MDW
ENVIRONMENTAL SERVICES

Appendix A – Figures and Supporting Documents

MDW Environmental Services

PERTH | PEEL
T: (08) 9250 6960
F: (08) 92508269
www.environmentalserivces.com.au
info@environmentalservices.com.au

Client:

WASTEROCK PTY LTD

Project:

Hazelmere Landfill

Location:

Lot 20 Adelaide Street, Hazelmere

Drawing Title:

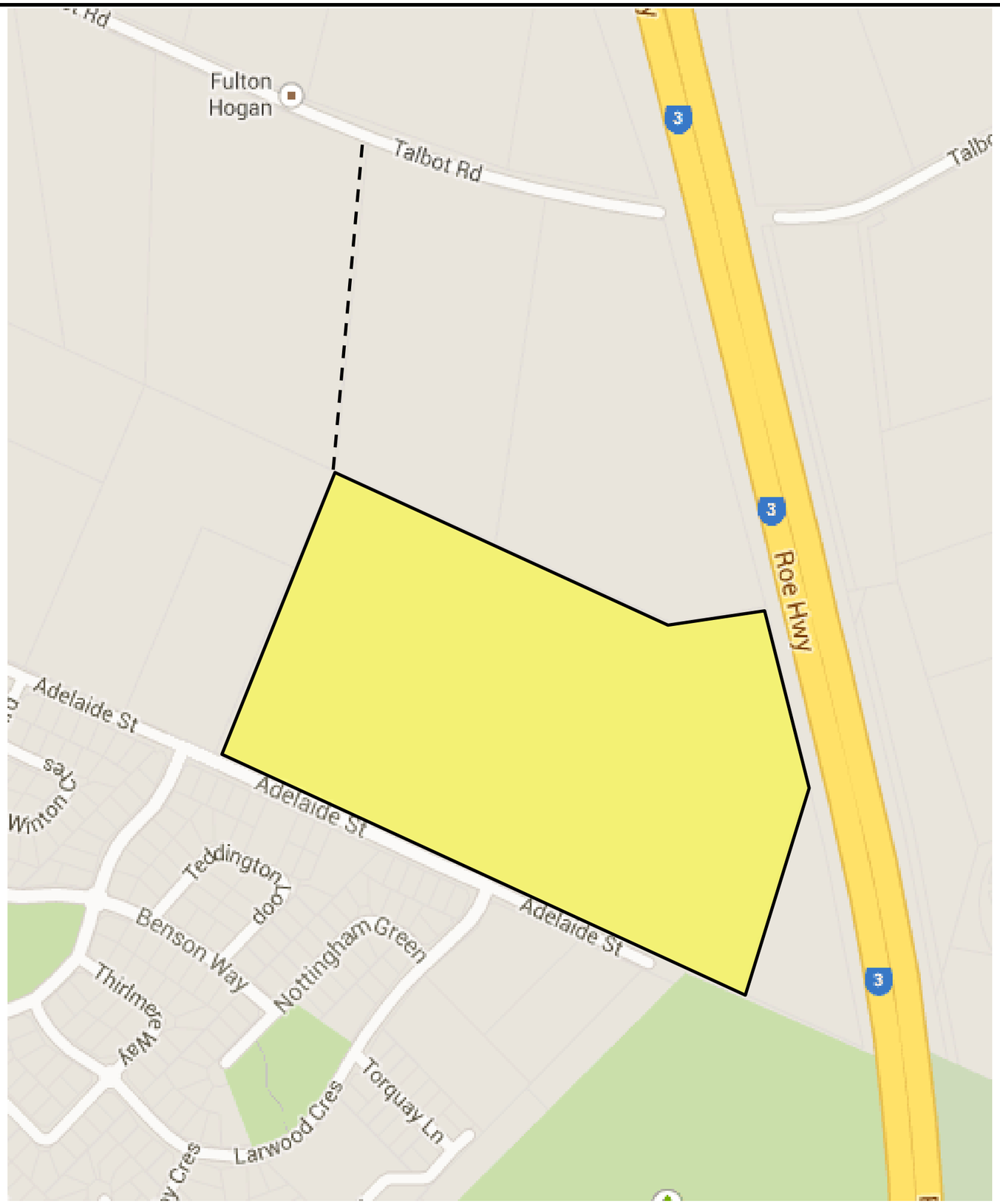
SITE AND REGIONAL VIEW

Notes:

Site Location

Drawn by:	Scale:	
Dale A.	Scale Not Used	North
Date: 10/09/2013		

Project No:	Figure No:	Rev:
E2012 - 031	1	v1



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Client:

WASTEROCK PTY LTD

Project:

Hazelmere Landfill

Location:

Lot 20 Adelaide Street, Hazelmere

Drawing Title:

PROPOSED ACCESS ROAD

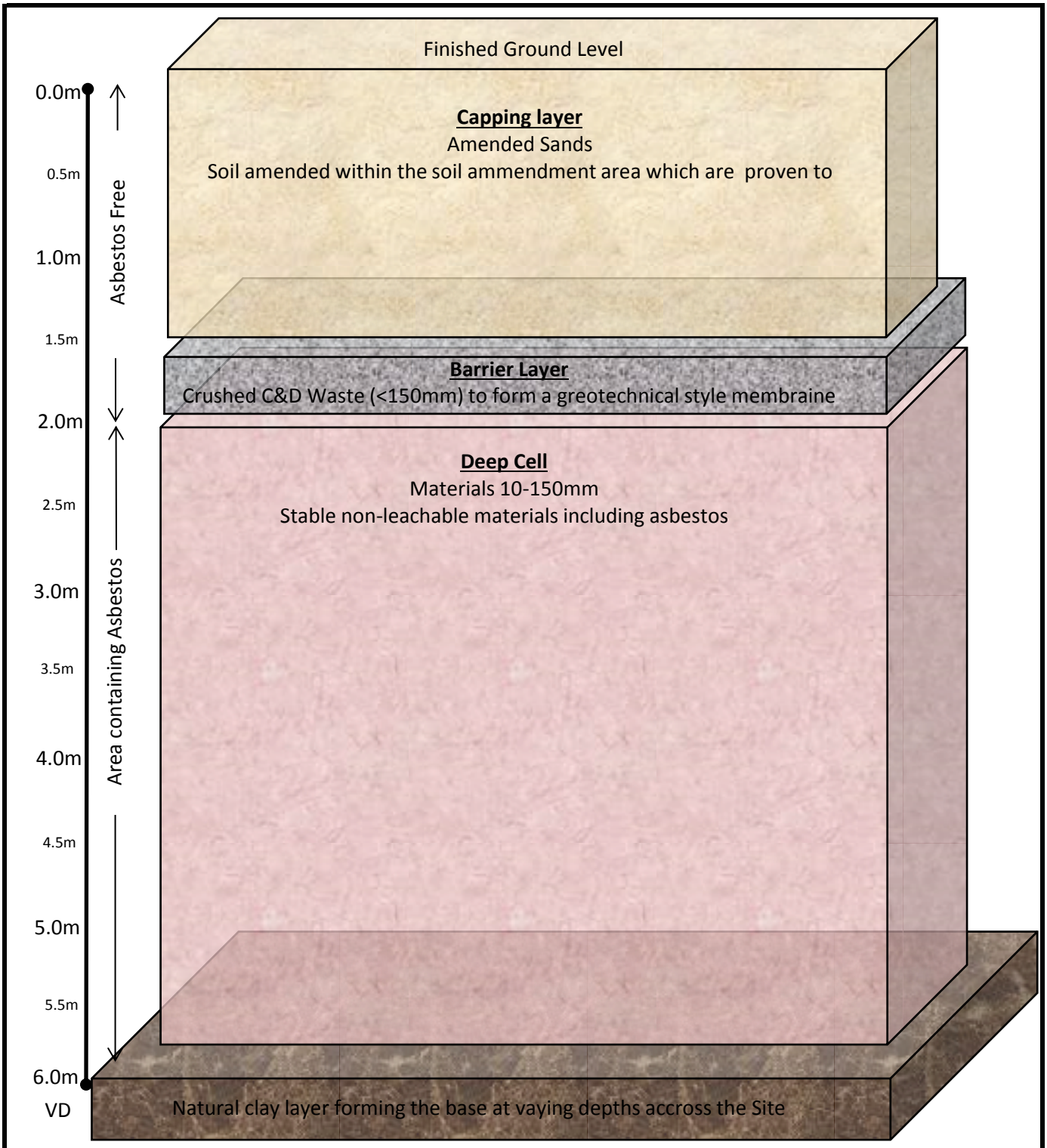
Notes:

Site Location

Proposed Site Access

Drawn by:	Scale:	
MB	Scale Not Used	North
Date: 7/01/2014		

Project No:	Figure No:	Rev:
E2012 - 031	2	v1



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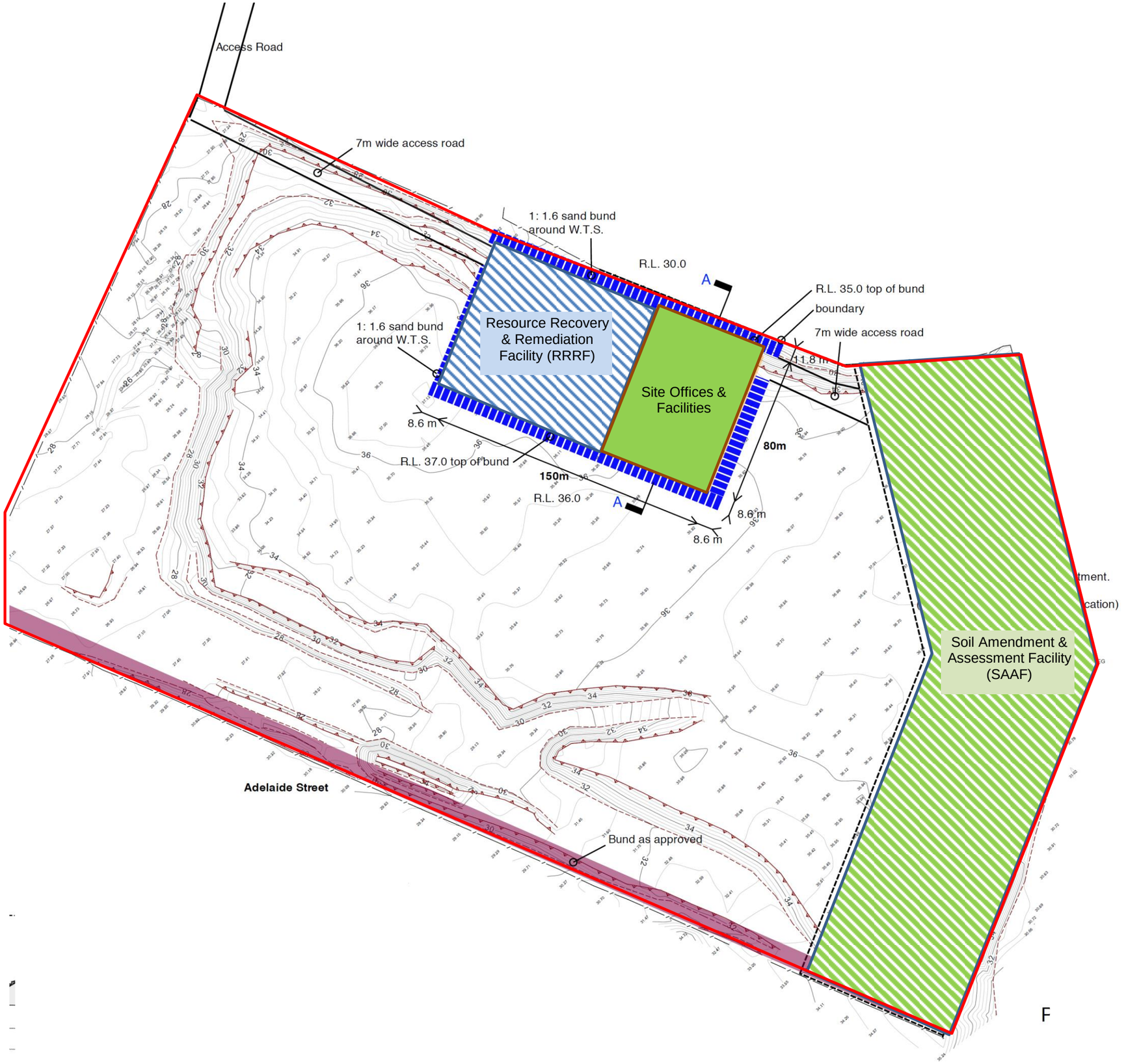
Notes:

- Depths indicated are below proposed finished ground level.
- VD = Varying depths dependent on natural levels and the volume of Deep Fill.

Client:	WASTEROCK PTY LTD
Project Title:	Hazelmere Landfill
Location:	Lot 20 Adelaide Street, Hazelmere
Drawng Title:	Proposed Engineered Construction Diagram for Remediation

Drawn By:	Date:	Scale:		Project Number:	Figure No:	Rev:
MB	7/01/2014	No Scale Used		E2012 - 031	3	v1



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Client:

WASTEROCK PTY LTD

Project:

Hazelmere Remediation and Regeneration Project

Lot 20 Adelaide Sreet

Drawing Title:

Survey of Site

Notes:

Location of :

- Resource Reconvery & Remediation Facility
- Soil Amendment & Assessment Facility
- Site Boundary

Drawn by:	Scale:	
MB	0 — 100 m	North
Date: 7/01/2014		

Project No:	Figure No:	Rev:
E2012 - 031	4	v1

MDW Environmental Services

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Client:

WASTEROCK PTY LTD

Project:

Hazelmere Remediation and Regeneration Project

Location:

Lot 20 Adelaide Street, Hazelmere

Drawing Title:

Proposed Location of Groundwater Bores for Abstraction for Dust Suppression

Notes:

Proposed Location of Abstraction Bores and holding tanks (50,000L x2) for groundwater's to be used as dust suppression

Drawn by: Dale A

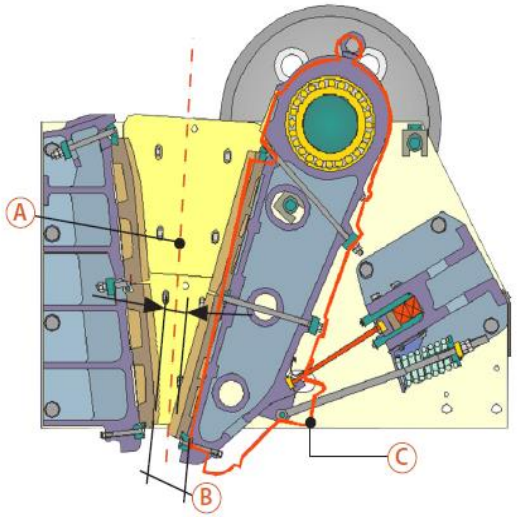
Date: 10/09/2013

Scale: 0 — 50 m

North

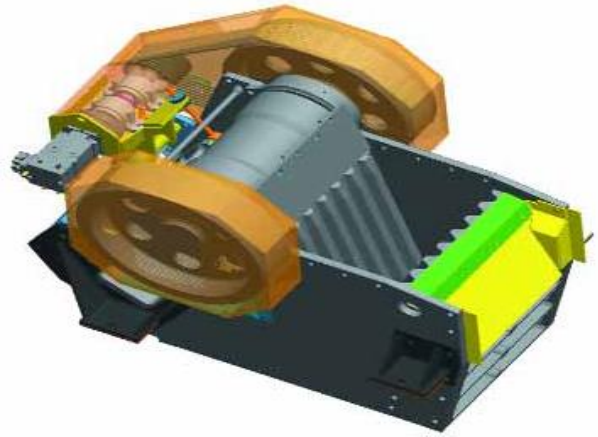
Project No:	Figure No:	Rev:
E2012 - 031	5	v1

Jaw Crusher cross section showing closed and open side setting and at rest

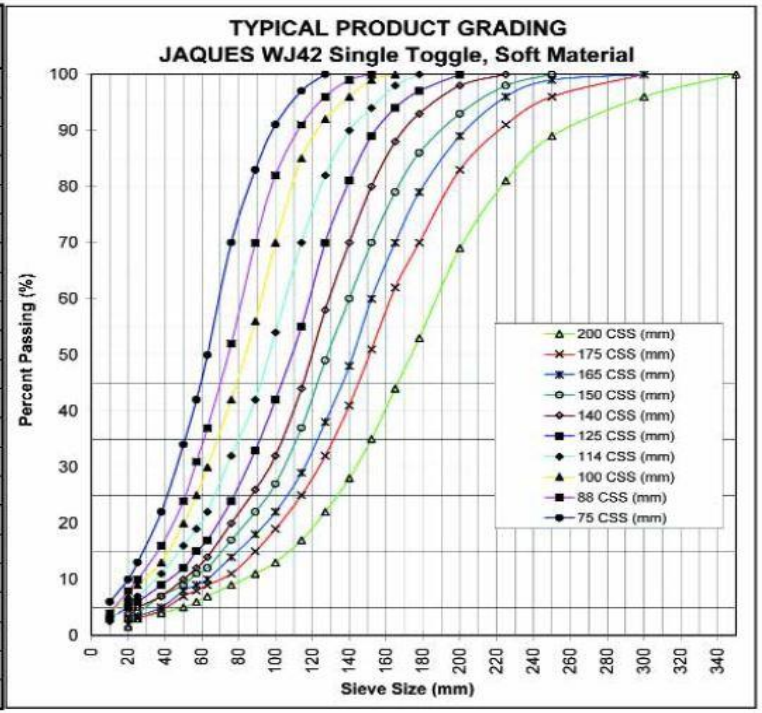


CSS (A), OSS (B) and stopped (C)

Width of CSS determines size of product, characteristics of material determine size range of product



Sieve Size (mm)	200 CSS (mm)	175 CSS (mm)	165 CSS (mm)	150 CSS (mm)	140 CSS (mm)	125 CSS (mm)	114 CSS (mm)	100 CSS (mm)	88 CSS (mm)	75 CSS (mm)
400										
350	100									
300	96	100	100							
250	89	96	99	100						
225	81	91	96	98	100					
200	69	83	89	93	98	100				
178	53	70	79	86	93	97	100			
165	44	62	70	79	88	94	98	100		
152	35	51	60	70	80	89	94	99	100	
140	28	41	48	60	70	81	90	96	99	
127	22	32	38	49	58	70	82	92	96	100
114	17	25	29	37	44	55	70	85	91	97
100	13	19	22	27	32	42	54	70	82	91
89	11	15	18	22	26	33	42	56	70	83
76	9	11	14	17	20	24	32	42	52	70
63	7	9	10	12	14	17	22	30	37	50
57	6	8	9	11	12	15	19	25	31	42
50	5	7	8	9	10	12	16	20	24	34
38	4	5	5	7	7	9	11	13	16	22
25	3	3	4	4	5	6	7	9	10	13
20	2	2	3	3	4	5	6	7	8	10
10						3	3	4	4	6



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Client:

WASTEROCK

Project:

Wasterock

Location:

Lot 20 Adeliade Street, Hazelmere

Drawing Title:

JAW CRUSHER

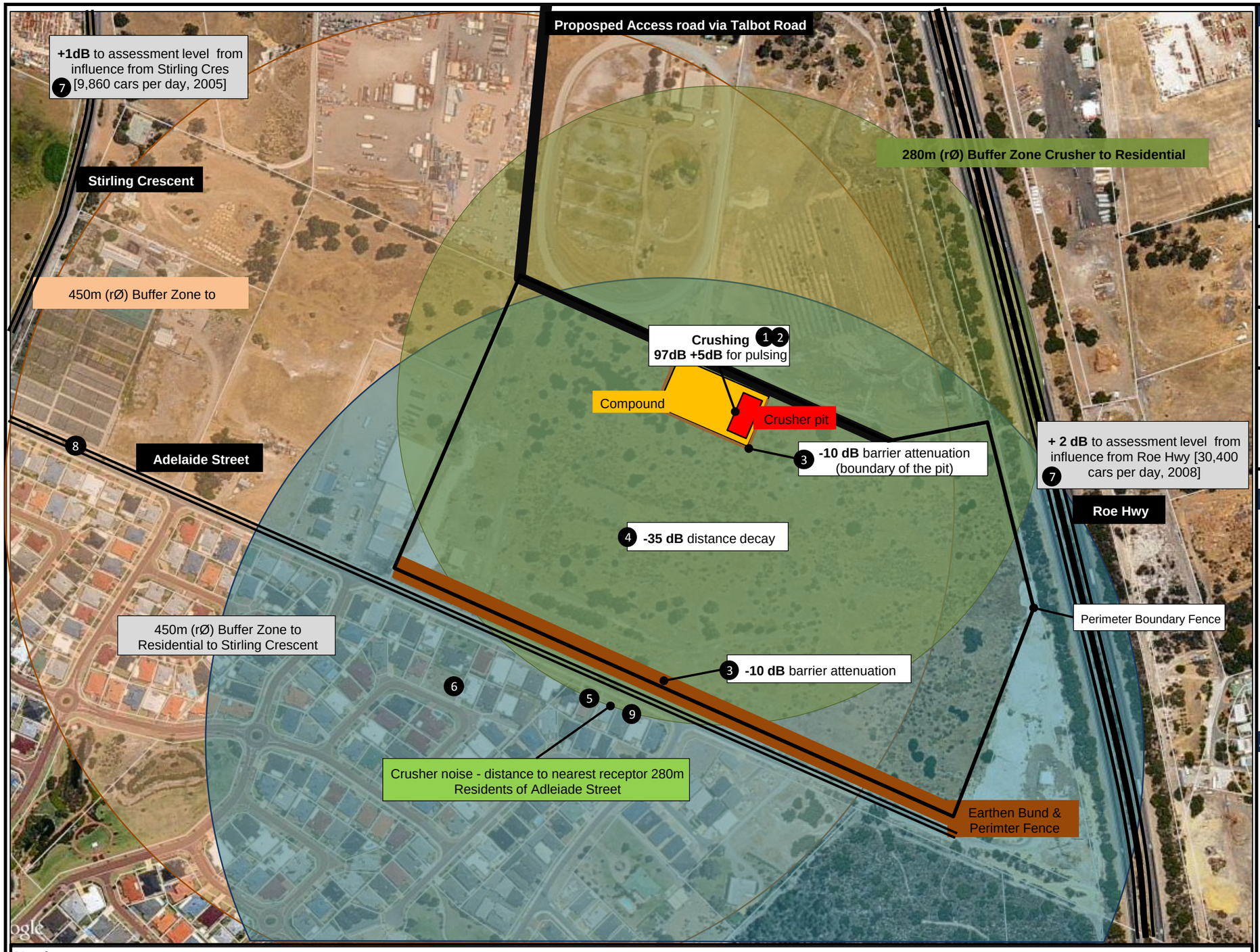
Notes:

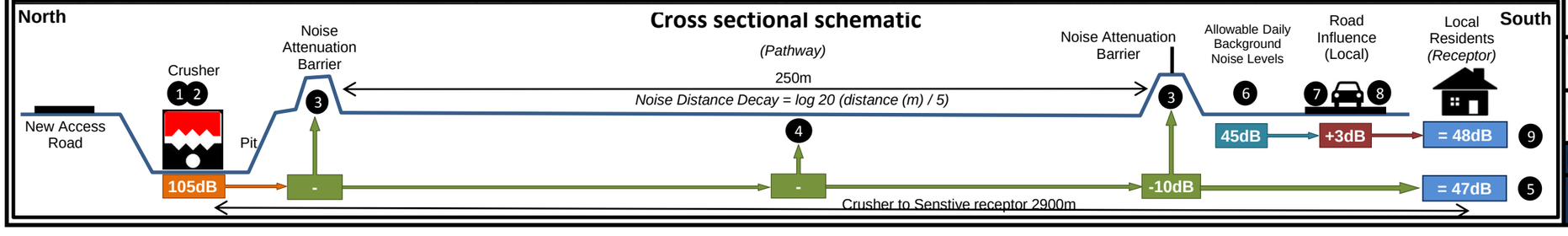
Capacities may vary depending on type of material, gradation of material, feed method, moisture, bulk density, clay content and fracture characteristics for the material

Drawn by: KW

Date: 17/01/2014

Project No:	Figure No:	Rev:
E2012-031	6	v1





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Client:

WASTEROCK PTY LTD

Project:

Lot 20 Adeliade Street

Location:

Lot 20 Adeliade Street, Hazelmere, Perth

Drawing Title:

NOISE ASSESSMENT - Crusher

Notes:

Noise From source to Receptor Calculation

1. Noise at nearest receptor equal to noise measured 5 metres from source **(97 dB)**
2. plus impulsiveness **(+5 dB)**, modulation and tonality
   Impulsiveness from crunching of material as it is crushed.
3. Less barrier attenuation x2 **(Total -20 dB)**
4. less distance decay **(-35 dB)** as per BS5228-1
5. Equivalent measured noise at receptor **47 dB** L_{A10}

Allowable Assessment Criteria at Receptor Calculation

6. Assessment criteria for nearest houses
   7 am to 7 pm Monday to Saturday
   Allowable noise level as per regulations **(45 dB)**
7. plus influencing factor from raods
   add **2 dB** due to proximity to Roe Hwy
   add **1 dB** due to proximity to Stirling Cres
8. No allowance made for noise from the trucks using Adelaide St could add an additional 5db (not included)
9. Calcualted Assessment level **48 dB** L_{A10}

Drawn by:	Scale:	
KW	0 — 100 m	North
Date: 17/01/2014		

Project No:	Figure No:	Rev:
E2012 031	7	v1

Process flow description

Vibrating feeder sorts and passes fine and coarse material to screen deck

Clean **oversize** material passes over top screen to end conveyor

Mid-size material passing through top deck but too large to pass through bottom screen passes to rear off-set conveyor

Fine material passing through bottom screen is conveyed forward to front off-set conveyor

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Client:

WASTEROCK PTY LTD

Project:

Hazelmere Landfill

Location:

Lot 20 Adelaide Street

Drawing Title:

SCREENING PLANT

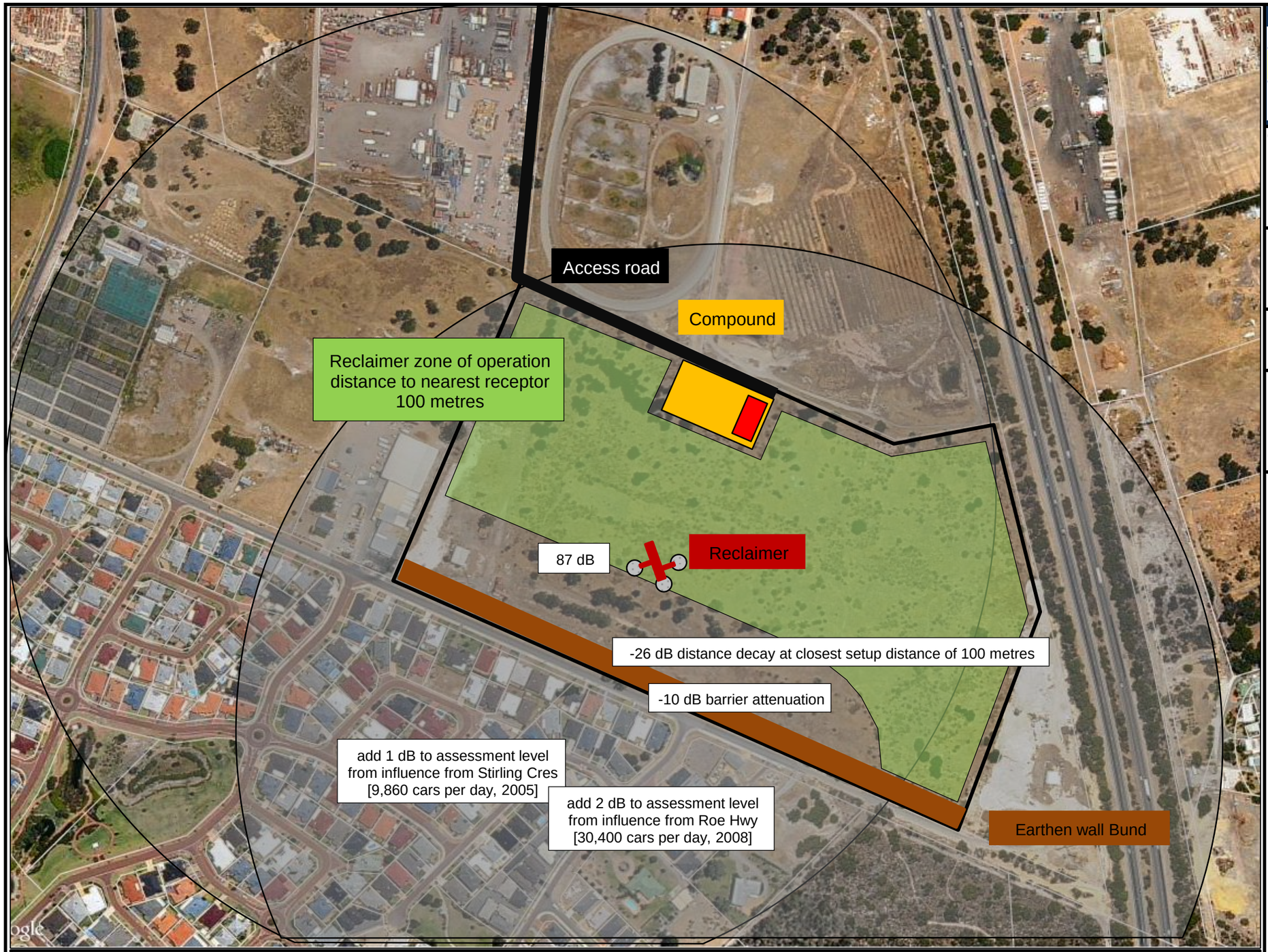
Notes:

Vibrating feeder overlays coarse material over fines as it passes to screen deck.
Size of product determined by size of top and bottom screens.

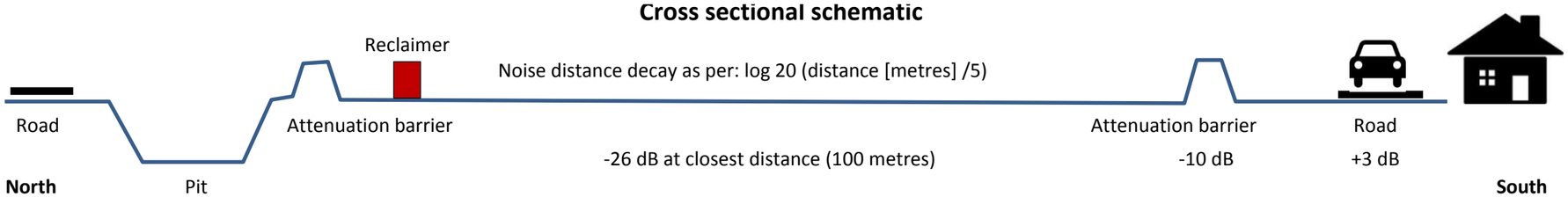
Drawn by: KW

Date: 17/01/2014

Project No:	Figure No:	Rev:
E2012-031	8	v1



Cross sectional schematic



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Client:

WASTEROCK PTY LTD

Project:

Lot 20 Adeliade Street

Location:

Lot 20 Adeliade Street, Hazelmere, Perth

Drawing Title:

NOISE ASSESSMENT - Reclaimer

Notes:

1. Noise at nearest receptor equal to noise measured 5 metres from source **(87 dB)**
2. plus impulsiveness, modulation and tonality **(nil)**
3. Less barrier attenuation **(-10 dB) and**
4. distance decay **(-26 dB)** as per BS5228-1
5. Equivalent measured noise at receptor **47 dB** L_{A10}
6. Assessment criteria for nearest houses 7 am to 7 pm Monday to Saturday Assigned level as per regulations **(45 dB)**
7. plus influencing factor from roads add **2 dB** due to proximity to Roe Hwy add **1 dB** due to proximity to Stirling Cres
8. No allowance made for noise from trucks currently using Adelaide St
9. Calculated Assessment level **48 dB** L_{A10}

Drawn by:	Scale:	
KW	0 — 100 m	North
Date: 17/01/2014		

Project No:	Figure No:	Rev:
E2012 031	9	v1

holman fenwick willan hfw

Jane Moltoni
Project Manager
Wasterock Pty Ltd
Level 1/32 Ledgar Road
BALCATTA WA 6021

Via email: jmoltoni@moltoni.com.au
And by Post

Level 19 Alluvion
58 Mounts Bay Road
Perth
WA 6000
Australia

T: +61 (0)8 9422 4700
F: +61 (0)8 9422 4777

hfw.com

Your Ref:
Our Ref: 072556/01

Direct Line: +61 (0)8 9422 4700
Email: Andre.Maynard@hfw.com
Robert.Desmond@hfw.com

Date: 9 September 2013

Dear Jane,

Lot 20 Adelaide Street, Hazelmere

We refer to your instructions to draft a submission for Wasterock Pty Ltd to provide to the Western Australian Department of Environmental Regulation with details why the proposed remediation works to be undertaken at Lot 20 Adelaide Street, Hazelmere by Wasterock should not require a works approval licence under category 63 of Schedule 1 *Environmental Protection Regulations 1987* (WA).

Submission

Wasterock Pty Ltd (**Wasterock**) will be applying for a licence(s) under Part V *Environmental Protection Act 1987* (WA) (**EP Act**) for works to be undertaken at Lot 20 Adelaide Street, Hazelmere (**Site**). This submission describes the activities that will be undertaken at the Site and then provides recommendations as to how these activities would be most appropriately licensed under the *Environmental Protection Regulations 1987* (WA) (**Regulations**).

Remediation of a contaminated site

Originally used for rural purposes, the Site was used for sand mining between 1978 and 1982 and operated as an inert landfill facility, licensed by the Department of Environmental Regulation (**DER**), from 1987 to 1997. The Site is classified as '*contaminated – remediation required*' pursuant to section 13 of the *Contaminated Sites Act 2003* (WA) (**CS Act**). Under the CS Act the owner of the Site has a statutory responsibility to remediate the Site.

Wasterock has been contracted to undertake remediation works on the Site and has prepared a draft Remediation Management Plan describing how the remediation works will be implemented. A copy of the draft Remediation Management Plan is included within the document entitled "Remediation of Landfill Site

Hazlemere – 7229 Development Application Report" dated 30 May 2013 which was previously sent to the DER. An independent Contaminated Sites Auditor has been engaged by Wasterock to monitor the remediation works and report to the DER in accordance with the CS Act.

The works that need to be undertaken on the Site are a civil engineering operation which is being undertaken for the specific purpose of remediating the Site and preparing it for future development. These works are unrelated to the operation of a landfill site and/or a waste disposal operation.

Remediation process

Remediation of the Site will involve excavation of the entire site and sorting of existing landfill into various grades of size and quality for reuse or disposal. Processing of some imported construction and demolition (**C&D**) waste for reuse as clean sand, roadbase and inert engineered fill will also occur. The sand "capping" layer will be sourced from clean fill created from a soil amendment process and clean imported C&D waste. During the excavation process, the Site will receive and process select C&D waste collected from specific locations within the wider metropolitan area for the purpose of sand recovery and creating an upper layer of inert fill.

The C&D waste will be stockpiled and sorted on-site and non-conforming materials will be segregated and dispatched to a licensed landfill facility. Once stockpiled and sorted the inert materials will be crushed and screened to the required size. This process of stockpiling, sorting, crushing and screening is crucial to achieving the successful remediation of the Site, allowing deep placement of asbestos impacted waste, and achieving an optimum grade of compacted materials across the Site to reduce the risks of differential settlement.

The final step in the remediation process is the establishment of a capping layer of clean fill over the Site. The will be achieved by receiving and processing acid sulphate soils (**ASS**) and hydrocarbon impacted soils (**HIS**) collected from specific sites within the wider metropolitan area, as well as natural yellow sands when available and a large volume of recovered sands from incoming C&D wastes. ASS and HIS will be treated to neutralise the active elements in the soil. When available, natural yellow sand will be mixed with the treated soils. Once the ASS and HIS has been treated it will be placed in the ground to create the final capping layer over the Site. The process is a well established practice for remediating a contaminated site. Any excavated contaminated soil that cannot be reused on Site will be scheduled for disposal at a designated landfill site.

An application for a licence under Part V EP Act will therefore be made to the DER for the purpose of obtaining approval to operate as a remediation and resource recovery facility and a soil acceptance and amendment facility for the duration of the remediation. Crushing and screening licenses will form part of the licensing requirement.

Note: No materials from the existing landfill will be crushed prior to sorting. Only oversize concrete retrieved from the Site will be considered for crushing and reuse.

Activities to be undertaken on Site that require a Part V EP Act licence

We understand that the activities that are part of the Remediation Management Plan for the Site that require licensing as a prescribed premises under the EP Act are:

- screening, sorting, crushing and separation of fill on the Site;
- crushing of C&D waste;
- receiving C&D waste on Site for sorting, processing and re-use; and
- soil amendment of ASS and HIS.

We understand that the screening and crushing activities would be most appropriately licensed under prescribed premises categories 12 and 13 respectively. The activity of receiving waste onto the Site for sorting, storage and reuse would be most appropriately licensed under prescribed premises category 62. The category 62 licence applies to "*premises on which waste is stored, or sorted pending final disposal or re-use.*" The term 'reuse' is not defined in the Act, the Regulations. Under *the Landfill Waste Classifications and Waste Definitions 1996 (As Amended)* (**Definitions**) reuse is defined as *'use of a product again for the same or different purpose without further manufacture.*'

Wasterock receive C&D waste onto the Site at the designated transfer station cell so as to extract reusable materials such as sand and crushed concrete. The C&D waste is received onto the Site from specific locations and the general public do not have the right to dispose of C&D waste at the Site. The waste is sorted with usable materials either being reused on Site a part of the earthworks or sent offsite as processed materials. Unusable materials are sent offsite to a licensed landfill for final disposal.

The works occurring at the Site amount to the sorting of and processing of C&D waste to create a product known as engineered fill which is then placed, following recognised earthworks standards of practice, to establish geotechnically stable foundations for the future development of the Site. This activity is clearly what is known as a transfer station operation (or resource recovery facility) and is most appropriately licensed as prescribed premises under category 62 of the Regulations.

Reuse is identified in the objects of the *Waste Avoidance and Resource Recovery Levy Regulations 2008* (WA) (**Levy Regulations**) as a form of resource recovery, an efficient use of resources and a higher 'resource management option' than disposal. The Levy Regulations, like the Regulations make a clear distinction between the final disposal of waste and the reuse of waste.

Category 63 Licence – licensed Class I landfill

The activities of receiving, processing and reusing waste on the Site do not fit under prescribed premises category 63 of the Regulations. Category 63 of the Regulations describes the category as:

"Class I inert landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial."

According to Supreme Court Justice Corboy the expression "*premises on which waste is accepted for burial*" within category 63 of the Regulations was intended to refer to premises on which waste satisfying the criteria for each of the classes of landfill referred to in those categories was accepted for disposal by burial as

landfill.[1] The Definitions define "landfill" to mean "*a site used for disposal of solid material (ie, is spadeable) by burial in the ground that is licensed as landfill under [the EP Act]*."

The term burial is not defined in the Act, the Regulations or the Definitions. The ordinary meaning of 'burial' is '*the action of burying something*' and 'bury' means '*to put under the ground in sign of final abandonment or abrogation; dispose of thus.*'[2] The term 'disposal' is not defined in the EP Act, the Regulations or the Definitions. The ordinary meaning of 'disposal' is '*the action of disposing of or getting rid of*' and dispose means to '*get rid of; deal conclusively with.*'[3]

It is clear then that under the Regulations a category 63 licence applies to a site that is used for the conclusive act of getting rid of solid material by putting it under the ground and this act amounts to the final abandonment of the waste material.

A landfill has a clear role as a disposal facility for waste. The Site, on the other hand, is receiving waste for processing and subsequent reuse as engineered fill, which fulfils two principal roles:

1) the product is used as a critical part of the remediation of the Site as it was classified *contaminated – remediation required* under the CS Act; and

2) the product is part of the geotechnical process of preparing a stable foundation for the future development of the Site.

The activities of processing and reuse of waste materials on the Site and the taking of unusable materials to a licensed landfill do not amount to the final disposal of waste through burial on the Site and therefore do not fit within the description of category 63 prescribed premises.

Category 61A – Solid Waste Facility

Whilst Wasterock firmly believes that the activities it will undertake on the Site are best regulated under category 62 it is worth noting that the activities on the Site are still better suited to classification under catategory 61A than 63. Category 61A is described as follows:

"Solid waste facility: premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated or discharged onto land."

Under the reasoning given for classifying the Dalyellup Waste Residue Disposal Facility (**Dalyellup Facility**) as a category 61A solid waste facility it was stated by the DER that "*This site is not considered to be classified as a "landfill" because other waste material and the public do not have access to the DWRF facility. The material disposed has been assessed against landfill classification as the most suitable relevant guidelines.*"[4]

---

[1] *Eclipse Resources Pty Ltd v McNamara, Chief Executive Officer, Dept of Environment and Conservation (No 2)* [2012] WASC 264 at [125]
[2] Stevenson, A., New Shorter Oxford Dictionary, 2007, Oxford University Press
[3] Stevenson, A., New Shorter Oxford Dictionary, 2007, Oxford University Press
[4] Licence L6130/1989/12, Millenium Inorganic Chemicals Ltd, 21/01/2010 - http://www.dec.wa.gov.au/pdf/licensingregs/K-Z/K-O-number/1208.pdf

Both the Site and the Dalyellup Facility do not grant access to the public to dispose of waste. The Dalyellup Facility accepts solid waste from the Kemerton and Australind processing plants. In a similar way the Site will only accept C&D waste, ASS and HIS from a limited number of sources.

At the Dayellup Facility the solid waste is reprocessed and treated by re-wetting the waste into a slurry and then placed into position using a simple gravity feed system on site. In comparison the Site receives C&D waste, ASS and HIL. The wastes are sorted and then treated using established remediation and earthworks practices to ensure that the materials conform to the correct engineering specifications (and DER guidelines). The engineered fill and clean fill materials created as a result of the on-Site processing are then reused as a foundation material for the future development of the Site. The Site's activities do, therefore, involve the storing, reprocessing and treatment of solid waste that is produced on other premises. However, due to the fact that waste will be again sent offsite for disposal at a licensed landfill category 62 most appropriate.

We look forward to hearing from DER regarding its view on the correct classification of the Site and we are happy to meet with DER to discuss this submission.

Yours sincerely

Holman Fenwick Willan

Government of Western Australia
Department of Environment Regulation

Industry Licensing System

Success!

Your application has been successfully submitted! Please keep a record of your AIN for future reference. Your AIN is [**wpj3gv**]

If you would like a PDF copy of the application submitted please click here. **Please Note:** You must have pop-ups enabled to access the PDF copy of your application.

Once the information is verified an invoice will be sent to the occupier representative. Options for payment will be provided on the invoice. Upon payment the 12 weeks application assessment process will begin and the application will be advertised and made available on the Department of Environment Regulation's website. If the application is not verified an Environmental Officer will contact the occupier representative to discuss why. The application will then need amending and resubmission. If you require further consultation please contact the Department of Environment Regulation.

Contact Details

Department of Environment Regulation

BOORAGOON
9333 7510
ils@der.wa.gov.au

Exit

Government of Western Australia
Department of Environment Regulation

Industry Licensing System

Application Page 3 of 5
Works Approval Fees

Fee start date 30/04/2014

Fees calculator

If you are applying for a works approval you must provide the following details in accordance with the Environmental Protection Regulations 1987. Guidance on calculating works approval fees is available on the DER website.

Fees relate to the cost of the works, including all capital costs (inclusive of GST) associated with the construction and establishment of the works proposed under the works approval application. This includes, for example, costs associated with earth works, hard stands, drainage, plant hire, equipment, processing plant, relocation of equipment and labour hire.

Costs exclude:

Premises Component(s)

Category	Capacity Range	Fee	
12 - Screening, etc. of material	More than 500 000 but not more than 5 000 000 tonnes per year	N/A	Remove
13 - Crushing of building material	More than 500 000 but not more than 5 000 000 tonnes per year	N/A	Remove
67A - Compost manufacturing and soil blending	More than 5 000 but no more than 50 000 tonnes per year	N/A	Remove
62 - Solid waste depot	More than 5 000 tonnes per year	N/A	Remove
61A - Solid waste facility	More than 10 000 but no more than 100 000 tonnes per year	N/A	Remove
Selection required	Select category first		Add
Total Premises Component(s)	N/A		

Premises construction cost

Total cost	**Rate**
More than $150,000 but not more than	55

Calculate

Total Fee

Total Works Approval Fee $1672.00

Financial Information

If you require a Purchase Order Number to pay for an invoice, please enter into the field below before submitting your application. You can view this page as a PDF by clicking the 'Print' button.

Purchase Order Number ENV 0826 Print

* NOTE: Due to the fee structure all fee calculations are approximates. Actual fees will be determined based on the commencement date of the authorisation. The commencement date will set during verification of the application and will be approximately 6 weeks from submission

Back Exit Continue