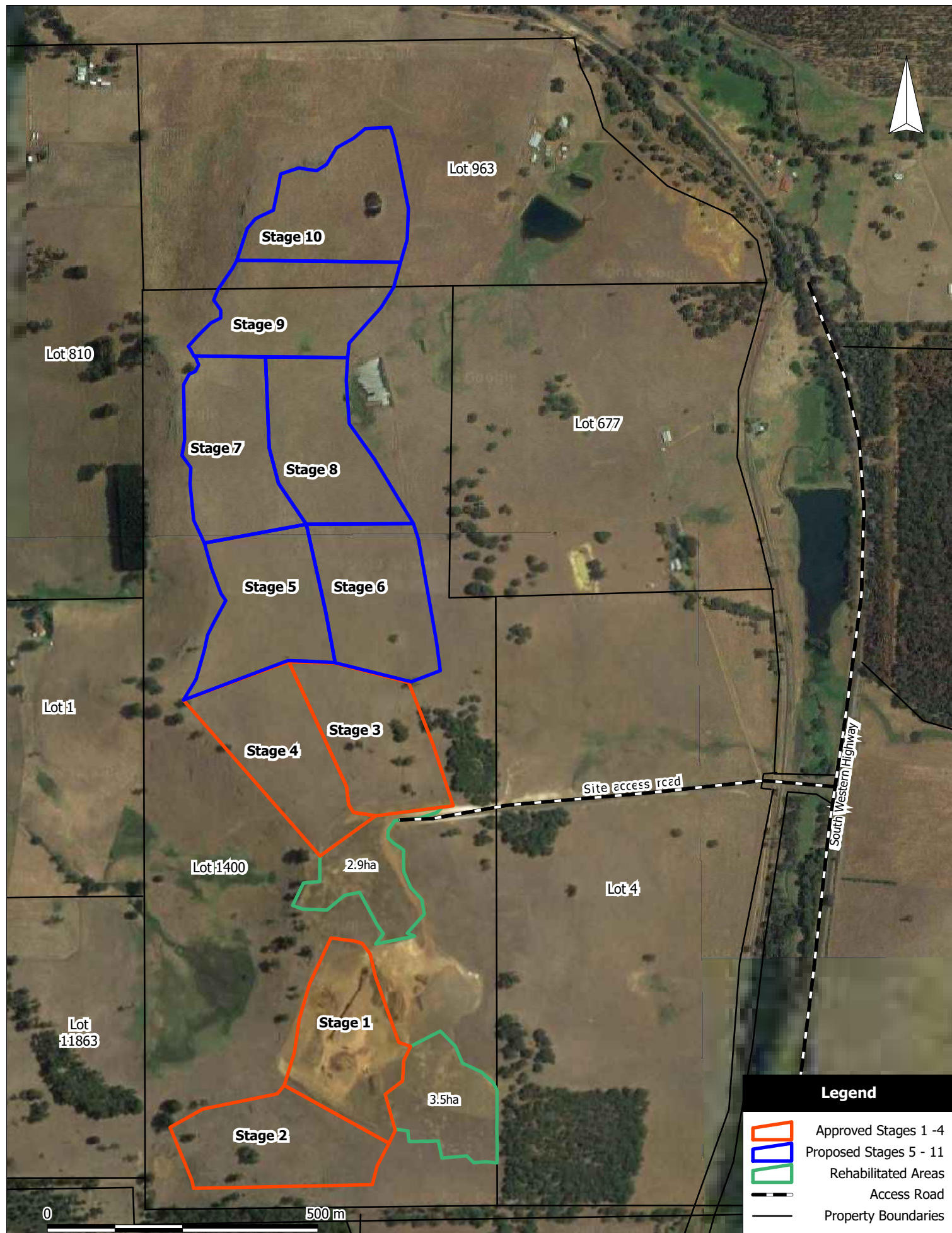
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(with Google 2015)
Datum: Australian Geocentric 1994 (GDA94)

B&J Catalano Pty Ltd

**Lot 1400 South West
Highway, Glenlynn
Gravel Extraction**

Site & Surrounds

Figure 1



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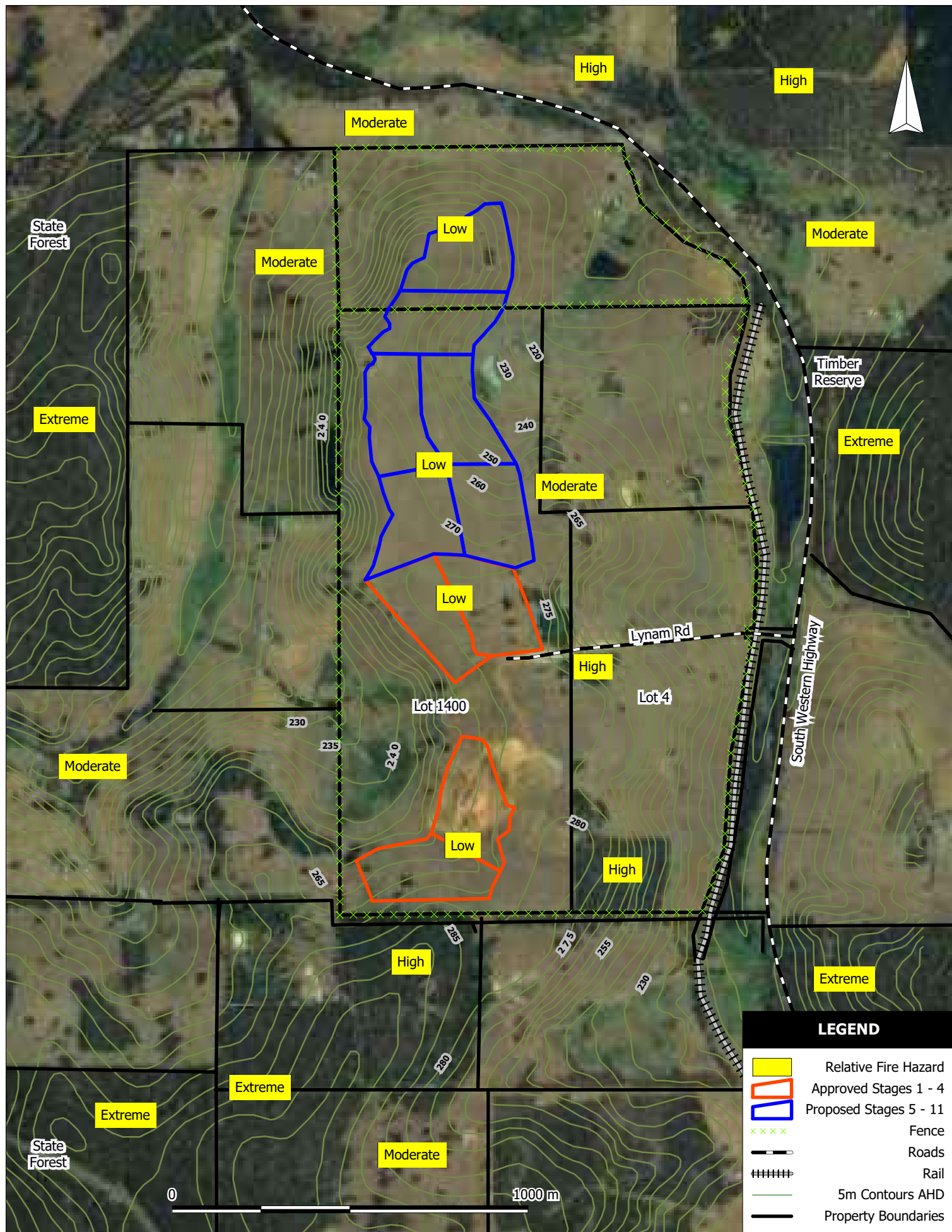
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B&J Catalano Pty Ltd
Lot 1400 South West Highway
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Gravel Extraction

Extraction Operation

Figure 2



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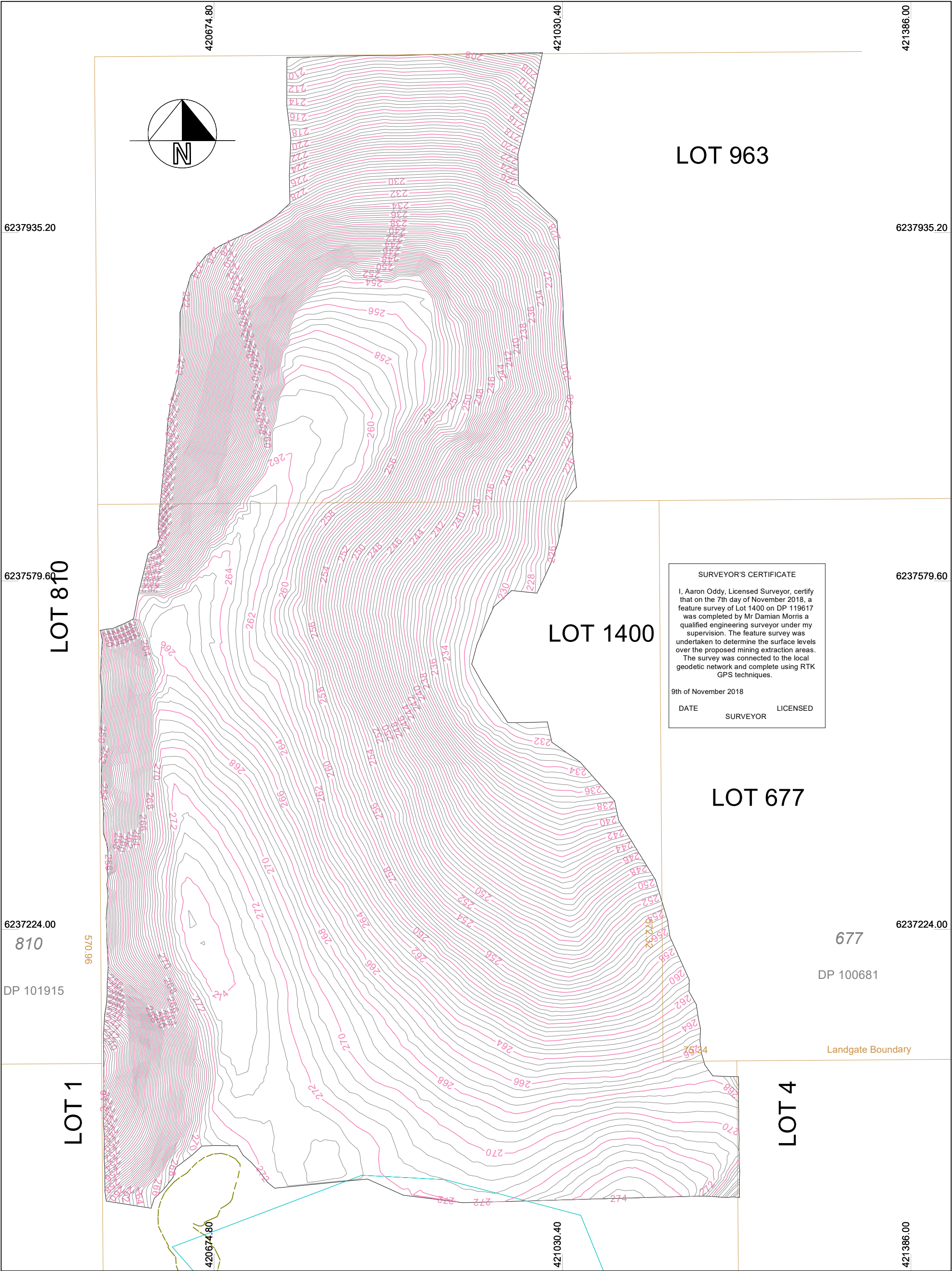
**Lot 1400 South West
Highway, Glenlynn
Gravel Extraction**

**Bush Fire Hazard
Assessment**

Figure 3

APPENDIX 8

CERTIFIED SURVEY



CLIENT: B & J CATALANO PTY LTD							COORDINATE DATUM HORIZONTAL : MGA94 VERTICAL : AHD CONTOUR INTERVAL : 2m CAD MODEL :E5192		NORTH POINT 		<div><div>SURFACE SURVEY LOT 1400 SW HIGHWAY BRIDGETOWN</div><div>B C E SURVEYING LICENSED & ENGINEERING SURVEYING CONSULTANTS</div></div> <div><div>BUNBURY 24 MOLLOY STREET BUNBURY WA 6230 Ph:(08) 9791 7411 Fax:(08) 9791 9315 admin@bcesurveying.com.au</div><div>PERTH SUITE 4, 7 KINTAIL ROAD APPLECROSS WA 6153 Ph:(08) 9364 6408 Fax:(08) 9364 6394 admin@bcesurveying.com.au</div></div>				JOB No. E5192	
BAR SCALE: 0 88 175 											PLAN No. E5192-01					
REV	REV DATE	SURV DATE	DESCRIPTION	DRAWN	SURVEYOR	APPROVED	<div>DISCLAIMER This plan / data has been prepared to assist in planning & design and should not be used in whole or part for any other purpose. The plan shows visible services only. Any underground services should be located by the appropriate service authorities prior to any works. Cadastral boundaries were not established during survey and are shown in accordance with from digital data/plan/diagram and limited on-site information where existing. The true boundary position may differ from that shown. Prior to any works boundaries should be re-established and marked.</div>									
A	12-11-18	5-11-18	INITIAL ISSUE	J.HARVERSON	J.HARVERSON	D.MORRIS										
							<div>SCALE @ A3: 1:3500 REVISION: A</div>									