



ROWE
GROUP

Job Ref: 9163
13 October 2020

Chief Executive Officer
Shire of Serpentine Jarrahdale
6 Paterson Street
MUNDIJONG WA 6123

Attention: Ashwin Nair – Manager Statutory Planning & Compliance

Dear Mr Nair

**Development Application for Temporary Works Approval
Lot 102 (No. 766) King Road, Oldbury**

Rowe Group acts on behalf of Kingroad Holding, the landowner of Lot 102 (No. 766) King Road, Oldbury (the 'subject land'). Please find enclosed the following updated documents in support of the Application seeking Temporary Works Approval, as requested by the Shire at the Friday 14 August 2020 site meeting:

- Site Volume Survey;
- Updated Remediation Management Plan; and
- Ultimate land use of the proposed hardstand.

Further background and justification in support of this application is provided below for your consideration.

SITE VOLUME SURVEY

As requested by the Shire, a survey has been undertaken by Harley Dykstra to determine the volumes of waste at the subject site.

The volume of waste at the subject site was determined by the survey to be approximately 35,389m³.

Furthermore, access to a mapping tool to view the survey and waste stockpiles at the subject site in 3D has been provided, and can be accessed via Google Chrome at the following link:

<https://cloud.pix4d.com/dataset/735614/map?shareToken=e6dde063-cc3c-45a5-b0f1-d5f5d703879b>

Refer **Attachment One – Site Volume Survey**.

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REMEDIATION MANAGEMENT PLAN

The updated Remediation Management Plan has been prepared by 360 Environmental to present the remediation management and monitoring measures for a number of matters to support the temporary works development application, including:

1. Asbestos and Hazardous Materials
2. Stockpiling and Screening
3. Construction
4. Dust
5. Noise and Vibration
6. Water
7. Public and Visual Amenity
8. Traffic

Refer **Attachment Two – Updated Remediation Management Plan**.

ULTIMATE LAND USE OF PROPOSED HARDSTAND AREA

The proposed hardstand area is proposed to be used consistent with the broader approved uses of the site of 'Industry – Light' and 'Transport Depot'. All activity associated with use of the site will occur within the approved area as detailed on the Development Approval granted by the Shire on 30 October 2015.

Refer **Attachment Three – Development Approval** and **Attachment Four – Ongoing Use Site Plan**.

TRAFFIC MANAGEMENT

We acknowledge the Shire's request for further clarification with regard to matters including traffic management and timeframe for works to occur, which has been referenced in the Remediation Management Plan ('RMP') enclosed. Further detail in this regard will be documented to the Shire's satisfaction in the relevant management plans prior to commencement of works, as detailed in the RMP report by 360 Environmental.

Should you require any further information or clarification in relation to this matter, please contact Ella Compton on 9221 1991.

Yours faithfully,

Ella Compton
Rowe Group

Encl.



Attachment One

Site Volume Survey



PLANNING & SURVEY SOLUTIONS

DISCLAIMER
 This plan has been prepared for ROWE GROUP from a combination of field survey and existing records for the purpose of showing the physical features of the land to assist in designing future development. It should not be used for any other purpose.
 The title boundaries shown herein were not verified or marked at the time of survey but are derived from the SCDB 09/2020. They are estimated to be accurate only to +/- 0.2m. This plan should not be used for building to boundary, or to prescribe set-backs, without a further boundary survey.
 Before starting any demolition, excavation or construction on the site, the relevant person should make an independent and updated enquiry of 'Call Before You Dig' and any relevant service providers to ascertain the existence of further services (if any) and the accurate location of those not surveyed at the time of preparing this plan (or data).
 No responsibility can be accepted by Harley Dykstra for any damage caused to any underground service or any loss or injury so suffered if enquiry and verification have not been completed in accordance with this note.
 Contractors to verify all survey control marks to be correct (by field checks) prior to utilisation for construction purposes. This note is an integral part of this plan or the data as transmitted. Failure to produce this note on providing this plan or accompanying data or any part thereof to any third party will render this plan or data invalid.
 Harley Dykstra disclaims any liability whatsoever and howsoever caused, for loss or damage arising from any party who uses or relies upon this plan for any purpose other than that for which it was intended.
 In any event the liability of Harley Dykstra Pty Ltd is limited to the resupply of the relevant goods and/or services or the reasonable cost of resupply.

A	Original drawing	PH	02/09/20
rev	details	approved	date
survey	PH 27/08/20	cad file	22375-01A.dgn
drawn	NR 02/09/20	checked	PH 02/09/20
horiz datum	MGA 94 ZONE 50	level datum	AHD
scale at A3	1 : 1500	all distances are in metres	0 20 40

plan type
VOLUME SURVEY

client
ROWE GROUP

description
LOT 102 ON D 82617

drawing no
22375-01A

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NOTICE:
 This drawing is the property of Harley Dykstra Pty Ltd it may not be copied or altered without the consent of the owner.





Attachment Two

Updated Remediation Management Plan

Our Ref: 3776AA_Rev3
6/10/2020



Ken Ming
Manager
Kingroad Holdings Pty Ltd
88 Smiths Road
Templestowe VIC 3106
Via Email: k.ming94@gmail.com

Dear Ken,

Lot 102 King Road Oldbury Remediation Management Plan

1 Introduction

360 Environmental Pty Ltd (360 Environmental) has been engaged by Kingroad Holdings Pty Ltd (Kingroad Holding) to conduct a site inspection and develop a plan for the remediation of approximately 35,389 m³ of stockpiled uncontrolled fill located at Lot 102 (on Deposited Plan 82617) King Road, Oldbury, Western Australia (herein referred to as the 'site').

1.1 Project Appreciation

It is understood that waste material of unknown origin(s) has unlawfully been disposed of at the site since 2016 and was generally deposited on three areas as shown on **Figure 1** (attached). The Shire of Serpentine-Jarrahdale (the Shire) require the waste material to be removed from the site. Following a site inspection by Shire officers and an ongoing review of the current site status, Kingroad Holding engaged Enpoint to assess the waste material and collect soil samples. The Enpoint assessment found that the waste material comprises mainly timber, brick, concrete and plastics as well as asbestos containing materials (ACM).

The Shire considered the Enpoint report at its Ordinary Council Meeting which took place on 18 November 2019 and resolved to require the submission of a "*temporary works development approval by 1 March 2020, for the purposes of site remediation*". Site remediation works were determined at this time to comprise the segregation of stockpiles with recyclable and non-reusable materials removed, and brick material crushed for onsite reuse.

1.2 Project Objective

The overarching objective of this Remediation Management Plan (RMP) is to present the remediation management methodology and outline high level management and monitoring measures for noise, dust and visual amenity aspects, with the potential to adversely affect human health. The RMP will be used to support the temporary works development approval documentation.

1.3 Scope of works

In order to meet the project objectives the following scope of works has been undertaken:

- A site visit by a contaminated site practitioner and occupational hygienist.
- Development of an abbreviated remediation management plan that defines the following:
 - Environmental processes pertaining to the methodology for the onsite segregation, reuse and/or removal of fill material from site
 - Methodology for removal and validation of top 100 mm of soil below the stockpiles
 - Post-remediation soil validation programme (including emu bob for ACM and soil sampling for contaminants of concern)
 - Development of a post-remediation groundwater investigation programme
- Development of a basic dust, noise and visual impact management plan for the remediation works.

2 Site Inspection

On 24th March 2020, a contaminated site practitioner and occupational hygienist attended the site to conduct an inspection. The inspection involved visual assessment of the extent and composition of stockpiled material at the site. A summary of site observations are presented in **Table 1** with the following key observations noted below:




- Uncontrolled fill material has been stockpiled on the north-east portion of the site
- There are two large (main) stockpiles up to approximately 8 metres in height in some locations which appear to be comprised of mostly building rubble mixed with some sand (refer to Photos 1-3)
- Other stockpiles located to the west and south of the main stockpiles include:
 - Stockpiles of sorted building rubble including concrete and timber (refer to Photo 5)
 - Stockpiles of mulch with some debris mostly comprised plastic, timber, brick, and concrete (refer to Photos 5, 7-9)

- Stockpiles of sand with some debris mostly comprised plastic, timber, brick and concrete (refer to Photo 6). .

Table 1: Summary of Site Observations

Site Photographs			Description
 <p>Photo 1</p>	 <p>Photo 2</p>	 <p>Photo 3</p>	<p>The two large stockpiles appear to comprise mostly builder's rubble including:</p> <ul style="list-style-type: none"> • Concrete • Bricks • Plastic items • Plaster board • Wood.
 <p>Photo 4</p>	 <p>Photo 5</p>	 <p>Photo 6</p>	<ul style="list-style-type: none"> • Separate stockpiles of concrete and timber are present to the south of the larger two stockpiles • One stockpile of mulch placed to the west of the two large stockpiles appears to have been mixed with plastics and putrescible waste. • Several sand stockpiles with inclusions of some bricks, plasterboard, timber and concrete have been placed to the south the two large stockpiles

Site Photographs			Description	
 <p>Photo 7</p>	 <p>Photo 8</p>	 <p>Photo 9</p>	<ul style="list-style-type: none"> • Stockpiles of mulch ranging from 2 – 4 metres in height are present at the site placed directly to the south and east and of the two large stockpiles • Debris is present on the surface of some of the stockpiles including timber, plasterboard, concrete fragments • Several of the mulch stockpiles potentially have debris entrained throughout. 	
 <p>Photo 10</p>	 <p>Photo 11</p>	 <p>Photo 12</p>		<ul style="list-style-type: none"> • Further west of the uncontrolled fill stockpiles there are a number of other smaller stockpiles which appear to comprise of building rubble. <p>During the site inspection a number of hazardous materials were identified including:</p> <ul style="list-style-type: none"> • Numerous electrical fittings including old Fluorescent lights (potential polychlorinated biphenyls (PCBs)) • ACM (primarily non-friable asbestos fibre cement, however friable asbestos items may be present and cannot be ruled out).

Site Photographs			Description
			<p>Other additional hazardous materials were identified including:</p> <ul style="list-style-type: none">• Suspected lead based paints• Old air conditioning units (potential chlorofluorocarbons (CFCs))• Synthetic Mineral Fibre• Treated pine (potential copper-chrome-arsenate (CCA) or cresols).

3 Pre-Remediation Conceptual Site Model

The DWER risk-based approach to contaminated site management requires that a CSM is developed to identify a source (nature and extent of contamination), migration pathways, and assess potential impacts to human health and the environment. The CSM is designed to:

- Identify the onsite and offsite AOPCs, including potential sources and COPCs, that may pose a risk to human health and/or ecological receptors
- Identify key receptors (onsite and offsite) and associated exposure scenarios
- Evaluate the risks from site contamination by identifying potentially complete source-pathway-receptor (SPR) linkages through the development of a CSM.

The linkages between the above elements will determine if a complete, potential, or incomplete exposure pathway exists which subsequently determines the presence of risk to human health and/or environment.

3.1 AOPCs, Potential Sources and COPCs

AOPCs are those areas on a site that may have potentially polluting activities, industries and land uses that could result in contamination of surficial and subsurface media at the site. AOPCs are generally characterised as being associated with the following primary and secondary sources:

- Point Source Release Areas (PSRAs) from which releases of chemicals of concern to the environment either currently exist or have historically existed
- Operational processes, such as storage, handling, transport and disposal of chemical substances and hydrocarbons could result in releases to the environment
- Non-PSRAs from polluting activities such as illegal disposal of waste or use of uncontrolled fill at a scale sufficient to adversely impact surficial and subsurface conditions
- Presence of secondary indicators such as staining, stressed vegetation, suspect odours, and sufficiently disturbed land indicating polluting activities (i.e., waste disposal, burial of drums).

Table 2 presents the AOPCs identified onsite based on the outcomes of the visual inspection and information presented on **Figure 1**.

Table 2: Site APOCs

AOPC / Volume	PSRA	COPCs	Description
Stockpile Area A ~19,466 m ³	Construction/demolition rubble	ACM/asbestos fines/fibrous asbestos Metals PCBs CFCs CCA Cresols	Stockpile Area A comprises of brick, concrete, plastic items, plaster board and wood. In addition some hazardous waste materials have been identified Material has been stockpiled in this area up to a height of 8 m.
Stockpile Area B ~5,638 m ³	Woodchip waste products	ACM/asbestos fines/fibrous asbestos, CCA Cresols	Stockpile Area B is comprised mostly wood chips with some plasterboard and other general debris scattered on what appears to be the surface of stockpiles.
Stockpile Area C ~10,285 m ³	Construction/demolition rubble	ACM/asbestos fines/fibrous asbestos Metals PCBs CFCs CCA Cresols	Stockpile Area C comprises of mostly brick and concrete. In addition some hazardous waste materials have been identified.

No other AOPC has been discussed in this report.

3.2 Potential Migration Pathways and Exposure Routes

For the purpose of this assessment, possible migration pathways are identified as natural and/or man-made pathways for the preferential migration of COPCs to receptors. Potential contaminant transport mechanisms and exposure routes for the identified AOPC in **Table 2** above are summarised in **Table 3**.

Table 3: Identified Potential Migration Pathways

Transport Mechanism	Exposure Pathway
Direct spillage of COPCs in solid or liquid state to ground and adsorption to soils.	Direct contact, ingestion, inhalation, biotic uptake
Windborne transport of impacted soil particulates	Inhalation
Potential for onsite soil impacts to leach COPCs into groundwater.	Direct contact with impacted groundwater via abstraction
Transport of contaminants via surface water drainage channels or preferential overland flow pathways	Direct contact, ingestion, inhalation, biotic uptake

Transport Mechanism	Exposure Pathway
Lateral migration of COPCs in groundwater in the direction of groundwater flow.	Direct contact, ingestion, inhalation, biotic uptake

3.3 Potential Receptors

For the purpose of this assessment, 'receptors' include persons, structures, utilities, ecological receptors, shallow groundwater and water supply wells that are, or may be, adversely affected by the COPCs. Potential receptors on or inferred hydraulically down-gradient of the site, which have exposure pathways that may be complete are defined in **Table 4**.

Table 4: Potential Receptors

Potential Receptor	Description
Onsite human health (current/future site users, maintenance workers, groundwater users)	<ul style="list-style-type: none"> Site workers in the event that they are exposed to contaminated dust, airborne fibres and impacted surface soils through inhalation, ingestion and/or dermal contact Workers conducting subsurface excavations or trenching at the site in the event they come into dermal contact with impacted soil or inhale/ingest contaminated dust or airborne fibres Users of bore water via abstraction in the event they come into contact with impacted groundwater
Offsite human health (residents, pastoral/maintenance workers and visitors/recreational users)	<ul style="list-style-type: none"> Offsite workers in the event that they are exposed to contaminated dust, airborne fibres and impacted surface soils through inhalation, ingestion and/or dermal contact Workers conducting subsurface excavations or trenching in the event they come into dermal contact with impacted soil or inhale/ingest contaminated dust or airborne fibres Users of bore water via abstraction in the event they come into contact with impacted groundwater
Onsite terrestrial and aquatic ecological receptors	<ul style="list-style-type: none"> Terrestrial and aquatic receptors located within the vicinity and to the west of the site boundary in the event they come into contact with impacted soils, surface water runoff and groundwater
Offsite terrestrial and aquatic ecological receptors	<ul style="list-style-type: none"> Abstraction of groundwater in the event they come into contact with impacted groundwater Hydraulically down gradient (offsite) surface water bodies and associated ecosystems in the event they come into contact with impacted surface water and/or groundwater

3.4 Source Pathway Receptor (SPR) Linkages

For a particular contaminant to present a risk to receptors, three components must be present:

- **Source** - A potentially hazardous substance that has been released into the environment
- **Pathway** - A mechanism by which receptors can become exposed to the source or derivatives of the source
- **Receptors** - The human or ecological component potentially at risk of experiencing an adverse response following exposure to the source or derivatives of the source.

If one of these three components are missing from an exposure scenario, then there can be no risk.

The follow following SPR linkages are currently considered viable at the site prior to remediation and validation activities being undertaken at the site:

- **SPR1:** Impacts in stockpiled material may pose a direct contact risk to current and future onsite and offsite workers
- **SPR2:** Impacts in stockpiled material may pose a direct contact risk to current and future onsite and offsite intrusive maintenance workers
- **SPR3:** Impacts in stockpiled material across the site may be transported offsite via wind or surface water posing a direct contact (inhalation, ingestion, dermal) risk to offsite human health
- **SPR4:** Impacts in stockpiled material across the site may be transported via surface water or wind posing a biotic update risk to onsite and offsite terrestrial ecosystems and aquatic receptors
- **SPR5:** Impacts in stockpiled material may have migrated from the unsaturated zone into groundwater and may pose a direct contact risk to onsite users of groundwater
- **SPR6:** Impacts in stockpiled material may have migrated from the unsaturated zone into groundwater and laterally migrated offsite and may pose a direct contact risk to offsite groundwater users.

4 Remediation Management Plan

As the proposed remediation works will involve the segregation of waste materials from the stockpiles into material that is considered appropriate for beneficial on site re-use (i.e. crushed brick material), recyclable (i.e. plastic, metal, wood, cardboard) and non-reusable wastes (i.e. putrescible, asbestos containing material and other hazardous material), a staged approach to remediation will be required. The remediation management plan presented in **Table 5** below outlines the key steps to complete remediation at the site.

Table 5: Remediation Management Plan

Tasks	Description	Remediation Management Plan	Responsibility Onsite
1	Site access	<p>The entrance to the site is located on the eastern boundary of the site via King Road.</p> <p>A road has been established in the centre of the site running east to west.</p> <p>All site traffic (vehicles and plant) involved in the remediation works are to use the entrance and road to access and egress the site. This will limit the potential for crushing hazardous materials (asbestos) and cross contaminating the site.</p>	Nominated Excavator Contractor
2	Site set up / management plan implementation (risk management) (refer to Section 5 for further details on site specific management plans)	<p>Implement management plans developed for the site (refer to Section 5 below) which will include information such as:</p> <ul style="list-style-type: none"> The designated area to set up the grizzly (mechanical screener) The designated areas for temporary stockpiling of different materials (e.g. material identified for use as hardstand on site, reusable/recyclable materials, potentially hazardous non-recyclable materials and putrescible) The turn-around point for site traffic. The designated area for vehicle decontamination/washdown Details of monitoring and site risk management measures including locations of monitoring equipment to be set up on site. Set up complaints register to log any complaints received and actions taken onsite in response to any complaints. 	Environmental Consultant Nominated Excavator Contractor
3	Community Consultation	<p>Develop and provide neighbours within a 1 km radius with a letter outline the proposed remediation works to be undertaken at the site. The letter will include the following:</p> <ul style="list-style-type: none"> Type of works being undertaken Timing and duration of works Contact details in the event there are any queries or complaints 	Environmental Consultant Land owner
4	Stockpile Remediation	<p>An environmental consultant will be onsite at all times during remediation works in order to identify and guide segregation and appropriate stockpiling of potential asbestos containing material and hazardous material. The screening and management of ACM and other potentially hazardous material will be undertaken in accordance with relevant legislation, codes of practice and guidelines as presented within Section 5.1. The following screening methodology is currently proposed at the site and will be presented in further detail in the Asbestos and Hazardous Materials Management Plan (AHMMP):</p> <ul style="list-style-type: none"> Stockpiles inspected and identified as mulch only will removed and stockpiled in a designated area on-site for future re-use. The surface area of all stockpiles will be visually inspected for asbestos fragments prior to disturbance with machinery. In the event ACM is identified fragments will be double bagged for disposal purposes in accordance with the AHMMP Stockpiles identified as mostly mulch or sand with some debris will require removal to allow access to the larger stockpile. These stockpiles will be removed to a designated area and incrementally loaded onto a mechanical screen which will separate material >65 mm for sorting purposes. Following screening excess soil will be sampled for waste classification purposes to allow for direct disposal to landfill. Areas of the stockpile comprised of brick and concrete will be incrementally moved to a designated area using an excavator bucket for screening purposes. If material is not suitable for screen the deposited load will be inspected by a qualified environmental consultant for ACM or hazardous materials. Any ACM or hazardous material will be managed in accordance with the AHMMP Following screening material brick/concrete determined as 'clean' and >65 mm will be placed in a designated area for crushing and beneficial reuse onsite and other material into recyclable, non-recyclable and potentially hazardous material stockpiles for disposal offsite The remainder of the soil <65 mm, following sampling, will be disposed of to landfill as type 1 special waste Following removal and remediation of stockpiles from the site, the top 100 mm of the surface soils within the stockpile footprints will be scraped off and placed with the sorted <65 mm soil material for disposal as type 1 special waste. <p>See Task 10 for sampling and analysis requirements for waste classification and disposal to landfill/reuse onsite.</p>	Environmental Consultant Nominated Excavator Contractor
5	Temporary stockpiling of impacted soils prior to offsite disposal	<ul style="list-style-type: none"> If direct disposal to landfill is not undertaken stockpiling of material onsite may be required. If stockpiles remain onsite, they will be covered with an impermeable plastic and adequately banded to mitigate any stormwater runoff or leaching into groundwater. 	Environmental Consultant Nominated Excavator Contractor
Constraints and Contingency Measures			
6	Presence of previously undetected contamination	<p>The excavation of material will be supervised by an environmental scientist experienced in contaminated land investigations. This will be done during the excavation and before the material is conveyed to screening or stockpiling. This person will be on hand to identify any material that is suspected of being contaminated for any reason and they will segregate this material for further assessment.</p>	Environmental Consultant

Tasks	Description	Remediation Management Plan	Responsibility Onsite
7	Volume of fill material varies from that anticipated	Discussion will be held with the client as soon as the anticipated volume of fill material is considered likely to vary for a decision on the best course of action.	Environmental Consultant
8	Soil validation results exceed nominated criteria	If following excavation, the identified COPCs in the stockpile/validation samples exceed remedial targets (See fieldwork plan item 12 below) the soil will not be suitable for reuse onsite until further screening/treatment is undertaken. Consideration will then be given to either rescreening the material or disposing of the material off site.	Environmental Consultant
9	Residual impacts from stockpiles are present in soil beneath removed stockpiles	In the event visual impacts in surface soils are observed these soils will be excavated further and stockpiled for sampling, laboratory analysis ,waste classification and disposal to landfill. Following removal of stockpiles, validation sampling of surface soils will be undertaken progressively to assess the suitability of the site for ongoing use as a commercial/industrial premises.	Environmental Consultant
Fieldwork Plan			
10	Landfill Classification scope of work	<p>Sampling of stockpiled material for waste classification purposes will be conducted in accordance with the Department of Water and Environmental Regulation (DWER) Landfill Waste Classification and Waste Definitions 1996 (as amended 2019) with numbers of samples required per volume (m³) presented in Table 6 below.</p> <p>It is understood there is approximately 34,434 m³ of stockpiled material onsite however the composition of the different stockpiles varies (particularly the mulch material to be disposed of offsite) and may require separate characterisation for disposal purposes. It is acknowledged that post sorting the volume of material for disposal will likely reduce., however at this preliminary stage an allowance for 40 samples to be collected for laboratory analysis is proposed to inform waste classification and disposal to landfill. Given the origin of waste is not known the full suite of contaminants of potential concern (COPCs) as listed in the DWER (2019) Landfill Waste Classification and Waste Definitions as follows:</p> <ul style="list-style-type: none"> • Metals (aluminium, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, hexavalent chromium, mercury, manganese, molybdenum, nickel, lead, selenium, silver, vanadium, and zinc) • Cyanide • Fluoride • Benzene, toluene, ethylbenzene, and xylene (BTEX) • Styrene • Total recoverable hydrocarbons (TRH) • Polynuclear aromatic hydrocarbons (PAHs) • Phenolic compounds • Cresols • 2,4 Dichlorophenoxyacetic acid • Polychlorinated biphenyls (PCBs) • Organochlorine pesticides (OCPs) • Asbestos in soil 	Environmental Consultant
11	Validation of sites soils for suitability for ongoing use as a commercial/industrial premise	Following removal of stockpiles and 100 mm surface scrape of underlying surface soils, a number of validation samples will be collected from the stockpile footprint for laboratory analysis. This area is approximately 12, 000 m ² and will require 25 samples to be collected and analysed for COPCs identified following review of stockpile sampling results.	Environmental Consultant
12	Nominated Assessment Criteria	<p>The nominated assessment criteria adopted to assess soils for disposal to landfill are:</p> <ul style="list-style-type: none"> • DWER (2019) Landfill Waste Classification and Waste Definitions 1996 (as amended 2019) <p>The nominated soil health and ecological investigation criteria adopted to validate sites soils are suitable for ongoing use as for the remediation will be selected from the following documents:</p> <ul style="list-style-type: none"> • National Environmental Protection Council (NEPC) (1996) National Environment Protection (Assessment of Site Contamination) Amendment Measure No.1, revised May 2013 • Department of Environment Regulation (DER) (now DWER) (2014) <i>Assessment and Management of Contaminated Site Guidelines</i> (AMCS Guidelines) • Department of Health (2009) Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia 	Environmental Consultant
13	Groundwater Investigation Program	Following remediation and validation works a groundwater investigation will be undertaken involving the installation of up to three groundwater monitoring wells at the site. The purpose of the investigation will be to ascertain if the storage of fill material at the site has caused impacts to groundwater beneath the site. The actual number of monitoring wells as	Environmental Consultant

Tasks	Description	Remediation Management Plan	Responsibility Onsite
		well as the potential contaminants of concern will be determined during remediation works. Groundwater monitoring wells will be installed once remediation works onsite have been completed to ensure wells are not damaged by machinery.	
14	Reporting	Reporting of soil and groundwater results will be presented in a factual letter report.	Environmental Consultant

Table 6: DWER Number of Samples Required per Volume (m³)

Volume	Number of Samples
100 to 200	4
200 to 500	6
500 to 1,000	8
1,000 to 2,000	11
2,000 to 3,000	15
3,000 to 4,000	18
4,000 to 5,000	20
5,000 to 10,000	24
> 10,000	24 plus 4 for each additional 10,000 m ³

Source: Department of Water and Environmental Regulation (DWER) Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)

5 Management Plans

A number of site-specific management plans will be developed to ensure that the disturbance of contamination does not result in causing a potential risk to human health, the environment or environmental values, or cause concern or nuisance to the surrounding community. The management plans identified to be implemented at the site are as follows:

- Asbestos and Hazardous Materials Management Plan
- Stockpiling and Screening Management Plan
- Construction Management Plan (dust, noise, water, vibration, and public/visual amenity)
- Traffic Management

In general each of the management plans will present details on the following:

- Time frame for which site management is necessary
- Specific risks to be mitigated as identified in the CSM
- Details of how site activities are to be managed, or monitoring and maintenance actions required
- Contingency measures to be taken in the event that any action criteria/trigger levels are exceeded
- Contact details for the persons responsible for implementing the plan
- Reporting requirements .

5.1 Relevant Legislation and Guidelines

The management plans will be developed in general accordance with the following legislation and guidelines:

Acts

- Occupational Safety and Health Regulations 1996 (WA)
- Contaminated Sites Act 2003
- Environmental Protection Act 1986, and Regulations 1987 (WA)
- Dangerous Goods Safety Act 2004

Regulations

- Environmental Protection (Controlled Waste) Regulations 2004
- Health (Asbestos) Regulations 1992
- Occupational Safety and Health Regulations 1996
- Environmental Protection (Noise) Regulations 1997 (WA)

Code of Practice

- National Occupational Health and Safety Commission, Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC:2018(2005)]
- National Occupational Health and Safety Commission, Code of Practice for the Safe Removal of Asbestos, 2nd Edition [NOHSC:2002(2005)]
- Safe Work Australia, Code of Practice How to manage and control asbestos in the workplace, October 2018
- Safe Work Australia, Code of Practice How to safely remove asbestos, October 2018

Guidelines

- DER 2014 Assessment and management of contaminated sites –contaminated sites guidelines, December 2014
- National Environment Protection Council, National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM ASC 2013) No. 1, April 2013
- DWER (formerly DEC 2011) A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites and other related activities, March 2011
- DWER, formerly DEC (2018), Landfill Waste Classification and Waste Definitions 1996, as amended December 2019

- Safe Work Australia (SWA), Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2ND Edition [NOHSC:3003(2005)]
- Western Australian DoH (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, May 2009

5.2 Site-specific Management Plans

The following sections present an overview of some of the details that are proposed for inclusion in the specific management plans to be developed for the site.

5.2.1 Asbestos and Hazardous Materials Management Plan

Asbestos and hazardous materials management must consider relevant legislation, codes of practice, industry standards and guidelines. The purpose of the AHMMP will be to provide clear guidance to the site project manager, site supervisor and site workers on how to comply with the asbestos prohibition and prevent exposure to airborne asbestos fibres, during remediation works.

It is acknowledged the current distribution, concentration and condition of asbestos at the site remains unknown so a conservative approach will be applied to guide likely exposure scenarios and the characterisation of health risk. At this stage the fact that the lateral and vertical extent of ACM and other hazardous materials remains unknown, the entire remediation area will be defined as high risk and management measures within the plan will be developed accordingly. The risk profile at the site will be regularly reviewed during each stage of works in order to determine the relevant control measures to be put in place.

The following management strategies are to be implemented to guide remediation works across the site and will be presented in detail within the AHMMP:

- Asbestos and hazardous materials register
- Site induction and training
- ACM and hazardous material management
- Personal Protective Equipment
- Barricading and/or signage
- Vehicle and mobile equipment management
- Personal decontamination
- Air quality monitoring
- Asbestos and hazardous material waste disposal
- Emergency, contingency and incident management

5.2.2 Stockpiling and Screening Management Plan

A Stockpiling and Screening Management Plan will be developed for the site. Some of the key monitoring/management controls to be presented in the plan include the following:

- The location of a designated area to set up the mechanical screener
- The location of a designated area for temporary stockpiles of different materials including amount of limestone material required to create pad base for stockpile areas
- Stockpile sampling requirements for waste classification
- A waste tracking log to track all waste leaving the site
- Inclusion of contingency measures to manage unexpected finds

5.2.3 Construction Management Plan

A Construction Management Plan, including measures to manage dust, noise, vibration and public/visual amenity, will be developed for the site. Some of the key monitoring/management controls to be presented in the plan are presented in the following sections.

5.2.3.1 Dust Management

Dust may be generated during remediation works. Disturbance of the ground surface including mobilisation and demobilisation to site, movement of plant and equipment, earthworks and clearing has the potential to generate hazardous particulate matter and airborne asbestos fibre. As residential areas are located adjacent to portions of the site, there is the potential for both site workers and also offsite residents and members of the public to be exposed.

Procedures used to minimise the potential for dust lift-off, airborne particles and airborne asbestos fibre associated with both construction and pre-construction activities will include, but are not limited to the following:

- Water carts to be available at all times to carry out dust suppression activities to control and prevent excessive dust from earthworks operation
- No timber or other debris is to be burnt
- Erecting and maintenance of fencing with dust control mesh, if required. Noting along the north, south and eastern boundaries berms have been formed using soils which are approximately 2 m in height, grassed with trees planted on top.
- Ensure vehicle movements on unsealed site road are not creating excess dust or tracking soils offsite.
- Prevent soil deposition offsite as much as possible and keeping roads adjacent to site clean
- Cessation of all work when wind speed exceeds 25km/hour or conditions are such that preventative measures are unable to contain dust and wind-blown materials

- Trucks carrying soils or other dusty materials are to be fitted with high tailgates and are not overloaded. At least 75mm of freeboard must be maintained or loads must be covered with a tarpaulin to prevent the release of dust outside the site
- Trucks carrying soils to or from the site are to be covered or wet down to prevent wind-blown dust
- Installation of automatic dust monitoring equipment providing an alert link by mobile phone to the site foreman or other responsible person, where required.

5.2.3.2 Noise and Vibration Management

The first priority is to eliminate the noise and vibration hazards through engineering controls. In the case of machinery and equipment where it is not technically feasible to make sufficient reduction in levels by engineering methods, noise exposure must be reduced by isolation of the noise hazard from employees.

To minimise the impact of noise and vibration associated with remediation activities the following principles will be followed:

- No machinery, work or delivery of plant or materials is to be undertaken outside of “normal working hours” - 7am to 7pm Monday to Saturday unless specific approvals are obtained
- Equipment is maintained on a regular basis to as near new condition as far as practicable and in particular any factory fitted noise controls are in good working order (e.g. exhausts silencers and complies with occupational health and safety standards), no servicing of machines outside normal working hours
- Establish speed limits within the sensitive zones
- Limit the use of engine exhaust brakes
- Erection of temporary noise barriers if required.

5.2.3.3 Water Management

Surface water or storm water has the potential to increase erosion and run-off containing ACM and/or potentially impacted soil particles that may leave site via local drains or be discharged into water ways. It is anticipated that the potential contamination of surface water would be low risk to environmental and public health receptors, however, the following water management procedures should be implemented:

- Minimise soil disturbance where practicable
- Schedule construction activities for low rainfall periods
- Ensure all stockpiles are located away from drainage points
- Contain run-off within the development area and construction fronts (i.e silt curtains)

- Site drainage may be improved or altered to prevent potential water erosion taking into account factors including rainfall, soil type and topography.

5.2.3.4 Public and Visual Amenity

The site is located within a rural area with the nearest residential neighbours located approximately 240 m south and 200 m west of the site. The contractor will implement strategies to reduce the public impact and visual amenity for the duration of the project including:

- Maintaining existing vegetation on site boundaries to provide a visual screen between stakeholders and remediation activities
- All vehicles/machinery/plant will be regularly inspected and cleaned to reduce unsightly mud on the road and surrounding areas
- All vehicles/machinery/plant will be regularly maintained to reduce potential for excess exhaust emissions
- Works will be staged to manage the duration of unsightly works, if required
- Works outside daylight hours will be minimised to reduce the potential for light spill/glare to adjacent residents and traffic, if required.

5.2.4 Traffic Management Plan

A Traffic Management Plan will be developed for the site. Some of the key monitoring/management controls to be presented in the plan include the following:

- Timing of works
- Volume of material to be removed and estimated number of vehicle movements
- Any local traffic management requirements
- The location of a designated turn around point and vehicle washdown bay
- The location of the vehicle decontamination and washdown area will also be presented within this plan.

We trust this meets your requirements at this time. Should you have any questions or require further action please do not hesitate to contact Richelle Bunbury or the undersigned on (08) 9388 8360. We look forward to hearing from you.

For and on behalf of 360 Environmental Pty Ltd



Chris Donnetti – Principal Environmental Consultant

6 Limitations

This report is produced strictly in accordance with the scope of services set out in the contract or otherwise agreed in accordance with the contract. 360 Environmental makes no representations or warranties in relation to the nature and quality of soil and water other than the visual observation and analytical data in this report.

In the preparation of this report, 360 Environmental has relied upon documents, information, data and analyses (“client’s information”) provided by the client and other individuals and entities. In most cases where client’s information has been relied upon, such reliance has been indicated in this report. Unless expressly set out in this report, 360 Environmental has not verified that the client’s information is accurate, exhaustive or current and the validity and accuracy of any aspect of the report including, or based upon, any part of the client’s information is contingent upon the accuracy, exhaustiveness and currency of the client’s information. 360 Environmental shall not be liable to the client or any other person in connection with any invalid or inaccurate aspect of this report where that invalidity or inaccuracy arose because the client’s information was not accurate, exhaustive and current or arose because of any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to 360 Environmental.

Aspects of this report, including the opinions, conclusions and recommendations it contains, are based on the results of the investigation, sampling and testing set out in the contract and otherwise in accordance with normal practices and standards. The investigation, sampling and testing are designed to produce results that represent a reasonable interpretation of the general conditions of the site that is the subject of this report. However, due to the characteristics of the site, including natural variations in site conditions, the results of the investigation, sampling and testing may not accurately represent the actual state of the whole site at all points.

It is important to recognise that site conditions, including the extent and concentration of contaminants, can change with time. This is particularly relevant if this report, including the data, opinions, conclusions and recommendations it contains, are to be used a considerable time after it was prepared. In these circumstances, further investigation of the site may be necessary.

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Attachment Three

Development Approval

WA Treeworks Pty Ltd

ABN: 88 104 441 441
 847 Canning Mills Rd
 Martin WA 6110

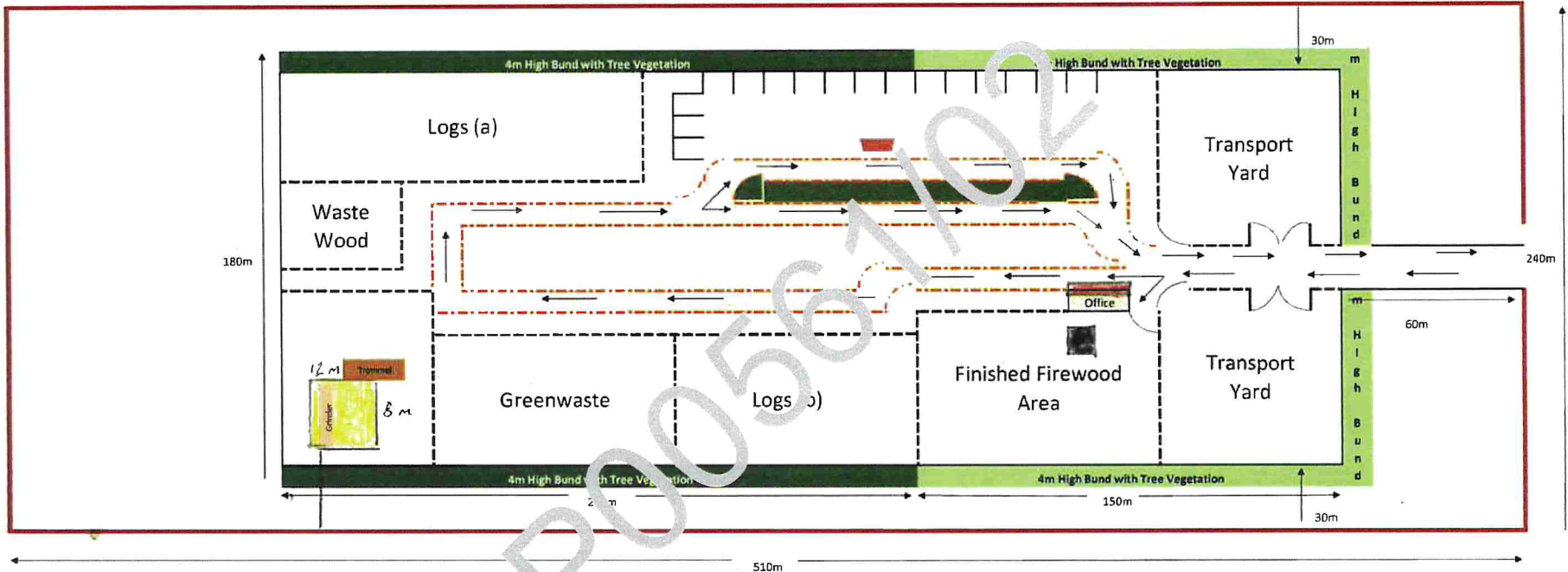
SHIRE OF SERPENTINE-JARRAHDAL PLANNING APPROVAL














Date 30/10/2015 Signed (Authorised Officer)

Amended Proposed Site Layout

766 King Road, Oldbury, WA



Legend

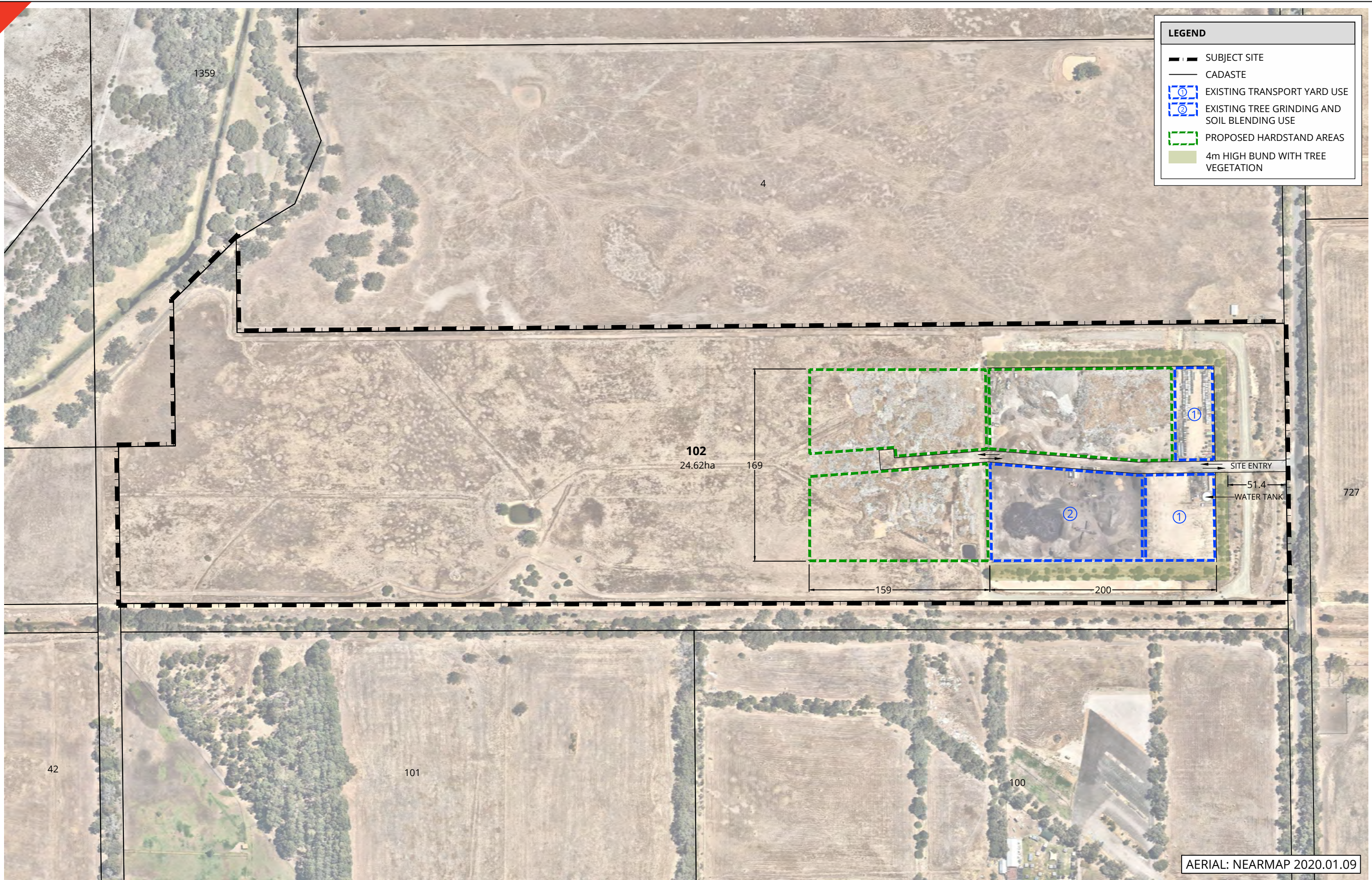
-  Redback Horizontal Grinder
-  Trommel Screen
-  Loading Ramp
-  Finished Product Bays
-  Internal Road & Direction of Traffic
-  Site Office
-  4m High Earthen Bund (with tree vegetation)
-  2m High Earthen Bund (with tree vegetation)
-  Proposed Machinery Shed (12m x 8m)
-  Proposed Verandah (12m x 1.8m)
-  Proposed Toilet block (2.8m x 3m)









Attachment Four

Ongoing Use Site Plan

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LEGEND

-  SUBJECT SITE
-  CADASTE
-  EXISTING TRANSPORT YARD USE
-  EXISTING TREE GRINDING AND SOIL BLENDING USE
-  PROPOSED HARDSTAND AREAS
-  4m HIGH BUND WITH TREE VEGETATION

AERIAL: NEARMAP 2020.01.09

WORKS COMPLETION (ONGOING USE) SITE PLAN
 LOT 102 (No. 766) KING ROAD
 OLDBURY

0 75 m
 SCALE @ A3: 1:3000
 9163-FIG-09-B

9163-FIG09B_20201013 Oldbury (Proposed Site Plan) - DRAWN: A. GLASKIN - DATE CREATED: 2020.10.13 - PROJECTION: MGA50 GDAS4 - CADASTE: LANDGATE - AERIAL: NEARMAP 2020.01.09