



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Used Lead Acid Battery Recycling Facility (ULAB) Hazelwood North (Victoria)

December 2021

Revision: Rev5 (IFC)

Chunxing Corporation Pty Ltd
Level 1, Unit 7
11 Lord Street
Botany, NSW, 2019
A.C.N: 632 456 538

PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 1 of 326 sheet(s)

Date:22/12/2021

Karen Egan
Council Delegate

PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
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Date:22/12/2021

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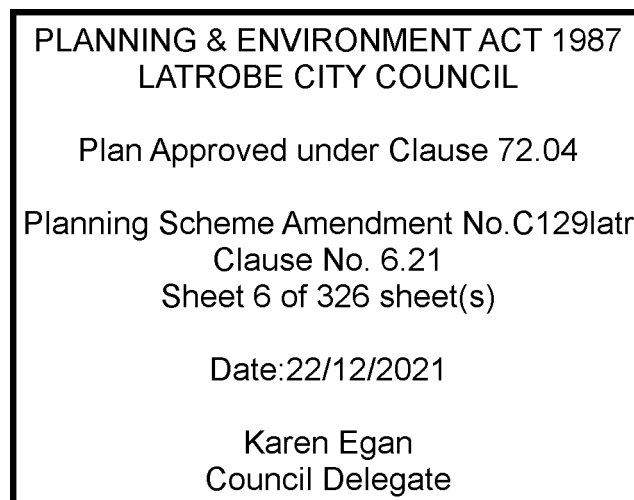
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Annexure Q	WL280 Flip Screen Datasheet
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Construction Environmental Management Plan (CEMP)

Details of Revision Amendment

Plan Control

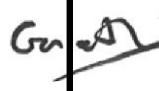
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Plan Developed By:

Position	Name	Signature	Date
Gareth Glover	Date: 22/12/2021 Environmental Consultant Karen Egan Council Delegate		12 December 2021

Plan Approved By:

Position	Name	Signature	Date
Chief Executive Officer (Project Director)	Dr Lakshman Jayaweera		12 December 2021
Project Manager	Robin Krause		12 December 2021

Note - The contaminated soil and groundwater components of this CEMP were developed under the guidance of Mr Phil Sinclair (EPA appointed Environmental Auditor, 75667).

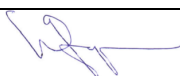
Amendment

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Revision numbers are noted on each page. When amendments occur, the document or relevant section will be reissued with the revision number updated accordingly.

The Project Director will approve amendments/revisions.

The following provides a record of revisions to this document:

Rev.	Date	Description	Prepared by	Approved By	Signature
1	15-06-2021	First Draft (IFR)	Gareth Glover	Dr Lakshman Jayaweera	
2	04-10-2021	Second Draft (IFR)	Gareth Glover	Dr Lakshman Jayaweera	
3	29-10-2021	Third Draft (IFR)	Gareth Glover	Dr Lakshman Jayaweera	
4	21-11-2021	Fourth Draft (IFR)	Gareth Glover	Dr Lakshman Jayaweera	
5	12-12-2021	Fifth Draft (IFC)	Gareth Glover	Dr Lakshman Jayaweera	

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The following provides a record of key amendments made to this document

Rev.	Description	Total No. of Pages (excl. Annexures)	Key Amendments	Section Amended
1	First Draft (IFR)	56	-	-
2	Second Draft (IFR)	145	Updated to address first round of comments from EPA Victoria regarding: - proposed environmental management framework - erosion and sediment control - design of construction stormwater pond - interaction with groundwater - management/reuse of contaminated soil - noise control	s5, s6 & s12 Annexure A - ESCP s7.4 s.7.7 & s7.4 s4.2.1, 7.1 & s7.2.1 s7.7
3	Third Draft (IFR)	150	Updated to address second round of comments from EPA Victoria regarding: - dust emissions - noise control - revised shaker/rumble grid design Also updated: - erosion and sediment control plan - Trade Waste Application (TWA) - Construction Phase - Trade Waste Application - Letter of TWA Approval - Gippsland Water - Environmental Auditor Letter (P.Sinclair / Tetra Tech Coffey)	s7.3 s7.7 Annexure M - Design for Shaker Grid Annexure A - ESCP Annexure B – TWA (Gippsland Water) - Construction - Approved Annexure N - Trade Waste Application (TWA) - Construction Phase Annexure C1 – TWA (Gippsland Water) - Construction - Approval Letter (add.) Annexure O - Environmental Auditor Letter (Tetra Tech Coffey) (add.)
4	Fourth Draft (IFC)	147	Per requirement from Latrobe City Council updated to remove proposal to place topsoil stripped from within the Construction Footprint into Western Buffer Zone (WBZ) to lower the WBZ to a consistent elevation of 75.0 mAMD. Instead, all topsoil stripped from within the Construction Footprint will be screened to remove vegetative material, conditioned and preferentially reused within the Construction Footprint. Any surplus soils not reused onsite will be managed as per 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009' for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility (if required).	Figure 19 Property 'As-designed' Levels s7.2.4 Table 9 Work Sequencing (Bulk Material Excavation, Movement & Stockpiling/Reuse) Annexure A – ESCP Annexure K – Topsoil Tracking Register Annexure P - CivilTest - Soil Testing Report (2021) (add.) Annexure Q - WL280 Flip Screen Data Sheet (add.)
5	Fifth Draft (IFC)	153	Updated to address third round of comments from EPA Victoria regarding: - dust emissions - groundwater management	s7.10 (add.) s7.2 Table 11 Electrical Conductivity, Chloride, Sodium & TDS in Groundwater Bores & Trade Waste Limits (add.) Figure 17 Regression (R2) Plot – Electrical Conductivity, Chloride, Sodium & TDS in Groundwater (add.) Annexure R - Engineers Endorsement - Excavation Depths (add.) Annexure S - Groundwater Holding Tank Volume & Discharge Tracking Register (add.)

Rev.	Description	Total No. of Pages (excl. Annexures)	Key Amendments	Section Amended
			- noise management Updated to address comments from Latrobe City Council regarding: - temporary and permanent water supply	Annexure T – Soil Stabiliser Example (add.) s7.7 Figure 27 Potable Water Supply and Trade Waste Connection Point – Construction Figure 28 Potable Water Supply and Trade Waste Connection Point – Permanent (add.) s4.1.1 - Preliminary Works Table 7 Summary Schedule

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Karen Egan
Council Delegate

ABBREVIATIONS and TERMS

Abbreviation	Description 1	Description 2
ACM	Asbestos Containing Material	-
BESA	Baseline Environmental Site Assessment	Baseline Environmental Site Assessment (BESA) completed by Tetra Tech Coffey in September 2021 (see 'Baseline Environmental Site Assessment - Morwell Used Lead Acid Battery Recycling Facility', Tetra Tech Coffey, September 30, 2021) for the property in accordance with Environment Protection Authority (EPA) Works Approval 232330
Chunxing Corporation Pty Ltd	-	The proponent responsible for the development of the ULAB Facilities Project (as approved by the Environment Protection Authority Victoria under Works Approval number 232330 (31-08-2-21))
Construction	PLANNING & ENVIRONMENTAL ACT 1987 LATROBE CITY COUNCIL Plan Approved under Clause 72.04	Construction Environmental Site Assessment issued with ULAB Facilities Project on the Chunxing-owned property (as approved by the Environment Protection Authority Victoria under Works Approval number 232330 (31-08-2-21))
CEMP	Construction Environmental Management Plan Planning Scheme Amendment No. C129 Clause No. 6.21 Sheet 13 of 326 sheet(s) Date: 22/12/2021	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the construction of a project or development
Construction Footprint	-	The 6.0 hectares spatial area, within the 13.45 hectare Chunxing-owned property, proposed for the ULAB Facility
Construction activities	-	Activities described in this CEMP
CSP	Construction Stormwater Pond	Construction Stormwater Pond (CSP0 installed in the north-west corner of the construction footprint (see Figure 14) to capture and retain all stormwater run-off from
EMP	Environmental Management Plan	A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the operation of a facility or project (e.g. Environmental Management Plan Former Lurgi Gasworks Site Morwell, Victoria, 24 September 2008)
Environmental Management Plan - Former Lurgi Gasworks Site Morwell, Victoria	-	Document forming part of the 'Statement of Environmental Audit' issued for the site (Former Lurgi Gasworks Site Morwell, Victoria) authored by Phil Sinclair (Environmental Audit Report; Former Lurgi Gasworks Site, Morwell Victoria, ENVIABTF08389AA-R01, dated 24 September 2008)
EPA Vic	-	Environment Protection Authority Victoria

Abbreviation	Description 1	Description 2
Former Lurgi Gasworks property	-	155.4 hectares of land which was purchased by the Gas and Fuel Corporation of Victoria in 1953 for the purpose of brown coal gasification (Former Lurgi Gasworks property). Crown Allotment 2047, owned by Chunxing Corporation (the site), assumes 13.4 hectares (8%) of land-area within the Former Lurgi Gasworks property The EPA Clean Up Notices (1989 & 2002), Remediation efforts (2005 & 2006) and Statement of Environmental Audit (2008) apply to 28.39 hectares of land area within the Former Lurgi Gasworks property (the Chunxing Property comprises 13.46 hectares within the 28.39 hectares; see Annexure H)
GW	Groundwater Well (Monitoring Well)	Groundwater Well installed for monitoring purposes
GWW	Groundwater Well (Monitoring Well)	Groundwater Well installed for monitoring purposes
IBC	-	IBC Free Water Bulk Container
mAHD	Metres Above Height Datum	Elevation in metres with respect to the Australian Height Datum
mbgs	Metres Below Ground Surface	-
MW	Groundwater Monitoring Well	Groundwater Well installed for monitoring purposes
Project (the)	-	Construction and construction-related activities associated with the ULAB Facilities development (as approved by the Environment Protection Authority Victoria under Works Approval number 232330 (31-08-2-21))
Property (the)	-	Crown Allotment 2047 (13.45 hectares) owned by Chunxing Corporation
RL	Reduced Level	Relative level reference to a common assumed datum (for this Project is mAHD)
SC	-	Silt/Clay
Site/site (the)	-	Crown Allotment 2047 (13.45 hectares) owned by Chunxing Corporation unless otherwise stated
Topsoil	-	The term 'topsoil' is used in this CEMP only for the purposes of identifying soil between 0.0 - 0.2 mbgs and likely to contain vegetative material (grasses). Material between 0.0 - 1.0 mbgs is largely homogenous in character, regarded as a strata of silt exhibiting low plasticity (see Appendix Z - 'Soil Testing Report - Report

Abbreviation	Description 1	Description 2
		No. 2210049-1' (CivilTest, March 18, 2021)). The vegetative material is to be separated from the topsoil prior to the topsoil's reuse as conditioned fill.
ULAB Facility (the)	-	The used lead acid battery recycling facility with secondary lead smelter to recycle 50,000 tonnes of used lead acid batteries to produce 28,000 tonnes of refined lead per year (to be developed within the Construction Footprint).
WBZ	Western Buffer Zone	Area to the west (and outside) of the construction footprint, yet within the property boundary
Works (the)	-	Construction and construction-related activities associated with the ULAB Facilities development (as approved by the Environment Protection Authority Victoria under Works Approval number 232330 (31-08-2-21)

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Council Delegate

1 Introduction

1.1 Background

Chunxing Corporation Pty Ltd propose to establish a state-of-the-art technology Used Lead Acid Battery (ULAB) recycling plant at Crown Allotment (CA) 2047 Fourth Rd, Hazelwood North, near Morwell, Victoria with a secondary lead smelter to process 50,000 tonnes of used lead acid batteries and recycle them into 28,000 tonnes of refined lead per year.

Crown Allotment 2047 property (site) was selected and purchased by Chunxing Corporation due to its 13.45 hectare size with correct zoning and a good buffer zone of greater than 1 km from the closest sensitive receptor over 2km from the outskirts of the town of Morwell. The ULAB Facilities footprint (the 'Construction Footprint') assumes approximately 6.0 hectares of the 13.45 hectares of property.

Crown Allotment 2047 Fourth Rd, Hazelwood North (owned by Chunxing Corporation) is within industrial 2-zoned land, surrounded by recycling and heavy industry facilities (also within Industrial 2 zoning).

The proposed ULAB facility will occupy only 50% of Crown Allotment 2047, the eastern extent, allowing sufficient room for landscaping and buffers between the ULAB facility and surrounding sensitive receptors to the west.

Chunxing Corporation Pty Ltd (Chunxing) submitted its final works approval application (WAA) to the Environment Protection Authority of Victoria (EPA) on 15 November 2019 to construct a used lead acid battery recycling facility with a secondary lead smelter to process 50,000 tonnes of used lead acid batteries and recycle them into 28,000 tonnes of refined lead per year. EPA provided approval for Project on 31-08-2021 under Works Approval number 232330.

Chunxing is committed to conforming to all relevant regulatory and legislative requirements.

1.2 Purpose of the CEMP

This Construction Environmental Management Plan (CEMP) has been prepared to identify environmental aspects and impacts and specify the actions and environmental controls required during construction works associated with the Project as required by relevant approval documents, statutory obligations and commitments and good industry practice.

The primary purpose of the CEMP is to provide a framework reference document detailing how Chunxing will manage and control environmental impacts of the Project during the construction phase. The CEMP will be used as a working document to ensure that statutory obligations and commitments are made known to all project personnel (including sub-contractors) and implemented effectively as an integral part of project construction.

The CEMP also aims to detail processes to minimise impacts associated with the construction of the project on adjacent sensitive areas.

The CEMP will be applicable to all staff and sub-contractors during the construction phase. The CEMP will be available to any member of the public via the Project web page (www.chunxing.com.au).

This Construction Environmental Management Plan is consistent with the requirements, findings and information contained within:

- Environmental Audit Report: Former Lurgi Gasworks, Morwell, Victoria (Coffey Environments Pty Ltd, 29 September 2008)

- 'Environmental Management Plan - Former Lurgi Gasworks Site Morwell, Victoria (Coffey Environmental, September 2008).
- Works Approval Application - Chunxing Used Lead Acid Battery (ULAB) Recycling Facility (Ascend Waste & Environment, December 2019).
- Final Planning Permit Report for Permit Application: Battery Recycling, Fourth Road, Hazelwood North (Beveridge Williams, 31/01/2020)
- Stormwater Management Design: Used Lead Acid Battery (Beveridge Williams, 19/05/2020)
- Works Approval Application - Addendum to WAA (Final) Chunxing Used Lead Acid Battery (ULAB) Recycling Facility (Ascend Waste & Environment, 29 June 2020).
- Works Approval 232330 (EPA Victoria, 31/08/2020).
- Latrobe Planning Scheme - Incorporated Document: Fourth Road, Hazelwood North (Latrobe City Council, December 2020)
- Chunxing ULAB Recycling Project Works Approval Assessment Report - SO1003702 (EPA Victoria, 03/09/2020).
- 'Soil Testing Report - Report No. 2210049-1' (CivilTest, March 18, 2021)
- 'Morwell Used Lead Acid Battery Recycling Facility' Baseline Environmental Site Assessment (Tetra Tech Coffey, 30 September 2021).

Guidance documents used in the development of this CEMP, and that will be consulted throughout the construction phase of the project includes (however may not necessarily be limited to):

- EPA 'Civil Construction, building and demolition guide' 2020 (EPA Publication 1834, November 2020).
- EPA 'Draft Urban Stormwater Management Guidance - Publication 1739' (EPA, October 2020)
- 'Managing Urban Stormwater: Soils and Construction - Volume 1 & 2', Landcom, (4th Edition) March 2004 (reprinted 2006) (the "Blue Book").
- 'Developer Guides and Resources ~ Standards and Specifications ~ Sediment Management Measures' (Melbourne Water, 27 September 2017). Available online: <https://www.melbournwater.com.au/building-and-works/developer-guides-and-resources/standards-and-specifications/stormwater/sediment>
- 'Identification and control of asbestos in workplaces' (WorkSafe Victoria June 2017).
- 'Asbestos-contaminated soil - Inspecting, removing, transporting and disposing of asbestos-contaminated soil' (WorkSafe Victoria, October 2010).
- 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009', August 2021, Available online: <https://www.epa.vic.gov.au/for-business/find-a-topic/iwrg>
- 'Industrial Waste Resource Guidelines - Soil Hazard Categorisation and Management - EPA Publication IWRG621', June 2009.
- 'Best Practice Erosion and Sediment Control' (IECA, 2008)
- 'Best Practice Erosion and Sediment Control - Appendix B - Sediment Basin Design and Operation' (IECA, updated June 2018)

1.2.1 Key Contacts

Table 1 Key Contacts

Contact Type	Contact Detail
Company responsible for implementing this Construction Environmental Management Plan	Chunxing Corporation Pty Ltd S1 213 Princes Drive, Morwell, VIC 3840 03 4122 3020
Person responsible for updating this Construction Environmental	Mr Gareth Glover S1 213 Princes Drive, Morwell, VIC 3840

Contact Type	Contact Detail
Management Plan	03 4122 3020 office.au@jschunxing.com
Project Director	Dr. Lakshman Jayaweera S1 213 Princes Drive, Morwell, VIC 3840 03 4122 3020 / 0418 239 441 office.au@jschunxing.com
Project Manager	Mr Robin Krause S1 213 Princes Drive, Morwell, VIC 3840 03 4122 3020 / 0418 239 441 office.au@jschunxing.com
Project Engineer	To Be Confirmed (TBC) S1 213 Princes Drive, Morwell, VIC 3840 03 4122 3020 / 0418 239 441 office.au@jschunxing.com
Project First Aid Officer	TBC
Project Environmental Officer	TBC
External Project Environmental Consultant	Mr Gareth Glover S1 213 Princes Drive, Morwell, VIC 3840 03 4122 3020 office.au@jschunxing.com
External Project Environmental Consultant	Mr Geoff Latimer (Ascend Waste & Environment) S1 213 Princes Drive, Morwell, VIC 3840 03 4122 3020 office.au@jschunxing.com
Project Health & Safety Officer	TBC
Police	000 or 03 5131 5000
Fire Brigade (CFA)	000
Ambulance	000
EPA (Morwell)	1300 372 842
Wildlife Rescue (Wildlife Victoria)	03 8400 7300
Snake Removal	Richard Copeland (Traralgon): 0498 107 918 Robert Harkess (Latrobe Valley): 0417 523 104 Jeff Lockwood (Gippsland Area): 0428 352 203
Dasma Group Licensed Waste Contractor ¹	03 5134 1455
Veolia Environmental Services Licensed Waste Contractor ¹	03 5133 7111

¹ Per EPA Victoria 'Prescribed Industrial Waste Database' at: <https://www.epa.vic.gov.au/for-business/business-forms-permits-online-tools/prescribed-industrial-waste-database>

1.3 Objectives and Targets of the CEMP

The environmental objectives for the CEMP in the construction period are:

- to protect human health and the environment from potential impacts from construction;
- to satisfy key requirements contained within the approval documents;

- to ensure compliance with relevant legislation and regulatory requirements;
- to develop, implement and maintain effective controls for the environmental aspects of construction works;
- to incorporate agreed community and stakeholder expectations (e.g. ULAB Community Liaison Committee);
- to monitor environmental impacts relating to construction as identified in this document; and
- to maximise the value and outcomes of environmental monitoring activities so that the information can be applied to the planning and implementation of future projects.

Chunxing will adopt the following key performance targets during construction:

- No breach of environmental legislative or regulatory requirements;
- Value of environmental penalties incurred = \$0;
- Environmental incident rate = 0;
- To maximise project efforts to recycle materials; and
- To employ strategies to minimise waste generation.

Chunxing will also adopt the following environmental objectives and targets:

Table 2 Objectives and Targets

PLANNING & ENVIRONMENT ACT 1987	
Objective	Target
To employ Best Environmental Management Practices (BEMP) to minimise noise and vibration impacts.	Maintain noise and vibration levels within project goals.
To apply BEMP to soil and water quality management.	Meet water quality discharge criteria with no uncontrolled discharges of stormwater from the Site.
To minimise air pollution from construction activities.	No community complaints relating to dust emissions.
To minimise impacts to the environment caused by the management of contaminated soil.	Manage any encountered contaminated soil in accordance with environmental legislation and applicable guidelines.
To avoid pollution of the environment caused by fuels, oils, chemicals used during the Project.	Avoid spills of fuel, oil or chemicals.
To minimise waste resulting from the Project's construction.	Minimise waste volumes and maximise reuse and recycling where possible.
To ensure all staff are aware of the Project's environmental commitments and required controls.	All project personnel to attend an environmental induction before commencing work on-site (attendees to sign an acknowledgement upon completion of induction).
Project to be constructed in accordance with planning, environmental and other approvals.	No identified non-compliances with approvals. No significant environmental incidents.

1.4 Environmental Policy

Chunxing's Environmental Policy can be found as Annexure D - Chunxing Environmental Policy. Chunxing will seek to ensure that the policy as well as environmental procedures and construction methods outlined in this CEMP are understood, implemented and maintained by personnel at all levels involved with the

Project.

1.5 Project Approval

Key stages of the Project approval process and technical assessment comprise (in event order):

1.5.1 Application

- On 15 November 2019, EPA received the whole package of the works approval application (WAA), including the main application document with appendices.
- On 6 December 2019, EPA accepted the WAA for assessment.

1.5.2 Public consultation

- On 11 December 2019, EPA advertised the WAA (1003702) in the Herald Sun.
- On 10 and 21 January 2020 respectively, EPA held information sessions at the Hazelwood North Community Hall.
- On 7 February 2020, the public consultation period was closed. During this period, EPA received 136 submissions. All submissions have been published on the Engage Victoria website (<https://engage.vic.gov.au/epa-works-approvals/ulab>).
- On 25 February 2020, EPA held a Section 20B public conference, facilitated by an independent chair.
- On 9 April 2020, EPA published the 20B conference report on the Engage Victoria website (<https://engage.vic.gov.au/epa-works-approvals/ulab>).

1.5.3 Further information requirement

- On 31 January 2020, EPA issued a notice to Chunxing, under Section 22 of the Environment Protection Act 1970 (EP Act) (s22 Notice), requiring additional information, mainly related to air emission control and management, wastewater treatment design and stormwater management.
- On 19 February 2020, EPA issued a second notice to Chunxing requesting the company to provide responses to the public submissions.
- On 24 April 2020, EPA issued a third notice to Chunxing, requesting the company to provide a human health risk assessment report and revised air dispersion modelling.
- On 30 June 2020, Chunxing provided EPA with their responses to the three notices as an addendum to the WAA (AddWAA).
- On 9 July 2020, EPA subsequently published the response for public comment.
- On 30 July 2020, the 2nd round public comment period was closed.
- On 12 August 2020, Chunxing provided EPA with their response to the 2nd round public submissions.
- On 17 August 2020, both the 2nd round submissions and Chunxing's response were published on the Engage Victoria.

1.5.4 Referrals

- On 19 December 2019, EPA referred the WAA to a statutory referral agency, Latrobe City Council. On 31 January 2020, the Council responded.
- On 19 December 2019, EPA referral the WAA to Sustainability Victoria (SV) and Gippsland Waste and Resource Recovery Group respectively. On 9 February 2020, SV responded.
- On 7 February 2020, EPA referred the WAA to the Country Fire Authority (CFA). On 27 March 2020, CFA responded.
- On 11 February 2020, EPA referred the WAA to West Gippsland Catchment Management Authority. On 3 March 2020, the catchment authority responded.
- On 11 February 2020, EPA referred the WAA to Gippsland Water Authority. On 13 February 2020, the water authority responded.
- On 11 February 2020, EPA referred the WAA to WorkSafe. On 2 August 2020, WorkSafe responded.
- On 20 December 2019, EPA referred the WAA to the Department of Agriculture.

1.5.5 Statutory approval time extension

- On 3 January 2020, Chunxing agreed to an extension of EPA's statutory approval timeline by a period of a week, until 23 March 2020. This agreement was under s67A of the EP Act, considering the extended public comments period.
- On 21 July 2020, Chunxing agreed a further extension of its statutory timeline by a period of a week, until 20 August 2020, considering the extended public comment period.
- On 13 August 2020, Chunxing agreed to a further extension until 31 August 2020.

1.5.6 Approval

- EPA provided approval for Project on 31-08-2021 under Works Approval number 232330.

The WAA was a concept design based on a reference facility in China to demonstrate the project's compliance with the EP Act, State Environment Protection Policies, Regulations and Guidelines. The final design will be subject to verification by EPA to ensure compliance with the Works Approval conditions.

1.6 Key EPA 'Works Approval' Requirements

Prior to commencing construction of the ULAB Facility the EPA Works Approval (No. 232330) requires that Chunxing provide a Construction Environmental Management Plan (CEMP) to the EPA that addresses the following requirements.

Table 3 Key Works Approval Requirements

EPA Works Approval Reference	Requirement	Chunxing Compliance/Reference Document
6 (b)	<i>Construction environmental management plan for managing contaminated soil and groundwater to meet the requirements in the Environmental Management</i>	CEMP (Document) Annexure A - Erosion & Sediment

EPA Works Approval Reference	Requirement	Chunxing Compliance/Reference Document
	<i>Plan Former Lurgi Gasworks Site Morwell, Victoria, 24 September 2008.</i>	Control Plan (ESCP) Annexure O - Environmental Auditor Letter (P.Sinclair / Tetra Tech Coffey)
10	<i>Provide a SWMP for management of noise and dust emissions, stormwater run-off, infiltrated groundwater and contaminated soil (if any) during construction.</i>	CEMP (Document) CEMP Table 17 CEMP Sections (7, 7.1, 7.2, 7.2.1, 7.2.2, 7.2.3, 7.2.4, 7.3, 7.4, 7.5, 7.5.1, 7.5.2, 7.6, 7.7, 7.9) CEMP Table 17 Annexure A - Erosion & Sediment Control Plan (ESCP)
WA_W15	<i>During construction, noise and vibration must not be emitted beyond the boundaries of the premises.</i>	CEMP (Document) CEMP Table 17 CEMP Section 7.7
WA_W16	<i>During construction, stormwater discharged from the premises must not be contaminated with waste.</i>	CEMP (Document) CEMP Table 17 CEMP Sections (7, 7.1, 7.2, 7.2.1, 7.2.2, 7.2.3, 7.2.4, 7.3, 7.4, 7.5, 7.5.1, 7.5.2, 7.6, 7.7, 7.9) Annexure A - Erosion & Sediment Control Plan (ESCP)
WA_W17	<i>All construction activities must be undertaken in accordance with EPA Publication 480 "Environmental Guidelines for Major Construction Sites", as amended from time to time.</i>	CEMP (Document) Annexure A - Erosion & Sediment Control Plan (ESCP)
WA_W18	<i>During construction, you must undertake an environmental monitoring program that enables you and EPA to determine compliance with condition(s) WA_W15, WA_W16 and WA_W17</i>	CEMP (Document) CEMP Section 12 Annexure A - Erosion & Sediment Control Plan (ESCP)
WA_W19	<i>During construction, you must ensure that all activities are carried out in accordance with the information provided in the Works Approval Application.</i>	CEMP (Document) CEMP Section 12 Annexure A - Erosion & Sediment Control Plan (ESCP)

1.6.1 CEMP Regulatory Review & Approval

Revision 1 of the CEMP was submitted to the EPA by Chunxing Corporation Pty Ltd for review on 11 June, 2021.

The EPA responded with comments on Revision 1 of the CEMP on 8 July, 2021.

Revision 2 of the CEMP was submitted to the EPA by Chunxing Corporation Pty Ltd for review on 01 October, 2021.

Revision 3 of the CEMP was submitted to the EPA by Chunxing Corporation Pty Ltd for review on 06 November, 2021 and to the Latrobe City Council on 15 November 2021.

Revision 4 of the CEMP was submitted to the Latrobe City Council by Chunxing Corporation Pty Ltd for review on 20 November, 2021.

2 Project Description

2.1 Location of the Project

Crown Allotment 2047, currently a vacant grassed block, is 13.45 hectares in size (the ULAB Facilities footprint assumes approximately half of the Allotment) and is located in the Latrobe Valley, approximately 3.5 km southeast of Morwell railway station.

The Site is bound by a small revegetated riparian land parcel to the east, agricultural and industrial land parcels to the immediate west (including Morwell Waste Transfer Station) and industrial land parcels to the immediate north, including Omnia Specialties Australia (humate and fulvate agricultural products) and industrial land parcels to the south (including Parkside Timber Products).

Apart from a single tree in the south-west corner of the site, the land is cleared and covered with pasture grass species.

The property is within industrial 2-zoned land, surrounded by related recycling activities and heavy industries also zoned as Industrial 2. The next layer of land radiating outwards from Fourth Road is zoned as Industrial 1.

More specifically, land surrounding the site out to a 500m radius is all zoned Industrial 2 (see Figure 30) and comprised of approximately 24 separate industrial properties, the majority of which are developed with large buildings and structures that date from the middle to latter half of last century. Some of these buildings are on land that also formed part of the former Lurgi Gasworks, whilst others were constructed following the former Gas and Fuel Corporation's subdivision and sale of land within the precinct in 1972. Most of the buildings and their associated infrastructure have been constructed on a very large scale and many are in a current state of disrepair. There are several businesses operating from properties immediately abutting the site however many surrounding properties are currently unused/vacant.

Land extending along the entire southern boundary of the Site (or separated from it by Fourth Road) is land used by O'Connor's Transport for the store and transport of bulk landscaping materials; primarily pine bark mulch.

To the north-west fronting Porters Road, is the Latrobe City Council's Morwell Transfer Station and land used for the storage of materials by an earthmoving company.

To the immediate north of the Site, at the corner of Tramway Road and Porters Road, is Omnia Specialties Australia; a fertilizer manufacturing operation and warehouse. Other engineering-related businesses cohabitate

the industrial precinct (old Lurgi Gasworks footprint).

To the immediate west, is vacant grazing land used for grazing purposes.

To the immediate east is Latrobe Magnesium's pilot plant Site (currently under construction).

Tramway Road can be found approximately 130m east of the Site, Monash Way can be found approximately 300m to the west and Porters Road approximately 300m to the north.

The slope direction on the property is southeast (76.2 mAHd) to northwest (74.2 mAHd) with approximately 2.0m of fall over 500m, equating to a 0.23 degrees or 0.4% slope (the Site also slopes gently to the north).

The perimeter of the property is fenced with high chain wire security fencing.

General property information can be found in Table 4 below and the property location is shown in Figure 1 and Figure 2. Figure 3 shows the Property and Construction (Site) Footprints, an Operations Site Layout Plan is shown in Figure 4 and an artist's impression of the completed facility on the property is shown in Figure 5.

Table 4 General Site Information

Property Address	PLANNING & ENVIRONMENT ACT 1987 Crown Allotment 2047, Fourth Road, Hazelwood North LATROBE CITY COUNCIL
Legal Identification	Plan Approved under Clause 72.04 Crown Allotment 2047, Fourth Road, Hazelwood North (Parish of Hazelwood, Title Plan 955137G; contained in Certificate of Title Planning Scheme Amendment No C 129) at
Local Government Area	Clause No. 6.21 Sheet 24 of 326 Sheet(s) Latrobe City Council
Zoning	Industrial 2 Zone (IN2Z) Date: 22/12/2021
Property Size	13.45 hectares
Construction/Site (ULAB Facility) Footprint	Karen Egan Council Delegate 6.0 hectares (approx.)
Current Property Use	Vacant
Surrounding Land Use	north: industrial fertiliser / soil conditioner facility east: fly-ash processing plant (under construction) & Tramway Road. south: Fourth Road & industrial mulch facility west: vacant land
Proposed Future Land Use	Used Lead Acid Battery Recycling facility, being scheduled categories I02 – Metal works and A02 – Other Waste Treatment



Figure 1 Location of Chunxing ULAB Property (Regional)
(source: <https://www.google.com/maps>)

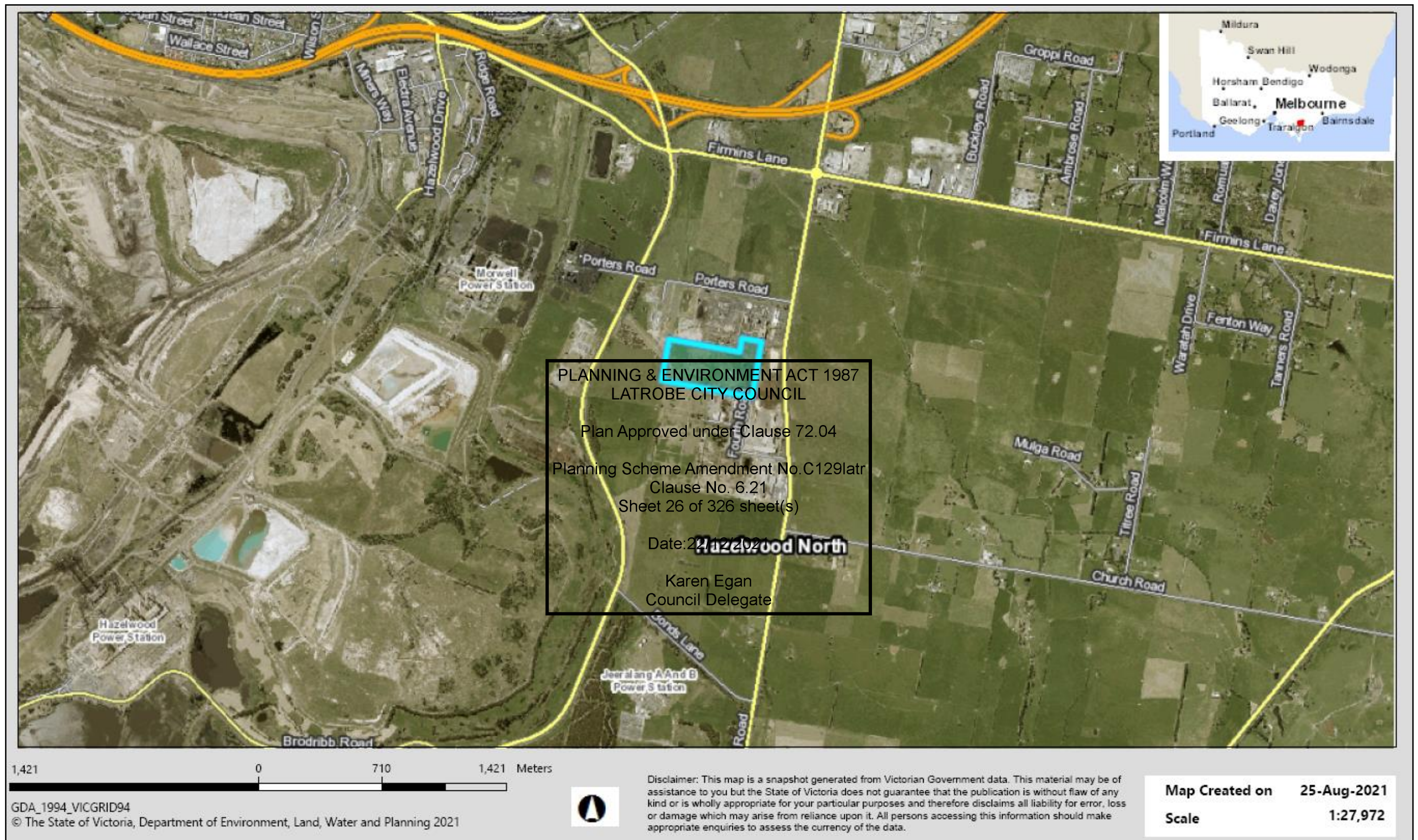


Figure 2 Location of Chunxing ULAB Property (Hazelwood North)
(source: <https://mapshare.vic.gov.au/MapShareVic>)



284 0 142 284 Meters

GDA_1994_VICGRID94

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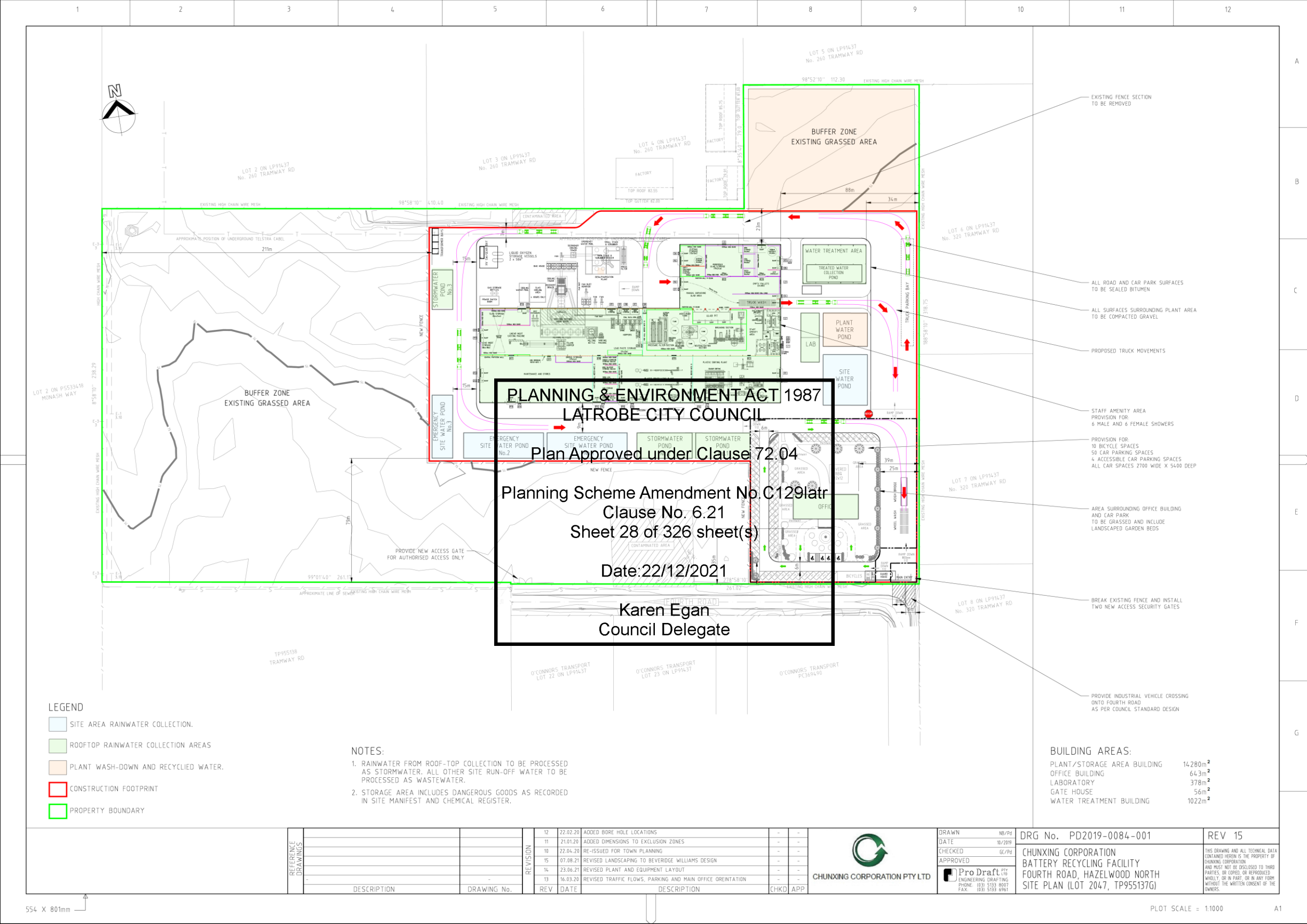
Disclaimer: This map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Map Created on 25-Aug-2021
Scale 1:5,592

Figure 3 Chunxing ULAB Property Boundary, Construction Footprint & Western Buffer Zone Footprint

(source: <https://mapshare.vic.gov.au/MapShareVic>)

(Blue Outline = site boundary / Red Outline = Construction Footprint / White Outline = Western Buffer Zone)



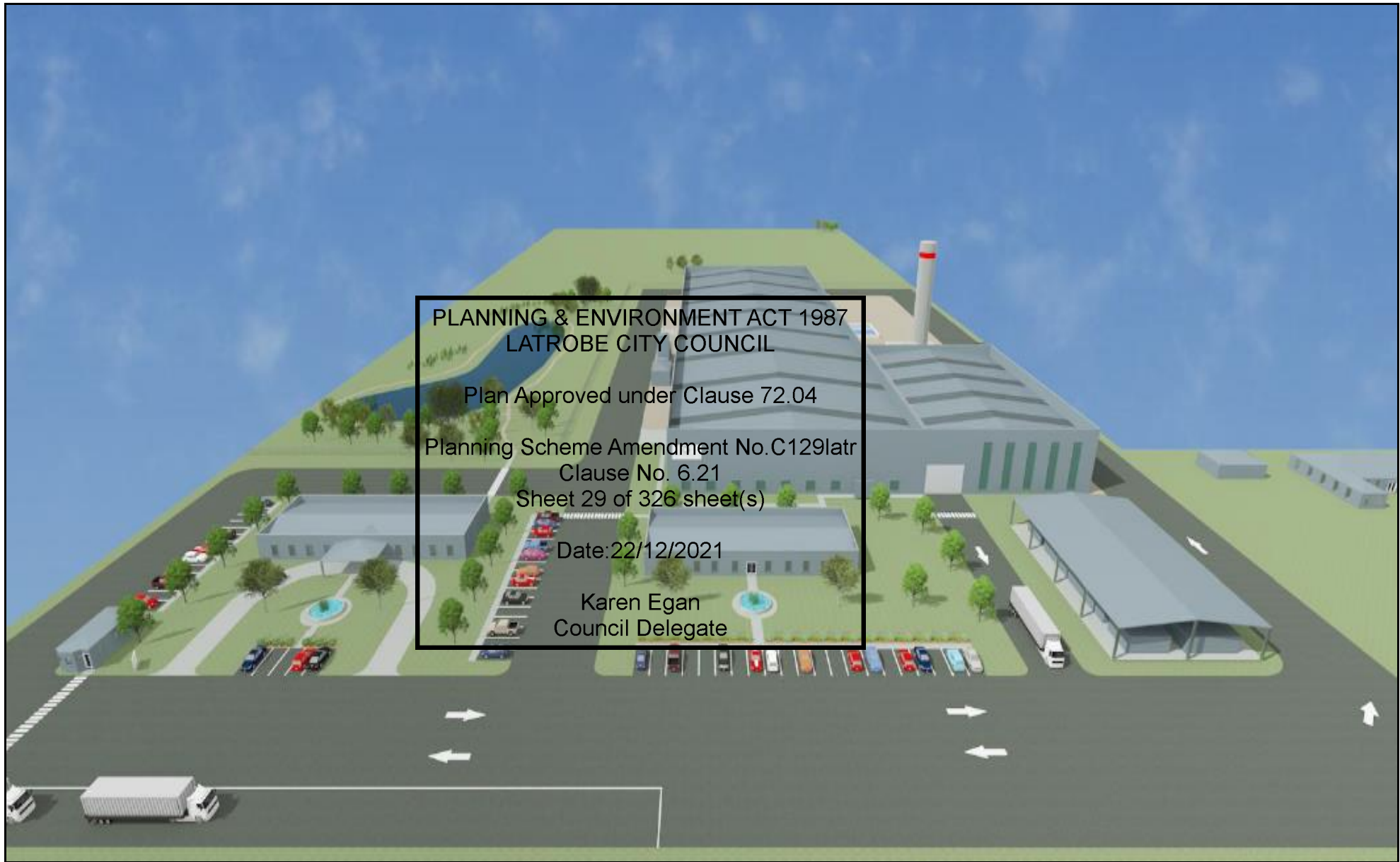


Figure 5 Artist's impression of the Final ULAB Facility (as viewed from the east)

2.2 Site History

The property (Crown Allotment 2047) is 13.45 hectares in size with the ULAB facilities/construction footprint assuming approximately half (approximately 6.0 hectares) of area within the property (see Figure 3). The property forms a subsection within a parcel of 155.4 hectares of land which was purchased by the Gas and Fuel Corporation of Victoria in 1953 for the purpose of brown coal gasification (the Former Lurgi Gasworks). Prior to the development as a gasification plant the Former Lurgi Gasworks property was understood to have been used for farming / grazing.

Construction of the gasification plant was completed in 1956 and the plant operated from 1956 to 1969.

Gasification works were completed to the south-east of the Site, and by-products were processed and stored on the Site, and on land to the west of the Site.

After the plant closed, the site remained inactive.

Two EPA Clean Up Notices were issued for 28.39 hectares of land area (sections within) within the Former Lurgi Gasworks property (see Annexure H); the first in 1989 and the second in 2002. The Chunxing property falls within some of this land area.

The first Clean Up Notice targeted the removal of asbestos lagging, piping debris and contaminated soil.

The second Clean Up Notice (CUN) specified that all asbestos must be removed from the relevant land areas by 1 September 2003 and requiring the appointment of an Environmental Auditor. Asbestos removal works were undertaken in 2004 and completed in early 2005. The EPA Victoria appointed independent Auditor for the CUN notices was Mr. Phillip Sinclair.

2.2.1 Environmental Remediation

Remediation and validation works were undertaken on the relevant land areas between October 2005 and March 2006 with final soil validation of hot spots in the remediated area undertaken in December 2007 and January 2008 (detailed in the Coffey 2008).

Following remediation works, soil contamination remained in-situ across the relevant land areas with land on the Site, and on land to the west of the Site, contaminated with residual polycyclic aromatic hydrocarbons (PAHs) with concentrations of naphthalene, phenanthrene, benzo(a)anthracene, benzo(b + k)fluoranthene benzo(a)pyrene and Total PAHs exceeding the Commercial / Industrial Use Guidelines at the time. Two contaminated Zones are still present; one on the Northern Boundary and the other on the Southern Boundary both outside the Construction Footprint (See Figure 6 Chunxing ULAB Facility Layout Plan).

Assessment of the groundwater conditions across the relevant land areas in 2007 reported elevated concentrations of Total Petroleum Hydrocarbons fraction; TPH C10-C36 (considered to be natural), total cyanide, chloroform, metals (aluminium, chromium, manganese and zinc), sodium, chloride, fluoride, ammonia and nitrate.

2.2.2 Statement of Environmental Audit

A Statement of Environmental Audit was prepared and issued by Mr. Phillip Sinclair of Coffey on September 29, 2008 (CARMS 51360-1) for the relevant land area noting that groundwater was polluted with nitrate, and there remained residual soil contamination associated with isolated locations on the Site

and on land to the west of the Site.

The Audit Statement (for the land areas <site> as seen in Annexure H) reads as follows:

"The site is suitable for the beneficial uses associated with Commercial and Industrial land uses, subject to the following conditions attached thereto:

a. Groundwater shall not be extracted (withdrawn) from the site for uses other than clean up or monitoring without testing of its suitability for the proposed use.

b. Site development protocols must take into account the requirements of the Environmental Management Plan (EMP) attached to this Statement of Environmental Audit and the presence of aesthetically impacted material at the site.

c. The site owner / occupier shall notify the responsible authority and EPA when construction of the capping layer across the "building restriction zone" shown in Figure S2 and as described in the EMP is completed.

d. No buildings with enclosed spaces shall be constructed within the boundaries of the "building restriction zone" as shown in Figure S2, unless a risk assessment including consideration of vapour risk is conducted that indicates it is safe to do so.

e. If the owner / occupier undertakes the redevelopment of the part of the audit site that includes the "building restriction zone" (other than construction of the capping layer referred to above), the owner / occupier must review the suitability of the EMP for the proposed development.

f. The owner / occupier shall notify EPA and the responsible authority of any significant revision to the EMP."

2.2.3 Final Baseline Environmental Site Assessment

A Baseline Environmental Site Assessment (BESA) was completed by Tetra Tech Coffey in September 2021 (see 'Baseline Environmental Site Assessment - Morwell Used Lead Acid Battery Recycling Facility', Tetra Tech Coffey, September 30, 2021) for the property in accordance with Environment Protection Authority (EPA) Works Approval 232330.

The baseline environmental site assessment was assessed by the EPA and required prior to the development of the CEMP and prior to the commencement of any construction, commissioning or operation of the proposed ULAB Facility. The purpose of the BESA was to set a benchmark against which future soil and groundwater conditions will be compared.

The BESA included collection of soil samples from 20 soil bores across the site, installation of 6 groundwater monitoring wells (MW) and completion of one groundwater monitoring event. See Figure 20 for locations of A - monitoring wells sampled and B - monitoring wells installed during the BESA and Figure 21 for the location of soil bores sampled for the BESA as well as samples during previous site investigations.

Table 19 provides nomenclature and details for monitoring and groundwater wells.

Based on the works undertaken, Tetra Tech Coffey concluded the following:

2.2.3.1 Soil

- *The encountered subsurface geology consisted of a combination of overlying sand / sandy clay fill material up to 0.2 metres below ground surface (mgs) with natural silty clay and clays extending to 7 mbgs.*
- *Total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAH), metals and nitrogen species were reported in soil samples across the site at concentrations higher than naturally occurring*

levels. Concentrations of contaminants of concern in soil were reported below the criteria considered to be protective of human health for a commercial / industrial site; i.e. no test results indicate soils at the site pose an unacceptable risk to site workers.

- Concentrations of contamination were below the adopted Maintenance of Ecosystems criteria for all but three of the 40 samples tested. These were sample location SB08, SB17 and SB20 at depths of 0.2 mbgs for the TRH C16-C34 fraction, and benzo(a)pyrene (Figures 2, 5A and 5B). On a statistical basis, soils at the site are protective of Maintenance of Ecosystems beneficial use relevant for an industrial site.
- Thirty four of the 40 soil samples tested met EPA Fill criteria. These criteria are applied for soils when offsite disposal of soil is being considered. Soil meeting EPA Fill category has no restriction on reuse or disposal.
- Six soil samples showed concentrations of TRH C10-C36, Total PAHs and zinc consistent with Waste Soil Category C. One of these six soil samples showed had a concentration of benzo(a)pyrene of 5.5 mg/kg just exceeding the upper limit of Category C of 5 mg/kg, but was subsequently tested and showed low leachability confirming it would meet Category C criteria.
- It is intended to retain all soil on site during development of the ULAB site meaning soil disposal is unlikely to occur and soil disposal criteria should not have to be applied.
- The waste soil categorisation is preliminary and further sampling would be required to appropriately categorise soils for disposal if offsite disposal of soil was required.
- It is considered that the baseline ESA demonstrated that soil contamination was consistent with the post- remediation soil conditions at the site as of 2008.
- EPA has required and Chunxing has agreed to collect soil samples at off-site locations to allow future impacts from the operation of ULAB (if any) to be assessed. This report includes a plan for assessment of those locations during the early works phase of development that has been accepted by EPA. (Appendix L) The results of the off-site soil sampling will be provided as an addendum to this report.¹
- It is considered that the Baseline ESA demonstrated that soil contamination was consistent with the post- remediation soil conditions at the site as of 2008

PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL
Plan Approved under Clause 72.04
Planning Scheme Amendment No. C1291atr
Clause No. 6.21
Sheet 32 of 326 sheet(s)
Date: 22/12/2021
Karen Egan
Council Delegate

2.2.3.2 **Groundwater**

- The depth to regional groundwater ranged from 2.1 to 2.7 mbgs with groundwater being inferred to flow in a north-westerly direction
- No petroleum (or gasworks related) hydrocarbon species (i.e. BTEX, TRH or PAH compounds) were reported in groundwater at levels above laboratory reporting limits.
- Low concentrations of acetone were reported for all groundwater wells at just above detection limits except for well MW1 where no detectable acetone was reported. There are no Australian acetone water quality criteria for ecosystem protection or drinking water to assess the acetone occurrence against. The concentrations reported are more than 100 times less than USEPA risk screening levels for drinking water.
- Trichloroethene (TCE) was reported at a concentration above the adopted health protection level at

¹ The timing of the off-site soil sampling works and groundwater sampling and testing for phenol is subject to Covid-19 restrictions.

MW3 and below the human health protection level at MW1. The average TCE concentration in groundwater across the site was reported below the adopted human health criteria, and two wells located downgradient of MW3 (MW4 and MW6) reported concentrations below the laboratory limit of reporting. As the site is located within a groundwater quality restricted use zone (GQRUZ), this result is considered to pose a low risk to potential extractive uses and to ecological or human health as a result of inadvertent exposure during excavations as detailed in the CEMP.

- Detectable concentrations of cobalt, copper, manganese, nickel and zinc were reported in all samples. Selenium was detected in well MW1 only and chromium detected in well MW3 only.

- Nitrogen species were detected in all groundwater samples, with nitrate concentrations at similar or lower concentrations than those reported in 2005 and 2006.

- Concentrations of copper, nickel, zinc and nitrate were at concentrations higher than the criteria adopted to be protective of the Water Dependent Ecosystems and Species beneficial use and concentrations of manganese, chloride and nitrate potentially preclude the potable water supply, agriculture and irrigation and water-based recreation beneficial uses. Concentrations of these chemical species were similar upgradient and downgradient of the site meaning the site is not likely to be a source of these chemical species. They were present at similar concentrations to those reported on 2005 and 2006.

- EPA has required and Chunxing has agreed to the collection of groundwater samples at the site for phenol testing. It is proposed that this occur at the same time as off-site soil sampling during the early works phase of development for the sake of efficiency.

- It is considered that the baseline ESA demonstrated that groundwater contamination was equivalent to or of better than the contamination status of groundwater conditions at the site as of 2008.

- In 2007, EPA declared a Groundwater Quality Restricted Use Zone (GQRUZ) based on a submission from the auditor. A GQRUZ provides public information about which uses groundwater is not suitable for. The GQRUZ covers the entire ULAB site and extends over the whole of the former gasworks site and includes groundwater beneath land which is up- and down-gradient of the former gasworks site.

- It is recommended that the GQRUZ remain on the site to prevent extraction and use of groundwater. The conclusions and recommendations are made within the limitations of the work that has been undertaken.

- With respect to WA_W1 clause 6 c) it is recommended that:

- the environmental improvement plan (EIP) required by WA Reporting Condition WA_ R3 will supersede the EMP (2008) only for the land area owned and occupied by Chunxing for the ULAB Facility at the time of acceptance of the EIP by EPA; and

- the EMP dated 24 September 2008, remain in force for the remainder of the former Lurgi gasworks site to which it applies.

- It is considered that the Baseline ESA demonstrated that groundwater contamination was consistent with the post-remediation soil conditions at the site as of 2008.

Further:

- A CEMP has been prepared under the advice and direction of Mr Phil Sinclair (EPA appointed

Environmental Auditor, 75667) and that it is the opinion of Mr Phil Sinclair that the soil and groundwater contamination components of the CEMP, meet the requirements of the Environment Management Plan Former Lurgi Gasworks Site Morwell Victoria, dated 24 September 2008. Two of the aims of the CEMP are to limit the exposure of any ecological receptors to excavated soils and groundwater and to appropriately categorise any waste soil prior to disposal offsite (if required).

- *It is in the opinion of the Mr Phil Sinclair (EPA appointed Environmental Auditor, 75667) that with the implementation of the construction methodology, controls and inspection and monitoring programs detailed within the Chunxing ULAB Facility CEMP, there is a low risk that development of the ULAB Facility will cause unacceptable impacts from contamination to surface water, groundwater or soil at and adjacent to the site.*

The key findings are to be read in conjunction with "Important Information about Tetra Tech Coffey's Environmental Report" attached to the Baseline Environmental Site Assessment.

2.3 Site Environmental Attributes

Crown Allotment 2047 is 13.45 hectares in size (the ULAB Facilities construction footprint assumes approximately half of the allotment) and is located in the La Trobe Valley approximately 3.5 km south-east of Morwell railway station.

The Site is bound by a small revegetated industrial land parcel to the east, agricultural and industrial land parcels to the immediate west (including Morwell Waste Transfer Station) and industrial land parcels to the immediate north, including Omnia Specialities Australia's (humate and fulvate agricultural products) and industrial land parcels to the south (including Parkside Timber Products). The major traffic thoroughfares Princess Freeway (1.3 km to the north), Fimlins Lane (1.2 km to the north), Monash Way (340m to the west) and Tramway Road (100m to the east) sit between the site and all sensitive receivers. These thoroughfares provide access for freight, commercial and residential traffic between Morwell, Traralgon, Hazelwood, Churchill, Hazelwood Open Cut Mine, Loy Yang Power Station, the Princess Freeway and Gippsland Heavy Industry Park (see Figure 1 and Figure 2).

The site forms part of 155.4 Ha of land which was purchased by the Gas and Fuel Corporation of Victoria in 1953 for the purpose of brown coal gasification. Prior to the development as a gasification plant the site was understood to have been used for farming / grazing. Construction of the gasification plant was completed in 1956 and the plant operated from 1956 to 1969.

After the plant closed, the site remained inactive.

With the exception of a single non-native small tree in the south-west corner of the site, the site is cleared and covered with pasture grass and other non-native groundcover vegetation.

The slope direction on the site is southeast (76.2 mAHD) to northwest (74.2 mAHD) with approximately 2.0m of fall over 500m, equating to a 0.23 degrees or 0.4% slope (the site also slopes gently to the north).

The nearest natural water courses to the site are Bennett's Creek which can be found ~1,300 west and 1,200m south of the site and Waterhole Creek which can be found ~700m north and ~1,000m east of the site.

Two EPA Clean Up Notices were issued for 28.39 hectares of land area (sections within) within the Former Lurgi Gasworks property (see Annexure H); the first in 1989 and the second in 2002. Chunxing's property

falls within some of this land area.

The first Clean Up Notice targeted the removal of asbestos lagging, piping debris and contaminated soil.

The second Clean Up Notice specified that all asbestos must be removed from the relevant land areas by 1 September 2003 and requiring the appointment of an Environmental Auditor. Asbestos removal works were undertaken in 2004 and completed in early 2005. The EPA Victoria appointed independent Auditor for the relevant land areas was Mr. Phillip Sinclair.

Following remediation works, soil contamination remained in-situ on the site and land to the west of the Site consisting of mostly polycyclic aromatic hydrocarbons, (PAHs) with concentrations of naphthalene, phenanthrene, benzo(a)anthracene, benzo(b + k)fluoranthene benzo(a)pyrene and Total PAHs exceeding the Commercial / Industrial use guidelines current at that time.

Assessment of the groundwater conditions in 2007 reported elevated concentrations of Total Petroleum Hydrocarbons fraction; TPH C10-C36 (considered to be natural), total cyanide, chloroform, metals (aluminium, chromium, manganese and zinc), sodium, chloride, fluoride, ammonia and nitrate.

A Statement of Environmental Audit was prepared and issued by Mr. Phillip Sinclair on September 29, 2008 (CARMS 51360-1) noting that groundwater at the site was polluted with nitrate, and there remained residual soil contamination associated with isolated locations on the Site and on land to the west of the Site.

2.3.1 Climate

Based on data recorded at the Latrobe Valley Airport (the closest BOM weather station; no. 085280), the area experiences a temperate climate with February being the warmest month, July the coldest and the highest rainfall occurring in late Winter and Spring. Average annual rainfall depth is 733mm typified by an average 170 days of rain and an average monthly rainfall depth between 50-70mm.

The three consecutive months with the highest mean rainfall are September (74mm), October (69mm) and November (74mm) and the lowest 3 month mean rainfall period occurs January (49mm), February (43mm) and March (47mm).

Average annual rainfall, 733mm, does not exceed the average annual pan evaporation rate of ~1,000mm; Autumn (1-200mm), Winter (~100mm), Spring (100 - 200mm) and Summer (3-400mm).

The historical data shows that the maximum rainfall over a 24 hour period (as recorded between 1986 - 2021) is 70mm (see Figure 8). The 1 in 5 year (20% AEP) 24-hour rainfall depth is 61mm, the 1 in 5 year (20% AEP) 5-day rainfall depth is 93.6mm, the 1 in 5 year (20% AEP) 7-day rainfall depth is 91mm and the 1 in 2 (50% AEP) year 5-day rainfall depth is 70.9mm (see Figure 9, Figure 23 and Table 20). Table 20 also summarises expected stormwater run-off from the construction footprint under different rainfall depth scenarios.

Morwell experiences 31 clear days and 168 cloudy days on average per year with prevailing winds coming from the west and south west and the strongest winds and wind gusts occurring in the months September to February (up to 122 km/h recorded in November).

Early works, comprising primarily of stripping, excavations and stockpiling, are expected to commence in the last quarter of the 2021 calendar year, extending into the first quarter of the 2022 calendar year. Based on available climate data, in relation to yearly climate averages for the area, it is expected that the

first quarter period (October - December) will be characterised by events of high and intense rainfall, strong and gusty winds, cloudy days and mild evaporation rates. The second period (January - March) will likely be characterised by low (less intense) rainfall, strong and gusty winds, clear days and high evaporation rates.

Table 5, Figure 6, Figure 7, Figure 8 and Figure 9 represent climate statistics recovered from the Australian Bureau of Meteorology (1984 - 2021) for Morwell (Latrobe Valley Airport, Weather Station ID No. 085280).

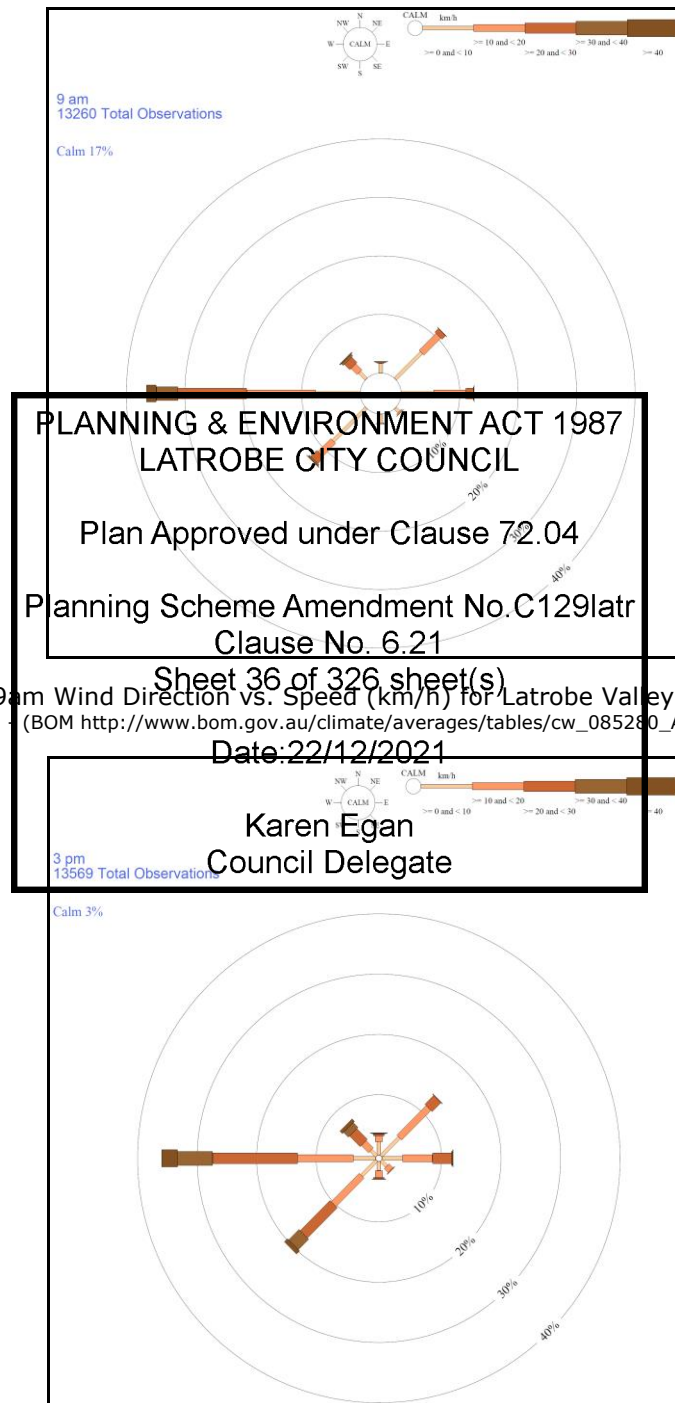


Figure 6 Rose of 9am Wind Direction vs. Speed (km/h) for Latrobe Valley Airport (1984 - 2021)

* Source - (BOM http://www.bom.gov.au/climate/averages/tables/cw_085280_All.shtml#other)

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Figure 7 Rose of 3pm Wind Direction vs. Speed (km/h) for Latrobe Valley Airport (1984 - 2021)

* Source - BOM (http://www.bom.gov.au/climate/averages/tables/cw_085280_All.shtml#other)

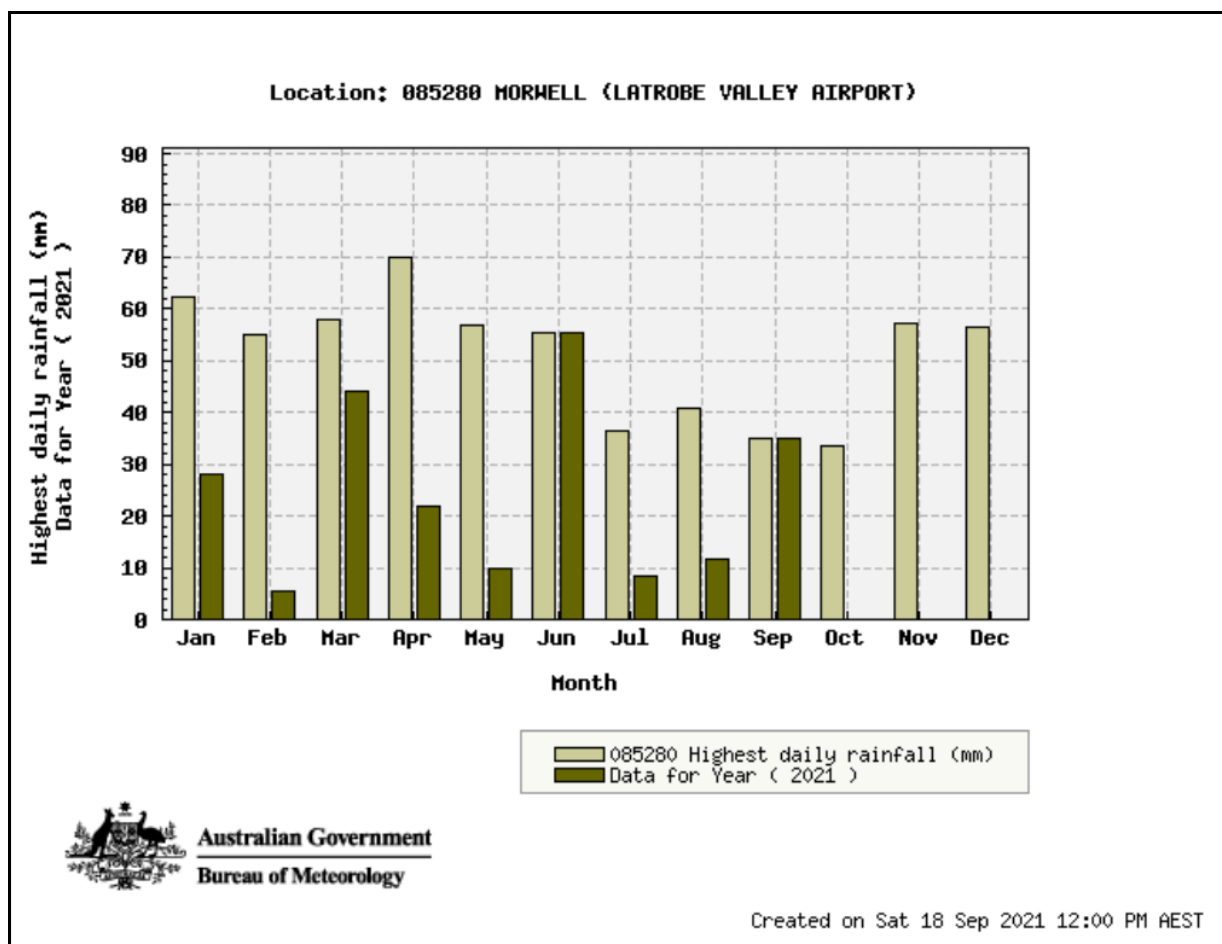


Figure 8 Maximum 24-hours rainfall for Latrobe Valley Airport (1984 - 2021)

* Source - BOM (http://www.bom.gov.au/climate/averages/tables/cw_085280_All.shtml#other)

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LATROBE CITY COUNCIL**

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
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Date:22/12/2021

Karen Egan
Council Delegate

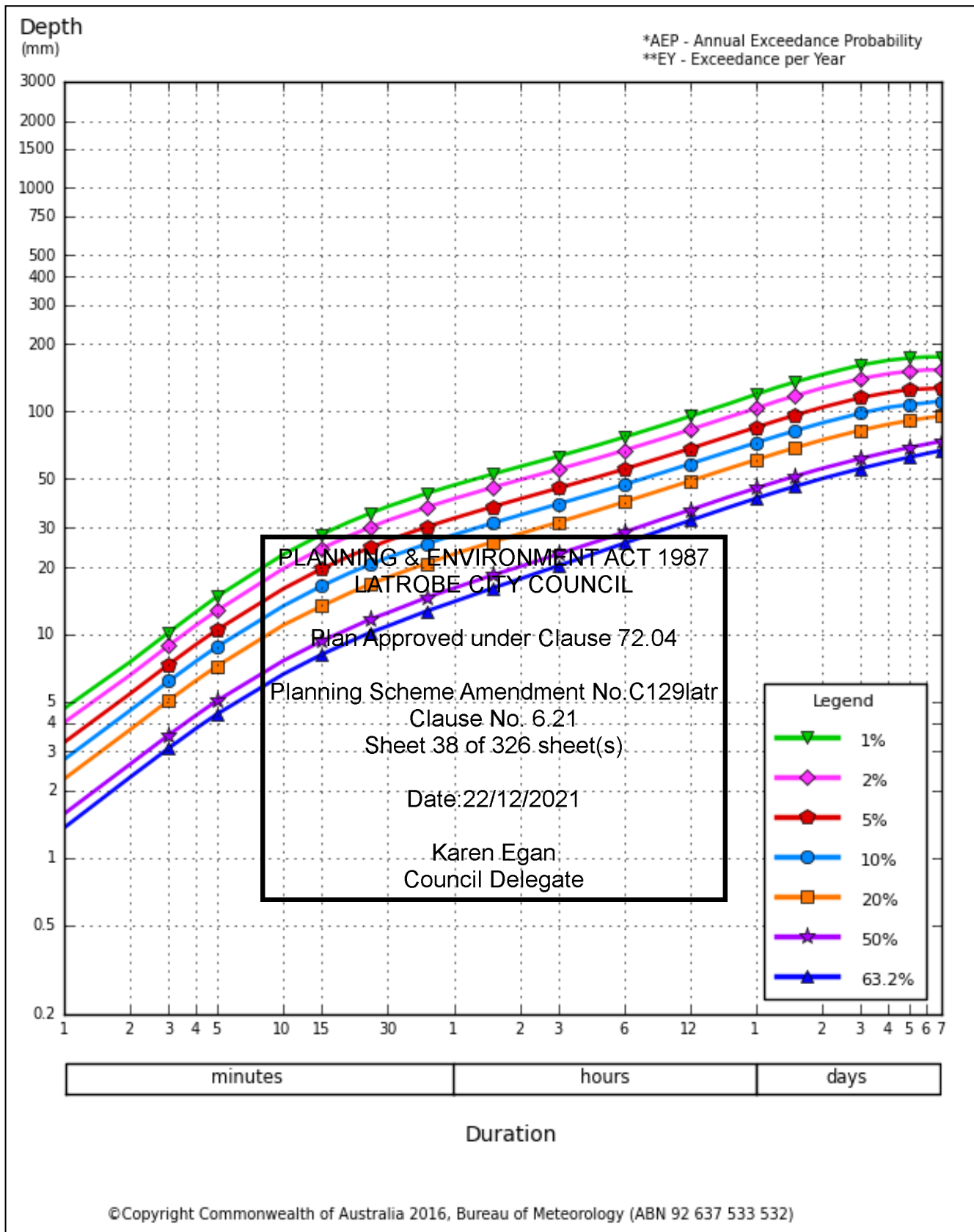


Figure 9 Rainfall depth, Durations, EY and AEP for Latrobe Valley Airport
* Source - BOM online (<http://www.bom.gov.au/water/designRainfalls/revised-ifd/>)

Table 5 Climate Statistics for Morwell

Mean Rainfall (mm) (1984 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
48.7	43.5	47.4	56.6	55.3	63.1	63.6	66.2	73.7	69.3	74.4	66.0	733.3

Mean Number Days of Rain (1984 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
9.4	8.7	10.8	13.0	15.6	18.1	19.1	19.0	17.0	14.7	13.2	12.2	170.8

Mean Minimum Temperature (°C) (1984 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
12.9	12.9	11.3	8.8	6.4	4.3	3.8	4.3	5.9	7.5	9.6	11.3	-

Mean Maximum Temperature (°C) (1984 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
26.7	26.6	24.5	20.6	16.9	14.2	13.7	14.8	17.0	19.6	22.2	24.5	20.1

Mean Daily Wind Run (km) (1997 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
355	332	318	275	283	243	295	329	344	328	347	373	318

Maximum Wind Gust (km/h) (1997 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
80	113	94	91	89	85	94	87	100	91	122	87	122

Mean Number of Clear Days (1984 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
3.7	3.6	3.8	2.9	2.0	1.4	1.7	2.3	2.2	2.4	2.3	2.7	31.0

Mean Number of Cloudy Days (1984 - 2021)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly
11.6	10.4	12.5	13.3	15.9	15.4	15.2	15.9	15.0	13.3	14.7	14.5	167.7

* Source - BOM online (<http://www.bom.gov.au/jsp/ncc/cdio/cvg/av>)

2.3.2 Regional Geology and Soils

Based on the online 1:500,000 seamless geological layer sourced from GeoScience Victoria (GSV) tool, the regional geology in the area consists of Tertiary (Pleistocene) alluvial terrace deposits (Qa2), consisting of mostly sands gravels and silts.

Drilling works undertaken by CivilTest in early 2021 revealed that the natural soil profile predominantly consists of an inorganic upper SILT dominated layer (0.0 - 1.0 mbgs) of low plasticity, underlain (1.0 - 7.0 mbgs) by an inorganic silty CLAY also of low plasticity; see Annexure P - 'Soil Testing Report - Report No. 2210049-1' (CivilTest, March 18, 2021).

Drilling works undertaken by Tetra Tech Coffey later in 2021 (see 'Morwell Used Lead Acid Battery Recycling Facility' Baseline Environmental Site Assessment (25 May, 2021) supported CivilTest's findings.

Based on a review of Landcom (2006) the soils on the site can be characterised as falling into Hydrologic Group D possessing a high runoff potential where *"Water moves into and through these soils very slowly when thoroughly wetted. Usually, they consist of soils: that are fine-textured (clay), poorly structured, surface-sealed or have high shrink/swell properties, and/or with a permanent high watertable, and/or with a layer near the surface that is nearly impervious"*.

Landcom also indicates that infiltration rates for Hydrologic Group D soils for 'saturated steady state' is 3mm per hour and for 'dry soils' it is ~75mm per hour.

The Baseline Environmental Site Assessment (2021) summarised contamination in soil at the property as follows:

- Total recoverable hydrocarbons (TRH) and polycyclic aromatic hydrocarbons (PAH), metals and nitrogen species were reported in soil samples from the site at concentrations higher than naturally occurring levels. Concentrations of contaminants of concern in soil were reported below the criteria considered to be protective of human health for the site. The best results indicate soils at the site pose an unacceptable risk to site workers.

- Concentrations of contamination were below the Maintenance of Ecosystems criteria for all but three of the 40 samples tested. These three samples (SB18, SB17 and SB20 at depths of 0.2 mbgs for the TRH C16-C34 fraction, and benzo(a)pyrene (Figures 2, 5A and 5B). On a statistical basis, soils at the site are protective of Maintenance of Ecosystems criteria for all but three of the 40 samples tested.

- Thirty four of the 40 soil samples tested met the Maintenance of Ecosystems criteria. These criteria are applied for soils when offsite disposal of soil is being considered. Soils meeting the Fill category has no restriction on reuse or disposal.

- Six soil samples showed concentrations of TRH C10-C36, Total PAHs and zinc consistent with Waste Soil Category C. One of these six soil samples showed had a concentration of benzo(a)pyrene of 5.5 mg/kg just exceeding the upper limit of Category C of 5 mg/kg, but was subsequently tested and showed low leachability confirming it would meet Category C criteria.

2.3.3 Surface Water

The nearest natural water courses to the property are Bennett's Creek, approximately ~1,300 west (and 1,200m south), Waterhole Creek ~1,200 to the north (and ~1,000m east) and Firmins Lane Wetlands ~1,000m to the north.

Surface water across the property generally drains south-east to north-west (~2.0m of relief over 500m) with surface water moving into open drainage systems along the northern and western boundaries (the latter is situated within a gas-line easement that runs north/south). The western and northern open drains converge in the northwest corner of the Site and discharge into a grated pit ('legal point of discharge'). Water then travels northwards approximately 330m in an open council drain (see Figure 29) between land occupied by Morwell Transfer Station (Lot 1 on PS533418, 73 Porters Road) and Omnia Specialties Australia (Lot 4 on LP91437, 260 Tramway Road) towards Porters Road. From there

stormwater runs under Porters Road via a drain and enters an irrigation channel that extends 500m northwards discharging into Firmins Lane Wetlands (see Figure 10). Anecdotal evidence suggests that Firmins Lane Wetlands was originally constructed in 2006 to accept stormwater runoff from surrounding industrial precinct including properties in the former Lurgi Gasworks footprint.

In the absence of extreme flooding, the property does not (and will not upon completion of the works) accept any run-on water from surrounding properties due to Fourth Road forming a barrier along the southern boundary of the property, an existing small bund along the eastern boundary, a small open drain along the northern boundary (draining to the west) and an open drain in the gas-easement running along the western boundary. Land parcels to the north and east are at lower elevations than the property.

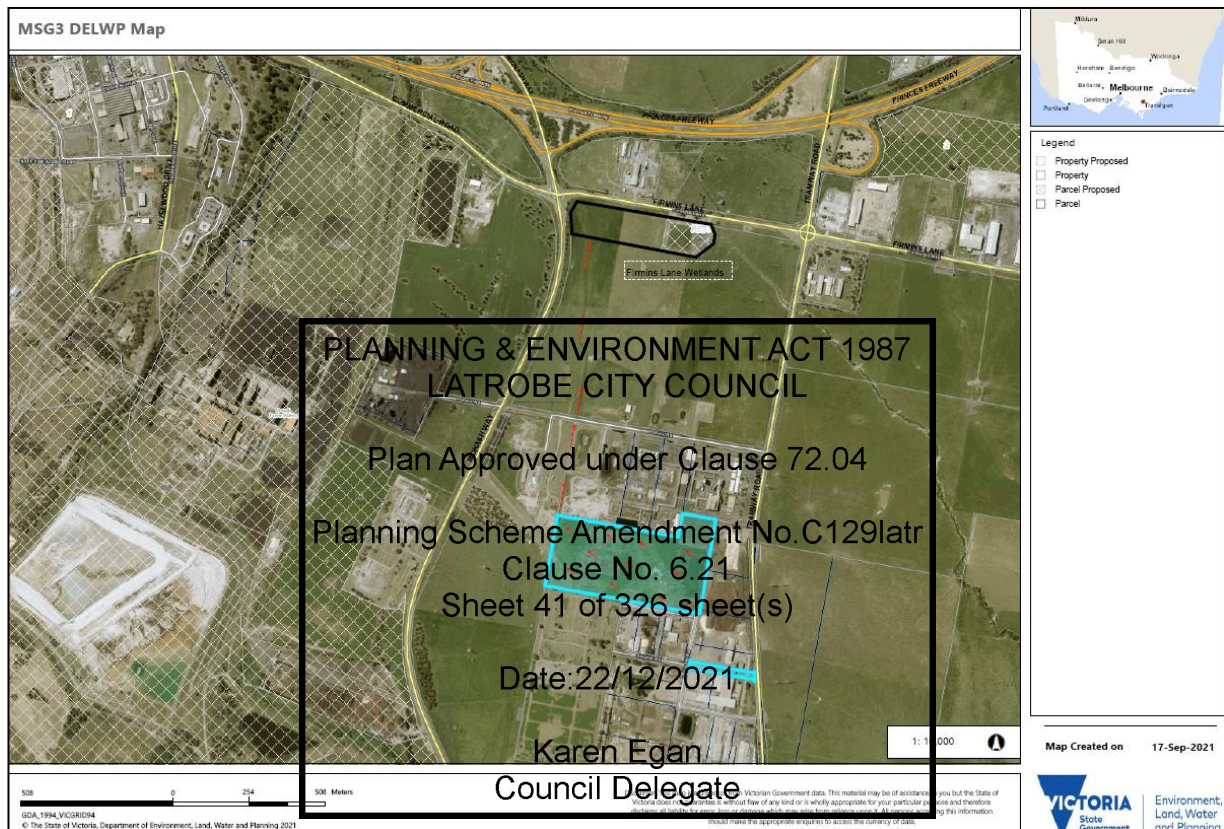


Figure 10 Chunxing ULAB Facility - Property Stormwater Drainage
(source: <https://mapshare.vic.gov.au/MapShareVic>)

2.3.4 Groundwater

Per the Baseline Environmental Site Assessment (2021) the depth to groundwater across the Site (interchangeable with 'Property') ranges between 2.1 to 2.7 metres below ground surface (73.1 - 71.7 mAHD; see Figure 22); shallower in south-east and deeper in the north-west (the inferred flow direction).

The 'Environmental Audit Report: Former Lurgi Gasworks, Morwell, Victoria' (Coffey Environments Pty Ltd, 29 September 2008) reports that hydraulic conductivity for the site was calculated at 0.043m/day with a calculated hydraulic gradient across the site of 0.005 and groundwater velocity of 0.26m/year, indicating that the groundwater movement across the site would be relatively slow (based on recovery test completed in April 2006 on groundwater wells located in proximity to the property).

A Groundwater Quality Restricted Use Zone (QGRUZ) has also been declared for the site as well as for areas extending beyond the boundaries of the site (reference number 513601-1) with groundwater within this zone considered not suitable for Drinking Water, Livestock Water or Water used for recreation purposes.

A total of 20 registered groundwater bores are located within 500 m from the site with all groundwater bores being registered for Groundwater Investigation use with the exception of three (registered use is unknown).

The Baseline Environmental Site Assessment (2021) summarised groundwater contamination conditions at the property as follows:

- *No petroleum (or gasworks related) hydrocarbon species (i.e. BTEX, TRH or PAH compounds) were reported in groundwater at levels above laboratory reporting limits.*
- *Low concentrations of acetone were reported for all groundwater wells at just above detection limits except for well MW1 where no detectable acetone was reported. There are no Australian acetone water quality criteria for ecosystem protection or drinking water to assess the acetone occurrence against. The concentrations reported are more than 100 times less than USEPA risk screening levels for drinking water.*
- *Trichloroethene (TCE) was reported at a concentration above the adopted health protection level at MW3 and below the human health protection level at MW1. The average TCE concentration in groundwater across the site was reported below the adopted human health criteria, and two wells located downgradient of MW3 (MW4 and MW6) reported concentrations below the laboratory limit of reporting. As the site is located within a groundwater quality restricted use zone (GQRUZ), this result is considered to pose a low risk to potential extractive uses and to ecological or human health as a result of inadvertent exposure during excavations as detailed in the CEMP.*
- *Detectable concentrations of cobalt, copper, manganese, nickel and zinc were reported in all samples. Selenium was detected in well MW1 only and chromium detected in well MW3 only.*
- *Nitrogen species were detected in all groundwater samples, with nitrate concentrations at similar or lower concentrations than those reported in 2005 and 2006.*
- *Concentrations of copper, nickel, zinc and nitrate were at concentrations higher than the criteria adopted to be protective of the Water Dependent Ecosystems and Species beneficial use and concentrations of manganese, chloride and nitrate potentially preclude the potable water supply, agriculture and irrigation and water-based recreation beneficial uses. Concentrations of these chemical species were similar upgradient and downgradient of the site meaning the site is not likely to be a source of these chemical species. They were present at similar concentrations to those reported on 2005 and 2006.*
- *EPA has required and Chunxing has agreed to the collection of groundwater samples at the site for phenol testing. It is proposed that this occur at the same time as off-site soil sampling during the early works phase of development for the sake of efficiency.*
- *It is considered that the baseline ESA demonstrated that groundwater contamination was equivalent to or of better than the contamination status of groundwater conditions at the site as of 2008.*
- *In 2007, EPA declared a Groundwater Quality Restricted Use Zone (GQRUZ) based on a submission from the auditor. A GQRUZ provides public information about which uses groundwater is not suitable for. The GQRUZ covers the entire ULAB site and extends over the whole of the former gasworks site and includes groundwater beneath land which is up- and down-gradient of the former gasworks site.*
- *It is recommended that the GQRUZ remain on the site to prevent extraction and use of groundwater. The conclusions and recommendations are made within the limitations of the work that has been undertaken.*

- With respect to WA_W1 clause 6 c) it is recommended that:

- the environmental improvement plan (EIP) required by WA Reporting Condition WA_ R3 will supercede the EMP (2008) only for the land area owned and occupied by Chunxing for the ULAB Facility at the time of acceptance of the EIP by EPA; and

- the EMP dated 24 September 2008, remain in force for the remainder of the former Lurgi gasworks site to which it applies.

Further:

It is considered that the Baseline ESA demonstrated that groundwater contamination was consistent with the post-remediation soil conditions at the site as of 2008.

Groundwater is not proposed for extraction for construction use for the project and groundwater is not expected to be intercepted during construction because excavations have been designed to not exceed 2.0 mbgs (at least 0.2m above groundwater depth at the deepest excavation locations).

In the unlikely event that groundwater is intercepted, based on data from the BESA (2021) groundwater, as measured from MW01 - MW06, would meet the parameters outlined in Gippsland Water's Trade Waste Agreement (Annexure B) with the exception of chloride. Gippsland Water's TWA indicates maximum chloride concentrations in discharges to sewer is not to exceed 200 g/m³ whereas the BESA reported a chloride concentration in groundwater of 270 - 2,200 g/m³.

2.3.5 Sensitive Receptors

The land areas surrounding the property consist of rural and industrial land parcels. The nearest residence is located approximately 1.1 km away to the north-east (from the nearest site boundary) and Hazelwood North Primary school is located approximately 1.7 km south-east from the nearest point on the site boundary. The nearest suburban residential area is Morwell south, its' southernmost edge approximately 2.1km to the north of the site.

Land immediately surrounding the property is zoned as IN2Z (Industrial 2, zoned to provide a range of light industrial and warehouse land uses) and land out to a radius of 500m from the site zoned as IN1Z (Industrial 1, zoned to provide for manufacturing industry, the storage and distribution of goods and associated uses); see Figure 30.

The major traffic thoroughfares Princess Freeway (1.3 km to the north), Firmans Lane (1.2 km to the north), Monash Way (340m to the west) and Tramway Road (100m to the east) sit between the site and all sensitive receivers. These thoroughfares provide access for freight, commercial and residential traffic between Morwell, Traralgon, Hazelwood, Churchill, Hazelwood Open Cut Mine, Loy Yang Power Station, the Princess Freeway and Gippsland Heavy Industry Park.

The locations of sensitive receptors are shown in Figure 11 and detailed in Table 6.

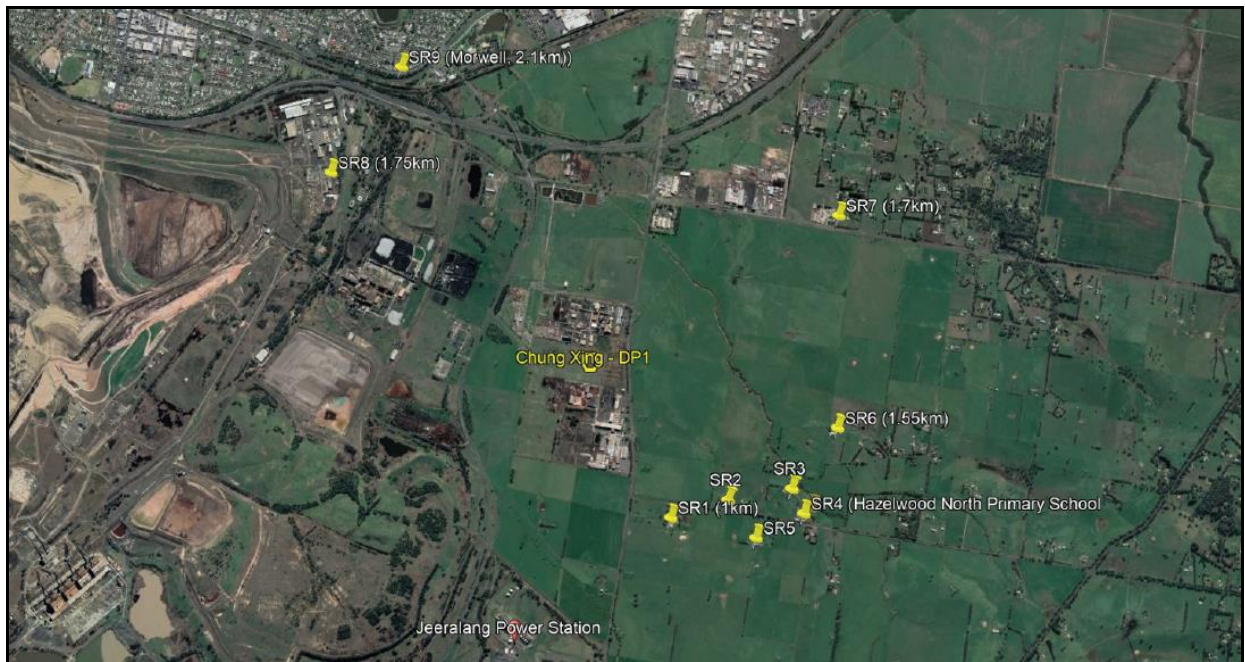


Figure 11 Location of Chunxing ULAB Facility and proximity to sensitive receptors

(Source: Works Approval Application - Chunxing Used Lead Acid Battery (ULAB) Recycling Facility (Ascend Waste & Environment, December 2019).

Table 6 Nearest Sensitive Receptors to Chunxing ULAB Facility

LABEL	DESCRIPTION	DISTANCE FROM ULAB FACILITY (m)	COORDINATES	
			mE	mS
SR1	Residential address	1,100	450774.34	5764208.27
SR2	Residential address	1,200	451162.33	5764328.29
SR3	Residential address	1,400	451594.08	5764407.02
SR4	Hazelwood north Primary School	1,500	451674.43	5764241.46
SR5	Residential address	1,460	451350.53	5764077.37
SR6	Residential address	1,550	451906.15	5764816.55
SR7	Residential address	1,700	451920.37	5766261.66
SR8	Residential address	1,750	448424.49	5766536.52
SR9	Residential address	2,100	448898.00	5767265

* Source - Works Approval Application - Chunxing Used Lead Acid Battery (ULAB) Recycling Facility (Ascend Waste & Environment, December 2019).

2.4 Key ULAB Facility Attributes

The Project will include the following key components:

The ULAB facility comprises a lead acid battery (ULAB) recycling facility with secondary smelter which is capable of processing 50,000 tonnes per annum (tpa) of ULABs to produce 28,000 tpa of refined lead.

The ULAB Facility will consist of the following key components:

a. Recycling processing facility consisting of:

- ULAB storage and sorting
- a continuous ULAB breaking process unit
- acid neutralisation using hydrated lime, $\text{Ca}(\text{OH})_2$
- pre-desulphurisation of lead paste process
- a set of dual chamber furnaces, each 5m in diameter and with a capacity of 75 tonnes for smelting lead paste
- slag tapping and quenching
- metallics melting in one kettle, 3m in diameter and with a capacity of 120 tonnes
- five refining kettles (each 3m in diameter and with a capacity of 120 tonnes) and refinery process
- by-product productions
- plastics processing plant
- lead ingot moulding

b. Air emission control system for fugitive emissions designed to emit to the atmosphere via a 30m stack.

c. Air emission control system for fugitive emissions designed to emit to the atmosphere via 20m stack.

d. Fugitive air emission control system designed to achieve the following:

- total enclosure of recycling process in buildings which are free of significant cracks or gaps, provided with ventilation and under negative pressure of at least 1.73 Pascals (0.013 mm mercury), except for the plastics plant area.
- an inward flow of air maintained through all natural draft openings.
- collection of fugitive emissions throughout the storage, smelting and melting areas of the process buildings and discharge to a baghouse.
- collection of gaseous emissions from battery breaking area.
- final treatment of collected fugitive emissions, through a wet scrubber prior to discharge to the atmosphere via a stack.

e. Fit for purpose wastewater treatment plant capable of treating all process water generated to the standards suitable for reuse on-site and/or discharge to sewer.

f. Stormwater management system which is designed to contain stormwater run-off in one in 100-year rainfall event and firefighting water.

g. Fit for purpose storage facilities designed for chemicals, dangerous goods and combustible materials.

PLANNING & ENVIRONMENT ACT 1987

LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No. C129latr

Clause No. 6.21

Sheet 45 of 326 sheets

Date: 22/12/2021

Karen Egan

Council Delegate

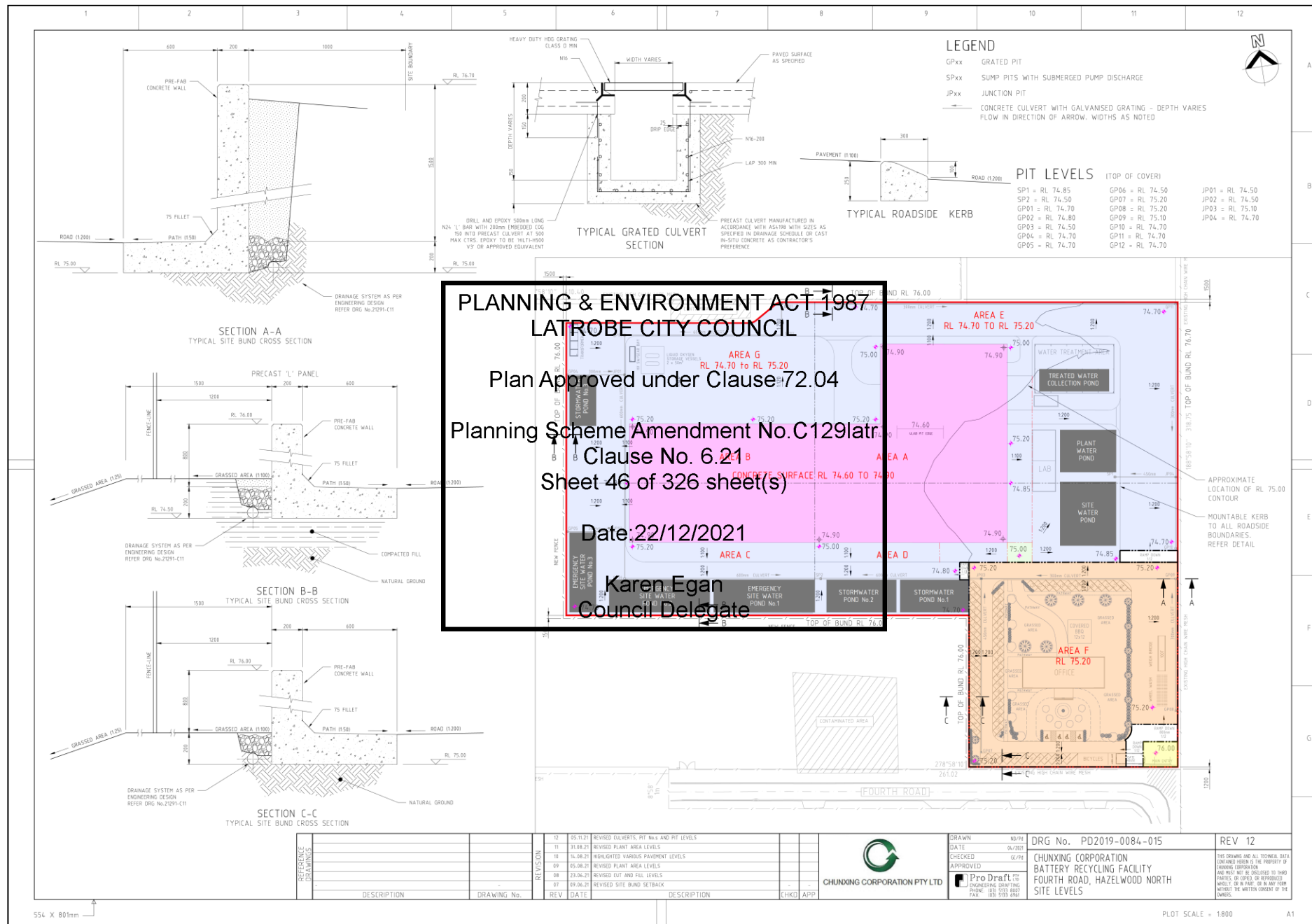


Figure 12 ULAB Facility - As-Designed Levels

3 Construction Activities

Whilst the property owned by Chunxing is 13.45 hectares in size, Chunxing have elected to only use 6.0 hectares of the land area, comprising the eastern half of the property, for the ULAB Facility (see Figure 3); referred to as the 'Construction Footprint'.

Construction activities and the overall construction approach comprise the below steps;

1. spraying property for weeds, connection of services, setting-out the site, placement of temporary buildings and construction facilities (including the an emergency groundwater holding tank, construction water tank and construction stormwater pond holding tank; see Figure 14) and installation of erosion and sediment controls;
2. stripping, screening and reuse/stockpiling of topsoil (grader, excavator, moxy, loader, mechanical screen);
3. excavation, conditioning and reuse/stockpiling of silts/clays for internal and external slab foundations (excavator, soil stabiliser, moxy, loader, and compactor);
4. erection of the plant steel core and building cladding (cranes and frannas);
5. excavation, conditioning and reuse/stockpiling of silts/clays for internal plant/equipment foundations (excavator, soil stabiliser, moxy, loader, and compactor);
6. concrete pouring for internal plant/equipment and plant building slab foundations (concrete trucks);
7. excavation, conditioning and reuse/stockpiling of silts/clays for external plant/equipment foundations and pavement areas (excavator, soil stabiliser, moxy, loader, and compactor);
8. concrete pouring for external plant/equipment foundations, pavements and roads (concrete trucks);
9. connection of internal services;
10. installation of ULAB facilities plant/equipment (crane, franna).

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The period between commencement of construction and commissioning of the ULAB facility is expected to take approximately 18 months, with works anticipated to commence in the last quarter of the 2021 calendar year.

These works will assume a general sequence Work Areas A, B, C, D, E, G to F (see Figure 13).

A total of ~12,000m³ of topsoil² will be stripped (progressively) with a grader across the construction footprint (to a depth of 0.2m) screened, conditioned and reused in-situ within the construction footprint or stockpiled in Area E . Screened vegetative debris will be stockpiled in Area F for later offsite disposal.

² The term 'topsoil' is used in this CEMP only for the purposes of identifying soil between 0.0 - 0.2 mbgs, and likely to contain vegetative material (grasses). All soil material between 0.0 - 1.0 mbgs is regarded as a strata of silt, largely homogenous in character and exhibiting low plasticity (see Annexure P - 'Soil Testing Report - Report No. 2210049-1' (CivilTest, March 18, 2021)). The vegetative material is to be separated (screened) from the topsoil prior to the topsoil's reuse as conditioned fill.

A total of ~38,000m³ of silt/clay will be excavated from depths between 0.2 - 2.0 mbgs, conditioned and then reused in-situ within the construction footprint.

At no time will stockpiles in Area E exceed 4,000m³ in volume.

~1,200m³ of silt/clay and screened topsoil material will be conditioned (addition of between 1 - 4% cement or lime) with a soil stabiliser (see Annexure T for example) each day. Placed fill will be compacted with padfoot and smooth drum rollers.

An additional ~3,500m³ of imported fill may be required for fill activities which will be imported from a quarry. It will be confirmed as 'Fill Material' (per Soil hazard categorisation and management - EPA publication IWRG621 in IWRG, s6) prior to delivery to site.

The requirement for importing or exporting fill is contingent upon the real-world response of the silt/clay (including screened and topsoil) to conditioning and compaction.

Steps 2 and 3 will assume a general sequence of commencing in Work Area A then progressing to B, C, D, E, G and finally to F. The stripping, screening, conditioning and reuse of topsoil and the excavation, conditioning and reuse of silt/clay will be completed in a Work Area before stripping, excavation, conditioning and reuse activities commencing the next Work Area (e.g. soil stripping, excavation, conditioning and reuse activities commencing in Work Area A before activities commence in Work Area B).

At no point in time will stripped the surface within the construction footprint exceed 13,000m².

Steps 2 and 3 are expected to take 2-months (see Table 9 for detail regarding the excavation and reuse of and silt/clay (including screened topsoil)).

Figure 3 identifies the property boundary and the construction footprint, Figure 13 shows the Work Areas within the construction footprint and Figure 14 shows the proposed locations of key facilities during construction.

It is expected that at during peak construction activity at the front-end of the Project there will be ~100 construction personnel onsite each day with ~60 personnel at the non-peak back-end of the Project.

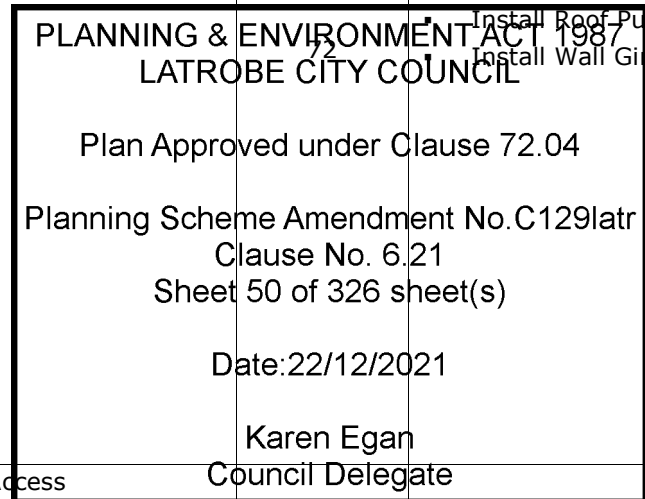
4 Schedule

A summary schedule can be found below in Table 7 and a detailed schedule is attached to the CEMP as Annexure F. The section below summarises key activities associated with activity clusters.

Table 7 Schedule Summary

Activity Cluster	Schedule Header	Schedule Item	Duration (Days)	Key Environmental Activities	Plant Required
1	1.0 SITE PRELIMINARY WORKS 2.0 CONTAMINATED AREAS MANAGEMENT 3.0 SITE PREPARATION 4.0 STORMWATER RUNOFF COLLECTION	1.1 Weed Eradication 1.2 Survey 1.3 Treated Water Supply 1.4 Sewer Connection 2.1 North Contaminated Area 2.2 South Contaminated Area 3.1 Site Preparation - AREA F - Laydown Area 3.2 Site Preparation - AREA F - Temporary Site Offices 3.3 Stockpile Footprints - AREA E 3.4 Stormwater Bund - south 3.5 Stormwater Bund - north 4.1 Construction Stormwater Pond - AREA G 4.2 Erosion and Sediment Controls	50	- Spraying for weeds on property 1-month in advance of any site activities - Survey and pegging of construction footprint and work Areas A - G - Installation of protective fencing around the northern contaminated site and protective flagging around the southern (EOT) contaminated site. Flagging will be fixed to the top of casing of all groundwater wells and with 1m standing PVC piping also affixed to the groundwater wells to be retained (see Table 10 for flagging colours) - Construction of construction stormwater pond at north-western corner of the construction footprint (75.0m long x 15.0m wide x 2.0m deep) in Area G - Installation of dirty water (northern and western boundaries), clean water (southern boundary), emergency stormwater and stockpile area earthen bunds. - Installation of erosion and sediment controls. - Stripping of topsoil and placement of 60mm rock in Area F - Installation of shaker grids and wheel wash at property entrance/exit point - Establishment of temporary crib huts, offices, ablutions (portable toilets with self-contained septic tanks and water supply), and 20,000 construction water supply tank (inc. stand-pipe), emergency groundwater holding tank and construction stormwater pond holding tank in Area F - Connecting construction stormwater pond (CSP) to construction stormwater pond holding tank. - Connecting construction stormwater pond holding tank to temporary sewer (TWA) connection (see Figure 27 for detail) See Annexure A - ESCP for more detailed information regarding the placement and timing of erosion and sediment control installation.	20t Franna x2 30-40t Excavator x3 Moxy Dump Trucks (28t capacity) Grader X1 Wheel Loader (medium size) Dewatering Pump/s (sub.)
2	5.0 SITE SOIL MANAGEMENT	5.1 Soil Compaction - AREA A 5.2 Soil Compaction - AREA B 5.3 Soil Compaction - AREA C 5.4 Soil Compaction - AREA D 5.6 Soil Compaction - AREA E 5.5 Soil Compaction - AREA G 5.7 Soil Compaction - AREA F 5.7.1 Relocate Site Office from AREA F to AREA E 5.7.2 Soil Management - AREA F 5.7.3 Relocate Site Office from AREA E to Area F	46	Within each Work Area (sequential from Work Area A – Work Area G): - Stripping of topsoil (including vegetation) down to (0.2 mbgs) within ULAB building facilities footprint with stripped topsoil to be stockpiled in Area E for screening, conditioning and reuse within the within ULAB building facilities footprint - Excavation of subsoils in 24m strips (commencing eastern end of Site) within ULAB main building footprint for concrete slab foundations - Relocation of subsoils to west of each 24m stripped area for in-situ conditioning (with soil stabiliser) for concrete slab foundations - Placement (in 0.25m lifts) and compaction of conditioned subsoils within ULAB main building footprint for concrete slab foundations - Install erosion and sediment controls in north-west corner of property See Annexure A - ESCP for more detailed information regarding the placement and timing of erosion and sediment control installation.	20t Franna x1 30-40t Excavator Grader x2 Moxy Dump Trucks (28t capacity) x1 Wheel Loader (medium size) x1 Roller (padfoot/smooth drum) x1 Soil Stabiliser Dewatering Pump/s (sub.) Flatbed/Semi Truck/s
3	6.0 EXCESS CONCRETE MANAGMEMENT 7.0 PLANT BUILDING CONSTRUCTION	6.1 Concrete Truck Washout Pond (Sketch-008) 6.2 Excess Concrete Dump No.1 6.2.1 Excess Concrete Dump No.1 - Footing 6.2.2 Excess Concrete Dump No.1 - Box Frame and Partitions 7.1 AREA A - Column Foundations ROW 1 Columns (9 OFF) ROW 4 Columns (9 OFF) ROW 7 Columns (12 OFF) ROW 11 Columns (12 OFF)	44	- Construction of concrete wash-out pit in Area E and excess concrete dump in Area F and Area A - Dig column foundations - Installing blinding concrete to foundation bottom - Installing column footing reinforcement cages - Pour column concrete footings	20t Franna x1 30-40t Excavator x1 Grader x2 Moxy Dump Trucks (28t capacity) x1 Wheel Loader (medium size) x1 Roller (padfoot/smooth drum) Dewatering Pump/s (sub.)

Activity Cluster	Schedule Header	Schedule Item	Duration (Days)	Key Environmental Activities	Plant Required
		ROW 15 Columns (12 OFF) Mullions Row A (11 OFF) Mullions Row I (4 OFF) 7.2 AREA B - Column Foundations ROW 7 Columns (13 OFF) ROW 11 Columns (13 OFF) ROW 15 Columns (13 OFF) Mullions Row Y (6 OFF)			Concrete/Agitator Truck/s Flatbed/Semi Truck/s
4	8.0 BUILDING STRUCTURAL STEEL ERECTION	ROW Y Columns (3 OFF) ROW X Columns (3 OFF) ROW W Columns (3 OFF) ROW V Columns (3 OFF) ROW U Columns (3 OFF) ROW T Columns (3 OFF) ROW S Columns (3 OFF) ROW R Columns (3 OFF) ROW Q Columns (3 OFF) ROW P Columns (3 OFF) ROW O Columns (3 OFF) ROW N Columns (3 OFF) ROW M Columns (3 OFF) ROW L Columns (3 OFF) ROW K Columns (3 OFF) ROW J Columns (3 OFF) ROW I Columns (5 OFF) ROW H Columns (5 OFF) ROW G Columns (5 OFF) ROW F Columns (5 OFF) ROW E Columns (5 OFF) ROW D Columns (5 OFF) ROW C Columns (5 OFF) ROW B Columns (5 OFF) ROW A Columns (5 OFF) Mullions ROW Y (6 OFF) Mullions ROW I (4 OFF) Mullions Row A (10 OFF)		- Erect columns, Roof Beams - Install Roof Purlins and Bracing - Install Wall Girts and Bracing	x2 20t Franna x2 50t Crane x2 EWP / Cherry Picker Flatbed/Semi Truck/s
5	9.0 PLANT BUILDINGS - ROOF CLADDING AND SKYLIGHTS	9.1 Plant Buildings - Install Safety Access 9.2 Plant Buildings - Install Safety Mesh 9.2.1 Plant Building - Install Safety Mesh 9.2.2 Storage Building - Install Safety Mesh 9.3 Main Plant Building - Install Vented Skylight 9.3.1 Install Vented Skylight Frames 9.3.2 Install Vented Skylight Mechanism 9.4 Plant Buildings - Install Roof Insulation 9.4.1 Main Building - Install Roof Insulation 9.4.2 Storage Building - Install Roof Insulation 9.5 Plant Buildings - Install Roof Cladding 9.5.1 Main Building - Install Roof Cladding 9.5.2 Storage Building - Install Roof Cladding	40	- Install Scaffolding Access to Roof - Install Roof Safety Mesh - Install Vented Skylight Frames and Mechanism - Install Roof Insulation - Install Roof Cladding	x2 20t Franna x2 50t Crane x2 EWP / Cherry Picker Flatbed/Semi Truck/s
6	10.0 INTERNAL FLOORS & FOUNDATIONS	10.1 INSTALL FLOORS & FOUNDATIONS - AREA B 10.1.1 Culverts and Sumps - AREA B 10.1.2 Refinery Kettles Pit - AREA B 10.1.3 Smelters Foundations - AREA B 10.1.4 Refinery Kettles Foundations - AREA B 10.1.5 Internal Floor - AREA B 10.2 INSTALL FLOORS & FOUNDATIONS - AREA A 10.2.1 Culverts and Sumps - AREA A 10.2.2 ULAB Pit - AREA A 10.2.3 Breaker Foundation - AREA A 10.2.4 Press Filters Foundations 10.2.5 Internal Floor - AREA A	35	- Placement (in 0.25m lifts) and compaction of conditioned subsoils within ULAB main building footprint for concrete slab foundations - Excavation of plant/equipment foundations within building footprint - Install Plant & Equipment Foundations Reinforcement - Install Blinding Concrete to level bottom of excavations - Pour Foundations for Plant & Equipment - Pour concrete for internal slab floors - Remove formwork	X1 20t Franna x1 30-40t Excavator x1 Wheel Loader (medium size) x1 Roller (padfoot/smooth drum) x2 Tip truck/s Concrete/Agitator Truck/s Flatbed/Semi Truck/s Dewatering Pump/s (sub.)
7	11.0 BUILDINGS PERIMETER	11.1 500mm NIB WALL - AREA B 11.2 500mm NIB WALL - AREA A	12	Scabble external edge of Internal Floors	20t Franna



Activity Cluster	Schedule Header	Schedule Item	Duration (Days)	Key Environmental Activities	Plant Required
	500mm NIB WALL			- Drill holes for reinforcement Bars - Erect Precast Concrete Bund Wall 6M Sections - Rill for reinforcement Bars	
8	12.0 CONCRETE BUND WALLS	12.1 CONCRETE BUND WALL - EAST BOUNDARY 12.1.1 Bund Wall Transition No.1 - AREA E 12.1.2 east Concrete Bund Wall - AREA E 12.1.3 east Concrete Bund Wall - AREA F 12.2 CONCRETE BUND WALL - NORTH BOUNDARY - AREA A, E, G 12.2.1 north Concrete Bund Wall - AREA E 12.2.2 north Concrete Bund Wall - AREA A 12.2.3 north Concrete Bund Wall - AREA G 12.3 CONCRETE BUND WALL - SOUTH BOUNDARY - AREA C, D 12.3.1 Stormwater Pond No.1 - AREA D 12.3.2 Bund Wall Transition No.2 12.3.3 Stormwater Pond No.2 - AREA D 12.3.4 south Concrete Bund Wall - AREA D 12.3.5 Emergency Site Water Pond No.1 - AREA C 12.3.6 Emergency Site Water Pond No.2 - AREA C 12.3.7 south Concrete Bund Wall - AREA C 12.4 CONCRETE BUND WALL - WEST BOUNDARY - AREA C, F, G 12.4.1 west Concrete Bund Wall - AREA F 12.4.2 Emergency Site Water Pond No.1 - AREA C 12.4.3 west Concrete Bund Wall - AREA C 12.4.4 Fill in Stormwater Collection Pond - AREA G 12.4.5 Stormwater Pond No.3 - AREA G 12.4.6 Transformers Foundations - AREA G 12.4.7 west Concrete Bund Wall - AREA G	189	- Excavation of Site Ponds - Form up Site Ponds - Install Site Ponds Reinforcement - Pour Site Ponds - Remove Formwork - Form up and concrete pour foundations for Concrete Bund Walls. - Erect Precast Concrete Bund Wall 6M Sections	x1 20t Franna x1 30-40t Excavator x1 Roller (padfoot/smooth drum) Dewatering Pump/s (sub.) Concrete/Agitator Truck/s Flatbed/Semi Truck/s
9	13.0 INSTALL PAVEMENT AREAS	13.0 INSTALL PAVEMENT AREAS 13.1 INSTALL PAVEMENT - AREA D 13.1.1 Develop AREA D - Pavement Slope 13.1.2 Develop AREA D - south Footpath 13.1.3 Develop AREA D - Culverts and Sumps 13.1.4 Sump Pit SEP6 - AREA D 13.1.5 Develop AREA D - south Road 13.2 INSTALL PAVEMENT - AREA C 13.2.1 Develop AREA C - Pavement Slope 13.2.2 Develop AREA C - Culverts and Sumps 13.2.3 Develop AREA C - south Pavement 13.2.4 Develop AREA C - west Pavement 13.2.5 Develop AREA C - south Road 13.2.6 Develop AREA C - west Road 13.3 INSTALL PAVEMENT - AREA G 13.3.1 Develop AREA G - west Footpath 13.3.2 Develop AREA G - Pavement Slope 13.3.3 Develop AREA G - north Footpath 13.3.4 Slag Cooling Water Pond - AREA G 13.3.5 Liquid Oxygen Plant Foundations - AREA G 13.3.6 Heat Recovery Boiler Foundations - AREA G 13.3.7 Chimney Foundations - AREA G 13.3.8 Fans Foundations - AREA G 13.3.9 Develop AREA G - north Pavement 13.1.10 Develop AREA G - west Culverts and Sumps 13.1.11 Develop AREA G - west Pavement 13.1.12 Develop AREA G - west Road 13.3.13 Develop AREA G - north Culverts and Sumps	286	- Form up Pedestrian Access around Buildings - Pour Pedestrian Access with Expansion Joints - Remove Formwork around Buildings - Excavate for Grated Culverts and Pump Pit - Install Precast Culverts and Grated Pits - Excavation of Plant Foundations & Site Ponds - Form up Plant Foundations & Site Ponds - Install Site Ponds Reinforcement - Install blinding Concrete to level bottom of Foundation excavations - Pour Plant Foundations & Site Ponds - Remove Formwork - Excavate for Pump Pit - Form up for Pump Pit Structure - Pour Pump Pit Concrete - Form up for Traffic Ramps - Pour Traffic Ramps Concrete - Remove Formwork - Compact Pavement, cut to level - Install 200mm thick Concrete top cover, 2-layer reinforcement	x1 20t Franna x1 30-40t Excavator x1 Roller (padfoot/smooth drum) Dewatering Pump/s (sub.) Concrete/Agitator Truck/s Flatbed/Semi Truck/s

Activity Cluster	Schedule Header	Schedule Item	Duration (Days)	Key Environmental Activities	Plant Required
		13.1.14 Develop AREA G – north Road 13.4 INSTALL PAVEMENT – AREA A 13.4.1 Develop AREA A – Pavement Slope 13.4.2 Develop AREA A – west Footpath 13.4.3 Develop AREA A – west Road 13.4.4 Develop AREA A – north Footpath 13.4.5 Develop AREA A – Culverts and Sumps 13.4.6 Develop AREA A – north Road 13.5 INSTALL PAVEMENT - AREA E 13.5.1 Develop AREA E – Pavement Slope 13.5.2 Develop AREA E – east Footpath 13.5.3 Treated Water Pond - AREA E 13.5.4 Plant Water Pond - AREA E 13.5.5 Water Treatment Plant Foundations – AREA E 13.5.6 Site Water Pond - AREA E 13.5.7 Develop AREA E – north Culverts and Sumps 13.5.8 Develop AREA E – north Road 13.5.9 Sump Pit SEP11 – AREA E 13.5.10 Develop AREA E – east Culverts and Sumps 13.5.11 Develop AREA E – east Pavement 13.5.12 Develop AREA E – east Road 13.6 INSTALL PAVEMENT - AREA F 13.6.1 Develop AREA F – Retaining Wall north Boundary 13.6.2 Develop AREA F – Retaining Wall west Boundary 13.6.3 Develop AREA F – west Ramp to AREA D 13.6.4 Develop AREA F – north Ramp to AREA E 13.6.5 Develop AREA F – Pavement Slope 13.6.6 Develop AREA F – Entry Pavement and 2xRamps 13.6.7 Weighbridge Sump – AREA F 13.6.8 Wheel Wash Sump – AREA F 13.6.9 south Concrete Bund Wall - AREA F 13.6.10 Develop AREA F – Carparks 13.6.11 Develop AREA F – Culverts and Sumps 13.6.12 Develop AREA F – Roads 13.6.13 Develop AREA F – Complete west Ramp to AREA D			

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Council Delegate

4.1 Activity Cluster 1 (Site Preparation)

4.1.1 Preliminary Works

Activities (1-month prior to commencement of construction):

1. Spray entire property for weeds.
2. Survey property (Construction Footprint, Work Areas A - G, southern (EOT) and northern Contamination Areas and Topsoil and Silt/Clay Stockpile area)

4.1.2 Site Set-Out

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 3 Chunxing ULAB Property Boundary, Construction Footprint	Property, Construction and Western Buffer Zone Footprints
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 20 Location of Groundwater Wells (Facilities Overlay)	Locations of monitoring wells installed during the Baseline Environmental Assessment period and those installed during previous site investigations
Table 10 Survey Tape Flagging Colours	Survey flagging tape colours, applicability and installation procedure
Table 19 Groundwater/Monitoring Bore Nomenclature and Details	GPS locations and other details for historical and recently installed groundwater/monitoring wells
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

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Activities:

1. Set-out/peg Construction Footprint with white survey flagging tape.
2. Set-out and install protective fencing (metal stakes installed every 5m with tracer wire on the top) around the northern contaminated site. Coordinates: E450145.4 / N5765447 (NE), E450143.4 / N5765438 (SE), E450103.2 / N5765442 (SW) and E450104.9 / N5765453 (NW))³. Affix red survey flagging tape to each metal stake.
3. Set-out/peg the southern (EOT) contaminated site with red survey flagging (offset pegs 1.0m outside coordinates: E450131 / N5765205 (SW), E450136.7 / N5765256 (NW), E450188.5 / N5765245 (NE) and E450181.9 / N5765197 (SE))⁴.
4. Attach red survey flagging tape to the top of the bore casing of all groundwater/monitoring wells (MW01-MW06) with an additional 1m standing PVC piping to be affixed to the casing of the groundwater wells that will be retained (MW1, MW2 and MW6). Refer to Figure 20 'Location of Groundwater Wells (Facilities Overlay)' and Table 18 'Groundwater/Monitoring Bore Nomenclature and Details' in the CEMP for well locations.

³ Coordinates taken from 'Environmental Audit Report: Former Lurgi Gasworks, Morwell, Victoria' (Coffey Environments Pty Ltd, 29 September 2008) - page 196

⁴ Coordinates taken from 'Environmental Audit Report: Former Lurgi Gasworks, Morwell, Victoria' (Coffey Environments Pty Ltd, 29 September 2008) - page 195

5. Set-out/peg Work Areas A - G will with pink survey flagging tape.
6. Set-out/peg Topsoil Stockpile (60m x 75m) and Silt/Clay (40 x 45m) stockpile footprints in Area E.
7. Set-out/peg the western buffer No-Go zone with green survey flagging tape.
8. Set-out and ground mark (spray paint) construction stormwater pond and temporary facilities footprints (water tanks/stand-pipe, concrete wash-out pit, concrete dump, shipping container for hazardous goods and inert goods and materials laydown).

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4.1.3 Soil & Water Controls (ESCs) & Temporary Facilities

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
Table 8 Excavation Depths and Cut & Fill Quantities	For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), depths of excavations and quantities to be exported/imported for preparation of slab/pavement foundations and plant/machinery foundations. The table also provides initial and final Reduced Levels (elevation in mAHD) for excavations and prepared foundations
Table 9 Work Sequencing (Bulk Material Excavation, Movement & Stockpiling/Reuse)	For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), and quantities and locations to be stockpiled or exported/imported for preparation of slab/pavement foundations and plant/machinery foundations
s7.1 – s7.10 Environmental Management and Controls	Reduction in Environmental Impact for implementation of environmental controls
Annexure A - ESCP	Details type, location and timing for erosion and sediment controls

Activities:

Erosion & Sediment Controls - Construction Footprint (1)

1. Strip topsoil/vegetation (including 155 of 326 sheet(s) to a depth of 0.2m for the silt/clay and topsoil stockpiles and place in stockpile footprints.
2. Strip northern half of Area E (place in Area E topsoil stockpile area) and excavate ~750m³ of silt/clay (204m³ + 350m³ + 95m³ + 35m³ + 38m³ + 19m³) from northern area in Area E to construct and install Clean Water Diversion (CWD) Bunds and Dirty Water Diversion (DWDB) Bunds:
3. Southern Boundary CWDB (2.0m W x 340.0m L x 0.3m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the southern construction footprint boundary and turn-out near the southwest corner of the construction footprint meet.
4. Northern Boundary DWDB (2.0m W x 350.0m L x 0.5m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the northern construction footprint boundary and turn-out 1.0m from the construction stormwater pond.
5. Western Boundary DWDB A (2.0m W x 95.0m L x 0.5m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the western construction footprint boundary from the southeast corner of the construction footprint extending 95.0m to the north towards the Construction Stormwater Pond. The bund/channel is to turn-out 2.0m from the construction stormwater pond.
6. Western Boundary DWDB B (1.0m W x 70.0m L x 0.5m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the western boundary of Area F. The lower end of the bund/channel is to daylight into Work Area D. Straw Bales will be placed in the channel to slow flow velocities (see Annexure A - ESCP Reference Drawing 'SD 6-7').

7. Stockpile Area CWDB (1.0m W x 75.0m L x 0.5m H bund + 0.15m deep x 0.5m wide channel) is to be installed upslope of the topsoil stockpile area. The lower end of the bund/channel will daylight into the construction footprint.
8. Stockpile Area Separation Bund (0.5m W x 75.0m L x 0.5m H) is to be installed primarily as delineation between the topsoil and silt/clay stockpile areas. This bund will be compacted with batters and daylight into Work Area D however will not include a channel.
9. Install sediment fencing 5 metres downslope of the silt/clay stockpile and straw bale controls at the down-gradient and of the sediment fence (see Annexure A - Reference Drawing 'SD 6-8').

Bunds are to be constructed out of silty clay, keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 0.25m lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v) and compacted with the excavator bucket. Bund channels are to be parabolic or trapezoidal (not to be v-shaped).

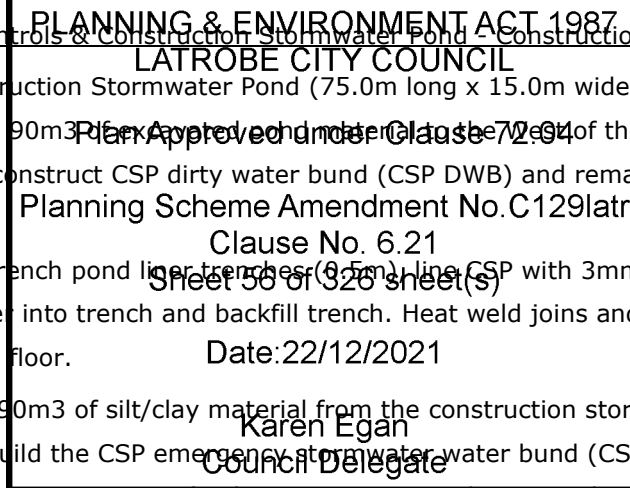
Bund channels are to have a maximum fall of 2% before turning-out and day-lighting to 0% at local contour grade via level spreader (see Annexure A - ESCP Reference Drawing 'Level Spreader').

Following construction the bunds and channels will be sprayed with a natural polymer (e.g. Dustac or Dustmag) to aid material stability.

Erosion & Sediment Controls & Construction Stormwater Pond - Construction Footprint (2)

1. Excavate Construction Stormwater Pond (75.0m long x 15.0m wide x 2.0m deep (72.0 mAH) = 2,250m³. Place 90m³ of excavated material from the construction stormwater pond (CSP) to construct CSP dirty water bund (CSP DWB) and remainder in silt-clay stockpile in Area E.
2. Excavate CSP trench pond liner trenches (6.5m) line CSP with 3mm HDPE Geomembrane Pond Liner, place liner into trench and backfill trench. Heat weld joints and fill CSP with 5,000 litres of water to secure floor.
3. Use excavated 90m³ of silt/clay material from the construction stormwater pond (CSP) excavation to build the CSP emergency stormwater bund (CSP ESWB) downslope of the pond (2.0m W x 90.0 L x 0.5 H). The CSP ESWB is to be merged with the Northern Boundary Dirty Water Bund and the Western Boundary Dirty Water Bund.
4. Construct 0.1m high x 3.0m wide rock-lined spillway in the northwest corner of the bund. Geofabric is to underlay spillway area within bund structure and in the ground below toe of bund batters).
5. Install straw bales upslope of the CSP (per Reference Drawing 'SD 6-7' in Annexure A - ESCP) ensuring that bales are orientated perpendicular to flow and down-gradient bales are positioned to not to interfere with overflow from the closest up-gradient bale flowing directly into the CSP (see Annexure A - ESCP Reference Drawing 'Sediment-Straw Bale Principles').
6. Install sediment socks around the grated pit in the northwest corner of the Western Buffer Zone (see Annexure A - ESCP Reference Drawing 'Sediment Sock').
7. Install straw bales (see Annexure A - ESCP Reference Drawing 'SD 6-7') in the existing open drains along the northern and western boundary of the Western Buffer Zone at 50m intervals.

Bunds are to be constructed out of silty clay, keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v).



No channel is to be constructed for the CSP ESWB.

Following construction the CSP ESWB will be sprayed with a natural polymer (e.g. Dustac or Dustmag) to aid material stability.

Area F Facilities

1. Strip topsoil (depth of 0.2m) in Area F and place in Area E topsoil stockpile area.
2. Compact and place 60mm rock (200mm depth including compaction) across Area F.
3. Install x2 sets (4.0m x 4.0m for each set) of rumble/shaker grids at Site entrance/exit point at Fourth Road (see Annexure M).
4. Deliver and install Temporary Site Offices and Amenities including generator (& self-bunded diesel tank), temporary crib huts, offices, ablutions (portable toilets with self-contained septic tanks and water supply) and 20,000 litre construction water supply tank (inc. stand-pipe), 20,000 litre emergency groundwater holding tank and construction stormwater pond holding tank in Area F.
5. Connect temporary sewer (TWA) connection to CSP holding tank (see Figure 27 for temporary connection/location details). Once the concrete bund wall is completed around the ULAB Facility footprint, permanent sewer and mains water supply connections will be put-in-place (see Figure 28).

Refer Annexure A - ESCP for more detailed information.

4.2 Activity Cluster 2 (Earthworks)

4.2.1 Excavation, Stripping, Screening, Stockpiling, Conditioning and Reuse of Soils

Relevant Drawings, Tables & Environmental Management Sections in the CEMP		Comment
Figure 13 Construction Sequence Work Areas		Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual		Location of temporary construction facilities in Work Areas
Table 8 Excavation Depths and Cut & Fill Quantities		For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), depths of excavations and quantities to be exported/imported for preparation of slab/pavement foundations and plant/machinery foundations. The table also provides initial and final Reduced Levels (elevation in mAHD) for excavations and prepared foundations
Table 9 Work Sequencing (Bulk Material Excavation, Movement & Stockpiling/Reuse)		For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), and quantities and locations to be stockpiled or exported/imported for preparation of slab/pavement foundations and plant/machinery foundations
s7.1 – s7.10 Environmental Aspects and Controls		Details the timing and location for implementation of environmental controls
Annexure A - ESCP		Details type, location and timing for erosion and sediment controls

Activities:

Topsoil stripping, screening, excavation, conditioning (addition of 1% - 4% cement or lime) and

placement of silts/clays for building foundation slab, as well as excavations for plant/equipment foundations, have been sequenced as far as practicable to minimise the size of silt/clay stockpiles, to minimise the time that open excavations and stockpiles are exposed to the environment (e.g. Work Areas stripped earlier in a work sequence will have compacted silt/material material placed within the Work Area before the next Work Area is stripped of topsoil).

These works will assume a general sequence Work Areas A, B, C, D, E, G to F.

The works have also been designed to reduce the potential need to import fill.

For each Work Area, topsoil will be stripped and progressively stockpiled in Area E for screening and later reuse with excavation, conditioning and placement of silts/clays for slab foundations to then take place in each Work Area, followed by excavations for plant/equipment. Mechanical screening will be completed using a 'Flip Screen'.

For example, topsoil will be stripped in Work Area A then stockpiled in Work Area E > silts/clays will then be excavated from Work Area A > silts/clays excavated from Work Area A will then be conditioned in Work Area A and then placed back into Work Area A for concrete slab foundations. Excavation for plant foundations will then take place in Work Area A. Surplus silt/clay stockpiled in Work Area A resulting from concrete slab foundation preparation or plant/equipment foundation excavations, will be stockpiled at the edge of the work area or in Work Area E for reuse in other Work Areas that have a deficit of silt/clay.

Whilst the works will assume a general sequence Work Areas A, B, C, D, E, G to F, the stripping of topsoil, excavation, conditioning or placement of silt/clay for slab foundations, excavation for plant/equipment foundations in one Work Area may be staggered, and not in linear, with regard to the next Work Area, because final sequencing will be contingent upon the real-world response of silts/clays to conditioning and compaction.

Surplus silt/clay shall be stockpiled in the Work Area from which it was excavated for expeditious reuse in adjoining Work Areas however additional silt/clay may have also have to be borrowed (cut) from Area E for some plant foundation preparations.

Surplus silt/clay excavated from external (and some internal) plant/equipment foundation preparations (may occur sequentially to concrete foundation preparations) will typically be used for plant building and pavement foundation preparations however some will be stockpiled (maximum of 4,000m³) in Area E for external for pavement foundation preparations. It is expected that silt/clay will be stockpiled for no more than 1-month prior to reuse.

Table 9 provides work sequencing detail for each Work Area including:

1. sequencing for stripping/stockpiling of topsoil and volume of topsoil parcel stripped;
2. timing, volume and stockpile location of topsoil parcel (and cumulative volume of topsoil stockpile);
3. volume, timing and location for reuse of stockpiled topsoil;

4. timing and volume of silt/clay to be excavated for slab foundations and plant/equipment foundations;
5. timing and volume of silt/clay used for slab foundations and plant/equipment foundations;
6. timing (and volume) for silt/clay exported from a Work Area (including end location);
7. timing (and volume) of silt/clay imported from a Work Area (including source location);
8. volume, timing and location of silt/clay parcel stockpiles (cumulative and Work Area volumes);
9. key changes in Work Area; and
10. general comments for each action.

4.3 Activity Cluster 3 (Plant Building Column Preparation)

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
Figure 24 Concrete Washout Pit Design	Details for Concrete Washout Pit
Figure 25 Excess Concrete Dump Design - Entry Pavement Box Frame	Details for Concrete Dump Design (Entry Pavement Box Frame)
Figure 26 Excess Concrete Dump - Details	Details for Concrete Dump Design (Pit Walls and Floor)
Table 8 Excavation Depths and Cut & Fill Quantities	For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), excavations and quantities to be exported/imported for preparation of slab/pavement foundations and plant/machinery foundations. The table also provides initial and final Reduced Levels (RL = elevation in mAHD) for excavations and prepared foundations
Table 21 Concrete Quantities	Details for quantities of concrete required
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities:

1. Excavate foundations and pour concrete foundations for Concrete Truck Washout Pit in Work area E and Concrete Dump 01 in Area F (the latter using pre-fabricated walls).
2. In Work Area A and B dig column foundations, install blinding concrete to bottom of column foundations, install column footing reinforcement cages and pour column concrete footings.

Concrete trucks are to washout chutes in Concrete Washout Pit in Work Area E with excess concrete from concrete pours to be sent to Concrete Dump 01 in Area F.

Surplus/excavated silt/clay is to be:

- a) pushed to the upgradient edge of the respective Work Area for reuse in another Work Area (if material is expected to be reused within 1 month)

or

- b) stockpiled in the Area E silt/clay stockpile footprint for reuse in external pavement foundation or road lifts (if material is not to be reused within 1 month).

Work Area B column excavation depths extend to within 0.2m of inferred groundwater depth in Work Area B. Sections 7.2, 7.4, 7.5.2 and 7.6 detail specific environmental management controls to be implemented during these excavations.

4.4 Activity Cluster 4 (Plant Building Structural Steel Erection)

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
Figure 24 Concrete Washout Pit Design	Details for Concrete Washout Pit
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities:

In Work Areas A and B, for main plant building:

1. Erect columns and steel roof beams.
2. Install steel roof purlins and bracing.
3. Install steel wall girts and bracing.

Section 7.9 Waste Management details specific environmental management controls to be implemented during this activity cluster.

4.5 Activity Cluster 5 (Plant Building Roof Cladding & Skylights)

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities:

In Work Areas A and B, for main plant building:

1. Install Scaffolding Access to Roof.

2. Install Roof Safety Mesh.
3. Install Vented Skylight Frames and Mechanism.
4. Install Roof Insulation.
5. Install Roof Cladding.

Section 7.9 Waste Management details specific environmental management controls to be implemented during this activity cluster.

4.6 Activity Cluster 6 (Plant Building Internal Floor & Foundations)

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
Table 8 Excavation Depths and Cut & Fill Quantities	For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), depths of excavations and quantities to be exported/imported for preparation of slab/pavement foundations and plant/machinery foundations. The table also provides initial and final Reduced Level (RL = elevation in mAHD) for excavations and prepared foundations
Table 21 Construction Materials	Details of concrete required
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities:

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In Work Areas A and B, for main plant building:

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1. Placement (in 0.25m lifts) and compaction of conditioned subsoils within ULAB main building footprint for concrete slab foundations.
2. Excavation of plant/equipment foundations within main building footprint.
3. Install Plant & Equipment Foundations Reinforcement.
4. Install Blinding Concrete to level bottom of excavations.
5. Pour concrete foundations for main building plant and equipment.
6. Pour concrete for internal slab floors.
7. Remove formwork.

Surplus/excavated silt/clay (~100m³ for each Work Area) is to be:

- a) pushed to the upgradient edge of the respective Work Area for reuse in another Work Area (if material is expected to be reused within 1 month)

or

- b) stockpiled in the Area E silt/clay stockpile footprint for reuse in external pavement foundation or road lifts (if material is not to be reused within 1 month).

Work Area A (ULAB Pit) and Work Area B (Smelters, Refining Kettle Pit and Refining Kettle Pit) plant/equipment foundation excavation depths extend to within 0.2m of inferred groundwater depth in Work Area A and B. Sections 7.2, 7.4, 7.5.2 and 7.6 detail specific environmental management controls to be implemented during these excavations.

4.7 Activity Cluster 7 (Plant Building Perimeter NIB Wall)

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities:

For main plant building perimeter:

1. Scabble external Plan of Intersoil Floor
2. Drill holes for reinforcement Bars.
3. Erect Precast Concrete Bund Wall 6M Sections.
4. Rill for reinforcement Bars.

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4.8 Activity Cluster 8 (Erect Plant Concrete Bund Walls & Site Ponds)

Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Work Areas	Spatial extent of Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas
Table 8 Excavation Depths and Cut & Fill Quantities	For each Work Area details expected quantities of topsoil and silt/clay to be excavated (or stripped), depths of excavations and quantities to be exported/imported for preparation of slab/pavement foundations and plant/machinery foundations. The table also provides initial and final Reduced Levels (RL = elevation in mAHD) for excavations and prepared foundations
Table 21 Concrete Quantities	Details for quantities of concrete required
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities:

1. Excavation of Site Ponds (Work Area D & C).
2. Form up Site Ponds (Work Area D & C).
3. Install Site Ponds Reinforcement (Work Area D & C).
4. Pour Site Ponds (Work Area D & C).
5. Remove Site Pond Formwork (Work Area D & C).
6. Form up and concrete pour foundations for Concrete Bund Walls (Work Area A, C, E, F & G).
7. Erect Precast Concrete Bund Wall 6M Sections (Work Area A, C, E, F & G).

Surplus/excavated silt/clay (~3,500m³) is to be:

- a) pushed to the upgradient edge of the respective Work Area for reuse in another Work Area (if material is expected to be reused within 1 month)

or

- b) stockpiled in the Area E silt/clay stockpile footprint for reuse in external pavement foundation or road lifts (if material is not to be reused within 1 month)

4.9 Activity Cluster 9 (Install Pavement Areas & Site Ponds)

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Relevant Drawings, Tables & Environmental Management Sections in the CEMP	Comment
Figure 13 Construction Sequence Worksheet	Location of temporary construction facilities in Work Areas A - G
Figure 14 Construction Facilities in Work Areas - Conceptual	Location of temporary construction facilities in Work Areas A - G
Table 8 Excavation Depths and Cut & Fill Quantities	For each Work Area details expected quantities of excavations and quantities to be exported/imported for preparation of slab/pavement foundations and plant/machinery foundations. The table also provides initial and final Reduced Levels (RL = elevation in mAHD) for excavations and prepared foundations
Table 21 Concrete Quantities	Details for quantities of concrete required
s7.1 – s7.10 Environmental Aspects and Controls	Details the timing and location for implementation of environmental controls

Activities (external areas):

1. Form up Pedestrian Access around Buildings.
2. Pour Pedestrian Access with Expansion Joints.
3. Remove Formwork around Buildings.
4. Excavate for Grated Culverts and Pump Pit.
5. Install Precast Culverts and Grated Pits.
6. Excavation of Plant Foundations & Site Ponds (Area G & E).
7. Form up Plant Foundations & Site Ponds (Area G & E).

8. Install Site Ponds Reinforcement.
9. Install blinding Concrete to level bottom of Foundation excavations.
10. Pour Plant Foundations & Site Ponds (Area G & E).
11. Remove Formwork.
12. Excavate for Pump Pit.
13. Form up for Pump Pit Structure.
14. Pour Pump Pit Concrete.
15. Form up for Traffic Ramps.
16. Pour Traffic Ramps Concrete
17. Remove Formwork
18. Compact Pavement, cut to level.
19. Install 200mm thick Concrete top cover, 2-layer reinforcement.

Surplus/excavated silt/clay (~1,000m³ for each Work Area) is to be:

- a) pushed to the upgradient edge of the respective Work Area for reuse in another Work Area (if material is expected to be reused within 1 month)
- or
- b) stockpiled in the Area E silt/clay stockpile footprint for reuse in external pavement foundation or road lifts (if material is not to be reused within 1 month).

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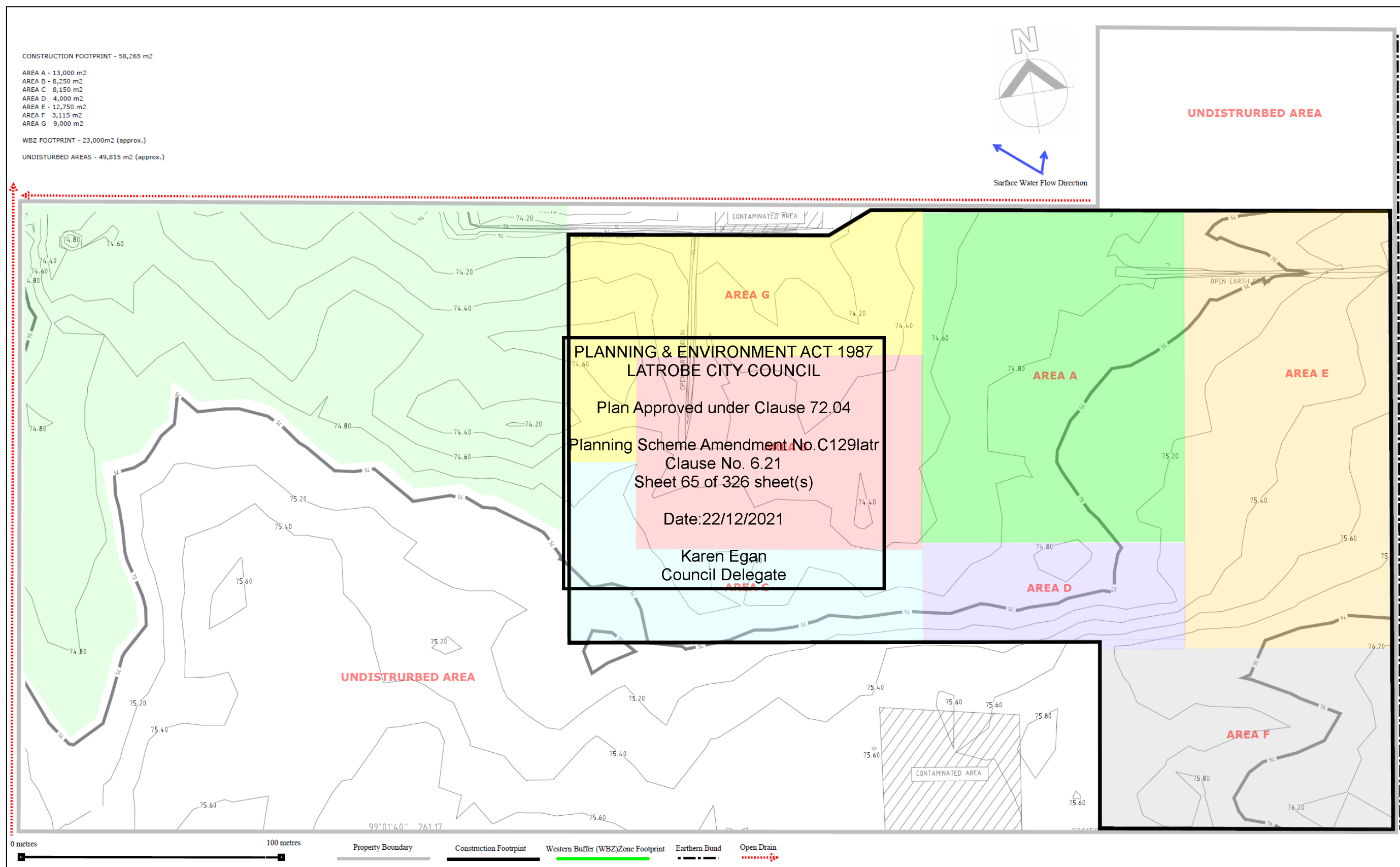


Figure 13 Construction Sequence Work Areas

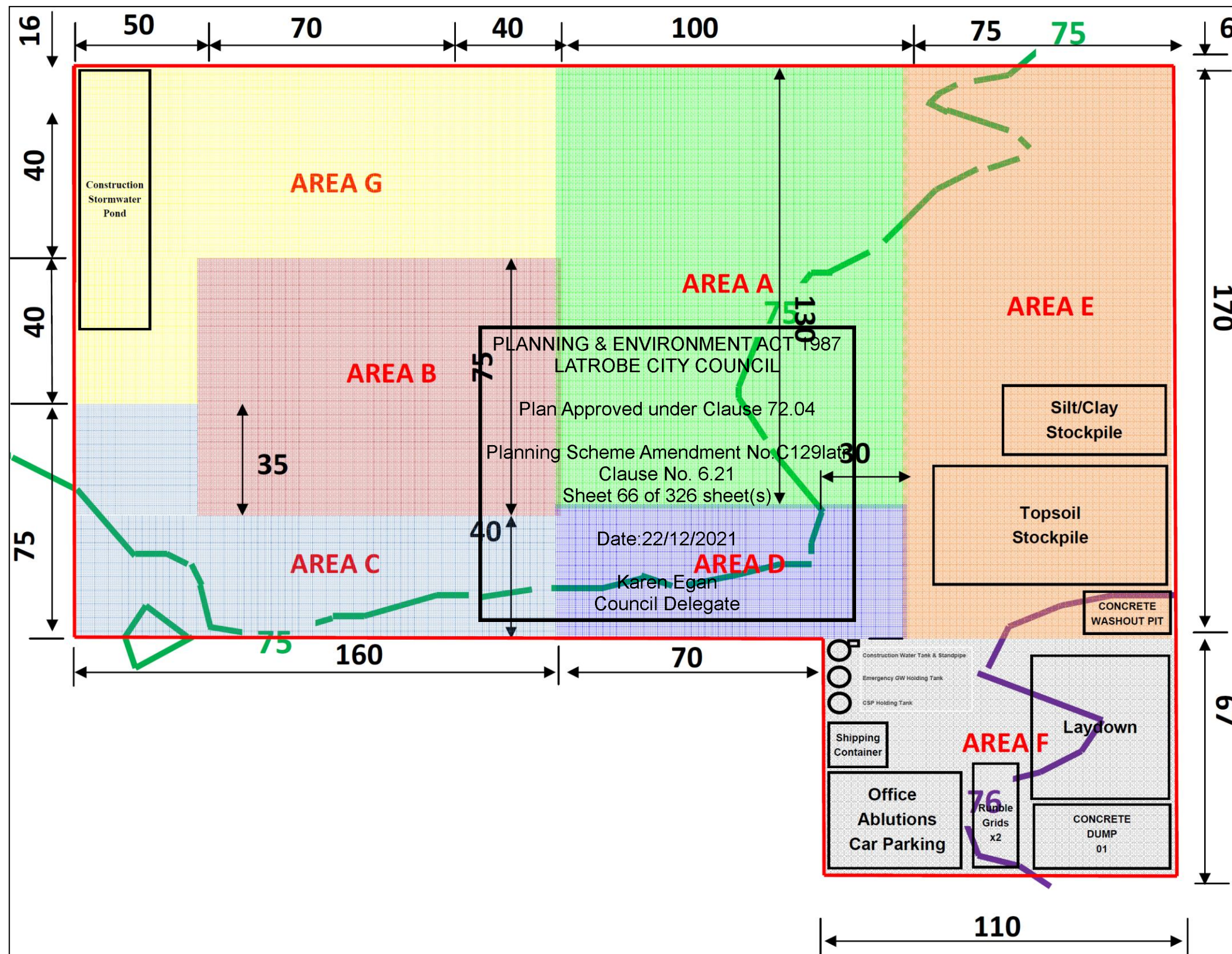


Figure 14 Construction Facilities in Work Areas - Conceptual

Table 8 Excavation Depths and Cut & Fill Quantities

CONSTRUCTION ELEMENT				EXCAVATION DEPTHS						MATERIAL QUANTITIES					
LOCATION	NUMBER OF ELEMENTS	SURFACE DIMENSIONS (M)	SURFACE AREA (m2)	AVERAGE SURFACE ELEVATION RL (mAHD)	SLAB BOTTOM DEPTH RL (mAHD)	CLAY AVERAGE DEPTH RL (mAHD)	EXCAVATION DEPTH (mbgs)	GROUNDWATER DEPTH (mAHD)	DELTA - EXCAVATION DEPTH ~ GROUNDWATER DEPTH (m)		TOPSOIL STRIPPED (m3)	SILT / CLAY EXCAVATED FOR SLAB FOUNDATION (m3)	CLAY EXCAVATED for OTHER ITEMS (post foundation prep) (m3)	COMPACTION DEPTH FOR SLAB FOUNDATION (m)	COMPACTION FOR SLAB FOUNDATION (m3)
AREA A	1		13,000.0	74.8	74.7	73.6				Sub Total	2,600	6,500	1,056	0.6	9,750
ULAB PIT	1	24.5x10.5 =	257.0	74.7	73.0	73.6	-1.7	72.8	0.2	Sub Item			437		
PRESSURE FILTERS	1	14x3	42.0	74.7	73.1	73.6	-1.6	72.8	0.3				67		
PRESSURE FILTERS	2	14x2	48.0	74.7	73.1	73.6	-1.6	72.8	0.3				77		
BREAKER	1	5x5=	25.0	74.7	73.1	73.6	-1.6	72.8	0.3				40		
Row 1 Columns	9		3.0	74.7	73.1	73.6	-1.6	72.8	0.3				43		
Row 4 Columns	9		3.0	74.7	73.1	73.6	-1.6	72.8	0.3				43		
Row 7 Columns	12		5.0	74.7	73.1	73.6	-1.6	72.8	0.3				96		
Row 11 Columns	12		8.0	74.5	73.1	73.6	-1.4	72.8	0.3				134		
Row 15 Columns	12		5.0	74.7	73.1	73.6	-1.6	72.8	0.3				96		
Mullions Row A	10		1.0	74.7	73.1	73.6	-1.6	72.8	0.3				16		
Mullions Row I	4		1.0	74.7	73.1	73.6	-1.6	72.8	0.3				6		
AREA B	1		8,250.0	74.3	74.7	73.1				Sub Total	1,650	-4,950	1,544	0.6	6,188
SMELTERS	1	15.5x8.5 =	132.0	74.7	72.7	73.1	-2.0	72.5	0.2	Sub Item			277		
REFINING KETTLE PIT	1	34x9 =	306.0	74.7	72.7	73.1	-2.0	72.5	0.2				673		
REFINING KETTLE FOUNDATION	2	5x5 =	25.0	74.7	72.7	73.1	-2.0	72.5	0.2				110		
Row 7 Columns	13		5.0	74.7	72.7	73.1	-2.0	72.5	0.2				137		
Row 11 Columns	13		8.0	74.5	72.7	73.1	-2.0	72.5	0.2				198		
Row 15 Columns	13		5.0	74.7	72.7	73.1	-2.0	72.5	0.2				137		
Mullions Row Y	6		1.0	74.7	72.7	73.1	-2.0	72.5	0.2				13		
AREA C	1		8,140.0	74.8	74.7	73.6				Sub Total	1,628	4,070	3,815	0.6	6,105
EMERG SITE WATER POND #1	1	51.5x16.5 =	849.0	74.7	73.0	73.6	-1.7	72.7	0.3	Sub Item			1,443		
EMERG SITE WATER POND #2	1	51.5x16.5 =	849.0	74.7	73.0	73.6	-1.7	72.7	0.3				1,443		
EMERG SITE WATER POND #3	1	40.5x13.5 =	546.0	74.7	73.0	73.6	-1.7	72.7	0.3				928		
AREA D	1		4,000.0	75.0	74.7	73.8				Sub Total	800	2,800	1,767	0.6	3,000
STORMWATER POND #1	1	35.5x16.5 =	585.0	74.7	73.2	73.8	-1.5	72.8	0.4	Sub Item			878		
STORMWATER POND #2	1	35.5x16.5 =	585.0	74.7	73.2	73.8	-1.5	72.8	0.4				878		
WEST RAMP TO AREA F			126.0	74.7	74.3	73.8	-0.4	72.8	1.5						
SUMP PIT - SEP6			8.0	74.7	73.2	73.8	-1.5	72.8	0.4				12		
AREA E	1		12,750.0	75.6	74.7	74.4				Sub Total	2,550	16,575	2,067	0.4	6,375
TREATED WATER POND	1	35.5x11.5 =	409.0	74.7	73.8	74.4	-0.9	72.9	0.9	Sub Item			368		
PLANT WATER POND	1	28.5x21.5 =	612.0	74.7	73.8	74.4	-0.9	72.9	0.9				551		
SITE WATER POND	1	28.5x32.5 =	926.0	74.7	73.8	74.4	-0.9	72.9	0.9				833		
WATER TREATMENT PLANT	1		656.0	74.7	74.5	74.4	-0.2	72.9	1.6				200		
CONCRETE WASHOUT POND	1		24.0	74.7	74.5	74.4	-0.2	72.9	1.6				5		
SOUTH RAMP TO AREA F	1	35x14 =	490.0	74.7	74.5	74.4	-0.2	72.9	1.6				98		
RETAINING WALL TO AREA F			60.0	74.7	74.5	74.4	-0.2	72.9	1.6				12		
AREA F	1		3,115.0	76.0	75.0	74.8				Sub Total	623	3,115	112	0.2	779
EXCESS CONCRETE DUMP	1		336.0	75.0	74.8	74.8	-0.2	73.1	1.7	Sub Item		24			
WHEEL WASH PIT	1	7x20 =	140.0	75.0	74.6	74.8	-0.4	73.1	1.5				56		
WEIGHBRIDGE PIT	1	7x20 =	140.0	75.0	74.6	74.8	-0.4	73.1	1.5				56		
AREA G	1		9,000.0	74.3	74.7	73.1				Sub Total	1,800	-5,580	4,964	1.0	11,250

CONSTRUCTION ELEMENT				EXCAVATION DEPTHS						MATERIAL QUANTITIES					
LOCATION	NUMBER OF ELEMENTS	SURFACE DIMENSIONS (M)	SURFACE AREA (m2)	AVERAGE SURFACE ELEVATION RL (mAHD)	SLAB BOTTOM DEPTH RL (mAHD)	CLAY AVERAGE DEPTH RL (mAHD)	EXCAVATION DEPTH (mbgs)	GROUNDWATER DEPTH (mAHD)	DELTA - EXCAVATION DEPTH ~ GROUNDWATER DEPTH (m)		TOPSOIL STRIPPED (m3)	SILT / CLAY EXCAVATED FOR SLAB FOUNDATION (m3)	CLAY EXCAVATED for OTHER ITEMS (post foundation prep) (m3)	COMPACTION DEPTH FOR SLAB FOUNDATION (m)	COMPACTION FOR SLAB FOUNDATION (m3)
CONSTRUCTION STORMWATER POND	1		500.0	74.0	72.0	72.8	-2.0	71.6	0.4	Sub Item	120	480	500		
SLAG COOLING WATER POND	1	4x9 =	21.0	74.7	72.7	73.1	-2.0	72.0	0.7				44		
LIQUID OXYGEN PLANT	1	20x15 =	300.0	74.7	74.3	73.1	-0.4	72.2	2.1				120		
HEAT RECOVERY BOILER	4	1.5x1.5 =	2.3	74.7	72.7	73.1	-2.0	72.1	0.6				5		
CHIMNEY FOUNDATIONS	1	40x40 =	1,600.0	74.7	73.1	73.1	-1.6	72.2	0.9				2,560		
FANS FOUNDATIONS	4	3x3 =	6.0	74.7	73.1	73.1	-1.6	72.2	0.9				38		
TRANSFORMERS FOUNDATIONS	1	20x45 =	900.0	74.7	73.1	73.1	-1.6	72.2	0.9				1,440		
STORMWATER POND #3	1	25.5x13.5 =	344.0	74.7	72.7	73.1	-2.0	71.9	0.2				757		
TOTALS											11,771	22,530	15,325		43,446

* yellow shading (excavations extending 2.0m below ground surface at the location) / red shading (excavations that come within 0.2m of inferred groundwater depth at the location)

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Plan Approved under Clause 72.04

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Council Delegate

Table 9 Work Sequencing (Bulk Material Excavation, Movement & Stockpiling/Reuse)

TOPSOIL & SILT/CLAY (SC): EXCAVATION & PLACEMENT (inc. STOCKPILES)																									
MATERIAL EXCAVATION									MATERIAL PLACEMENT																
SEQ. NO.	AREA	ACTION	TS EXC. AREA	TS PARCEL VOL.	Other	EXC. SILT/CLAY (SC) AREA	EXC. SILT/CLAY (SC) PARCEL VOL.	COMMENT	SEQ. NO.	ACTION	TS PLACEMENT AREA	TS PARCEL VOL.	TS COMM. 1	CUM. VOL. of TS STOCKPILE	TS COMM. 2	Other	SILT/CLAY (SC) PLACEMENT AREA	SILT/CLAY (SC) PARCEL PLACEMENT VOL.	CUM. VOL. of SILT/CLAY (SC) STOCKPILED	SC COMM. 1	SC COMM. 2	No. of Loads (assuming using a HM300-5 Dump Trucks with 32m3 capacity)	SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	CUM. SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	PRIMARY CHANGE IN AREA
F																									
3.110	F	Strip TS	F	623					3.120	Place / Stockpile Topsoil	E	623	Place on southern end of Area E	623	TS SP in Area E							19.5			Add to Topsoil Stockpile in Area E
									3.130	Place 60mm rock for hardstand (200mm deep)						934									
E																									
3.310	E	Strip TS	E	1,300				Strip only northern half. Push TS to southern side	3.320	Place / Stockpile Topsoil	E	1,225	push into southern end of Area E	1,848	TS SP in Area E							38.3			Add to Topsoil Stockpile in Area E
C, D, F																									
3.400	C D F								3.410	Create Clear Water Diversion Bund along western boundary of Area F & southern boundary of Areas C & D with TS stripped from Area E	Clea n Water Storage Bund - south	210	2.0m W x 350.0m L x 0.3m H (40 degree batters)	1,638	TS SP in Area E							6.6			Remove from Topsoil Stockpile in Area E
A, E, G																									
3.500	A E G								3.510	Create Dirty Water Diversion Bund along northern boundary of Areas A, E & G with TS stripped from Area E	Clea n Water Storage Bund - north	350	2.0m W x 350.0m L x 0.5m H (40 degree batters)	1,288	TS SP in Area E							10.9			Remove from Topsoil Stockpile in Area E

TOPSOIL & SILT/CLAY (SC): EXCAVATION & PLACEMENT (inc. STOCKPILES)																										
MATERIAL EXCAVATION									MATERIAL PLACEMENT																	
SEQ. NO.	AREA	ACTION	TS EXC. AREA	TS PARCEL VOL.	Other	EXC. SILT/CLAY (SC) AREA	EXC. SILT/CLAY (SC) PARCEL VOL.	COMMENT		SEQ. NO.	ACTION	TS PLACEMENT AREA	TS PARCEL VOL.	TS COMM. 1	CUM. VOL. of TS STOCKPILE	TS COMM. 2	Other	SILT/CLAY (SC) PLACEMENT AREA	SILT/CLAY (SC) PARCEL PLACEMENT VOL.	CUM. VOL of SILT/CLAY (SC) STOCKPILED	SC COMM. 1	SC COMM. 2	No. of Loads (assuming using a HM300-5 Dump Trucks with 32m3 capacity)	SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	CUM. SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	PRIMARY CHANGE IN AREA
G																										
4.100	G	Strip TS - Construction SW Pond	G	120						4.110	Place / Stockpile Topsoil	B	120	push to west side of Area B	120	TS SP in Area B				-			3.8			Add to Topsoil Stockpile in Area B
4.120	G	Excavate SC - Construction SW Pond				G	880			4.130	Place / Stockpile SC							G	880	880	push SC up-gradient for re-use	SC in Area G				
4.140	G									4.140	Create Earth Bund down-gradient of Construction SW Pond (western & northern boundary)							Construction SW Pond - Bund	880	0						
A																										
5.110	A	Strip TS	A	2,600						5.120	Place / Stockpile Topsoil		2,600	Push to south side of Area E	3,888								81.3			Add to Topsoil Stockpile in Area E
5.130	A	Cut for Site / Foundation Prep in Area A				A	6,500	Push to southern edge																		
5.140	E	Cut & import SC from Area E for Site / Foundation Prep in Area A				E	3,250	Cart from Area E to A		5.150	Blend / Place & Compact SC from Area A & E							A	9,750	0			101.6	3,250.0	3,250.00	Borrow (Cut) SC from Area E
5.160	A	Excavation of var. Foundations				A	1,056	Push to southern edge		5.170	Place / Stockpile SC							A	1,056	1,056	Push SC to southern edge of Area A for in-situ reuse					Surplus SC in Area A
B																										
5.210	B	Strip TS	B	1,650						5.220	Place / Stockpile Topsoil	E	1,650	Push to south side of Area E	5,538	TS SP in Area E							51.6			Add to Topsoil Stockpile in Area E
5.230	B	Cut for Site / Foundation Prep in Area B				A	0	Push to southern edge																		
5.240	E	Cut & import SC from Area E for Site / Foundation Prep in Area B				E	6,188	Cart from Area E to B		5.250	Blend / Place & Compact SC from Area B & E							B	6,188	0			193.4	6,188.0	9,438.00	Borrow (Cut) SC from Area E

TOPSOIL & SILT/CLAY (SC): EXCAVATION & PLACEMENT (inc. STOCKPILES)																										
MATERIAL EXCAVATION									MATERIAL PLACEMENT																	
SEQ. NO.	AREA	ACTION	TS EXC. AREA	TS PARCEL VOL.	Other	EXC. SILT/CLAY (SC) AREA	EXC. SILT/CLAY (SC) PARCEL VOL.	COMMENT		SEQ. NO.	ACTION	TS PLACEMENT AREA	TS PARCEL VOL.	TS COMM. 1	CUM. VOL. of TS STOCKPILE	TS COMM. 2	Other	SILT/CLAY (SC) PLACEMENT AREA	SILT/CLAY (SC) PARCEL PLACEMENT VOL.	CUM. VOL of SILT/CLAY (SC) STOCKPILED	SC COMM. 1	SC COMM. 2	No. of Loads (assuming using a HM300-5 Dump Trucks with 32m3 capacity)	SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	CUM. SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	PRIMARY CHANGE IN AREA
5.260	B	Excavation of var. Foundations				B	1,544	Push to southern edge		5.270	Place / Stockpile SC							B	1,544	2,600	Push SC to southern edge of Area B for in-situ reuse					Surplus SC in Area B
C																										
5.310	C	Strip TS	C	1,628						5.320	Place / Stockpile Topsoil	E	1,628	Push to south side of Area E	7,166	TS SP in Area E							50.9			Add to Topsoil Stockpile in Area E
5.330	C	Cut for Site / Foundation Prep in Area C				C	4,070	Push to western edge																		
5.340	E	Cut & import SC from Area E for Site / Foundation Prep in Area C				E	2,035	Cart from Area E to C		5.350	Blend / Place & Compact SC from Area C & E							C	6,105				63.6	2,035.0	11,473.00	Borrow (Cut) SC from Area E
5.360	C	Excavation of var. Foundations				B	3,815	Push to southern edge		5.370	Place / Stockpile SC							C	3,815	6,415	Push SC to southern edge of Area C for in-situ reuse					Surplus SC in Area C
D																										
5.410	D	Strip TS	D	800						5.420	Place / Stockpile Topsoil	E	800	Push to south side of Area E	7,966	TS SP in Area E							25.0			Add to Topsoil Stockpile in Area E
5.430	D	Cut for Site / Foundation Prep in Area D				D	2,800	Push to western edge																		
5.440	E	Cut & import SC from Area E for Site / Foundation Prep in Area D				E	200	Cart from Area E to C		5.450	Blend / Place & Compact SC from Area D & E							D	3,000				6.3	200.0	11,673.00	Borrow (Cut) SC from Area E
5.460	D	Excavation of var. Foundations				E	1,767	Push to southern edge		5.470	Place / Stockpile SC							D	1,767	8,182	Push SC to southern edge of Area D for in-situ reuse					Surplus SC in Area D
E																										

TOPSOIL & SILT/CLAY (SC): EXCAVATION & PLACEMENT (inc. STOCKPILES)																											
MATERIAL EXCAVATION										MATERIAL PLACEMENT																	
SEQ. NO.	AREA	ACTION	TS EXC. AREA	TS PARCEL VOL.	Other	EXC. SILT/CLAY (SC) AREA	EXC. SILT/CLAY (SC) PARCEL VOL.	COMMENT		SEQ. NO.	ACTION	TS PLACEMENT AREA	TS PARCEL VOL.	TS COMM. 1	CUM. VOL. of TS STOCKPILE	TS COMM. 2	Other	SILT/CLAY (SC) PLACEMENT AREA	SILT/CLAY (SC) PARCEL PLACEMENT VOL.	CUM. VOL of SILT/CLAY (SC) STOCKPILED	SC COMM. 1	SC COMM. 2	No. of Loads (assuming using a HM300-5 Dump Trucks with 32m3 capacity)	SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	CUM. SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	PRIMARY CHANGE IN AREA	
5.510	E	Cart TS	E	7,966				Cart TS for reuse		5.510	Reuse	TBC	7,966			TS SP in Area E										Remove/reuse all Topsoil Stockpile in Area E	
5.520	E	Strip TS	E	1,300				Remaining half (northern) of Area E		5.530	Reuse	TBC	1,300													Reuse all Topsoil Stockpile in Area E	
													9,266										289.6			No. of 32m3 moxy loads	
5.540	E	Cut for Site / Foundation Prep in Area E				E	4,902	16,575m3 minus SC already removed from Area E for prepping other Areas (Cell z47).																			
5.550	Various	Import SC from various from "Var. Excavations"				Various	1,473			5.560	Blend / Place & Compact SC from various from other "Var. Excavations"							E	6,375							Import SC from var. areas to complete foundation prep in Area E	
																				6,709						Surplus SC across all Areas	
5.580	E	Excavation of var. Foundations				E	2,067	Surplus SC. Push to middle of Area E		5.590	Place / Stockpile SC							E	2,067	8,776		Push SC to southern edge of Area E for in-situ reuse				Surplus SC in Area E	
G																											
5.610	G	Strip TS	G	1,800						5.620	Place / Stockpile Topsoil	TBC	1,800											56.3			Reuse TBC
												Total TS strip ped, conditioned & reused	11,066														
5.630																											

TOPSOIL & SILT/CLAY (SC): EXCAVATION & PLACEMENT (inc. STOCKPILES)																										
MATERIAL EXCAVATION									MATERIAL PLACEMENT																	
SEQ. NO.	AREA	ACTION	TS EXC. AREA	TS PARCEL VOL.	Other	EXC. SILT/CLAY (SC) AREA	EXC. SILT/CLAY (SC) PARCEL VOL.	COMMENT		SEQ. NO.	ACTION	TS PLACEMENT AREA	TS PARCEL VOL.	TS COMM. 1	CUM. VOL. of TS STOCKPILE	TS COMM. 2	Other	SILT/CLAY (SC) PLACEMENT AREA	SILT/CLAY (SC) PARCEL PLACEMENT VOL.	CUM. VOL of SILT/CLAY (SC) STOCKPILED	SC COMM. 1	SC COMM. 2	No. of Loads (assuming using a H/M300-5 Dump Trucks with 32m3 capacity)	SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	CUM. SILT/CLAY VOL. EXCAVATED from AREA E FOR USE IN OTHER AREAS	PRIMARY CHANGE IN AREA
5.640	E	Import SC from various from "Var. Excavations "				Vari ous	8,776																274.3			Import SC from var. areas to complete foundation prep in Area G
																				0						Surplus SC across all Areas
5.640	E	Import SC from various Work Areas as required				Vari ous	2,474	SC req. for Area E us 11,250m3		5.650	Blend / Place & Compact imported SC							G	11,250							Import SC from other Work Areas
5.660	G	Excavation of var. Foundations				G	4,964	Push to southern edge		5.670	Place / Stockpile SC							G	4,964	4,964	Cart to Area E					Add to SC Stockpile in Area E
F																										
5.7.1	F	Relocate site offices to Area E																		-						
5.7.21	F	Remove crushed rock to Area D (934m3)			934					5.7.22	Remove crushed rock to Area D (934m3)						934	D			Area D crushed rock SP (934m3)		29.2			Add to Crushed Rock SP in Area F
5.7.23	F	Cut for Site / Foundation Prep in Area F				F	3,115	push to western side		5.7.24	Blend / Place & Compact SC from Area F							F	779							
5.7.25	F	Cart surplus SC to middle of Area E				F	2,336	Push to southern edge		5.7.25	Place / Stockpile SC							E	2,336	7,300	Vol. of surplus SC stockpile d in middle of Area E		73.0			Add to SC Stockpile in Area E
5.7.26	E	Relocate site offices from Area E to Area F																								
5.7.27	F	Excavation of var. Foundations				F	112	Push to southern edge		5.7.28	Place / Stockpile SC							F	112	7,412	Cart to Area E					Add to SC Stockpile in Area E for later reuse in pavement foundation lifts

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LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 73 of 326 sheet(s)

Date:22/12/2021

Karen Egan
Council Delegate

5 Environmental Management Framework

The proposed environmental management framework is one of continual improvement wherein issues identified during monitoring and inspections, meetings/toolboxes and reports will feedback into amendments or additions to monitoring and inspection checklists, the ESCP, internal and external reports, meeting agenda items and/or the form of meetings items, as well as the CEMP.

Changes to applicable legislation or approvals will also feed back into revisions to the CEMP and its' sub-elements.

A register of construction-related environmental management documentation will be maintained on site by the Environmental Officer that will detail the most current revision numbers, track any required amendments / improvements to be made, responsibilities for specific documents and revision time frames.

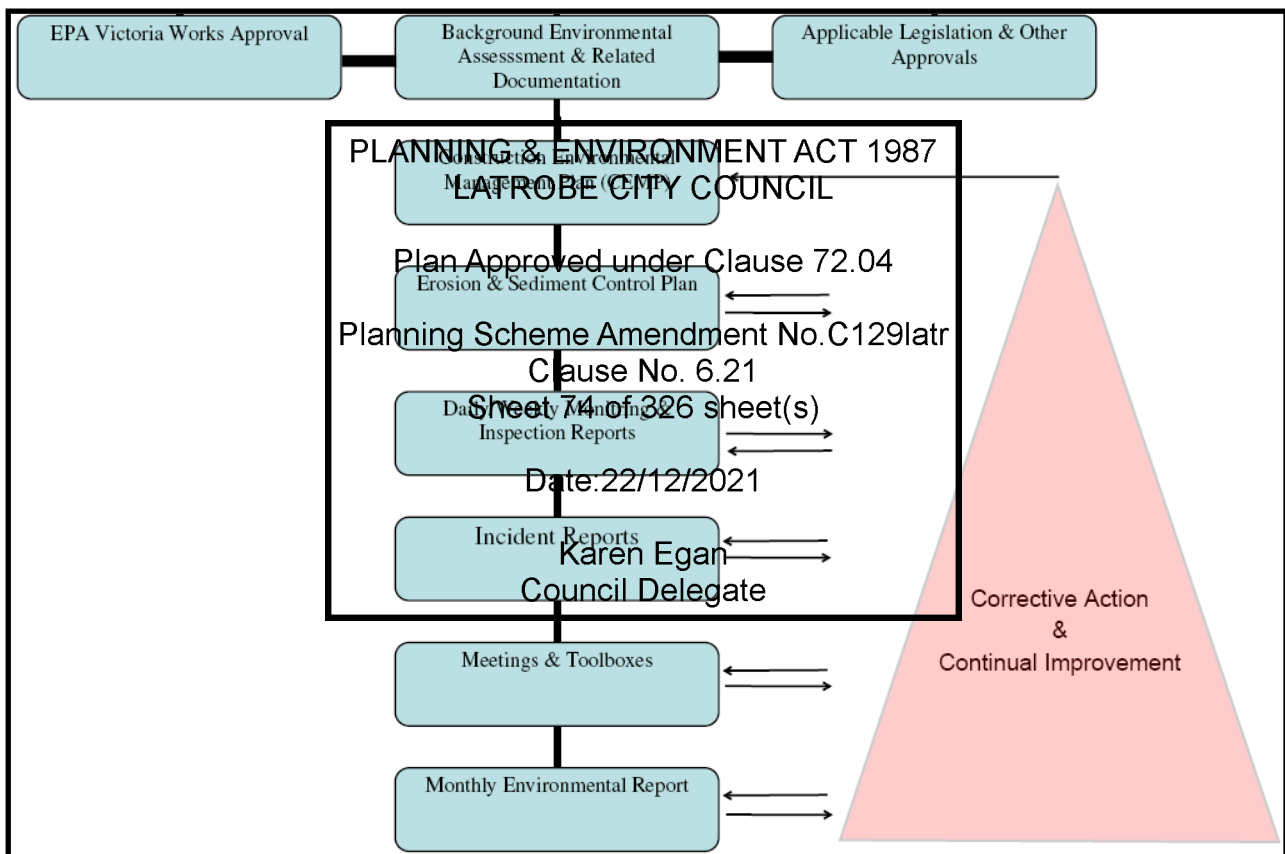


Figure 15 Environmental Management Framework

5.1 Construction Environmental Management Plan (CEMP)

The CEMP is the key management tool in relation to environmental performance during the construction phases. The CEMP describes the construction environmental management framework for the Project and Chunxing's system for minimising and managing environmental risks.

The CEMP is a dynamic document that will be reviewed and amended to incorporate additional requirements as required, changes to the project team, organisational structure and responsibilities or as improvements to procedures and methodologies develop.

5.1.1 Erosion and Sediment Control Plan

Appropriate planning is crucial to effective management of erosion and sedimentation onsite and manage offsite impacts from erosion and sediment control. Erosion and Sediment Control Plans (ESCP's) are planning documents that show the site layout and the timing for installation, location of installation and type of erosion and sediment control structures to be installed on the site.

ESCP's are designed for use as a practical guide.

An ESCP has been developed for the Site (Annexure A) which will be delivered in the field (and updated when required) by the Environmental Officer, with input from the Environmental Consultant when required.

5.1.2 Weekly Environmental Inspection Checklist

A Weekly Environmental Inspection Checklist (Annexure E) has been developed for the purposes of monitoring and tracking the implementation, condition and effectiveness of environmental controls as well as for identifying emerging environmental issues.

The Weekly Environmental Inspection Checklist (WEIC) will be delivered in the field and updated when required by the Environmental Officer (with input from the Environmental Consultant if required).

Corrective Actions identified in the WEIC will be captured and tracked by the Environmental Officer in the Environmental Action Tracking Register (Annexure G) with outstanding items to be raised directly with the relevant party (to which the Corrective Action applies) and/or at Prestarts, Toolboxes and periodic meetings.

Overdue WEIC Corrective Actions considered long outstanding will be escalated by the Environmental Officer to the Project Manager for the Project Manager's attention.

5.1.3 Incident Reporting

Incident reporting is regarded as a valuable method of addressing shortcomings in procedures, training or equipment and as an opportunity for improvement.

All environmental incidents will be documented, investigations conducted, and Corrective Actions developed and tracked in order to reduce the likelihood of the event reoccurring.

All environmental incidents will be investigated by the Environmental Officer within 24 hours of the incident occurring with an Incident Report developed by the Environmental Officer and submitted to the Project Manager within 5 working days of the incident occurring (or sooner should the seriousness of the incident warrant more immediate attention).

An Environmental Action Tracking Register (Annexure G) will be maintained by the Environmental Officer for the purpose of tracking of Corrective Actions identified within Incident Reports.

Where lessons learnt from the investigation or current procedures are identified as being ineffective, the CEMP (or sub-elements) will be revised by the Environmental Officer to include the improved procedures or requirements.

Where an environmental incident results in a potential 'notifiable incident' (per EPA Victoria Guidelines⁵) an Incident Investigation will commence and the EPA will be contacted as soon as practicable (typically within 12-hours of the event occurring) on 1300 372 842 (24 hours).

Overdue Incident Report Corrective Actions considered long-outstanding will be escalated by the Environmental Officer to the Project Manager for the Project Manager's attention.

5.1.4 Meetings and Toolbox Talks (Prestarts)

The Environmental Officer will attend Prestarts, Toolbox Talks, Progress Meetings and various other meetings during which the Environmental Officer will be afforded the opportunity to provide input surrounding ongoing environmental compliance.

Personnel will also be provided with the opportunity to recommend improvements to procedures or controls.

Meetings provide a vehicle for providing feedback for the purposes of continual improvement with any approved changes to the CEMP (or sub-elements) made by the Environmental Officer.

At least once a month the Environmental Officer will deliver a Toolbox Talk to the construction personnel for education and continual improvement purposes. Additional Toolbox Talks may be delivered by the Environmental Officer to implement learnings resulting from Incident Investigations, or other pertinent topics.

5.1.5 Internal Monthly Report

An internal monthly environmental report (s12.2) will be compiled by the Environmental Officer at the end of each month and distributed to the Project Manager and other key management representatives.

The report will provide a vehicle for providing feedback to management for the purposes of continual improvement to the CEMP (or sub-elements).

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**Karen Egan
Council Delegate**

⁵ see <https://www.epa.vic.gov.au/for-business/new-laws-and-your-business/reporting-a-notifiable-incident>

6 Roles and Responsibilities

6.1 Organisational Structure

The proposed organisational structure for key personnel for the works can be seen in Figure 16 below.

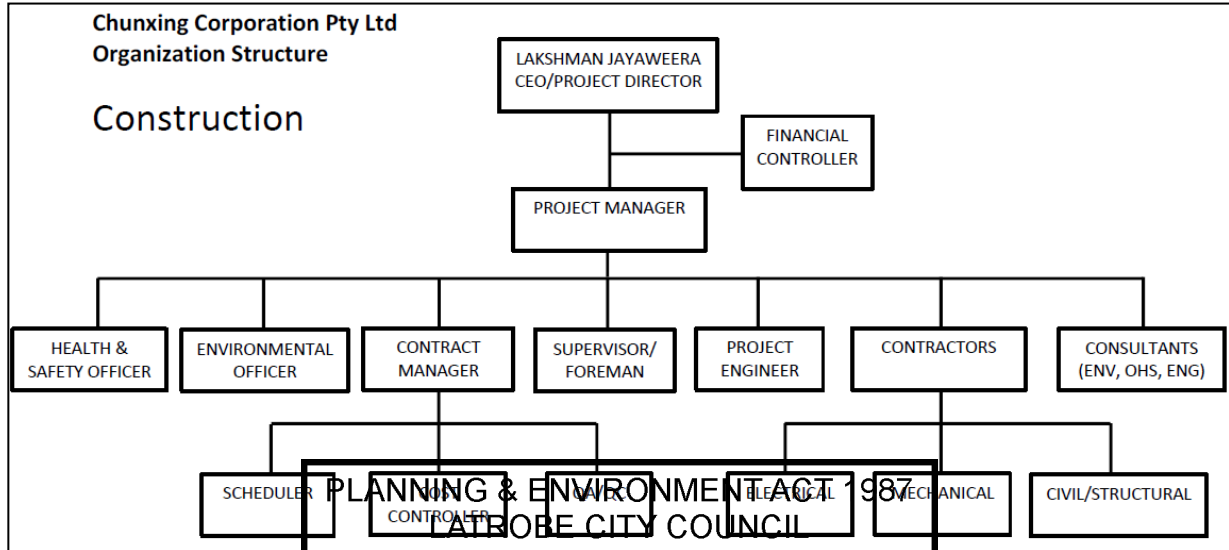


Figure 16 Chunxing ULAB Organisational Chart - Construction
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6.2 Management Team - Environmental Roles and Responsibilities

The responsibility and authority pertaining to environmental performance of key personnel, environmental specialists and sub-contractors is described below. These responsibilities are categorised in relation to relevant positions and will be explained to project personnel during project inductions and reinforced during on-going environmental awareness education (e.g. toolboxes).

6.2.1.1

Chief Executive Officer / Project Director

The Chief Executive Officer (CEO) provides management oversight and responsibility across the organisation to ensure the effective and efficient functioning of the organisation managing the executive team and managing the day to day operations of the organisation, its people and resources.

The CEO is accountable to the other shareholders in the business and provides strategic oversight and direction to the organisation.

The CEO/Project Director is responsible for all phases of the ULAB Facility (pre-construction, construction, commissioning and operations) and typically will not be in attendance at Site.

A resume for Chunxing Corporation's (Australia) CEO/Project Director can be found in Annexure L.

6.2.2 Site Environmental Management Team

6.2.2.1

Project Manager

Chunxing's Project Manager is responsible for delivery of the construction phase of the Project.

The Project Manager ensures that Project obligations are met and site personnel and subcontractors are accountable.

The Project Manager is also responsible for ensuring adequate resources are made available to the Environmental Officer for the implementation of the CEMP and for ongoing environmental compliance.

An Environmental Officer reporting directly to the Project Manager is responsible for ensuring that Chunxing delivers through its construction division for the prescribed environmental outcomes.

A resume for the Project Manager can be found in Annexure L.

6.2.2.2 **Environmental Officer (& Environmental Consultants)**

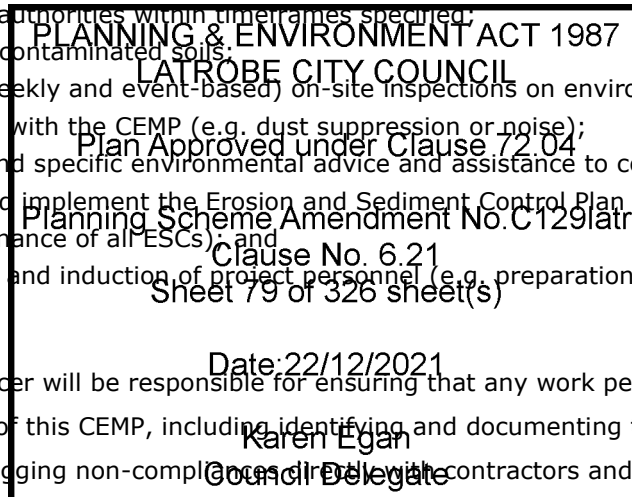
The Environmental Officer reports directly to the Project Manager and will be in attendance at Site each day during the works.

The Environmental Officer is primarily responsible for the development and delivery of the CEMP, managing ongoing environmental management activities, ensuring environmental compliance and flagging emerging environmental issues to management and construction personnel over the course of the construction phase of the Project.

Specific responsibilities of the Environmental Officer are to:

- Prepare, implement, assess and monitor the CEMP;
- Maintain the Environmental Action Tracking (Annexure G), Construction Stormwater Pond Discharge (Annexure I), Waste Tracking (Annexure J) and Topsoil Tracking (Annexure K) Registers;
- Complete monitoring and inspection forms as detailed in 'Section 10 Compliance Tracking, Monitoring, Inspection and Reporting' and Table C of Environmental Monitoring & Inspection Frequencies including daily (informal) and weekly (formal) inspections; the latter to be recorded in the Weekly Environmental Inspection Checklist (Annexure E));
- Manage discharges of the construction water tank (tank) and concrete washout pit (the latter as decanted into a bunded IBC) into sewer and complete field sampling using a multimeter probe (capable of measuring temperature, electrical conductivity, total suspended solids/turbidity and pH) to ensure compliance with Gippsland Council Delegate Quality Limits;
- Manage any encountered groundwater including field sampling water in excavations suspected of being groundwater using a multimeter probe, pumping groundwater into emergency groundwater tank, testing water in groundwater tank and discharging into TWA sewer or organising removal offsite via licensed waste contractor;
- Decant wastewater from the concrete washout pit into a bunded IBC and buffer to a pH of between 6 - 9 with citric acid prior to discharges;
- Maintain an inventory of all chemicals and hydrocarbon-based liquids stored onsite detailing types, quantities and storage locations and also ensure chemicals and hydrocarbon-based liquids are stored in accordance with the applicable MSDS.
- Monitor weather forecasts and prepare site for periods of rainfall, strong winds or extended dryness;
- Ensure that all project environmental obligations are met and prepare informal and formal reports for the Project Manager regarding environmental compliance;
- Review changes to foundation or excavation design depths and 'as-built' survey data provided by the Project Engineer for all excavations to confirm that excavations will not / have not intercepted groundwater.
- Review subcontractor's Work Method Statements (relevant to their scope of works) prior to subcontractor commencing their scope of work on Site (the WMS are to incorporate all key controls contained within, and approaches adopted, within the CEMP and will define higher resolution controls relevant to the subcontractor's work scope);

- Review survey data provided by the Project Engineer pertaining to volumes of stripped, excavated, stockpiled and reused (placed) materials to confirm any deviances from the Bulk Material Movement Table (Table 9 in the CEMP).
- Identify the need for, manage the delivery and coordinate the placement in Works Areas of, appropriate waste containers (skips, bins, IBCs, drip-trays, bunding) and coordinate the removal of wastes from site;
- Identify the need for, manage the delivery of and coordinate the placement of spill-kits in Work Areas;
- Provide input and advice to engineers on work approach;
- Obtain relevant licences, permits and approvals;
- Identify, prepare and deliver environmental induction and other training materials (e.g. Toolbox Talks);
- Liaise with government agencies and relevant stakeholders;
- Manage the environmental budget;
- Identify environmental subject-matter-experts (consultants) when required and develop and manage scopes of work;
- Respond to environmental incidents and develop incident reports;
- Maintain environmental documents;
- Prepare required reports (e.g. National Greenhouse and Energy Reporting (NGERS) if required) and submit to relevant authorities within timeframes specified;
- Identify suspected contaminated soils;
- Perform regular (weekly and event-based) on-site inspections on environmental controls to assess general compliance with the CEMP (e.g. dust suppression or noise);
- Provide on-going and specific environmental advice and assistance to construction personnel;
- Prepare, amend and implement the Erosion and Sediment Control Plan (including inspections/maintenance of all ESCs); and
- Assist with training and induction of project personnel (e.g. preparation of environmental toolbox talks).



The Environmental Officer will be responsible for ensuring that any work performed by contractors meets with the requirements of this CEMP, including identifying and documenting the environmental risks of the proposed works and flagging non-compliance with contractors and the Project Manager.

See Section 12 (Compliance Tracking, Monitoring, Inspection and Reporting) and Table 18 (Environmental Monitoring & Inspection Frequencies) for more information regarding the responsibilities of the Environmental Officer.

Resumes for two of Chunxing's Project Environmental Consultants can be found in Annexure L.

6.2.2.3 **Project Engineer**

The Project Engineer reports to the Project Manager and is responsible for ensuring that environmental considerations are integral to the decision making for all construction activities. The Project Engineer will liaise closely with the Environment Officer to ensure that the environmental controls and procedures contained in the CEMP are implemented during the design and construction phases of the Project.

Where applicable the Project Engineer will be responsible for ensuring that any work performed by external parties meets with the requirements of this CEMP, including identifying and documenting the environmental risks of the proposed works.

The Project Engineer will advise the Environmental Officer of any proposed changes to foundation or excavation design depths and provide the Environmental Officer with 'as-built' survey data on a weekly basis for all excavations so that the Environmental Officer can confirm that excavations will not intercept or have not intercepted groundwater.

The Project Engineer will provide survey data to the Environmental Officer weekly pertaining to volumes of stripped, excavated, stockpiled and reused (placed).

6.2.2.4 **Superintendent / Foreman**

The Foreman reports to the Superintendent, who reports directly to the Project Manager.

The Superintendent (and the Foreman) will have a direct role in environmental compliance implementing environmental procedures and controls in the field as requested by the Environmental Officer.

They will monitor site operations ensure environmental controls such as sediment controls and dust suppression etc are functioning effectively and ensure that resources (labour and materials) are available for environmental compliance (e.g. sediment fencing, pumps, lay-flat etc).

The Superintendent and Foreman must ensure that all personnel under their supervision have completed inductions and attend environmental "toolbox" training.

6.2.3 **Subcontractors and Other Chunxing Site Staff**

Chunxing recognises that it is often subcontractors that present the greatest environmental risks to a project due to:

- Their detachment from the main construction delivery teams, and therefore the potential for poor communication regarding environmental risks;
- The large number of subcontractors on site; and
- Subcontractors operating under a different management system from the Chunxing Environmental Management System.

Chunxing acknowledges it has a responsibility to ensure that all persons on the Project including subcontractors and their employees comply with the relevant environmental requirements. All subcontractors and Chunxing staff will be required to comply with the environmental requirements within the CEMP.

The selection of subcontractors working on site will be guided by the subcontractor's approach towards environmental compliance, identified when reviewing tender response documentation and face-face discussions.

The need to operate in compliance with the CEMP at all times will be included in subcontract documentation.

All personnel working on Site will be required to:

- undertake all activities and follow all requirements contained within the CEMP;
- co-operate fully with site emergency incident procedures and consultative arrangements;

- attend all inductions, toolboxes and environmental training as required and adhere-to, and remain familiar with, the principles covered in the training session(s);
- ensure that they are aware of the contact person for environmental matters; and
- report any activity that has resulted, or has the potential to result in an environmental incident.

Subcontractors will also be required to:

- observe subcontract and statutory requirements relating to environmental protection and other environmental legislation and to follow instructions issued by the Project management, supervisory personnel and the Environmental Officer;
- ensure that any required clearances are obtained from the Environmental Officer when required;
- develop Work Method Statements (relevant to their scope of works) in consultation with Chunxing's Environmental Officer prior to commencing their scope of work on Site (the WMS will incorporate all key controls contained within, and approaches adopted, within the CEMP and will define higher resolution controls relevant to the work scope); and
- nominate site representatives to liaise with the Project representatives and the Environmental Officer with respect to, and take responsibility for, environmental requirements for the site activities.

Chunxing will ensure that the work of subcontractors is monitored through the site inspection process.

Observations of non-compliance to the CEMP or 'at-risk' or 'near-miss' activities will be dealt-with at the time of the observation with the subcontractor. If a subcontractor continues to be non-compliant or continue with 'at-risk' activities the issue will be escalated to the attention of the Superintendent and the Project Manager.

6.2.4 Regulatory Authorities

Chunxing will consult and co-operate with all relevant regulatory agencies in meeting the Project environmental requirements and will permit those agencies to attend the site to assess and/or audit compliance with Approval Conditions and the CEMP.

This includes (however is not necessarily limited to) Latrobe City Council, EPA Victoria, WorkSafe Victoria and Gippsland Water.

6.2.5 Utility Authorities

Any work required to be undertaken by utility authorities under the direction of Chunxing will be discussed, agreed and overseen by Chunxing personnel including Engineers and Foreman.

Entry to the Site will be contingent upon the completion of the Site induction prior to work commencing.

6.3 Environmental Resources

Resources will be made available by senior management throughout the project to establish, implement, maintain and improve environmental controls, to ensure compliance with this CEMP, and to ensure compliance with approvals and other legislative requirements.

Resources will include but not be limited to:

- Authority and public support from senior management for the delivery of the CEMP;

- Qualified environmental personnel;
- A multimeter probe capable of measuring temperature, electrical conductivity, total suspended solids/turbidity and pH;
- General labour to install and maintain controls during construction activities and following storm/wet weather events;
- Specialist input from consultants;
- Financial resources including the payment of licence fees;
- Heavy plant and equipment such as graders, excavators, loaders and bulldozers etc for the development and maintenance of erosion and sediment controls;
- Hand tools;
- Fencing, flagging tape and signage to secure and protect sensitive areas (e.g. contaminated areas and groundwater wells to be retained);
- Erosion and sediment control equipment (e.g. sediment fencing, pumps, lay-flat, excavators etc); and
- Emergency response equipment including booms and hydrocarbon and chemical absorbent materials.

The Superintendent will be responsible for ensuring sufficient resources (general labour and materials) are allocated to the Environmental Officer to install, inspect, maintain and repair environmental controls in the field.

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7 Environmental Management and Controls

The general construction approach is;

1. spraying property for weeds, connection of services, setting-out the site, placement of temporary buildings (construction facilities) and installation of erosion and sediment controls;
2. stripping, screening and reuse/stockpiling of topsoil (grader, excavator, moxy, loader, mechanical screen);
3. excavation, conditioning and reuse/stockpiling of silts/clays for internal and external slab foundations (excavator, soil stabiliser, moxy, loader, and compactor);
4. erection of the plant steel core and building cladding (cranes and frannas);
5. excavation, conditioning and reuse/stockpiling of silts/clays for internal plant/equipment foundations (excavator, soil stabiliser, moxy, loader, and compactor);
6. concrete pouring for internal plant/equipment and plant building slab foundations (concrete trucks);
7. excavation, conditioning and reuse/stockpiling of silts/clays for external plant/equipment foundations and pavement layers (excavator, soil stabiliser, moxy, loader, and compactor);
8. concrete pouring for external plant/equipment foundations, pavements and roads (concrete trucks);
9. connection of internal services;
10. installation of ULAB facilities (steel building, franna).

The period between commencement of construction and commissioning of the ULAB facility is expected to take approximately 18 months, with works anticipated to commence in the last quarter of the 2021 calendar year.

These works will assume a general sequence Work Areas A, B, C, D, E, G to F (see Figure 13).

Steps 2, 3 and 4 will assume the sequence of commencing in Work Area A then progressing to B, C, D, E, G and finally to F. Figure 13 identifies the Work Areas within the construction footprint and the approximate locations of key construction facilities.

A summary schedule can be found in Table 7 and a detailed schedule is attached as Annexure F.

The sections below summarise the overall environmental management approach and key controls to be implemented for elements of the work. Table 14 provides a high-level risk assessment for key work activities (pre and post mitigation control) and references relevant CEMP sections that detail the controls that are to be implemented.

Monitoring of works and controls will be completed as per s11 'Compliance Tracking, Monitoring, Inspection and Reporting' and Table 15 'Environmental Monitoring & Inspection Frequencies'.

The principles guidelines contained in 'Managing Urban Stormwater: Soils and Construction' aka 'the Blue Book' (Landcom, 2006) will be followed with regard to soil and water (erosion and sediment) control.

Existing Site Conditions

Following the completion of clean-up activities as required under EPA Clean-Up Notices (1989 and 2022), the 2021 BESA reported residual contamination of soils on the site above naturally occurring levels. The 2021 BESA summarised soil conditions at the Site as follows:

- *Total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAH), metals and nitrogen species were reported in soil samples across the site at concentrations higher than naturally occurring levels however that Concentrations of contaminants of concern in soil were reported below the criteria considered to be protective of human health for a commercial / industrial site (i.e. no test results indicate soils at the site pose an unacceptable risk to site workers).*
- *Concentrations of contamination were below the adopted Maintenance of Ecosystems criteria for all but three of the 40 samples tested. These were sample location SB08, SB17 and SB20 at depths of 0.2 mbgs for the TRH C16-C34 fraction, and benzo(a)pyrene (Figures 2, 5A and 5B). On a statistical basis, soils at the site are protective of Maintenance of Ecosystems beneficial use relevant for an industrial site.*

- *Thirty four of the 40 soil samples tested met EPA Fill criteria. These criteria are applied for soils when offsite disposal of soil is being considered. Soil meeting EPA Fill category has no restriction on reuse or disposal.*

- *Six soil samples showed concentrations of TRH, PAHs and zinc consistent with Waste Soil Category C. One of these six soil samples showed had a concentration of benzo(a)pyrene of 5.5 mg/kg just exceeding the upper limit. Plan Approved under Clause 72.04 subsequently tested and showed low leachability confirming it would meet Category C criteria.*

- *It is considered that the baseline ESA demonstrated that soil contamination was consistent with the post- remediation soil conditions at the site as of 2021.*

The Baseline Environmental Site Assessment (2021) went on to state;

- *It is intended to retain all soil on site during development of the ULAB site meaning soil disposal is unlikely to occur and soil disposal criteria should not have to be applied.*

- *A CEMP has been prepared under the advice and direction of Mr Phil Sinclair (EPA appointed Environmental Auditor, 75667) and that it is the opinion of Mr Phil Sinclair that the soil and groundwater contamination components of the CEMP, meet the requirements of the Environment Management Plan Former Lurgi Gasworks Site Morwell Victoria, dated 24 September 2008. Two of the aims of the CEMP are to limit the exposure of any ecological receptors to excavated soils and groundwater and to appropriately categorise any waste soil prior to disposal offsite (if required).*

- *It is in the opinion of the Mr Phil Sinclair (EPA appointed Environmental Auditor, 75667) that with the implementation of the construction methodology, controls and inspection and monitoring programs detailed within the Chunxing ULAB Facility CEMP, there is a low risk that development of the ULAB Facility will cause unacceptable impacts from contamination to surface water, groundwater or soil at and adjacent to the site.*

7.1 Demarcation Management

7.1.1.1 Approach/Assumptions

Survey flagging tape/pegging, fences and signs will be used to demarcate and/or protect key areas on the Property and within the Construction Footprint implementing demarcation systems as per Table 10

Survey Tape Flagging Colours.

7.1.1.2 Controls

1-month prior to commencement of construction activities the property will be professionally surveyed.

Immediately prior to construction commencing, survey flagging tape/pegging and signs will be used to demarcate and/or protect key areas including the Construction Footprint, southern (EOT) contaminated area (sits outside the construction footprint), groundwater/monitoring wells, Work Areas A - G, topsoil and silt/clay stockpile footprints and the Western Buffer Zone using the method and colouring detailed in Table 10 Survey Tape Flagging Colours. Protective fencing (metal stakes installed every 5m with tracer wire on the top) will be erected around the northern contaminated area with red survey flagging attached to each metal stake and signage (Do Not Enter) will be attached to the southern fenceline.

The integrity of flagging/pegs, fencing, signage and other demarcation controls will be inspected informally on a daily basis and formally as per the Weekly Environmental Inspection Checklist (Annexure E).

Repairs (or replacement) to demarcation controls will be completed immediately upon identification.

Table 10 Survey Tape Flagging Colours

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Construction Footprint	WHITE survey flagging tape fixed to pegs or		
Work Area (including sign-posting e.g. for Work Areas A - G)	PINK survey flagging tape fixed to pegs or permanent feature.		
Protected Area (do not encroach enter without permission from Superintendent)	RED survey flagging tape affixed to pegs, rope, or permanent feature.		
Topsoil stockpile	YELLOW survey flagging tape fixed to pegs, rope, or permanent feature.		
Silt/Clay stockpile	BLUE survey flagging tape fixed to pegs, rope, or permanent feature.		
Western Buffer Zone	GREEN survey flagging tape fixed to pegs, rope, or permanent feature.		
Orange PVC stakes/pipe (1.0m in height)	Groundwater / Monitoring Wells to be retained/protected		
* Note corners and direction changes to be pegged and boundary/perimeter pegs spaced at 10m intervals (survey flagging tape to be attached to each peg)			

7.2 Excavated Materials Management

Stripping, excavation and stockpiling activities are expected to commence late in the last quarter of 2021 (or early in the in the first quarter of the 2022 calendar year) extending into the end of the second quarter of the 2022 calendar year. Based on available climate data, in relation to yearly climate averages for the area, these activities will take place in conditions characterised by low (less intense) rainfall, strong and gusty winds, clear days and high evaporation rates (relative to other calendar quarters).

A sequenced and excavated material reuse approach has been proposed as a means of limiting the period of time that open excavation faces and excavated materials are exposed to the elements, to minimise the size of silt/clay stockpiles and to minimise the extent of areas that are cleared (e.g. Work Areas stripped earlier in a work sequence will have compacted silt/material placed and compacted within the Work Area

before the next Work Area is stripped of topsoil). Adopting this approach will limit the potential to adversely impact ecological and human receptors and reduce impacts from dust.

Stripping will commence in Work Area A then progress to B, C, D, E, G and finally to F. For each Work Area, topsoil will be stripped, screened, conditioned and then and reused in the construction footprint in the area from which it came. The excavation, conditioning and placement of silts/clays for plant building, plant equipment and external foundations will also adopt a sequential approach in each Work Area; following stripping activities in the relevant Work Area. Topsoil stripping in each Work Area will not take place until foundation preparation is completed in the preceding Work Area (e.g. only one Work Area will be open at any point in-time). The maximum surface area stripped and open at any one point in time is 13,000m².

Where there is a surplus in excavated silts/clays (including screened topsoil) for slab foundations and/or for silts/clays excavated for plant foundations, the silt/clay will be pushed to the outer edge of the relevant Work Area for immediate re-use in adjoining Work Areas that have a deficit (e.g. Work Area A, B, D, E) of silts/clays required for slab foundations. Alternatively, silt/clay will be stockpiled in Work Area E for later reuse in slab foundation preparation in other Work Areas, or for external pavement preparation.

At no time will stockpile volumes in Area E exceed 4,000m³

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At no time will stripped/open areas exceed 13,000m² (13,000m² being half of Area E, the largest Work Area to be stripped).

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It is anticipated that open excavations and silt/clay stockpiled in each Work Area will be exposed to the elements for a maximum of 1-month however exposure time is likely to be significantly less.

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Table 9 provides, for each Work Area, detail on:

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1. sequencing for stripping/stockpiling of topsoil and volume of topsoil parcel stripped;
2. timing, volume and stockpile location of topsoil parcel (and cumulative volume of end stockpile);
3. volume, timing and location for reuse of screened and conditioned stockpiled topsoil;
4. timing and volume of silt/clay to be excavated for slab foundations;
5. timing and volume of silt/clay used for slab preparations;
6. timing (and volume) for silt/clay exported to another Work Area (including end location);
7. timing (and volume) of silt/clay imported from another Work Area (including source location);
8. volume, timing and location of silt/clay parcel stockpiles (cumulative and Work Area volumes);
9. key changes in Work Area; and
10. general comments for each action.

Deviations from the proposed sequencing in Table 9, in particular with regard stockpile quantities and stockpile ages, will be tracked by the Environmental Officer (based on survey data provided by the Project Engineer) and flagged for the attention of the Project Manager, with additional environmental controls implemented if required.

A topsoil tracking register will also be maintained by the Environmental Officer (Annexure K) that will record (for topsoil parcels from each Work Area), the stripping location (and date), stripped volume, stockpile/reuse location (and date) and a running balance of topsoil stockpile volumes.

All stripped topsoil and excavated silt/clay will be reused on the property and no soil or silt/clay will be exported from the property for the works (other than that which may be identified as 'contaminated soil'; such soils will be managed in accordance with EPA Industrial Waste Resource Guidelines).

An additional ~3,500m³ of imported fill may be required for fill activities which will be imported from a licensed quarry. Imported material will be confirmed as 'Fill Material' (per Soil hazard categorisation and management - EPA publication IWRG621 in IWRG, s6) prior to delivery to site.

Assumptions regarding the volume of silt/clay required for foundation preparation is based on geotechnical data reported by CivilTest (2021) however the requirement for importing fill will be contingent upon the actual (field) response of silt/clay to conditioning and compaction.

7.2.1 Contaminated Soil Management

7.2.1.1

Approach/Assumptions

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Extensive clean-up operations have been completed across the property prior to 2008.

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Based on the findings in the Baseline Environmental Site Assessment (2021) and the Environmental Audit Report - Former Lurgi Gasworks (2008) the spatial contamination patterns (or lack thereof) in soils across the property have remained relatively consistent.

Considering that the proposed placement (reuse) elevations for stripped (screened) topsoil and excavated silts/clays are analogous to their original stripping/excavation (source) elevations, it is believed that the stripping, stockpiling and reuse of silt/clay (within the Construction Footprint) will not lead to spatial or temporal changes in soil contamination levels across the property, particularly in light of the implementation of environmental controls outlined in this CEMP.

7.2.1.2

Controls

Per the Baseline Environmental Assessment (2021) and CivilTest Soil Report (2021) material between 0.0 - 1.0 mbgs is likely to be inorganic silt, dark brown to pale yellow in colour with low plasticity and material excavated from between 1.0 - 7.0 mbgs is likely to be inorganic clay with low to medium plasticity that is likely to be pale brown with orange streaks. During inductions construction personnel will be familiarised with expected colouring, spatial patterns and condition of excavated materials.

Construction personnel will be educated on typical field characteristics of contaminated soils including discolouration, the presence of hydrocarbons (smells) and unexpected materials such as asbestos containing material (ACM) (e.g. fibro-cement or fibro-cladding in soils).

If an operator (or other worker) notes suspected contaminated material in excavated soils or stockpiles the Environmental Officer (employed as a competent person) will inspect the soil.

Where contamination is also suspected by the Environmental Officer, the Environmental Officer will contact the Project Manager who will then contact a suitably qualified external consultant to seek professional external advice to verify the type and extent of contamination and the required management approach.

Any suspected contaminated soils will be stored in a dedicated skip and managed as per 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009' for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

Any surplus soils not reused onsite will be managed as per 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009' for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility (if required).

Where ACM is suspected, a Class A asbestos removal licence holder will be engaged to identify any and perform ACM removal if required. An asbestos register will be maintained by the Environmental Officer.

Any confirmed ACM will be wrapped in plastic and stored separately in a dedicated skip and managed as per 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009' for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

7.2.2 Topsoil Management

7.2.2.1 Approach/Assumptions

Topsoil⁶ stripping will commence in Work Area A then progress to B, C, D, E, G and finally to F. For each Work Area, topsoil will be stripped, screened, conditioned and then and reused in the construction footprint in the area from which it came.

⁶ The term 'topsoil' is used in this CEMP only for the purposes of identifying soil between 0.0 - 0.2 mbgs, and likely to contain vegetative material (grasses). All soil material between 0.0 - 1.0 mbgs is regarded as a strata of silt, largely homogenous in character and exhibiting low plasticity (see Annexure P - 'Soil Testing Report - Report No. 2210049-1' (CivilTest, March 18, 2021)). The vegetative material is to be separated (screened) from the topsoil prior to the topsoil's reuse as conditioned fill.

Topsoil stripping in each Work Area will not take place until foundation preparation is completed in the preceding Work Area. The maximum surface area open at any one point in time will be 13,000m² (half of Area E).

Where there is a surplus in excavated silts/clays (including screened topsoil) for slab foundations and/or for silts/clays excavated for plant foundations, the silt/clay will be pushed to the outer edge of the relevant Work Area for immediate re-use in adjoining Work Areas that have a deficit (e.g. Work Area A, B, D, E) of silts/clays required for slab foundations. Alternatively, silt/clay will be stockpiled in Work Area E for later reuse in slab foundation preparation in other Work Areas, or for external pavement preparation.

At no time will stockpile volumes in Area E exceed 4,000m³.

Topsoil (including groundcover/grass) within the construction footprint will be stripped to a depth of 0.2m and screened, conditioned and reused within the construction footprint as general fill in the area from which it came.

Mechanical screening will likely be completed using a flip screen attached to a loader (see Annexure Q for example of a flip screen).

7.2.2.2 **Controls**

Stripping of topsoil will be completed with a grader(s). During stripping in drier periods (or where dust generation is a possibility), a water cart will follow behind the grader to suppress fugitive dust.

Excess screened topsoil will be stockpiled in a designated stockpile area in Area E. Screened vegetative matter will be stockpiled in Area F for later offsite disposal⁷.

A small clean water diversion bund/swale will be constructed up-gradient of the stockpile area (Area E) to stop surface water runoff water interacting with the topsoil and silt/clay stockpiles. A sediment fence will be installed immediately down-gradient of the stockpile area to reduce sediment loading in run-off from the stockpile areas moving across the site.

The topsoil (screened) stockpile area will be clearly marked (No Unauthorised Access) and will be regularly lightly wetted down to reduce the potential for dust generation.

Sprinkler systems will be employed during mechanical screening to reduce the potential for generation of dust.

Topsoil will not be stockpiled more than 2.0m in height and batters of 2:1 will be maintained at all times.

⁷ As the entire property will be sprayed for weeds 1-month prior to the commencement of any construction activities screened vegetative matter is highly unlikely to be viable or able to propagate.

Topsoil stripping, stockpiling or screening will not take place during periods of strong winds and a water cart will follow behind the grader to suppress fugitive dust during stripping operations during dry periods (or where dust is evident).

Sediment controls (hay bales) will be installed up-gradient of the construction stormwater pond to minimise sediment loads in surface water entering the construction stormwater pond.

Sediment controls (hay bales) will be installed in the western and northern open drains in the Western Buffer Zone to minimise sediment loads in surface water entering the stormwater 'legal point of discharge' in the north west corner of the Western Buffer Zone during the unlikely event of flooding leading to overtopping of the spillway in the north east bund of the construction footprint.

A topsoil tracking register will also be maintained by the Environmental Officer (Annexure K) that will record (for topsoil parcels from within each Work Area), the stripping location (and date), stripped volume, stockpile/reuse location (and date) and a running balance of topsoil stockpile volumes.

Table 9 also tracks bulk material movement (silt/clay and topsoil) and deviations from the proposed sequencing in Table 9 (in particular with regard to quantified and time periods for stockpiles) will be flagged for the attention of the Project Manager and the Environmental Officer, with additional environmental controls implemented if required.

Any surplus soils not reused onsite will be managed as per 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009' for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility (if required).

A set of two rumble/shaker grids will be installed at the site entrance (see Annexure M for design). The second rumble grid will be installed within a HDPE-lined pit with an associated low-volume high-pressure wash system for the removal of soils not shaken-off from the first rumble/shaker grid. Vehicles will drive over the wheel wash pit before exiting the Site. The pit will drain to a HDPE-lined sump which will be dewatered as required into the construction stormwater pond. No detergents will be used during wheel washing.

Topsoil management controls will be inspected informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

Annexure A - ESCP provides additional detail pertaining to the timing, location and construction of erosion and sediment controls for the management and/or protection of topsoil assets.

7.2.3 Silt/Clay Management

7.2.3.1 Approach/Assumptions

Excavated silt/clay will be extracted and conditioned (with 1% - 4% lime or cement) and replaced with a mobile soil stabiliser (similar to a mobile cutter/pug-mill unit; see Annexure T for example) that cuts 300mm of silt/clay, adds required water and cement or lime additive to the cut material, and then

deposits the conditioned material behind the soil stabiliser. The conditioned silt/clay is then compacted with rollers.

The conditioning of silt/clay takes place inside the soil stabiliser unit minimising the potential for generating dust during conditioning.

As stripping and conditioning works will proceed in a sequential manner and no more than one Work Area will be open at any one point in time, the maximum area being worked will be 13,000m² (half of Area E). It is not expected that conditioned (compacted) material for foundations will generate dust however if dust is being generated or works are held up, a natural polymer will be applied to the open area to minimise the potential for generation of dust.

Surplus silt/clay, after the soil is conditioned to the required depth, will typically be stockpiled in the Work Area from which it was excavated for expeditious reuse in adjoining Work Areas however additional silt/clay will have also have to be borrowed from Area E for concrete foundation preparations across most Work Areas.

Surplus silt/clay from plant/equipment foundation preparations will typically be used for plant building and pavement foundation preparations however where silt/clay is not required for reuse within a month, it will be stockpiled in Work Area E to a height not exceeding 2.0m, for reuse at a later time (batters will not exceed 2:1). The stockpiled material will be regularly wetted down to minimise the potential for generation of dust.

No more than 4,000m³ will be stockpiled in Area E at any point in time.

Landcom (2006) indicates site soils generally meet Hydrologic Group D criteria where "*Water moves into and through these soils very slowly when thoroughly wetted. Usually, they consist of soils that are fine-textured (clay), poorly structured, surface-sealed or have high shrink/swell properties and/or with a permanent high watertable and/or with a layer near the surface that is nearly impervious*".

Landcom also indicates that steady state infiltration rates for Hydrologic Group D soils at "*saturated steady state*" is 3mm per hour and for '*dry soils*' it is ~75mm per hour'. Clay soils also possess a high runoff potential due to its low infiltration/transmissivity rate and tendency to form an outer crust when wetted.

Clay-based earthen stormwater controls have been designed and purposed to prevent ponding and be free-draining, capitalising on the low permeability/transmissivity and tendency of clay to form an outer crust, thereby reducing the potential for leaching of contaminants from soils into stormwater, from stormwater into soils or from stormwater into groundwater.

7.2.3.2 **Controls**

Any surplus silt/clay not required for immediate reuse will stockpiled in a designated stockpile area in Area E.

A small clean water diversion bund/swale will be constructed up-gradient of the stockpile areas to stop surface water runoff water interacting with the silt/clay stockpile and a sediment fence will be installed immediately down-gradient of the stockpile area to reduce sediment concentrations in run-off from the stockpile area into the construction stormwater pond.

Silt/clay stockpiled in Area E will be clearly marked (No Unauthorised Access) and wetted down as required to reduce the potential for the generation of dust.

Table 9 tracks bulk material movement (silt/clay and topsoil) and deviations from the proposed sequencing in Table 9 (in particular with regard quantifies and time-periods for stockpiles) will be tracked by the Environmental Officer, based on surveyed quantities provided by the Site Engineer, and flagged for the attention of the Project Manager, with additional environmental controls implemented if required.

Silt/clay management controls will be inspected informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

Annexure A - ESCP provides additional detail pertaining to the timing, location and construction of erosion and sediment controls for the management and/or protection of silt/clay assets.

7.2.4 Western Buffer Zone (WBZ)

7.2.4.1

Approach/Assumptions

The Western Buffer Zone has a 0.34 degree / 0.59% slope (over 200m) from the south-east to the north-west with stormwater discharging from the WBZ at the convergence of the western and northern open drains in the northwest corner of the site, into a grated pit ('legal point of discharge').

No excavations, topsoil stripping or placement of materials (e.g. soils) will be undertaken in the WBZ.

The construction stormwater pond (and associated surface water diversions) will stop run-off water from the construction footprint entering the WBZ during construction whereafter a concrete bund will be constructed along the western boundary of the construction footprint, built to 76.0 mAHD, permanently separating the Construction/Facilities Footprint and the Western Buffer Zone (both the construction and operational designs of the construction/facilities footprint will ensure all stormwater run-off from is captured and retained within the construction/facilities footprint).

Figure 19 shows final 'as-designed' elevation levels (mAHD) for the property upon completion of construction.

7.2.4.2

Controls

Erosion and sediment controls will be inspected informally on a daily basis as well as weekly per the Weekly Environmental Inspection Checklist. The WBZ will be also inspected immediately prior-to and immediately following rainfall events with clean-out/replaced as required with any accumulated sediment to be placed back onto the buffer zone.

Annexure A - ESCP provides additional detail pertaining to the timing, location and construction of erosion and sediment controls in the Western Buffer Zone.

7.3 Stockpile Management

7.3.1.1 Approach/Assumptions

Stockpiles will take the form of screened topsoil and silt/clay material.

Stockpile footprints will be stripped of 0.2m of topsoil prior to the placement of soils.

Silt/clay will be stockpiled in the Area E silt/clay stockpile area with the final volume contingent upon the response of the material to conditioning and compaction however at no time will stockpiles in Area E exceed 4,000m³ in volume.

7.3.1.2 Controls

Screened topsoil and surplus silt/clay not required for immediate reuse will stockpiled in a designated stockpile area in Area E, separated via an earthen bund.

A small clean water diversion bund/swale will be constructed up-gradient of the stockpile areas to stop surface water runoff water interacting with the stockpiles.

Sediment fencing will be installed 9 metres downslope stockpile area and straw bale controls installed at the down-gradient end of the sediment fence (see Annexure A - Reference Drawing 'SD 6-8'). Run-off from the stockpiles will then drain into the construction stormwater pond via dirty water diversions.

Prior to commencement of activity cluster works in Area E up-to ~4,000m³ of silt/clay (inc. screened topsoil) may will be stockpiled in the Area E stockpile area.

The soil stockpile areas will be clearly marked (No Unauthorised Access) and will be regularly lightly wetted down to reduce the potential for dust generation.

Sprinkler systems will be employed during mechanical screening to reduce the potential for generation of dust.

Stockpiles will not exceed 2.0m in height and batters of 2:1 will be maintained at all times.

Topsoil stripping, stockpiling, screening or movement will not take place during periods of strong winds.

Stockpile management controls will be inspected informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

A Topsoil Tracking Register will be maintained by the Environmental Officer (Annexure K) that tracks the source, volume and reuse location of materials stockpiled in Work Area E and reused in the Construction Footprint.

Table 9 tracks bulk material movement (silt/clay and topsoil). Deviations from the framework in Table 9, in particular with regard quantifies of material stockpiled or exported from the stockpiles in Work Area E, will be flagged for the attention of the Project Manager, with additional environmental controls implemented if required.

Annexure A - ESCP provides additional detail pertaining to the timing, location and construction of erosion and sediment controls for the management and/or protection of stockpile assets.

7.4 Surface Water Management

7.4.1.1 Approach/Assumptions

The nearest natural water courses to the property are Bennett's Creek which can be found ~1,300 west and 1,200m south of the site, Waterhole Creek which can be found ~1,200 north (and also ~1,000m east) of the property and Firmins Lane Wetlands ~1,000m to the north.

The slope direction on the Site is southeast (76.2 mAHD) to northwest (74.2 mAHD) with approximately 2.0m of fall over 500m, equating to a 0.23 degrees or 0.4% slope (the Site also slopes gently to the north) with surface water moving into open drainage systems along the northern and western boundaries (the latter is situated within a gas-line easement that runs north/south). The western and northern open drains converge in the northwest corner of the site and discharge into a graded pit ('legal point of discharge') and then continue to drain northwards in an open drain approximately ~1,000m. Surface water finally discharges into Firmins Lane Wetlands (see Figure 10). Anecdotal evidence suggests that Firmins Lane Wetlands was originally constructed in 2006 to accept stormwater runoff from surrounding industrial precinct areas (IZ2 and IZ1) including properties in the former Lurgi Gasworks footprint.

In the absence of extreme flooding, the property does not (and will not upon completion of the works) accept any run-on water from surrounding properties due to Fourth Road forming a barrier along the southern boundary of the property, an existing small bund along the eastern boundary, a small open drain along the northern boundary (draining to the west) and a small open drain in the gas-easement running along the western boundary. Land parcels to the north and the east are at lower elevations than the property.

Stripping, excavation, stockpiling and foundation preparation activities (including development of the site emergency stormwater and storage ponds) are expected to commence late in the last quarter of 2021 (or early in the in the first quarter of the 2022 calendar year) extending into the end of the second quarter of the 2022 calendar year. Based on available climate data, yearly climate averages for the area indicate that these work aspects will take place in weather conditions characterised by low (less intense) rainfall, strong and gusty winds, clear days and high evaporation rates (relative to other calendar quarters).

A clean water diversion bund across the southern boundary of the construction footprint will divert clean-run water from the Site from entering the construction footprint. This bund will discharge into the Western Buffer Zone via a level sill.

Earthen stormwater controls will be constructed from compacted clay and purposed to prevent ponding and be free-draining, capitalising on clay's low permeability/transmissivity and tendency to form an outer

crust, thereby reducing the potential for leaching of contaminants from soils into stormwater, from stormwater into soils or from stormwater into groundwater.

Bunds are to be keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v).

Silt/clay will be conditioned (with 1 - 4% lime or cement) and compacted for foundations across each Work Area greatly reducing the potential for infiltration of stormwater into the placed material.

Once the construction stormwater pond and dirty water diversions are in-place the construction footprint will have a 0.38 degree / 0.6% slope (over 300m) from the south-east to the north-west and the Western Buffer Zone will have a 0.34 degree / 0.59% slope (over 200m) from the south-east to the north-west.

Construction Stormwater Pond

All construction footprint surface water will be directed into a construction stormwater pond (CSP) via dirty water bunds along the northern and western boundaries of the construction footprint. The CSP will be periodically discharged into sewer per approved Trade Waste Agreement (see Annexure C1 - Trade Waste Agreement - Construction - Letter of Approval, Annexure B - Approved Trade Waste Agreement - Construction and Annexure N - Plan Approved under Clause 72.04 - Construction).

The volume of the construction stormwater pond (2,250m³) has been constrained by the need to fit the pond within construction footprint whilst not interfering with the works sequencing inside the construction footprint.

The CSP has the capacity to accept all stormwater run-off associated with a 1 in 2 year AEP 24-hour rainfall depth (assuming 20% infiltration across the construction footprint) or a 1 in 1.58 year AEP 24-hour rainfall depth (assuming 10% infiltration across the construction footprint); see Table 20 Rainfall Depths & Runoff - Chunxing ULAB Facility.

A CSP emergency stormwater water bund (CSP ESWB) will be installed along the western boundary of the construction footprint by merging the northern and western boundary dirty water diversions creating an additional emergency stormwater holding capacity of approximately 2,811m³ between the 74.2 and 74.6 mAHD contours within the construction footprint. The approximate storage volume area within the construction footprint between the 74.2 - 74.4 mAHD contours is 1,275m³ and between the 74.4 - 74.6 mAHD contours is 1,535m³ (see sub-table E in Table 20 Rainfall Depths & Runoff - Chunxing ULAB Facility).

The combined CSP and emergency stormwater bund storage volume is approximately 5,061m³. This volume is higher than a stormwater run-off volume associated with a 1 in 50 year AEP 24-hour rainfall depth (assuming 20% infiltration across the construction footprint) and is nearly enough capacity to retain a 1 in 100 year AEP; see Table 20 Rainfall Depths & Runoff - Chunxing ULAB Facility).

Based on 'Best Practice Erosion and Sediment Control - Appendix B - Sediment Basin Design and Operation' (IECA, 2008 - updated June 2018) a Type A (wet basin):

- *are considered most effective sediment traps for clayey soils;*
- *are best suited when Disturbance is short-term such as civil construction and urban development; and*
- *sizing is typically sized for 1 year 24-hour ARI' which equates to a 1 in 1.58 year AEP.*

To overcome the requirement to include an upper settling zone, a free-water zone and a sediment storage zone in the CSP as per IECA guidelines, the CSP will instead be discharged on a continual basis to ensure 90% capacity (2,025m³) at all times.

7.4.1.2 **Controls**

Construction Stormwater Pond (CSP)

Prior to the commencement of topsoil stripping activities a construction a stormwater pond (CSP) will be installed in the northwest corner of the construction footprint (see Figure 14).

The construction stormwater pond (CSP) will be 75.0m long x 15.0m wide x 2.0m deep with a holding capacity of 2,250m³. The construction stormwater pond will be lined with 3.0mm HDPE Geomembrane Pond Liner.

A CSP emergency stormwater water bund (CSP ESWB) will be installed along the western boundary of the construction footprint by merging the northern and western boundary dirty water diversions creating an additional emergency stormwater holding capacity (within the construction footprint) of approximately 2,811m³.

The CSP ESWB will be constructed of silty clay keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v).

The CSP will be discharged into a 20,000 litre holding tank and from there, on a continual basis via a pump system (at a rate not exceeding 80m³ per day per agreement with Gippsland Water - Annexure C2) into the Trade Waste sewer connection located at the site entrance of the property, to ensure 90% capacity (2,025m³) at all times.

The 20,000 CSP water tank will be clearly labelled '*construction water only – not for drinking*'.

Construction footprint surface water will be directed into the CSP via dirty water bunds along the northern and western boundaries of the construction footprint.

Discharges from the CSP water tank to sewer will be recorded in the Offsite Discharge Tracking Register (Annexure I) by the Environmental Officer. Field sampling of discharge water will be undertaken to

measure compliance with Gippsland Water's TWA Water Quality using a multimeter probe capable of measuring temperature, electrical conductivity, total suspended solids/turbidity and pH.

The intake for from the CSP to the CSP holding tank will be via a floating intake on the surface of the CSP water-level to reduce the potential for taking-up water with high sediment loadings.

Where water level in the construction pond needs to be reduced during construction and the 80m3 per day volumetric discharge limit has been reached, an appropriately licensed contractor (e.g. Veolia Environmental Services) will be engaged to transport the wastewater offsite (likely as L100 or L150) to a licensed facility. Relevant waste certificates will be completed and retained as required for verification purposes.

Where accumulated sediment (sludge) is evident at the floor of the construction sediment pond, an appropriately licensed contractor (e.g. Veolia Environmental Services) will be engaged to transport the sludge-water to a licensed facility. Relevant waste certificates will be completed and retained as required for verification purposes.

If flocculation of the construction stormwater pond is required, guidelines in Appendix E (Settlement of Dispersed Fines) in 'Managing Urban Stormwater: Soil and Construction' aka 'the Blue Book' (Landcom, 2006) will be followed.

Erosion and Sediment Controls

Sediment levels in the CSP will be reduced as far as practicably possible via the use of upslope erosion and sediment controls including sediment fencing and hay-bale sediment controls installed perpendicular to the gradient (for location and orientation see Annexure A - ESCP).

A clean water diversion bund across the southern boundary of the construction footprint will divert clean-run water from the Site from entering the construction footprint. This bund will discharge into the Western Buffer Zone via a level sill.

Immediately upslope of the topsoil stockpile footprint a small clean water diversion bund/swale will be constructed to stop water interacting with the topsoil and silt/clay stockpiles.

Sediment controls will be installed in the existing open drains bordering the Western Buffer Zone.

Sediment fencing will be installed 5 metres downslope of the stockpile area and straw bale controls installed at the down-gradient end of the sediment fence (see Annexure A - Reference Drawing 'SD 6-8'). Run-off from the stockpiles will then drain into the construction stormwater pond via dirty water diversions.

Clean and dirty water diversion bunds will be constructed of silty clay, keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v).

Surface water (stormwater) that ingresses excavations will be removed from the excavations and pumped into the construction stormwater pond (CSP) via submersible pump during, or immediately following rainfall events. Surface water pumped into the CSP from excavations is expected to have lower contaminant loadings (chlorides will not likely be present) than as reported in groundwater in the Baseline Environmental Site Assessment (2021) due to the short residence time of the ingressed water in the excavation and because clay has a low permeability/transmissivity (resulting in a very low potential for leaching of contaminants into water or from soils into water).

Construction water (e.g. for conditioning/compaction, work area and stockpile dust suppression and for watering to encourage seed strike) will be provided via mains water.

Surface water management controls will be inspected informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

Annexure A - ESCP provides additional detail pertaining to the timing, location and construction of erosion and sediment controls for the management and/or protection of surface water assets.

7.4.1.3

Potable (Construction) Water Supply

Potable water for use in construction will be supplied via an external contractor and stored in a 20,000 litre holding tank in Area F. Plan Approved under Clause 72.04

The Environmental Officer will maintain a water supply register that records the volume, date and time for water deliveries.

The 20,000 potable (construction) water tank will be clearly labelled 'construction water only – not for drinking'.

7.5 Waste Water Management

Waste water on the project is expected to primarily take the form of concrete wash-down water.

Waste water management controls will be inspected informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

7.5.1 Concrete Wastewater

7.5.1.1

Approach/Assumptions

The volume of concrete required over the duration of the works is expected to be ~19,000m³ (Table 21) which will be delivered to site via ~2,570 deliveries (assuming each concrete truck has a 7.4m³ capacity).

It is expected that each concrete truck will use ~12 litres of water for washing-down delivery chutes (and other truck-mounted equipment) after pouring concrete resulting in 30,840 litres of water will be required for concrete truck wash-down over the course of the Project.

Controls

A concrete truck wash-down pit (see Figure 14 for location and Figure 24 for design), with a capacity of 2,400 litres, will be installed prior to the commencement of concreting activities.

To promote settling out of solids, the 1.4m³ capacity front washout section (trucks back into the pit) of the pit will be separated from a lower secondary section (1.0m³) via a baffle/wall.

When concrete wastewater (expected to have a pH value between 11 - 13.6) in the pit will reaches 50% capacity, it will be decanted into a 1,000 litre bunded IBC, pH balanced with citric acid to between 6.0 - 9.0 and then discharged to sewer in compliance with the approved Gippsland Water Trade Waste Agreement (field sampling will be completed using a multimeter probe capable of measuring temperature, electrical conductivity, total suspended solids/turbidity and pH).

Discharges to sewer will be recorded in the Offsite Discharge Tracking Register (Annexure I) by the Environmental Officer.

Where treatment of the concrete wastewater cannot be completed, or where the pH value in wastewater in the IBC cannot be reduced to 6.0 - 9.0, it will be taken offsite by an appropriately licensed contractor (e.g. Veolia Environmental Services) when the capacity in the washout pit reaches 50%.

7.5.2 Other Wastewater

7.5.2.1

Approach/Assumptions

Other wastewater is expected to take the form of water impacted by chemicals or hydrocarbons and sewerage effluent from portable toilets. There is a possibility that groundwater may require management (s7.6 details controls for management of groundwater).

7.5.2.2

Controls

Dedicated IBCs (bunded) for hydrocarbon or chemical impacted water will be placed around the site in the immediate vicinity of relevant works for the correct disposal (e.g. IBC to be placed in Area E near the concrete washout pit for decanting of concrete pit wastewater for discharge to sewer).

Portable amenities in Area F will have septic waste removed from the internal tanks as required by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility. High-level alarms set-to 80% level will be installed to minimise the potential for sewerage spill.

Stormwater ingressed into hydrocarbon containment bunds or hydrocarbon drip-trays will be removed and stored in an appropriately bunded 1,000 litre (1m³) intermediate bulk container (IBC) for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

Section 7.8 (Chemical and Hydrocarbons) and 7.9 (Waste Management) provide additional information regarding wastewater management.

7.6 Groundwater Management

7.6.1.1 Approach/Assumptions

The Baseline Environmental Site Assessment (2021) summarised groundwater conditions at the property as follows:

- The depth to regional groundwater ranged from 2.1 to 2.7 mbgs with groundwater being inferred to flow in a north-westerly direction
- No petroleum (or gasworks related) hydrocarbon species (i.e. BTEX, TRH or PAH compounds) were reported in groundwater at levels above laboratory reporting limits.
- Low concentrations of acetone were reported for all groundwater wells at just above detection limits except for well MW1 where no detectable acetone was reported. There are no Australian acetone water quality criteria for ecosystem protection or drinking water to assess the acetone occurrence against. The concentrations reported are more than 100 times less than USEPA risk screening levels for drinking water.
- Trichloroethene (TCE) was reported at a concentration above the adopted health protection level at MW3 and below the human health protection level at MW1. The average TCE concentration in groundwater across the site was reported below the adopted human health criteria, and two wells located downgradient of MW3 (MW4 and MW6) reported concentrations below the laboratory limit of reporting. As the site is located within a groundwater quality restricted use zone (GQRUZ) this result is considered to pose a low risk to potential extractive uses.
- Detectable concentrations of cobalt, copper, manganese, nickel and zinc were reported in all samples. Selenium was detected in well MW2 only and chromium detected in well MW3 only.
- Nitrogen species were detected in all groundwater samples, with nitrate concentrations at similar or lower concentrations than those reported in 2005 and 2006.
- Concentrations of copper, nickel, zinc and nitrate were at concentrations higher than the criteria adopted to be protective of the Water Dependent Ecosystems and Species beneficial use and concentrations of manganese, chloride and nitrate potentially preclude the potable water supply, agriculture and irrigation and water-based recreation beneficial uses. Concentrations of these chemical species were similar upgradient and downgradient of the site meaning the site is not likely to be a source of these chemical species. They were present at similar concentrations to those reported on 2005 and 2006.
- EPA has required and Chunxing has agreed to the collection of groundwater samples at the site for phenol testing. It is proposed that this occur at the same time as off-site soil sampling during the early works phase of development for the sake of efficiency.
- It is considered that the baseline ESA demonstrated that groundwater contamination was equivalent to or of better than the contamination status of groundwater conditions at the site as of 2008.
- In 2007, EPA declared a Groundwater Quality Restricted Use Zone (GQRUZ) based on a submission from the auditor. A GQRUZ provides public information about which uses groundwater is not suitable for. The GQRUZ covers the entire ULAB site and extends over the whole of the former gasworks site and includes groundwater beneath land which is up- and down-gradient of the former gasworks site.

- A Groundwater Quality Restricted Use Zone (QGRUZ) has also been declared for and extending beyond the boundaries of the site (reference number 513601-1) with groundwater within this considered not suitable for Drinking Water, Livestock Water and Water used for recreation purposes.

- It is recommended that the GQRUZ remain on the site to prevent extraction and use of groundwater.

- It is considered that the Baseline ESA demonstrated that groundwater contamination was consistent with the post- remediation soil conditions at the site as of 2008.

The Baseline Environmental Site Assessment (2021) went on to state;

- A CEMP has been prepared under the advice and direction of Mr Phil Sinclair (EPA appointed Environmental Auditor, 75667) and that it is the opinion of Mr Phil Sinclair that the soil and groundwater contamination components of the CEMP, meet the requirements of the Environment Management Plan Former Lurgi Gasworks Site Morwell Victoria, dated 24 September 2008. Two of the aims of the CEMP are to limit the exposure of any ecological receptors to excavated soils and groundwater and to appropriately categorise any waste soil prior to disposal offsite (if required).

- It is in the opinion of the Mr Phil Sinclair (EPA appointed Environmental Auditor, 75667) that with the implementation of the construction methodology, controls and inspection and monitoring programs detailed within the Chunxing ULAB Facility CEMP, there is a low risk that development of the ULAB Facility will cause unacceptable impacts from contamination to surface water, groundwater or soil at and adjacent to the site.

Groundwater will not be extracted for use during the Works.

The potential for surface water (stormwater) that ingresses excavations (during rain events or other) to move into groundwater is considered negligible as ingressed stormwater will be quickly removed from the excavations and pumped into the CSP using a pump during, during or immediately following rainfall events. Additionally, clay material has low permeability/transmissivity resulting in a very low potential for the leaching of contaminants from clay into ingressed stormwater or from ingressed stormwater water into clay (and then groundwater).

Per the Baseline Environmental Site Assessment (2021) the depth to groundwater at the Site ranges between 2.1 to 2.7 metres below ground surface (73.1 - 71.7 mAHD; see Figure 22); shallower in south-east and deeper in the north-west (inferred flow direction).

The deepest excavations have been designed to avoid groundwater interception by at least 0.2m (average difference between excavation depth and inferred groundwater depth is 0.7m); Table 8 summarises excavation depths for the ULAB Facility and provides corresponding depths to groundwater for the excavations. Annexure R (Engineer's Endorsement - Excavation Depths) provides confirmation from a chartered engineer that the excavation depths in Table 8 are true and correct and all excavations are at least 0.2m above inferred groundwater depth (e.g. that excavation depths correspond to the design and construction elements contained in CEMP and the proposed engineering drawings for the ULAB Facility).

Tetra Tech Coffey's Baseline Environmental Site Assessment (2021) indicates that groundwater quality (as measured from MW01 - MW06) would meet water quality parameters outlined in the approved

Gippsland Water 'Trade Waste Agreement' (Annexure B), with the exception of chloride, sodium, total dissolved solids (TDS) and electrical conductivity (EC); see Table 11.

Table 11 Electrical Conductivity, Chloride, Sodium & TDS in Groundwater Bores & Trade Waste Limits

BORE ID	EC* (µs/cm)	EC TWA LIMIT (µs/cm)	CHLORIDE (mg/L)	CHLORIDE TWA LIMIT (mg/L)	FILTERED SODIUM (mg/L)	SODIUM TWA LIMIT (mg/L)	TDS* (mg/L)	TDS TWA Limit (mg/L)
MW1	6,638	1,600	2,200	200	1,300	200	4,315	1,000
MW2	3,337	1,600	950	200	490	200	2,169	1,000
MW3	3,759	1,600	1,100	200	530	200	2,443	1,000
MW4	3,522	1,600	570	200	310	200	1,256	1,000
MW5	1,165	1,600	270	200	170	200	757	1,000
MW6	1,732	1,600	430	200	270	200	1126	1,000
As reported in Tetra Tech Coffey's Baseline Environmental Site Assessment (2021) Samples taken 08-04-2021 / *Field Measured (TDS = EC x 0.65)								

Electrical conductivity (EC) can act as a surrogate for the presence or absence of salts and therefore can provide an indication of the presence, and possible concentrations, of chloride and sodium in groundwater. Figure 17 below shows the strong relationship between EC and chloride, sodium and total dissolved solids in groundwater at the site. In the unlikely event groundwater is suspected of having ingressed excavations (e.g. water is evident in excavations in the absence of rain), Chunxing proposes to measure the field EC value of the ingressed water to help confirm the presence (or otherwise) of groundwater, and implement additional management controls (surface water (stormwater) that ingresses excavations will be removed from the excavations and pumped into the construction stormwater pond (CSP) via submersible pump). Planning Scheme Amendment No. C129 states and therefore is likely to have much lower EC readings than groundwater due to the short residence time of the ingressed water in the excavation).

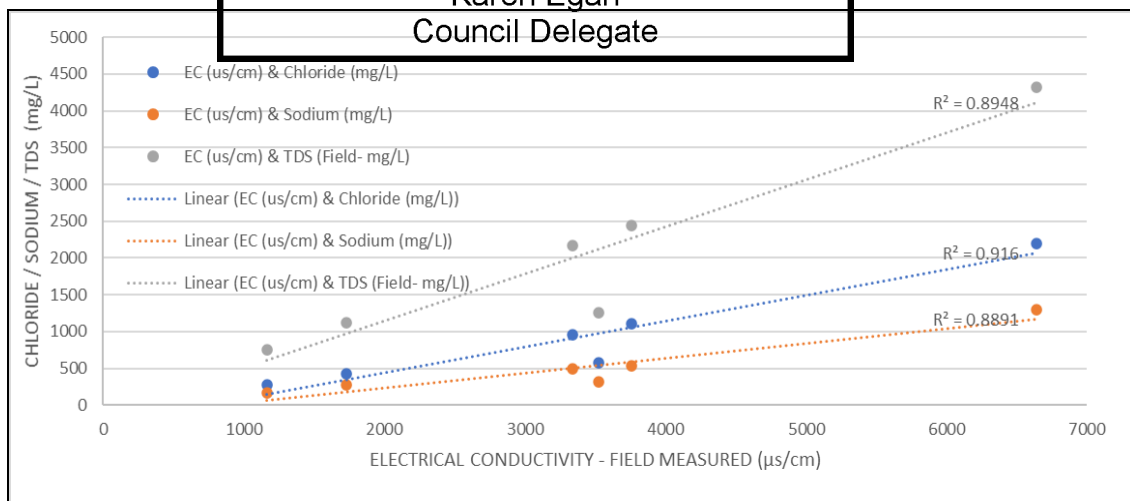


Figure 17 Regression (R2) Plot – Electrical Conductivity, Chloride, Sodium & TDS in Groundwater

7.6.1.2 Controls

Maximum excavation depths have been designed to not exceed 2.0 mbgs at any location on the site ensuring a minimum 0.2m delta between inferred groundwater levels and the deepest excavations

(smelter foundations, refining kettle pit foundations, row 7 columns, row 1 columns, row 15 columns; mullions row Y, ULAB Pit and the construction stormwater pond).

The earthworks supervisor/superintendent will be in attendance in-person at all excavations where excavation depth extends below 73.0 mAHD (smelter foundations, refining kettle pit foundations, row 7 columns, row 1 columns, row 15 columns; mullions row Y, ULAB Pit and the construction stormwater pond).

To provide a greater level of accuracy during more sensitive excavations, excavators used by earthworks contractors will employ a Trimble System (or similar) with +/- 50mm tolerance during excavations at those locations where inferred groundwater depth comes within 0.2m of the floor of the excavation (e.g. smelter foundations, refining kettle pit foundations, row 7 columns, row 1 columns, row 15 columns; mullions row Y, ULAB Pit and the construction stormwater pond).

Surface water (stormwater) that ingresses excavations during rain events will be removed from the excavations and pumped into the CSP using a submersible pump during, during or immediately following rainfall events or immediately upon discovery.

Excavated silt/clay will be conditioned (with 1 – 4% lime or cement) and compacted for the preparation of foundations in each Work Area, greatly reducing the potential for infiltration of stormwater into the compacted silt/clay profile and into underlying groundwater.

The Project Engineer will advise the Environmental Officer of any changes to foundation or excavation design depths and provide 'as-built' survey for all excavations so that the Environmental Officer can confirm that excavations will not intercept, or have not, intercepted groundwater.

Ingressed Groundwater

Where water in excavations is suspected of containing groundwater (e.g. water is evident in excavations in the absence of rain), Chunxing will test the EC value in the ingressed water with a multimeter field probe.

Where an EC value of 1,600 µs/cm or greater is recorded in the suspected ingressed groundwater, the water will be pumped into a 20,000 litre holding tank using a submersible pump (EC reading and volume of water discharged into the tank is to be recorded in Annexure S (Groundwater Holding Tank Volume & Discharge Tracking Register)). Whilst the suspected groundwater in the excavation is being pumped to the holding tank, barricading will be erected around the excavation to prevent intrusion by construction personnel and activities.

The 20,000 emergency groundwater holding water tank will be clearly labelled 'do not use'.

When the volume in the groundwater holding tank reached 80%, a sample will be sent to a laboratory for testing conformance with TWA parameters. Where water in the holding tank meets TWA parameters, it will be discharged into the CSP or into sewer via a layflat hose. Where water in holding tank does not meet TWA parameters, it will be collected by a licensed water contractor for offsite disposal.

A Groundwater Holding Tank Volume & Discharge Tracking Register (Annexure S) will be maintained by the Environmental Officer for the purposes of tracking:

- volumes of suspected groundwater in excavations pumped into the groundwater holding tank (including EC readings of suspected groundwater in the excavation prior to pumping);
- laboratory analysis of water in groundwater holding tank prior to discharge; and
- volumes of discharges from the groundwater holding tank into the CSP or removed from site by a licensed contractor (including waste tracking form numbers).

Discharges of the groundwater holding tank to TWA will be recorded in the Offsite Discharge Tracking Register (Annexure I) by the Environmental Officer.

Conformance with groundwater management controls will be checked informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

Where groundwater seep is constant (e.g. despite pumping water in excavation to the holding tank the excavation recharges with water), an external subject-matter expert will be engaged to advise on a specific management approach with notification to the Victorian EPA if required.

7.7 Noise Management

7.7.1.1 Approach/Assumptions

Land surrounding the property is industrial in nature (Gippsland Heavy Industry Park) with land parcels immediately surrounding the property zoned as IN22 (Industrial 2, zoned to provide a range of light industrial and warehouse land uses) and land out to a radius of 500m from the site zoned as IN1Z (Industrial 1, zoned to provide for manufacturing industry, the storage and distribution of goods and associated uses); see Figure 30.

The nearest suburban residential area is Morwell south, its' southernmost edge approximately 2.1km to the north of the site. The nearest residence is located approximately 1.1km to the south-east (from the nearest site boundary). Hazelwood north Primary school is located approximately 1.7 km south-east of the site. The locations of sensitive receptors are shown in Figure 11 and detailed in Table 6.

Major vehicular thoroughfares sit between the site and each of the nine sensitive receivers. The thoroughfares comprise Princess Freeway (1.3 km to the north of site), Firmins Lane (1.2 km to the north of site), Monash Way (340m to the west of site) and Tramway Road (100m to the east of site). These busy thoroughfares provide access for existing freight, commercial and residential traffic between Morwell, Traralgon, Hazelwood, Churchill, Hazelwood Open Cut Mine, Loy Yang Power Station, the Princess Freeway and Gippsland Heavy Industry Park. Traffic volumes on these thoroughfares are high, ranging between 3.3 vehicles per minute to 14 vehicles per minute (see Table 12).

Each of the nine sensitive receptors are located closer to one of the above identified major vehicular traffic thoroughfares than they are to the Chunxing site. Each of the nine sensitive receptors is also <1,900m from a second (and sometimes third) major vehicular traffic thoroughfare (see Table 14).

Table 14 also summarises estimated peak dBA levels likely to be experienced by sensitive receptors resulting from existing traffic (e.g. no noise associated with the Project). Based on the data in Table 14, existing peak and ambient noise experienced by the sensitive receptors associated with traffic from the identified vehicular thoroughfares (not factoring any other noise generating activities associated with other industrial, vehicular or commercial activities) could be characterised as elevated.

Table 13 summarises peak dBA levels that are likely to be experienced by sensitive receptors resulting from site construction activities⁸ including noise levels associated with single pieces of plant/machinery, as well as for cumulative noise levels associated with the simultaneous use of plant/machinery deployed during the noisiest period of the Project; topsoil stripping operations. During topsoil stripping, Chunxing expect to simultaneously use x1 grader + x1 excavator + x1 loader + x1 moxy. During all other phases of the Project it is expected only one or two pieces of plant will be operated simultaneously (e.g. soil stabiliser and loader during foundation preparation only) and such activities will employ plant/machinery with lower noise emissions than those used in topsoil stripping.

Table 13 indicates that peak dBA experienced by the closest sensitive receptor (SR1) associated with topsoil stripping activities is likely to be 51 dBA and peak dBA experienced by the farthest sensitive receptor (SR9) associated with topsoil stripping activities is likely to be 37.0 dBA.

Table 14 indicates that peak dBA experienced by the sensitive receptors due to non-project activities (existing traffic noise) is higher than peak dBA levels from project activities (with existing traffic noise levels ranging between 51.5 dBA (SR1), 68.9 dBA (SR9)). As can be noted in see Table 12, peak dBA (from trucks) experienced by the sensitive receptors occurs at least once every 2 minutes and peak dBA from cars (ranging from 33.9 - 62.5 dBA) occurs at least once every 26 seconds.

It is important to note that the estimated peak dBA levels that may be experienced by sensitive receptors due to project activities does not account for noise attenuation afforded by existing structures and buildings immediately surrounding the site in Gippsland Heavy Industry Park (see Figure 3).

Noise Attenuation

Of the nine identified sensitive receptors, six located to the south-east of the site (SR01 - SR06) are afforded acoustic protection from site construction noise by large industrial buildings and large stockpiles (Latrobe Magnesium) within Gippsland Heavy Industry Park.

The two sensitive receptors located to the north and north-west of the site (SR08 & SR09) are also afforded acoustic protection from site construction noise by large industrial buildings and Latrobe City Council's Morwell Transfer Station, located within Gippsland Heavy Industry Park. SR08 is also situated

⁸ Table 13 also provides 3 examples of noise levels experienced by sensitive receptors associated with existing (non-Project) noise emissions from the property area including from A - a single car passing by B - a busy kerbside and C - a single truck passing by. These 3 models are provided only to offer comparisons to likely noise emissions associated with plant/machinery use on the project e.g. the noise emissions experienced by sensitive receptors associated with a non-Project truck passing by the Chunxing property is 3 dBA louder than the collective noise emissions from the project experienced by the same sensitive receptors during the most noisy period on the project (topsoil stripping).

50m from a heavy metal recyclers and 500m from Hazelwood Open Cut Mine and SR09 is <100m from the Princess Freeway and associated on/off ramps as well as Princess Drive, a major thoroughfare in Morwell.

Sensitive receptor 7 is located 1.7km to the north-east of the site on Firmins Lane and is afforded acoustic protection by large stockpiles (Latrobe Magnesium). SR07 is also situated in close proximity to a Holcim concrete batch plant, Easyquip (a heavy industrial equipment supplier) and Firmins Lane garden supplies.

Construction activities are not expected to greatly impact existing ambient noise levels as experienced by sensitive receptors that are already impacted by noise associated with four major traffic thoroughfares, Gippsland Heavy Industry Park and other heavy industry in the vicinity.

7.7.1.2 **Controls**

Works will be limited to the hours as detailed in the 'Works Approval Application - Chunxing Used Lead Acid Battery (ULAB) Recycling Facility' (Ascend Waste & Environment, December 2019) and the 'Works Approval Application - Addendum to WAA (Final) Chunxing Used Lead Acid Battery (ULAB) Recycling Facility' (Ascend Waste & Environment, 29 June 2020), approved per EPA Works Approval 232330 (31/08/2020). Construction activities will only take place between 7.00am and 6.00pm Monday to Friday and 8.00am to 1.00pm Saturday (Approved under Clause 72.04 of the Planning & Environment Act 1987, Planning Scheme Amendment No. C129latr, Clause No. 6.21). No construction activities will take place outside normal working hours (as per EPA Pub. 1834).
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The selection of plant and equipment intended for mobilisation to Site will include a documented assessment of sound power levels by the environmental officer in conjunction with the Project Manager. Where practicable plant/equipment with the lowest sound power ratings will be preferentially selected over plant/equipment with higher sound power ratings. The documented assessment will be retained by the Environmental Officer for future reference.

All plant/machinery mobilised to site will employ the use of broadband "croaker" reversing alarms and not tonal (beep-beep-beep) reversing alarms.

Plant/equipment mobilised to site will be inspected prior to use to confirm equipment is operating properly (e.g. exhausts, mufflers, alarms, timing belts, hydraulic power packs). Plant/equipment will be maintained in accordance with manufacturer's specifications with maintenance records made available to the Environmental Officer during routine environmental inspections.

Where practicable, in scheduling plant/equipment use for different phases of the project, the Project Manager will give consideration to reducing the simultaneous use of multiple machines and/or machines with higher sound power ratings. Where possible the Project Manager will also schedule the noisiest activities around times of high background noise (e.g. during heavy vehicular traffic times on the nearby thoroughfares) to mask/reduce site-based noise intruding above existing background noise levels.

Routes and timing for the delivery and removal of materials to/from site will be planned to minimise noise impacts to sensitive receptors as far as practicable (e.g. bulk material delivery/removal will be planned to take place during existing heavy vehicular traffic periods on existing heavily trafficked routes).

During inductions machine operators and truck drivers will be educated on noise reduction techniques including avoidance of sudden acceleration/decelerations, restricting the use of engine brakes and not dropping noisy materials from height etc. The Environmental Officer will monitor the implementation of these techniques and communicate any potential improvements to the relevant operator/s with lessons-learned also communicated to personnel during pre-starts and toolboxes.

Noise enquiries from the community will be managed in accordance with s10 of this CEMP and Chunxing's Project 'Communication and Engagement Plan' (Revision 3, 25 October 2021). Chunxing will also adopt a proactive approach with regard to the Hazelwood Primary School (Sensitive Receptor 7; located 1.7km to the south-east of the Site) and communicate with school representatives on a fortnightly basis.

Whilst acoustic protection from site activities is afforded to sensitive receptors by existing large buildings in Gippsland Heavy Industry Park, acoustic blankets will be affixed to perimeter fencing such that the acoustic blankets provide an unbroken acoustic shadow (as far as practicable) between the site and sensitive receptors.

The 100 kVA (self-bunded) diesel generator will operate only during nominated construction hours until such a time as a permanent electricity supply is connected (the precise timing is unknown at this stage due to the expected complexity and scope of the local power infrastructure upgrade).

Conformance with noise management controls will be checked informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

Whilst piling was originally planned for the development of the foundation columns Chunxing decided to eliminate piling (impulse noise) from the works to reduce noise levels (risks) associated with the project.

With the adopted construction approach and proposed controls implemented, Chunxing believe that risks to sensitive receptors associated with noise from the site have been reduced as far as reasonably practicable.

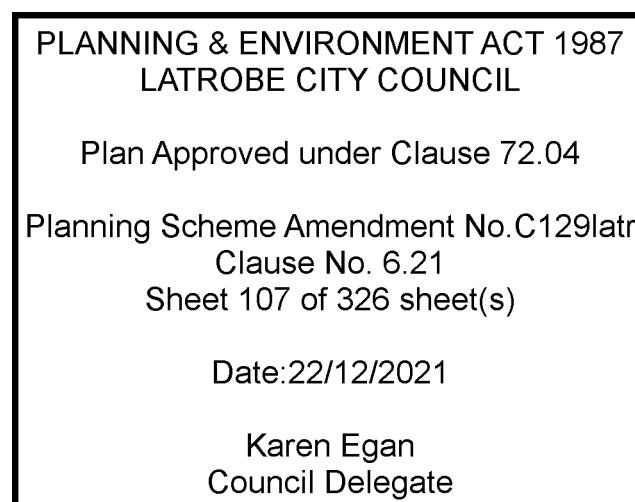


Table 12 Average daily (24-hour) Traffic Volume on Roads Separating Site & Sensitive Receptors (2020)

Location	Trucks Per Day	Trucks Per Hour	Trucks Per Minute	Cars Per Day	Cars Per Hour	Cars Per Minute	Total Vehicles Per Day	Total Vehicles Per Hour	Total Vehicles Per Minute
Tramway Road (btwn Churchill-Traralgon Road & Loy Yang-Morwell Road)	600	25	0.4	4,200	175	2.9	4,800	200	3.3
Firmins Lane (btwn Hazelwood Road & Tramway Road)	640	26	0.4	4,660	194	3.2	5,300	220	3.6
Monash Way (btwn Commercial Road & Brodribb Road)	700	29	0.5	9,300	388	6.5	10,000	416	6.9
Princess Highway (btwn Princes Freeway East & Princes Highway East Onramp)	1,700	70.8	1.2	19,300	804	13.4	21,000	875	14
* Source - VicRoads (https://vicroadsopendata-vicroadsmaps.opendata.arcgis.com/datasets/traffic-volume)									

Table 13 Estimated Peak dBA Levels Experienced by Sensitive Receptors from Likely Chunxing Project Activities

Noise Source	dBA Measured Lmax @ 15 metres for Noise Source ¹	Estimated Peak dBA at Sensitive Receptor 1 (1,100m from site) ²	Estimated Peak DBA at Sensitive Receptor 2 (1,200m from site) ²	Estimated Peak DBA at Sensitive Receptor 3 (1,400m from site) ²	Estimated Peak DBA at Sensitive Receptor 4 (1,560m from site) ²	Estimated Peak DBA at Sensitive Receptor 5 (1,460m from site) ²	Estimated Peak DBA at Sensitive Receptor 6 (1,550m from site) ²	Estimated Peak DBA at Sensitive Receptor 7 (1,700m from site) ²	Estimated Peak DBA at Sensitive Receptor 8 (1,750m from site) ²	Estimated Peak DBA at Sensitive Receptor 9 (2,100m from site) ²
Generator (<25KVA)	73	36	35	34	33	34	33	32	32	31
Car passing by**	73	36	35	34	33	34	33	32	32	31
Flat Bed Truck	74	37	36	35	34	35	34	33	33	32
Dump Truck	76	39	38	37	36	37	36	35	35	34
Compressor (air)	78	41	40	39	38	39	38	37	37	36
Concrete Mixer Truck	79	42	41	40	39	40	39	38	38	37
Kerbside of busy road**	79	42	41	40	39	40	39	38	38	37
Front End Loader	79	42	41	40	39	40	39	38	38	37
Compaction Roller	80	44	42	41	40	41	40	39	39	38
Soil Stabiliser	80	44	42	41	40	41	40	39	39	38
Crane	81	45	43	42	41	42	41	40	40	39
Excavator	81	45	43	42	41	42	41	40	40	39
Pumps	81	45	43	42	41	42	41	40	40	39
Concrete Pump Truck	81	45	43	42	41	42	41	40	40	39
Small Dozer (D6)	82	46	44	43	42	43	42	41	41	40
Soil Stabiliser + Loader ³	84	48	46	45	44	45	44	43	43	42
Vac-Truck	85	49	47	46	45	46	45	44	44	43
Grader + Smaller Dozer (D6) ³	87	51	49	48	47	48	47	46	46	45
Grader + Excavator + Dump Truck + Loader ³	87	51	49	48	47	48	47	46	46	45
Truck passing by**	90	54	52	51	50	51	50	49	49	48

1 - Source US Department of Transportation (https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm)

2 - Source - The Engineering Toolbox (https://www.engineeringtoolbox.com/inverse-square-law-d_890.html)

3 - Source - The Engineering Toolbox (https://www.engineeringtoolbox.com/adding-decibel-d_63.html)

** Provided as examples for comparison only

Note: Peak dBA at each sensitive receptor assumes no noise attenuation from acoustic barriers (e.g. buildings etc)

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Table 14 Sensitive Receptors - Comparison of Estimated Peak dBA levels Experienced at Sensitive Receptors from A - Roads closest to Sensitive Receptor & B - Site Construction Activities

SENSITIVE RECEPTOR			NOISE FROM PROJECT		NOISE FROM CLOSEST ROAD 1				NOISE FROM CLOSEST ROAD 2				NOTES
SENSITIVE RECEPTOR ID	DESCRIPTION	RECEPTOR DISTANCE FROM ULAB FACILITY (APPROX.)	ESTIMATED PEAK dBA EXPERIENCED AT SENSITIVE RECEPTOR FROM CHUNXING CONSTRUCTION ACTIVITIES ¹	ACOUSTIC BARRIER BETWEEN ULAB FACILITY & SENSITIVE RECEPTOR	SENSITIVE RECEPTOR DISTANCE FROM CLOSEST ROAD 1 (APPROX.)	ACOUSTIC BARRIER BETWEEN CLOSEST ROAD 1 & SENSITIVE RECEPTOR	ESTIMATED PEAK dBA EXPERIENCED AT SENSITIVE RECEPTOR FROM CLOSEST ROAD 1 ²	FREQUENCY EXPERIENCING PEAK dBA FROM TRAFFIC ON CLOSEST ROAD 1 BY SENSITIVE RECEPTOR (per min.) ³	SENSITIVE RECEPTOR DISTANCE FROM CLOSEST ROAD 2 (APPROX.)	ACOUSTIC BARRIER BETWEEN CLOSEST ROAD 2 & SENSITIVE RECEPTOR	ESTIMATED PEAK dBA EXPERIENCED AT SENSITIVE RECEPTOR FROM CLOSEST ROAD 2 ²	FREQUENCY EXPERIENCING PEAK dBA FROM TRAFFIC ON CLOSEST ROAD 2 BY SENSITIVE RECEPTOR (per min.) ³	NOTES
SR1	Residential address	1,100m	52	YES Large industrial buildings & stockpiles	400m Tramway Road	NO	Car - 44.5 Truck - 61.5	Car - 2.9 Truck - 0.4	1,200 Monash Way	NO	Car - 34.9 Truck - 51.9	Car - 6.5 Truck -0.5	Also located within 100m of a minor road (Church Rd)
SR2	Residential address	1,200m	50	YES Large industrial buildings & stockpiles	620m Tramway Road	NO	Car - 40.7 Truck - 57.7	Car - 2.9 Truck - 0.4	1,500 Monash Way	NO	Car - 33.0 Truck - 50.0	Car - 6.5 Truck -0.5	Also located within 100m of a minor road (Church Rd)
SR3	Residential address	1,400m	49	YES Large industrial buildings & stockpiles	990m Tramway Road	NO	Car - 36.6 Truck - 53.6	Car - 2.9 Truck - 0.4	1,900 Monash Way	NO	Car - 30.9 Truck - 47.9	Car - 6.5 Truck -0.5	Also located within 100m of a minor road (Church Rd)
SR4	Hazelwood north Primary School	1,560m	48	YES Large industrial buildings & stockpiles	1,140m Tramway Road	NO	Car - 35.4 Truck - 52.4	Car - 2.9 Truck - 0.4	1,900 Firmans Lane	NO	Car - 30.9 Truck - 47.9	Car - 3.2 Truck -0.4	Also located within 100m of a minor road (Church Rd)
SR5	Residential address	1,460m	49	YES Large industrial buildings & stockpiles	840m Tramway Road	NO	Car - 38.0 Truck - 55	Car - 2.9 Truck - 0.4	1,720 Monash Way	NO	Car - 31.8 Truck - 48.8	Car - 6.5 Truck -0.5	Also located within 100m of a minor road (Church Rd)
SR6	Residential address	1,550m	48	YES Large industrial buildings & stockpiles	1,360m Tramway Road	NO	Car - 33.9 Truck - 50.9	Car - 2.9 Truck -0.4	1,350m Firmans Lane	LIMITED	Car - 33.9 Truck - 50.9	Car - 3.2 Truck -0.4	Also located within 100m of a minor road (Church Rd)
SR7	Residential address	1,700m	47	YES Large industrial buildings & stockpiles	50m Firmans Lane	NO	Car - 62.5 Truck - 79.5	Car - 3.2 Truck -0.4	1,300 Tramway Road	NO	Car - 33.9 Truck - 50.9	Car - 2.9 Truck -0.4	Located 1,000m from concrete batch plant, 500m from heavy industrial equip. supplier & 100m from

SENSITIVE RECEPTOR			NOISE FROM PROJECT		NOISE FROM CLOSEST ROAD 1				NOISE FROM CLOSEST ROAD 2				NOTES
SENSITIVE RECEPTOR ID	DESCRIPTION	RECEPTOR DISTANCE FROM ULAB FACILITY (APPROX.)	ESTIMATED PEAK dBA EXPERIENCED AT SENSITIVE RECEPTOR FROM CHUNXING CONSTRUCTION ACTIVITIES ¹	ACOUSTIC BARRIER BETWEEN ULAB FACILITY & SENSITIVE RECEPTOR	SENSITIVE RECEPTOR DISTANCE FROM CLOSEST ROAD 1 (APPROX.)	ACOUSTIC BARRIER BETWEEN CLOSEST ROAD 1 & SENSITIVE RECEPTOR	ESTIMATED PEAK dBA EXPERIENCED AT SENSITIVE RECEPTOR FROM CLOSEST ROAD 1 ²	FREQUENCY EXPERIENCING PEAK dBA FROM TRAFFIC ON CLOSEST ROAD 1 BY SENSITIVE RECEPTOR (per min.) ³	SENSITIVE RECEPTOR DISTANCE FROM CLOSEST ROAD 2 (APPROX.)	ACOUSTIC BARRIER BETWEEN CLOSEST ROAD 2 & SENSITIVE RECEPTOR	ESTIMATED PEAK dBA EXPERIENCED AT SENSITIVE RECEPTOR FROM CLOSEST ROAD 2 ²	FREQUENCY EXPERIENCING PEAK dBA FROM TRAFFIC ON CLOSEST ROAD 2 BY SENSITIVE RECEPTOR (per min.) ³	NOTES
													garden supply Also located within 100m of a minor road (Ambrose Rd & Buckleys Road)
SR8	Residential address	1,750m	47	YES Large industrial buildings & Morwell Transfer Station	640m Princess Freeway	NO	Car - 40.4 Truck - 57.4	Car - 13.4 Truck - 1.2	1,350m Monash Way	LIMITED	Car - 33.9 Truck - 50.9	Car - 6.5 Truck -0.5	Located 50m from 'Industrial Mitral Recyclers' & 500m from Hazelwood Open Cut Mine Also located within 100m of a numerous minor roads
SR9	Residential address	2,100m	46	YES Large industrial buildings & Morwell Transfer Station	170m Princess Freeway	NO	Car - 51.9 Truck - 68.9	Car - 13.4 Truck - 1.2	1,250m Monash Way	YES	Car - 34.6 Truck - 51.6	Car - 6.5 Truck -0.5	Princess Freeway on/off ramps 150m from address Also located within 100m of a numerous minor roads

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Council Delegate

1 – Based on the simultaneous operation of Grader + Excavator + Dump Truck + Loader (expected peak plant/machinery during the construction stage (stripping)); See Table 12

2 - See Table 12

3 - See Table 11

7.8 Hydrocarbons and Chemicals Management

7.8.1.1 Approach/Assumptions

All plant/equipment used on the project will be diesel-powered. A genset will also provide power for electricity to the office area and shipping container (will include a self-bunded diesel tank).

No fuels will be stored on the property and fuelling of plant/equipment will take place in the field via a mobile trailer-mounted tank delivery system (with a feedback shut-off mechanism) that will return to refuelling point as and when additional diesel is required.

No hazardous substances will be brought on site by any party without a current MSDS.

7.8.1.2 Controls

Chemicals used on Site will be housed in the self-bunded and ventilated shipping container (see Figure 4 for location) and stored and used in accordance with relevant MSDS (container bunding to equal 110% of the largest container; expected to be a 1,000 litre bunded IBC).

Chemicals will be stored in their original containers with the label intact at all times and spill-kits bins will be kept near the shipping container at all times.

Field refuelling of plant/equipment will only take place via a mobile trailer-mounted tank delivery system (with a feedback shut-off mechanism) and refuelling will employ the use of a drip-tray, take-place within 10m of a spill kit and at least 10m away from drains and the construction stormwater pond.

All transfer connections (shut-off mechanism and seals) are to be regularly checked for tight fittings.

Stormwater ingressed into hydrocarbon containment bunds or hydrocarbon drip-trays will be removed and stored in an appropriately bunded 1,000 litre (1m³) intermediate bulk container (IBC) for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

Used spill containment materials will be placed into a dedicated skip and contaminated soils will be managed as per relevant EPA Guidelines for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

The Environmental Officer will maintain an inventory of all chemicals stored onsite detailing types, quantities and storage locations and maintain a library of MSDS sheets maintained.

Conformance with hydrocarbon and chemical management controls will be checked informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist (Annexure E).

7.8.2 Spill Response

In the event that an accidental spillage of hydrocarbons or chemicals occurs, the immediate response will be:

- Ensure the area is safe
- Control the spill
- Contain the spilled material
- Clean-up and disposal
- Report the incident

Control the Spill

The actions below will restrict further release of the spilled material:

- A punctured drum can be rolled over so that the puncture is on the top.
- Moving the drum/container to a bunded/containment area to prevent spill spreading.
- Turning machinery off or powering down in the case of a burst hydraulic hose.
- Placing impermeable material under machinery if it cannot be moved.
- Placing absorbent material around the outlet of burst hoses/pipes.
- Closing up-stream valve or shutting down a pump in the case of a broken/damaged pipe.

Contain the Spill

- All plant and equipment will operate in immediate vicinity of spill kits.
- Spills shall be contained using appropriate "absorbent" material and booms from the spill kits provided.
- Additional spill kits and stock will be located at the shipping container.

Clean-up and Disposal

Once the spill has been contained:

- Any contaminated clean-up materials (absorbents, rags, etc) shall be placed into dedicated wheelie site waste vessels.
- If soil has become (or is suspected to be) contaminated, the affected area shall be cordoned off and assessment, removal and clean-up initiated as soon as possible (to be disposed of by a licensed waste contractor with waste disposal records kept on site).
- Large volumes may require removal from site by a licensed 'regulated waste' removal contractor.
- If the CSP has been impacted from a spill, floating containment booms must be deployed immediately, If in large volume and too great for absorbent pads, a vacuum truck can be brought in to remove the oil off the surface of the water.

7.9 Waste Management

7.9.1.1 Assumptions/Approach

Expected solid waste streams comprise general waste (putrescible and non-putrescible), steel, wood, cardboard and hydrocarbon/chemically-impacted solids (used rags, absorbent padding, filters, empty

chemical containers <200 litres in size). Contaminated soils may also be generated resulting from spills or encountered during excavations (e.g. asbestos).

Expected liquid waste streams include water impacted by chemicals or hydrocarbons, sewerage effluent from portable toilets, stormwater from the construction stormwater pond and wastewater from the concrete washout pit.

Wastes will be segregated into waste streams and properly stored for offsite recycling or disposal.

Wastes will be managed (characterised, stored, managed, transported and disposed of) per 'Industrial Waste Resource Guidelines - EPA Guidance for all the sections of the Environment Protection (Industrial Waste Resource) Regulations 2009', August 2021.

Used spill containment materials (and other hydrocarbon-impacted wastes) and contaminated (excavated) soils will be placed into dedicated skips and managed as per relevant EPA Guidelines for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

7.9.1.2

Controls

General waste, steel, wood, cardboard, hydrocarbon and chemical waste skips/bins will be placed around the site in the immediate vicinity of relevant works for the correct transport disposal (and recycling) of waste streams (e.g. steel and general skips will be placed in Work Area A and B when building erection and building fixture is taking place). Drip trays, to be used during plant/machinery refuelling, will be placed around the site in the immediate vicinity of relevant works and decanted into a nominated hydrocarbon waste IBC.

Dedicated IBCs (bunded) for hydrocarbon and hydrocarbon impacted water (including concrete wastewater) will be placed around the site in the immediate vicinity of relevant works for the correct disposal (e.g. IBC to be placed in Area E near the concrete washout pit for decanting of concrete pit wastewater for discharge to sewer).

A skip dedicated to the storage of contaminated solids/soils will remain empty and onsite in readiness to accept material following a hydrocarbon spill or if contaminated soil is encountered during excavations (e.g. ACM).

Portable amenities will be placed in Area F with septic waste removed from the attached above-ground tanks as required (high-level alarms set-to 80% level will be installed to minimise the potential for sewerage spill).

The removal of wastes from Site will be completed by appropriately licensed contractor (e.g. Veolia Environmental Services) and wastes will be disposed of at a licensed facility.

Stormwater ingressed into hydrocarbon containment bunds or hydrocarbon drip-trays will be removed and stored in an appropriately bunded 1,000 litre (1m³) intermediate bulk container (IBC) for later offsite disposal by an appropriately licensed contractor (e.g. Veolia Environmental Services) to a licensed facility.

Hard concrete waste (removed from the concrete washout pit or surplus from concrete pours) from will be temporarily stored in the concrete-lined concrete dump area (see Figure 14 for location and Figure 25 and Figure 26 for design) before being crushed and reused as road/pavement base.

A Waste Tracking Register (Annexure J) will be maintained by the Environmental Officer. The register records location of the waste (waste containment type), quantity of wastes, date of waste transported, registration number of the waste transportee's vehicle, run-sheet and waste tracking references and for contaminated materials, the location of waste assessment and categorisation reports (including sampling methodologies, laboratory analysis reports) and the final location for disposal.

Conformance with waste hydrocarbon and chemical management controls will be checked informally on a daily basis and weekly on a formal basis per the Weekly Environmental Inspection Checklist.

7.10 Dust Management

7.10.1.1 Assumptions/Approach

Stripping, excavation and stockpiling activities are expected to commence late in the last quarter of 2021 (or early in the in the first quarter of the 2022 calendar year) extending into the end of the second quarter of the 2022 calendar year. Based on available climate data, in relation to yearly climate averages for the area, these activities will take place in conditions characterised by low (less intense) rainfall, strong and gusty winds, clear days and high evaporation rates (relative to other calendar quarters).

A sequenced and excavated material reuse has been proposed as a means of limiting the period of time that open excavation faces and excavated materials are exposed to the elements, to minimise the size of silt/clay stockpiles and to minimise the extent of areas that are cleared (e.g. Work Areas stripped earlier in a work sequence will have compacted silt/material placed and compacted within that Work Area before the next Work Area is stripped of topsoil). Adopting this approach will limit the potential to adversely impact ecological and human health impacts from dust because only one Work Area will ever be stripped and exposed at any point in-time.

Stripping will commence in Work Area A then progress to B, C, D, E, G and finally to F. For each Work Area, topsoil will be stripped, screened, conditioned and then and reused in the construction footprint in the area from which it came. The excavation, conditioning and placement of silts/clays for plant building, plant equipment and external foundations will also adopt a sequential approach in each Work Area; following stripping activities in the relevant Work Area. Topsoil stripping in each Work Area will not take place until foundation preparation is completed in the preceding Work Area. The maximum surface area stripped and open at any one point in time will be 13,000m² (being half of the largest Work Area, Area E).

Where there is a surplus in excavated silts/clays (including screened topsoil) for slab foundations and/or for silts/clays excavated for plant foundations, the silt/clay will be pushed to the outer edge of the relevant Work Area for immediate re-use in adjoining Work Areas that have a deficit (e.g. Work Area A, B, D, E) of silts/clays required for slab foundations. Alternatively, silt/clay will be stockpiled in Work Area E for later reuse in slab foundation preparation in other Work Areas, or for external pavement preparation.

It is anticipated that open excavations and silt/clay stockpiled in each Work Area will be exposed to the elements for a maximum of 1-month however exposure time is likely to be significantly less.

7.10.1.2 **Controls**

At no time will stockpile volumes exceed 4,000m³.

Stockpiles will not exceed 2.0m in height and batters of 2:1 will be maintained at all times.

At no time will stripped/open areas exceed 13,000m² (being half the surface area of the largest Work Area, Area E).

Topsoil stripping, stockpiling or screening will not take place during periods of strong winds and a water cart will follow behind the grader(s) during stripping activities to suppress fugitive dust.

A stockpile tracking register will be maintained by the Environmental Officer (Annexure K) that will record (for topsoil parcels from each Work Area), the stripping/excavation location (and date), stripped volume (including final screened volume for topsoil), material reuse location (and date) and a running balance of stockpile volumes.

Deviations from the proposed sequencing in Table 9, in particular with regard to Work Sequence, stockpile quantities and stockpile ages will be tracked by the Environmental Officer (based on survey data provided by the Project Engineer and approved by the Project Manager, with additional environmental controls implemented if required).

Sprinkler systems will be employed during mechanical screening of vegetation from topsoil to reduce the potential for generation of dust.

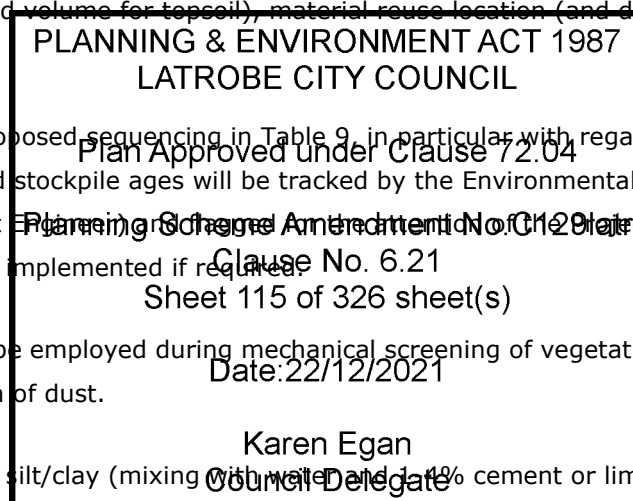
The conditioning of the silt/clay (mixing with water and 1-4% cement or lime) will take place inside the cutter/pug-mill unit, minimising the potential for generating dust during the conditioning process.

Where stockpiles or compacted silt/clay foundations may be open to the elements for more than 1-month (e.g. schedule delays), a natural polymer will be applied to the surface of the stockpile or Work Area to reduce dust emissions.

Dust emissions will be constantly monitored informally on a daily basis. Where dust emissions are evident, the Environmental Officer will consult with the Superintendent and/or Project Manager to advise that works must cease. The Environmental Officer will make journal entries recording when works cease due to elevated dust emissions.

The Environmental Officer will also review weather forecasts and advise construction management personnel prior to Prestarts of the likelihood of wind speeds that may lead to the generation of dust.

Dust monitoring records will be inspected on a per the Weekly Environmental Inspection Checklist.



8 Environmental Aspects, Impacts and Risks

Environmental aspects as referred to in this document are those activities associated with the project that have the potential to cause, or result in, adverse environmental impacts.

8.1 Risk Assessment

Effective environmental management should be proactive rather than reactive. In order to facilitate a proactive style of environmental management, a risk management style of assessment has been utilised to identify and assess environmental aspects associated with the project, and to implement appropriate mitigation strategies to minimise the likelihood of environmental risks associated with each aspect. This process involves:

- Identifying the risk/aspect;
- Analysing the risk/aspect (determining likelihood and consequence);
- Evaluating the risk/aspect; and
- Treating the risk.

The risk assessment matrix is displayed in Table 15. Risk assessment is based on (1) the likelihood of an impact occurring and (2) the consequences of the impact if the event occurred. The Chunxing definition of likelihood and consequence are detailed in Table 16. Following this assessment, each impact is assigned a risk category which range from "Low" (low likelihood and consequence) to "extreme" (high likelihood and consequence).

A risk category identified as having an extreme or higher risk may be downgraded if appropriate environmental controls and measures are implemented and maintained. Proactive planning, installation and maintenance of appropriate environmental controls and ongoing monitoring will reduce the risks associated with each environmental impact identified for Project.

Table 14 provides a high-level risk assessment for key work activities (pre and post mitigation control) and references relevant CEMP sections that detail the controls that are to be implemented.

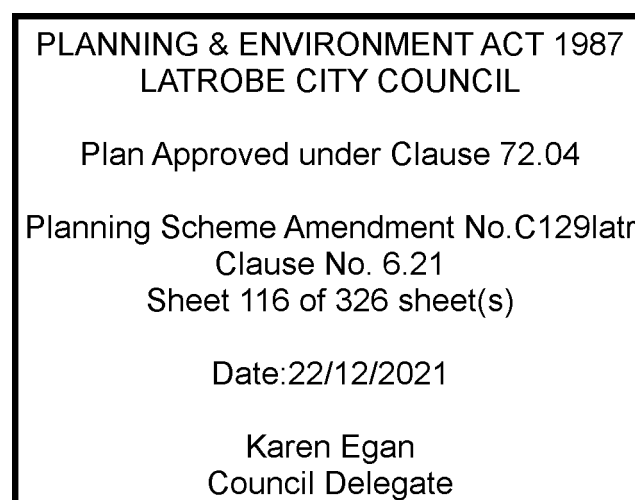


Table 15 Risk Matrix

LIKELIHOOD	CONSEQUENCES				
	1 INSIGNIFICANT	2 MINOR	3 MODERATE	4 MAJOR	5 SEVERE
A (ALMOST CERTAIN)	Medium	Significant	High	High	Extreme
B (LIKELY)	Medium	Medium	Significant	High	Extreme
C (MODERATE)	Low	Medium	Significant	High	High
D (UNLIKELY)	Low	Low	Medium	Significant	High
E (RARE)	Low	Low	Low	Medium	Significant

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Table 16 Classification of Likelihood and Consequence
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LEVEL	CATEGORISATION OF LIKELIHOOD	DESCRIPTION
A	Almost certain	Is or is likely to occur during the project, 90% or > probability
B	Likely	Will probably occur during the project, ~50% probability
C	Moderate	Might occur at some time during the project, ~10% probability
D	Unlikely	May occur at some time during the project, ~1% probability
E	Rare	Only occur in exceptional circumstances, < 1% probability
LEVEL	CATEGORISATION OF CONSEQUENCE	DESCRIPTION
1	Insignificant	Negligible Discharge
2	Minor	Uncontrolled Discharges in Minor Quantities
3	Moderate	Moderate Breach of Environmental Statutes
4	Major	Major Breach of Environmental Statutes
5	Severe	Shutdown of Project Due to Environmental Breach

8.2 Environmental Impacts and Control Measures

8.2.1 General Approach

In terms of risk, significant impacts associated with the Project are detailed in Table 17 below.

Table 17 also reclassifies the risk after the mitigation measures have been implemented.

The CEMP provides a range of measures that will be implemented to:

- Control the occurrence of the identified environmental impacts;
- Protect the environment from harm;
- Safeguard the local community;
- Satisfy the environmental requirements of the Project and relevant agencies; and
- Provide positive environmental offsets to unavoidable environmental impacts (where practical and cost effective to do so).

Specific measures and procedures have been identified to address each of the project obligations. The process of matching actions with obligations and assigning responsibility for each action will ensure that each project obligation is being implemented.

A program of routine maintenance and monitoring will be conducted on environmental controls. Daily inspections of work areas will be undertaken by the Project Engineer, Superintendent and/or Environmental Officer coupled with weekly (minimum) inspections by the Environmental Officer and will provide a means for identifying failures and maintenance requirements before they reach a critical stage. Records of routine inspections will be maintained in checklists.

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Table 17 Environmental Impacts, Risks & Mitigation

POTENTIAL IMPACT	RISK ANALYSIS					MITIGATION MEASURES (CEMP SECTION REFERENCE)	REVISED RISK
	Low	Medium	Significant	High	Extreme		
Impacts to land or surface water as a result of handling soils.		C2				7.2 EXCAVATED MATERIALS MANAGEMENT 7.3 STOCKPILE MANAGEMENT 7.10 DUST MANAGEMENT	C1
Impacts to land or surface water as a result of handling groundwater.	E3					Annexure A - ESCP 7.6 GROUNDWATER MANAGEMENT 7.4 SURFACE WATER MANAGEMENT	E1
Impacts to groundwater as a result of encountering or handling soils.	E3					7.2 EXCAVATED MATERIALS MANAGEMENT 7.3 STOCKPILE MANAGEMENT 7.10 DUST MANAGEMENT	E1
Trafficking mud or soils offsite.		C2				Annexure A - ESCP 7.2 EXCAVATED MATERIALS MANAGEMENT	C1
Excessive noise or vibration impacts to sensitive receptors.		C2				7.7 NOISE MANAGEMENT	D2
Excessive generation of waste.		B2				7.9 WASTE MANAGEMENT	B1
Dust impacts to sensitive receptors from excavation, stockpiling and transport works.		D3				7.10 DUST MANAGEMENT	D1
Erosion of topsoil stockpiles resulting in uncontrolled discharge offsite.		D3				7.2 EXCAVATED MATERIALS MANAGEMENT 7.3 STOCKPILE MANAGEMENT 7.10 DUST MANAGEMENT	D1
Pollution of land or waters as a result of uncovering contaminated material.		C2				7.2 EXCAVATED MATERIALS MANAGEMENT 7.2.1 Contaminated Soil Management 7.4 SURFACE WATER MANAGEMENT	C1
Excessive erosion of disturbed areas resulting in uncontrolled discharge offsite.		D3				7.3 STOCKPILE MANAGEMENT 7.4 SURFACE WATER MANAGEMENT 7.2 EXCAVATED MATERIALS MANAGEMENT	D1
Pollution of land or waters during construction from stormwater pond discharge.		C2				Annexure A - ESCP 7.4 SURFACE WATER MANAGEMENT	C1
Pollution of land or waters during construction from hydrocarbon or chemical spill.		C2				Annexure A - ESCP	C1
Works outside approved areas or interaction with protected areas/assets (e.g. contaminated areas).			C3			7.1 DEMARCATION MANAGEMENT 7.4 SURFACE WATER MANAGEMENT 7.5 WASTE WATER MANAGEMENT 7.6 GROUNDWATER MANAGEMENT	E3
Pollution of land or waters during construction from wastewater discharge.			C3			Annexure A - ESCP	C1
Pollution of land or waters during construction from concrete wastewater discharge.		C2				7.5.1 Concrete Wastewater	C1
Failure of erosion and sediment control devices resulting in significant pollution events.		D3				Annexure A - ESCP 7.4 SURFACE WATER MANAGEMENT 7.2 EXCAVATED MATERIALS MANAGEMENT	D1
Excessive air quality impacts	C1					7.2 EXCAVATED MATERIALS MANAGEMENT 7.3 STOCKPILE MANAGEMENT 7.7 NOISE MANAGEMENT 7.10 DUST MANAGEMENT	D1
						Annexure A - ESCP	

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9 Training, Awareness and Competence

Two main forms of training will be provided on site:

- Site induction, including roles and responsibilities; and
- “toolbox” training.

Records of induction and toolbox training will be kept on a database including the topic of the training carried out, dates, names and trainer details. Inductees will be required to sign-off that they have been informed of the environmental issues and that they understand their responsibilities.

9.1 Site Induction

Prior to working on site all personnel and sub-contractors will undertake an environmental induction. The induction will address a range of issues including, however not necessarily limited to:

- Chunxing’s Environmental Policy;
- The CEMP (purpose/objectives);
- Legal requirements including due diligence, duty of care and potential consequences of infringements;
- Key personnel and associated responsibilities;
- Environmental responsibilities;
- Conditions of permits and approvals;
- Environmental controls for noise, dust, soil, surface water, groundwater erosion and sediment control, wastes, hazardous goods, contaminated land, (e.g. ACM) no-go zones (e.g. emergency groundwater tank, contaminated areas, Western buffer zone) etc;
- Incident management and the use of spill kits; and
- Reporting process for environmental harm/incidents.

Personnel will be required to register their attendance and understanding of the Induction subject matter by completing a short questionnaire and signing a completion form upon completion.

9.2 ‘Toolbox’ Training

‘Toolbox’ training will help to ensure that relevant information is communicated to the workforce and that feedback can be provided on issues of interest or concern. ‘Toolbox’ training will generally be prepared and delivered by the Project Engineer or Site Foreman. If required, the Environmental Consultancy will prepare and deliver some toolboxes. A register of ‘Toolbox’ training will be kept on site and maintained by the Environmental Officer.

Depending on the worker’s role on the Project, ‘Toolbox’ training topics may include:

- Contaminated soil and water management;
- Stockpile management;
- Erosion and sediment control management;
- Stormwater basin management (including discharge);
- Spills and leaks (including the application of control and remediation products);
- Noise and vibration minimisation;
- Dust control;
- Emergency response procedures;

- Clearing and stripping procedures;
- Waste management, minimisation and recycling;
- Wastewater control (including dewatering);
- Work Method Statements;
- Concrete washout procedures;
- Concrete pit pH balancing, dewatering and clean-out procedures;
- Wet weather procedures and inspections; and
- Changes to recent legislation.

Personnel will be required to register their attendance and understanding of Toolbox subject matter by completing a short questionnaire and signing a completion form upon completion.

10 Community and Stakeholder Communications

10.1.1 Project Communications

Chunxing Corporation has developed Communication & Engagement Plan (CEP) that provides specific detail on communication methods and timing for key stakeholder groups throughout the construction phase of the project.

In April 2021 Chunxing also established a Community Liaison Committee (CLC) to manage community concerns during the pre-construction, construction and operational phases of the project. Members of the CLC include:

The CLC is the primary vehicle of communication and engagement for the pre-construction and construction phases of the project. Its membership encompasses (however is not limited to) the following:

- Neighbouring landholders and businesses;
- Community representatives;
- Hazelwood north Primary School Council;
- Local contractors;
- Latrobe Heath Assembly;
- Latrobe Valley Sustainability Group;
- Committee for Gippsland;
- Environmental Protection Authority Victoria (EPA Victoria);
- Fire Rescue Victoria (FRV);
- Department of Environment, Land, Water and Planning (DELWP);
- WorkSafe;
- Latrobe City Council;
- Latrobe Health Advocate;
- Gippsland Waste and Resource Recovery Group; and
- Construction, Forestry, Maritime, Mining and Energy Union (CFMEU).

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Chunxing shall ensure that all relevant community stakeholders are consulted at appropriate times during the implementation of the Project. Specific actions will ensure that community members have adequate opportunity to be informed and provide input into items that may impact them (e.g. noise impacts and proposed mitigation measures and environmental impacts).

Specific actions shall include:

- Issuing of community updates/newsletter and/or notifications;
- Advertising of activity timetables in local papers;
- Maintaining a public website that provides for Project updates, contact information for the Project and dissemination of other pertinent project information (<https://www.chunxing.com.au>);
- Publicising a general toll-free project contact number on the public website; and
- Responding to community enquiries and complaints about the project aiming to ensure that all enquiries and complaints are dealt with promptly and properly addressed, as far as practicable.

Key community groups include business owners, rural landholders and managers, interest groups (environmental and commercial), emergency services and residential communities.

Information prepared for distribution to the community will be tailored to the needs of the target group. It may address project progress, traffic disruptions and controls work outside normal hours and may be provided through various forms including:

- As a community notice;
- As advertisements (e.g. planning scheme amendments, No U-turn at traffic);
- Newsletters;
- Brochures;
- On the internet;
- On noticeboards; and/or
- In a display/information area.

10.1.2 Complaints Management

A complaints and enquiry management system and register will be established and maintained during construction by the Project Manager who will receive, log, track and respond to complaints with complaints responded-to within 14 days (as specified in the Chunxing Community Engagement Plan).

The following details will be recorded in the register:

- Date, time and nature of the complaint or inquiry;
- Type of communication (telephone, letter, meeting etc);
- Name, address, contact number;
- Nature of complaint;
- Response details.

Community complaints and feedback can be directed to the Chunxing office phone number 03 4122 3020 or made at the 'Contact Us' page at <https://www.chunxing.com.au>. Chunxing's CEO/Director or Project Manager will respond to enquires."

11 Environmental Incidents and Emergencies

11.1 Emergency Planning

11.1.1 Preparedness

Chunxing acknowledge that the key to effective incident prevention on site is via ongoing monitoring, surveillance and training. During the course of construction, the following preventative strategies will be implemented onsite:

- Daily inspections of active work sites;
- Completion of Weekly Environmental Inspections (see Annexure E for checklist);
- Issue and quick close-out of non-compliance notices (as required);
- Prompt maintenance and repairs;
- Ongoing environmental training, and
- Environmental audits of worksites, sub-contractors and general compliance.

Environmental and Safety information on hazardous substances (e.g. Materials Safety Data Sheets) will be available at the main site office and where such substances are to be stored. Spill kits and other emergency supplies (e.g. Silt fences, pumps) will also be located where required.

Testing of environmental response procedures may be conducted in areas where a pollution risk is present, such as in workshops and work areas in close proximity to water courses. Personnel involved in emergency response activities should be trained in the following:

An up-to-date list of emergency response personnel and relevant organisations (emergency services etc) will be maintained at the main office and site compounds.

11.2 Environmental Emergency Response

An environmental emergency (incident) may include a hydrocarbon spill or major leak, failure of a pollution control device such as a bund or basin, inappropriate use or handling of contaminated soil, contaminated groundwater or major ground settlement.

The following framework supports is provided for consideration during incident response.

Define the problem

- Establish the details of the immediate problem to facilitate the identification of short-term response options.

Manage the situation

- The safety of any person, either works or others involved, is the priority;
- Minimise environmental damage as quickly as possible. In a spill situation, use sandbags, absorbent material, soil, an excavation or barrier to prevent the pollutant from reaching a watercourse;
- Advise the relevant Authority (if required); and
- Clean up the problem.

After the event

- Develop an action plan to prevent a similar incident occurring again;
- Prepare a report on the incident; and
- A refresher toolbox or induction may be undertaken if necessary.

A list of key contacts, phone (business and after hours) will be maintained and displayed.

Emergency response equipment including booms, absorbent material, MSDS sheets, spill kits, sandbags and sediment fence will be located at the maintenance compound. Personnel will be provided with training and basic instructions for use.

The content of emergency equipment stores will be checked on at least a 3-monthly basis.

11.3 Incident Reporting

Incident reporting is regarded as a valuable method of addressing shortcomings in procedures, training or equipment and as an opportunity for improvement.

All environmental incidents will be documented, investigations conducted, and action plans established in order that the event does not occur again.

An environmental investigation will include the following basic elements:

- Identifying the cause, extent and responsibility of the incident;
- Identifying and implementing the necessary corrective action;
- Identifying the personnel responsible for carrying out the corrective action;
- Implementing or modifying controls necessary to avoid a repeat occurrence of the incident;
- Recording any changes in written procedures required; and
- Advising the environmental authority(ies) if any substantial pollution has occurred.

All environmental incidents will be investigated by Environmental Officer within 24 hours of the incident occurring with an Incident Report developed by the Environmental Officer and submitted to the Project Manager and Project Engineer within 5 working days of the incident occurring.

The following details will be captured within an Incident Report:

- The cause and extent of the incident;
- An assessment of the maximum consequence and likelihood of the incident occurring again;
- Corrective action(s) identified and implementation;
- Personnel responsible for implementing the corrective action;
- Modification or new controls required to prevent the incident occurring again;
- Changes in procedures or safeguards required; and
- Details of any waste and contamination treatment and/or disposal.

An Environmental Action Tracking Register (Annexure G) will be maintained by the Environmental Officer for the purpose of tracking of Corrective Actions identified within Incident Reports.

Where lessons are learnt from the investigation or current procedures are identified as being ineffective, the CEMP (or sub-elements) will be revised by the Environmental Officer to include the improved procedures or requirement.

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12 Compliance Tracking (Monitoring, Inspection and Reporting)

12.1 Environmental Monitoring & Inspections

12.1.1 Environmental Monitoring

Environmental monitoring will involve collecting and interpreting data to provide quantification of any environmental impacts from the Project. Monitoring will assist in the auditing of safeguard measures to ensure they achieve their objectives and to facilitate modification where necessary.

Formal environmental monitoring will cover the following key areas:

- Noise and vibration (visual inspections/observations only);
- Air quality (visual inspections/observations for dust & other emissions);
- Wastewater (sampling of construction stormwater pond prior to, or during discharge and concrete wash-out pit <IBC> prior to discharge);
- Erosion and sedimentation (visual inspections/observations);
- Flora, fauna and weeds (visual inspections/observations); and
- Groundwater (yearly).

The timing, frequency, methodology, locations and responsibilities for the proposed environmental monitoring programs are specified in the Environmental Monitoring Plan. Those involving formal sample collection, analysis and measurement, to those involving a more simplistic qualitative assessment (e.g. visual inspections/observations).

Irrespective of the type of monitoring conducted, the results will be used to identify potential or actual problems arising from construction processes. Where monitoring methods permit, results will be obtained at the time of the assessment and analysed immediately by the Environmental Officer. This will allow a prompt response to be initiated should an unaccepted levels/criteria be identified.

Where this cannot be achieved, preliminary results will be requested as soon as possible following the monitoring episode with a full report to follow.

Where a non-conformance is detected or monitoring results are outside of the expected range, the process described in the below section will be implemented, which may include:

- Analysis by the Environmental Officer in more detail with the view of determining possible causes for the non-conformance;
- Site Inspection undertaken by the Environmental Officer;
- Relevant personnel will be contacted and advised of the problem;
- An agreed action will be identified; or
- Action will be implemented to rectify the problem.

A non-conformance Environmental Incident Report may be issued by the Environmental Officer in response to the problem if it is found to be construction related. The timing for any improvement will be agreed between the Project Manager and Environmental Officer based on the level of risk e.g. a significant risk will require immediate action.

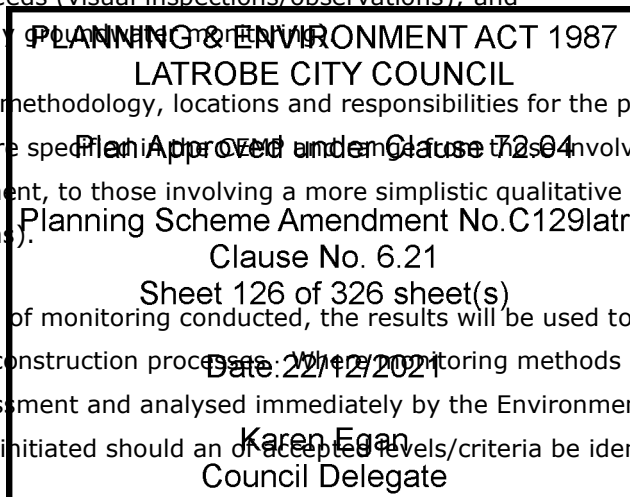


Table 18 summarises environmental inspection and monitoring frequencies.

12.1.2 Weekly Environmental Inspections

The effectiveness of environmental protection measures described in this CEMP will be assessed on a weekly basis by environmental staff. A weekly checklist has been developed with the purpose of:

- Providing a surveillance tool to ensure that safeguards are being implemented;
- Identifying where problems might be occurring;
- Identifying where sound environmental practices are not being implemented; and
- Facilitating the identification and early resolution of problems.

The Environmental Officer will be responsible for completing environmental inspections using the weekly environmental inspection checklist (Annexure E).

Any non-conformances identified through the checklist process will be highlighted and an environmental inspection report (minor issues) or an environmental improvement notice/environmental incident report completed.

The checklist will remain 'open' until:

- The issue has been resolved;
- A new or revised procedure has been established and implemented; or
- Training has been provided to relevant personnel/ sub-contractors.

12.1.3 Inspection and Surveillance

Inspections and surveillance of work activities and sub-contractors will be undertaken on a day-to-day basis by:

- Superintendents and Foreman,
- Senior Project Engineer; or
- Environmental Officer.

The activities of sub-contractors will also be monitored to assess:

- Compliance with contractual requirements,
- Knowledge of and compliance with the CEMP and work procedures and environmental controls used on site;
- General work practices;
- The effectiveness of environment protection measures; and
- The maintenance of environmental measures.

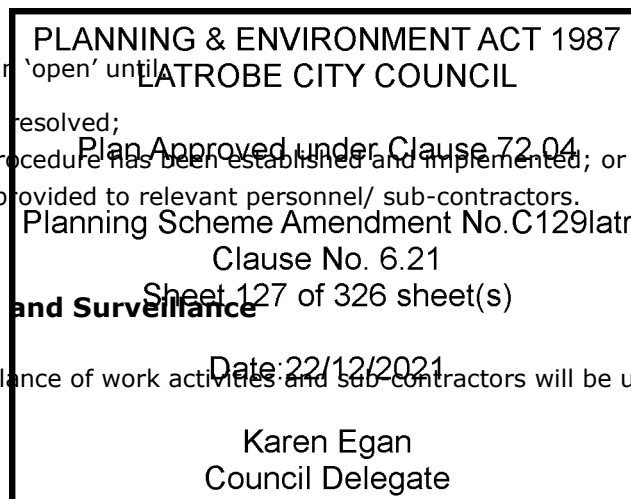


Table 18 Environmental Monitoring & Inspection Frequencies

ELEMENT	TYPE & FREQUENCY	REPOSNI BILITY	EVIDENCE
Dust Monitoring	Visual - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes
	Visual - weekly (formal)	EO	WEIC and Monthly Environmental Report
Stockpile Monitoring	Visual - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes
	Visual - weekly (formal)	EO	WEIC and Monthly Environmental Report
Noise Monitoring	Audible - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes
	Audible - weekly (formal)	EO	WEIC and Monthly Environmental Report
Groundwater Monitoring	Sampling (field meter)	EC	GME Report
	Sampling (grab sample for lab) - when GW holding tank reaches 80 % vol.	EO	Field Notes/Diary/Meeting Minutes & WEIC and Monthly Environmental Report
		EO	Laboratory Reports
Topsoil Monitoring	Visual - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes
	Survey Reports - ongoing (formal)	PE	Topsoil Tracking Register
	Visual - weekly (formal)	EO	WEIC & Monthly Environmental Report
Waste Monitoring	Visual - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes
		EO	Waste Run-Sheets

ELEMENT	TYPE & FREQUENCY	REPOSNI BILITY	EVIDENCE
	Visual - weekly (formal)	EO	Waste Tracking Forms
		EO	Waste Tracking Register
		EO	WEIC & Monthly Environmental Report
Erosion and Sediment Control Monitoring	Visual - ongoing and immediately preceding & immediately following rainfall events (informal)	EO	Field Notes/Diary/Meeting Minutes
	Visual - weekly (formal)	EO (& EC)	WEIC & Monthly Environmental Report
Construction Stormwater Pond Monitoring	Visual - ongoing (informal)	EO	Field Notes/Diary/Meeting Minutes
	Visual - ongoing and immediately preceding & immediately following rainfall events (informal)	EO	Offsite Discharge Tracking Register
	Sampling (grab sample for lab) - ongoing (when discharging to sewer)	EO	Field Notes & Certified Laboratory Reports
	Visual - weekly (formal)	EO (& EC)	WEIC and Monthly Environmental Report
Concrete Wash-out Pit Monitoring	Visual - ongoing (informal)	EO	Field Notes/Diary/Meeting Minutes
	Visual - ongoing and immediately preceding & immediately following rainfall events (informal)	EO	Field Notes/Diary/Meeting Minutes
	Sampling - prior to discharge to sewer	EO	Field Notes & Certified Laboratory Reports
	Visual - weekly (formal)	EO (& EC)	WEIC and Monthly Environmental Report
Flora & Fauna	Visual - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes

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ELEMENT	TYPE & FREQUENCY	REPOSNI BILITY	EVIDENCE
	Visual - weekly (formal)	EO	WEIC and Monthly Environmental Report
Construction Zone Signage, Flagging & Fencing	Visual - ongoing (informal)	All	Field Notes/Diary/Meeting Minutes
	Visual - weekly (formal)	EO	WEIC and Monthly Environmental Report
Environmental Incidents	Review - weekly (formal)	EO	Environmental Action Tracking Register

Note: These are the standard monitoring requirements. In the event of incident or complaint specific monitoring may be required.
EO = Environmental Officer EC = Environmental Consultant PE = Project Engineer WEIC = Weekly Environmental Inspection Checklist (Annexure F)

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12.2 Internal Monthly Report

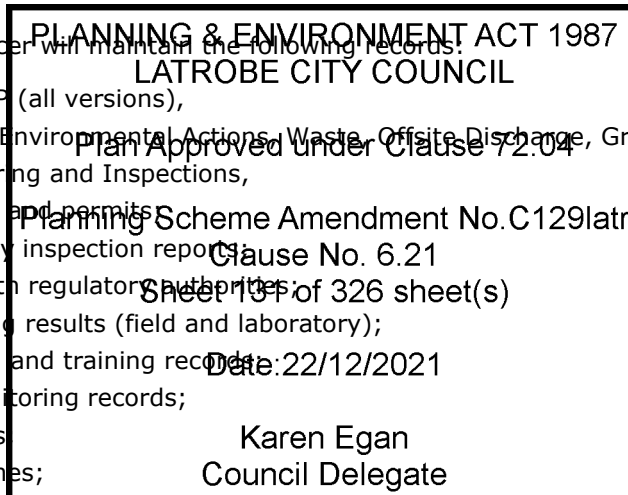
An internal monthly environmental report will be compiled by the Environmental Officer at the end of each month and provided to the Project Manager. The monthly environmental report will provide details surrounding:

- all cases of non-compliance with environmental obligations and the CEMP;
- inspections by agencies and actions resulting from the inspection;
- actioning and reporting of all incidents;
- frequency of environmental checklists and actioning of concerns;
- any issues not addressed after two months.
- monitoring/sampling results environmental elements;
- complaints; and
- audits conducted (internal and external).

13 Records

The Environmental Officer will maintain the following records:

- The CEMP and ESCP (all versions),
- Registers (Topsoil, Environmental Actions, Waste, Offsite Discharge, Groundwater Holding Tank)
- Compliance Monitoring and Inspections,
- Regulatory licences and permits,
- Regulatory authority inspection reports,
- Correspondence with regulatory authorities;
- Monitoring/Sampling results (field and laboratory);
- Employee induction and training records;
- Environmental monitoring records;
- Cut and fill volumes;
- Water supply volumes;
- Discharge volumes to sewer;
- Construction stormwater pond basin checklists and release records;
- Environmental accidents/incidents/emergency reports;
- Non-conformance reports;
- Compliance reports;
- Complaint reports;
- Community involvement information;
- Waste quantity reports;
- Audit reports;
- Weekly Environmental Checklists; and
- Management review minutes and action taken.



13.1 Document and Data Control

The Environmental Officer will coordinate the preparation, review and distribution, as appropriate, of the environmental documents listed above. During construction, environmental documents will be stored at the main site office and can be accessed upon request to the Environmental Officer.

A document and data control procedure will be implemented to control the flow of documents and data within Chunxing and between Chunxing, stakeholders and sub-contractors.

Documents and data that are to be issued and liable to change will be controlled to ensure that they are approved before issue and that the current issue or revision is known to and available to those requiring them. Controlled documents and data will be uniquely identified and will bear a defined revision number on each page of the document.

After a number of changes have been made to a document it will be withdrawn and reissued as a new revision. Data will be issued on a revision basis only. Obsolete documents and data will be kept for contractual or other reasons however will be clearly marked "superseded".

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Appendix 1 Additional Tables & Figures

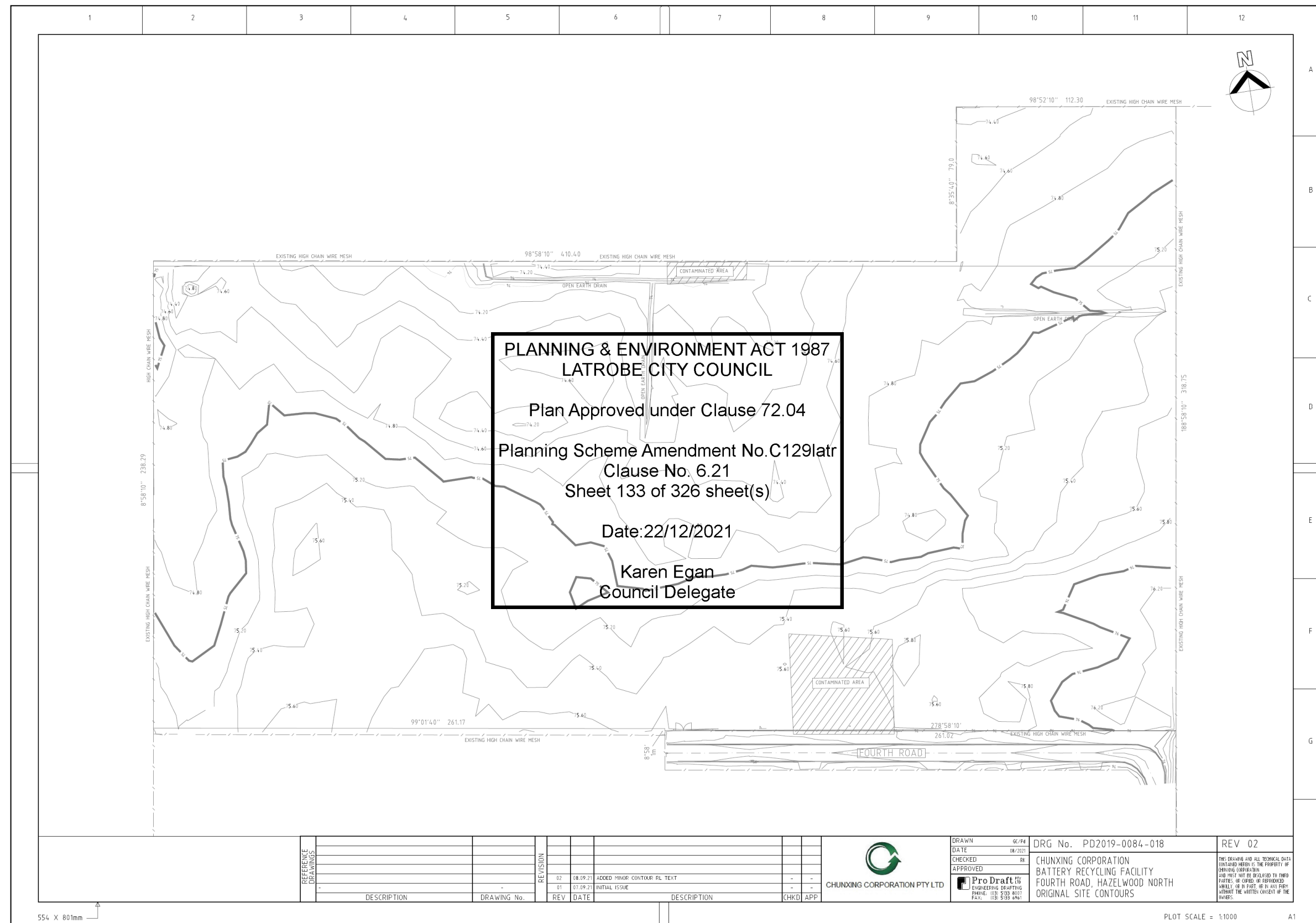


Figure 18 Existing Site Levels

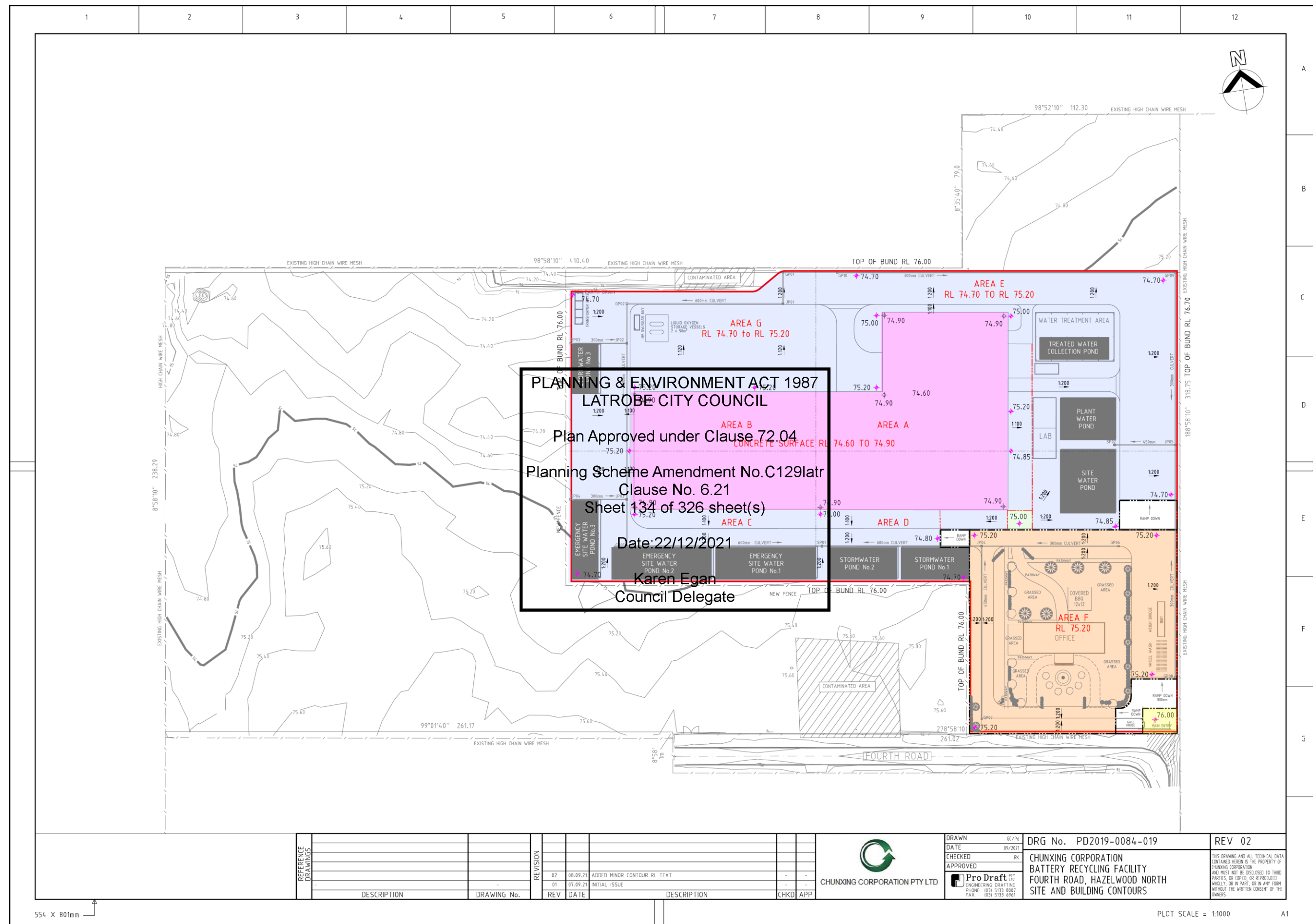


Figure 19 Property 'As-designed' Levels

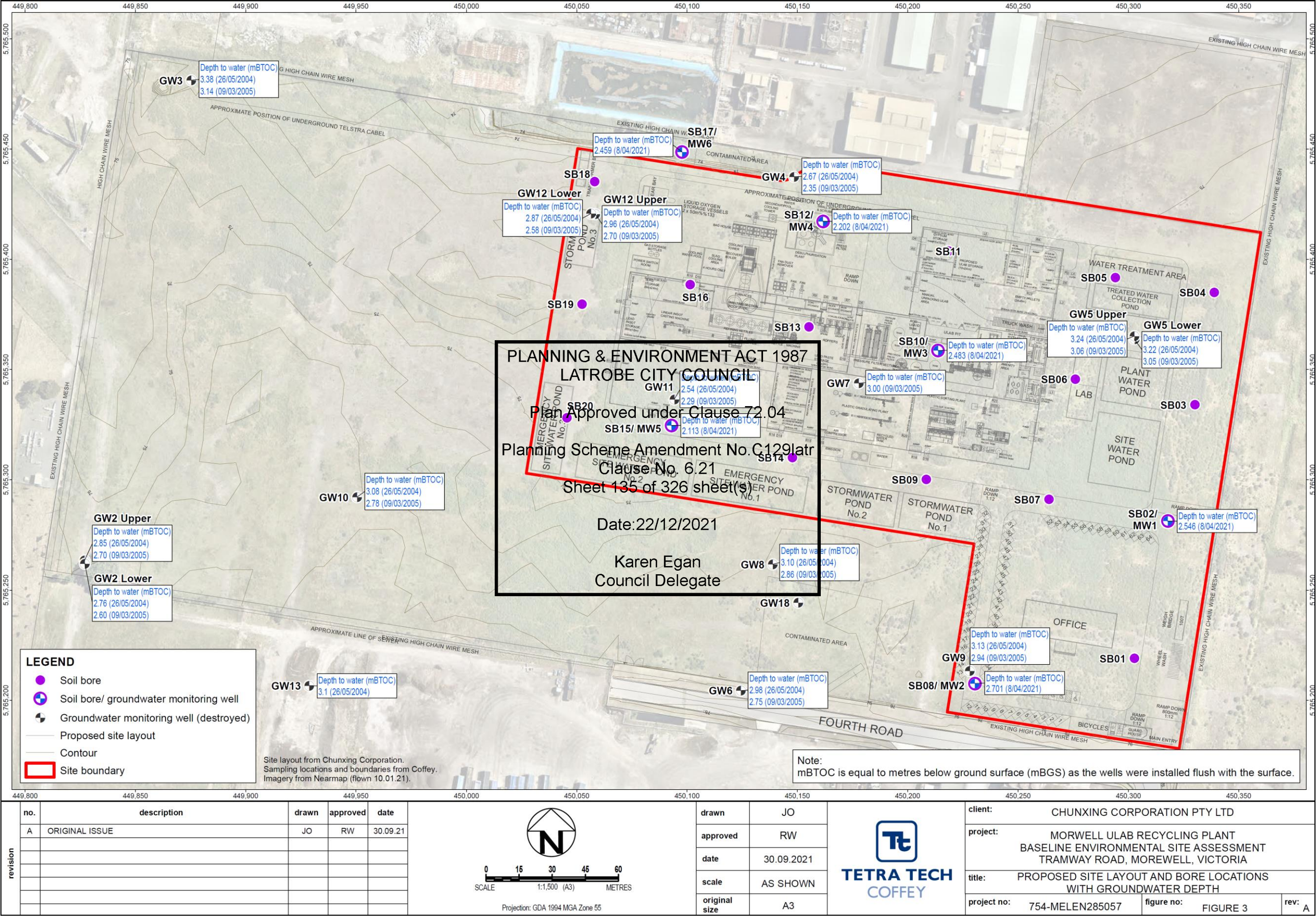


Figure 20 Location of Groundwater Wells (Facilities Overlay)
(Source: Baseline Environmental Site Assessment, Tetra Tech Coffey, 2021)

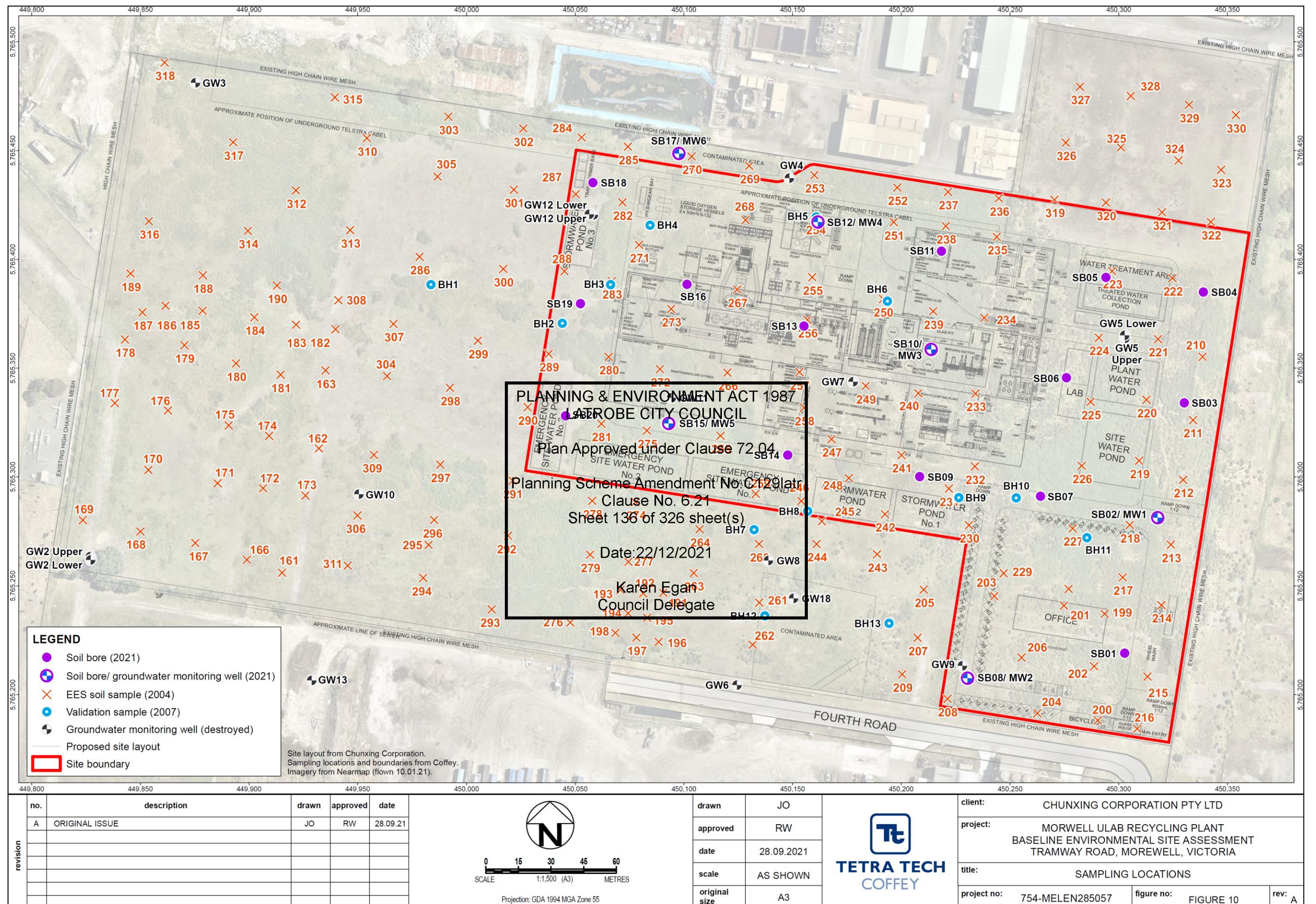


Figure 21 Location of Soil Bores (Facilities Overlay)
(Source: Baseline Environmental Site Assessment, Tetra Tech Coffey, 2021)

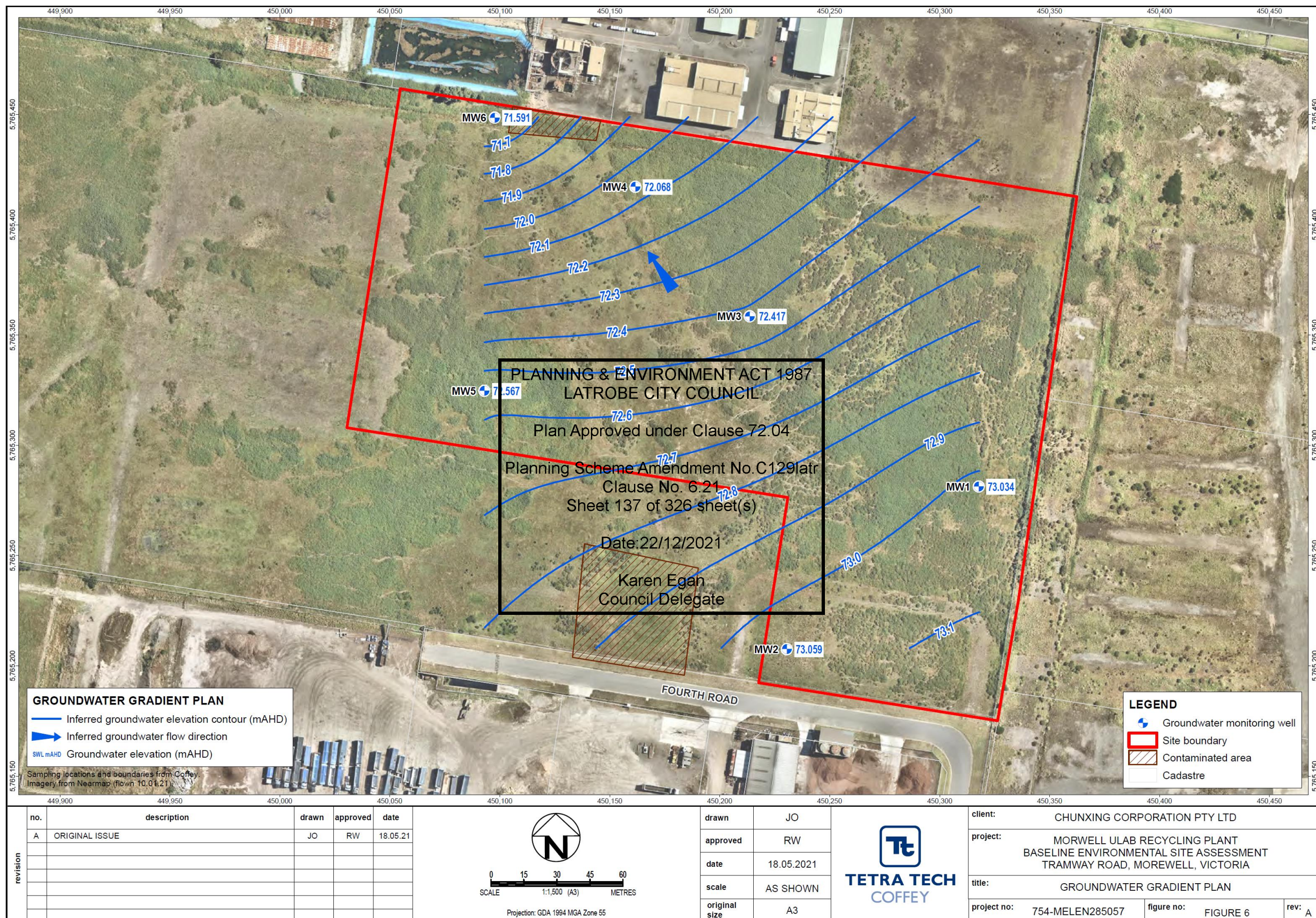


Figure 22 Groundwater Depth (mAHd)
 (Source: Baseline Environmental Site Assessment, Tetra Tech Coffey, 2021)

Table 19 Groundwater/Monitoring Bore Nomenclature and Details

BORE ID	TOC mAHD	GOUND SURFACE ELEVATION mAHD	EASTING	NORTHING	SWL mAHD 26/05/2004	SWL mAHD 9/03/2005	SWL mAHD 27/09/2005	SWL mAHD 08/04/2021	COMMENTS
GW1 Upper	78.42	77.77	449809.15	5764900.35	74.65	74.60	74.41	-	Status unknown
GW1 Lower	78.43	77.76	449807.17	5764901.28	58.03	65.51	74.37	-	Status unknown
GW2 Upper	75.62	75.05	449826.98	5765263.51	72.20	72.35	72.08	-	Status unknown
GW2 Lower	75.66	75.03	449827.11	5765262.06	72.27	72.43	72.15	-	Status unknown
GW3	74.98	74.38	449875.26	5765481.22	71.00	71.24	71.01	-	Status unknown
GW4	74.71	74.08	450148.49	5765437.50	71.41	71.73	71.47	-	Confirmed destroyed
GW5 Upper	75.78	75.10	450302.76	5765363.81	71.88	72.05	71.91	-	Confirmed destroyed
GW5 Lower	75.78	75.12	450302.71	5765365.23	71.88	72.06	71.92	-	Confirmed destroyed
GW6	75.96	75.41	450124.41	5765204.47	72.43	72.66	72.41	-	Bore not on Chunxing property
GW7	75.95	75.12	450177.85	5765343.90	-	72.12	71.89	-	Assumed destroyed
GW8	75.93	75.30	450138.83	5765261.73	72.20	72.44	72.17	-	Status unknown
GW9	76.19	75.62	450228.01	5765213.42	72.49	72.68	72.46	-	Status unknown
GW10	75.81	75.12	449950.41	5765292.19	72.04	72.34	72.03	-	Status unknown
GW11	75.20	74.51	450094.24	5765336.47	71.97	72.22	71.91	-	Confirmed destroyed
GW12 Upper	75.03	74.39	450058.36	5765420.48	71.43	71.69	71.45	-	Confirmed destroyed
GW12 Lower	74.99	74.36	450056.45	5765420.81	71.49	71.78	71.53	-	Confirmed destroyed
GW13	76.17	75.76	449928.78	5765206.74	72.66	-	-	-	Bore not on Chunxing property
GW14	76.89	76.15	449780.13	5765070.21	73.36	73.41	73.17	-	Bore not on Chunxing property
GW15	77.53	76.79	449996.15	5764958.83	74.10	74.16	73.97	-	Bore not on Chunxing property
GW16	79.48	78.76	449926.18	5764669.20	75.38	75.38	75.25	-	Bore not on Chunxing property
GW17	76.48	76.51	449920.99	5765045.97	-	73.72	73.48	-	Bore not on Chunxing property
MW1	75.58	75.77	450317.31	5765274.84	-	-	-	73.03	
MW2	75.76	75.87	450229.13	5765209.56	-	-	-	73.06	
MW3	74.90	75.04	450218.35	5765355.77	-	-	-	72.42	
MW4	74.27	74.42	450165.99	5765413.47	-	-	-	72.06	
MW5	74.68	74.83	450072.55	5765326.87	-	-	-	72.56	
MW6	74.05	74.17	450100.99	5765441.92	-	-	-	71.59	
Australian Height Datum (mAHD), Top of Casing (TOC), SWL (standing water level)									

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Date:22/12/2021

Karen Egan
Council Delegate

Table 20 Rainfall Depths & Runoff - Chunxing ULAB Facility

A - Rainfall Depth (mm) for Different Durations							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63	50	20	10	5	2	1
Duration							
12 hours	33	37	50	59	70	85	98
24 hours	41	46	62	74	87	106	123
48 hours	51	56	76	91	107	131	151
3 days	57	63	84	100	118	144	166
5 days	64	71	94	111	129	156	180
7 days	70	76	99	115	132	159	182
* Source BOM online (http://www.bom.gov.au/water/designRainfalls/revised-ifd/?multipoint)							

B - Run-off (m3) Generated from Rainfall Depths of Different Durations (0% infiltration)							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63.2	50	20	10	5	2	1
Duration							
12 hours	1,923	2,144	2,896	3,461	4,061	4,941	5,681
24 hours	2,492	2,889	3,807	4,512	5,663	6,176	7,167
48 hours	2,966	3,288	4,416	5,285	6,234	7,633	8,798
3 days	3,304	3,659	4,894	5,821	6,875	8,390	9,672
5 days	3,741	4,131	5,454	6,467	7,516	9,089	10,488
7 days	4,049	4,446	5,757	6,700	7,691	9,264	10,604

* Catchment Area = 58,625m²

C - Run-off (m3) Generated from Rainfall Depths of Different Durations (10% infiltration)							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63.2	50	20	10	5	2	1
Duration							
12 hours	1,730	1,930	2,606	3,115	3,655	4,447	5,113
24 hours	2,171	2,412	3,246	3,880	4,557	5,558	6,450
48 hours	2,669	2,958	3,975	4,756	5,611	6,869	7,918
3 days	2,973	3,293	4,405	5,244	6,188	7,551	8,705
5 days	3,367	3,718	4,908	5,821	6,765	8,180	9,439
7 days	3,644	4,001	5,181	6,030	6,922	8,338	9,544

* Catchment Area = 58,625m²

C - Run-off (m3) Generated from Rainfall Depths of Different Durations (20% infiltration)							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63.2	50	20	10	5	2	1
Duration							
12 hours	1,538	1,715	2,317	2,769	3,249	3,953	4,545
24 hours	1,930	2,144	2,885	3,449	4,051	4,941	5,733

48 hours	2,373	2,629	3,533	4,228	4,987	6,106	7,038
3 days	2,643	2,927	3,915	4,661	5,500	6,712	7,738
5 days	2,992	3,305	4,363	5,174	6,013	7,271	8,390
7 days	3,240	3,556	4,605	5,360	6,153	7,411	8,483

* Catchment Area = 58,625m²

D - Run-off (m3) Generated from Average Rainfall Depth Periods				
	Annual	Monthly	Weekly	Daily
Rainfall (m)	0.733	0.061	0.014	0.002
Run-off (m3) - no infiltration	42,708.245	3,559.020	819.736	117.009
Run-off (m3) - 10% infiltration	38,437.421	3,203.118	737.762	105.308
Run-off (m3) - 20 infiltration	34,166.596	2,847.216	655.789	93.607

* Catchment Area = 58,625m²

E - Emergency Storage Volume of the Construction Footprint¹			
mAHD Contour	Area (m ²)	Depth (m)	Storage Volume (m ³)
74.4 - 74.6	7,677.0	0.2	1,535.4
74.2 - 74.4	6,378.0	0.2	1,275.6
74.2 - 74.6	14,055.0	-	2,811.0
			+
CSP Storage Vol.			2,250.0
Total Emerg. Stormwater Volume			5,061.0

*Following the Installation of Construction Stormwater Pond Emergency Stormwater Bund

¹ The height of the CSP ESWB spillway is 74.6 mAHD therefore assumption is area between the 74.2 mAHD and 74.6 mAHD contours will provide emergency storage for stormwater in the event the construction stormwater pond is full.

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Karen Egan
Council Delegate

Table 21 Concrete Quantities

LOCATION	QTY	WIDTH (m)	LENGTH (m)	HEIGHT (m)	WALL (m)	FLOOR (m)	DEPTH (m)	AREA (m2)	CONCRETE WALLS (m3)	CONCRETE FLOOR (m3)	STABILIZED SAND m3	FOUNDATION 32 MPa (m3)	CONC 25 MPa TOTAL (m3)	CONC 15MPa TOTAL (m3)	TOTAL CONC (m3)
AREA A (FLOOR)	1						0.2	7940					1588.0		1588.0
AREA A (ROADS)	1						0.2	1515					303.0		303.0
AREA A (FOOTPATH)	1						0.2	797					159.4		159.4
ULAB PIT	1	24	10	2	0.25	0.25		240	106.25	257.3			363.5		363.5
BREAKER	1	5	5				0.5	25				12.5		32.5	45.0
PRESSURE FILTERS	2	1.6	13.5				0.5	43.2				21.6		56.2	77.8
PRESSURE FILTERS	2	2.7	13.5				0.5	72.9				36.5		94.8	131.2
Row 1 Columns	9	1.2	1.2	0.5				13.0			10.4	6.5		1.9	8.4
Row 4 Columns	9	1.2	1.2	0.5				13.0			10.4	6.5		1.9	8.4
Row 7 Columns	12	2.2	2.2	0.5				58.1			46.5	29.0		8.7	37.8
Row 10 Columns	12	2.7	2.7	0.5				87.5			70.0	43.7		13.1	56.9
Row 13 Columns	12	2.2	2.2	0.5				58.1			46.5	29.0		8.7	37.8
Mullions C1	10	1	1	0.5				10.0			8.0	5.0		1.5	6.5
Mullions C9	4	1	1	0.5				4.0			3.2	2.0		0.6	2.6
Row 11 Columns	12	2.7	2.7	0.5				87.5			70.0	43.7			43.7
Row 15 Columns	12	2.2	2.2	0.5				58.1			46.5	29.0		8.7	37.8
Mullions Row A	10	1	1	0.5				10.0			8.0	5.0		1.5	6.5
Mullions Row I	4	1	1	0.5				4.0			3.2	2.0		0.6	2.6
NORTH CONCRETE BUND WALL	17	0.75	6	0.2									15.3		15.3
AREA B (FLOOR)	1						0.2	5658					1131.6		1131.6
REFINING KETTLE PIT	1	34	9	2	0.25	0.25		306	71.25	76.5		162.0			162.0
REFINING KETTLE FOUNDATION	2	5	5				0.4	25				20.0		50.0	70.0
SMELTERS	1	7.6	14.6				0.5	111.0				55.5		221.9	277.4
SMELTERS (STRIP FOOTINGS)	16	0.35	5.3				0.75	29.7				23.4			23.4
Row 7 Columns	13	2.2	2.2	0.5				62.9			50.3	31.5		25.2	56.6
Row 11 Columns	13	2.7	2.7	0.5				94.8			75.8	47.4		23.7	71.1
Row 15 Columns	13	2.2	2.2	0.5				62.9			50.3	31.5		25.2	56.6
Mullions Row Y	6	1	1	0.5				6.0			4.8	3.0		2.4	5.4
AREA C (FOOTPATH)	1						0.2	1200					240.0		240.0
AREA C (PAVEMENT)	1						0.2	700					140.0		140.0
AREA C (ROADS)	1						0.2	1880					376.0		376.0
EMERG SITE WATER POND #1	1	51	16	3.2	0.25	0.25		816	155.25	204.0			359.3		359.3
EMERG SITE WATER POND #2	1	51	16	3.2	0.25	0.25		816	155.25	204.0			359.3		359.3
EMERG SITE WATER POND #3	1	40	13	3.2	0.25	0.25		520	125.05	130.0			613.0		613.0
SOUTH CONCRETE BUND WALL	25	0.75	6	0.2									22.5		22.5
WEST CONCRETE BUND WALL	10	0.75	6	0.2									9.0		9.0
AREA D (FOOTPATH)	1						0.2	700					140.0		140.0
AREA D (PAVEMENT)	1						0.2	450					90.0		90.0

LOCATION	QTY	WIDTH (m)	LENGTH (m)	HEIGHT (m)	WALL (m)	FLOOR (m)	DEPTH (m)	AREA (m2)	CONCRETE WALLS (m3)	CONCRETE FLOOR (m3)	STABILIZED SAND m3	FOUNDATION 32 MPa (m3)	CONC 25 MPa TOTAL (m3)	CONC 15MPa TOTAL (m3)	TOTAL CONC (m3)
AREA D (ROADS)	1						0.2	630					126.0		126.0
STORMWATER POND #1	1	35	16	3.2	0.25	0.25		560	139.3	140.0			279.3		279.3
STORMWATER POND #2	1	35	16	3.2	0.25	0.25		560	139.3	140.0			279.3		279.3
SOUTH CONCRETE BUND WALL	12	0.75	6	0.2									10.8		10.8
TRUCK RAMP - EAST															0.0
Ramp Piers	4	0.3	16	0.2				4.8					3.8	25.0	28.8
Ramp Key	1	1.2	9	0.6				10.8					6.5		6.5
Ramp Top	1	17	9	0.2				153					30.6		30.6
SUMP PIT - SEP6	1							8				2.0	4.0		6.0
AREA E (ROADS)	1						0.2	4760					952.0		952.0
AREA E (FOOTPATH)	1						0.2	1200					240.0		240.0
AREA E (PAVEMENT)	1						0.2	2233					446.6		446.6
TREATED WATER POND	1	35	11	3.2	0.25	0.25		385	107.3	96.3			203.5		203.5
PLANT WATER POND	1	28	21	3.2	0.25	0.25		588	164.3	147.0			311.3		311.3
SITE WATER POND	1	28	32	3.2	0.25	0.25		896	234.7	224.0			458.7		458.7
NORTH CONCRETE BUND WALL	13	0.75	6	0.2									11.7		11.7
EAST CONCRETE BUND WALL	22	0.9	6	0.2									23.8		23.8
WATER TREATMENT PLANT	1						0.2					80.0			80.0
CONCRETE TRUCK WASHOUT POND	1	4	6				0.2	24		6.0			9.0		9.0
TRUCK RAMP - SOUTH															0.0
Ramp Piers	13	0.3	13	0.25				9.9					12.7	101.1	113.8
Ramp Key	1	1.2	35	0.6				42					25.2		25.2
Ramp Top	1	35	14	0.2				490					98.0		98.0
SUMP PIT - SEP11	1							8				2.0	4.0		6.0
AREA F (ROADS)	1							642					728.4		728.4
AREA F (CARPARK)	1						0.2	1920					384.0		384.0
SOUTH CONCRETE BUND WALL	16	0.75	6	0.2				4.5					14.4		14.4
EAST CONCRETE BUND WALL	20	0.9	6	0.2				5.4					21.6		21.6
WEST CONCRETE BUND WALL	18	0.75	6	0.2				4.5					16.2		16.2
WHEEL WASH PIT	1	7	20	0.4	0.25	0.25		140	23.5	56.0			79.5		79.5
WEIGHBRIDGE PIT	1	7	20	0.4	0.25	0.25		140	23.5	56.0			79.5		79.5
EXCESS CONCRETE DUMP															0.0
north Footing	1	0.9	22.5	0.4				20.3					8.1		8.1
south Footing	1	1.2	27.4	0.4				32.9					13.2		13.2
east Footing	1	0.9	20	0.4				18					7.2		7.2
west Footing	1	0.9	13.7	0.4				12.3					4.9		4.9
Box Frame	1	0.3	75	0.6				22.5					13.5	230.3	243.8
Partitions	8	0.3	13.4	0.8				4.02					25.7		25.7
Pavement	1	14	24	0.2				336					67.2		67.2
ENTRY RAMP - NORTH															0.0

Frequency Descriptor	EY	AEP (%)	AEP (1 in x)	ARI	Uses in Engineering Design
Very frequent	12				Water sensitive urban design
	6	99.75	1.002	0.17	
	4	98.17	1.02	0.25	
	3	95.02	1.05	0.33	
	2	86.47	1.16	0.50	
Frequent	1	63.2	1.58	1.00	Stormwater/pit and pipe design
	0.69	50.00	2	1.44	
	0.5	39.35	2.54	2.00	
	0.22	20.00	5	4.48	
	0.2	18.13	5.52	5.00	
Infrequent	0.11	10.00	10.00	9.49	Floodplain management and waterway design
	0.05	5.00	20	20.0	
	0.02	2.00	50	50.0	
	0.01	1.00	100	100	
Rare	0.005	0.50	200	200	
	0.002	0.20	500	500	
	0.001	0.10	1000	1000	
Extremely Rare	0.0005	0.05	2000	2000	
	0.0002	0.02	5000	5000	
Extreme			PMP		

Figure 23 Australian Rainfall and Runoff Terminology

* Source BOM Online (<http://www.bom.gov.au/water/designRainfalls/#sec1q5>)

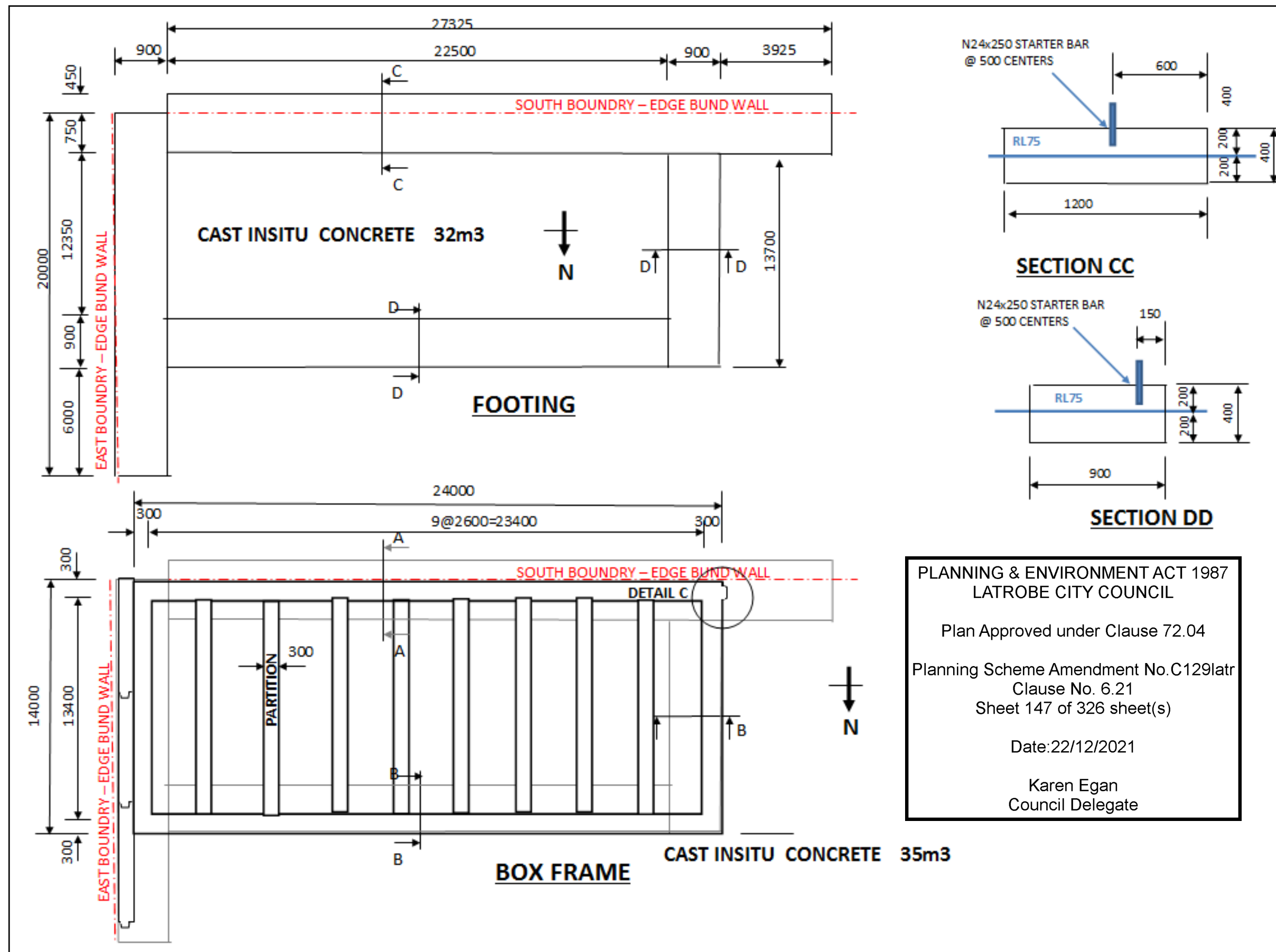


Figure 26 Excess Concrete Dump - Details

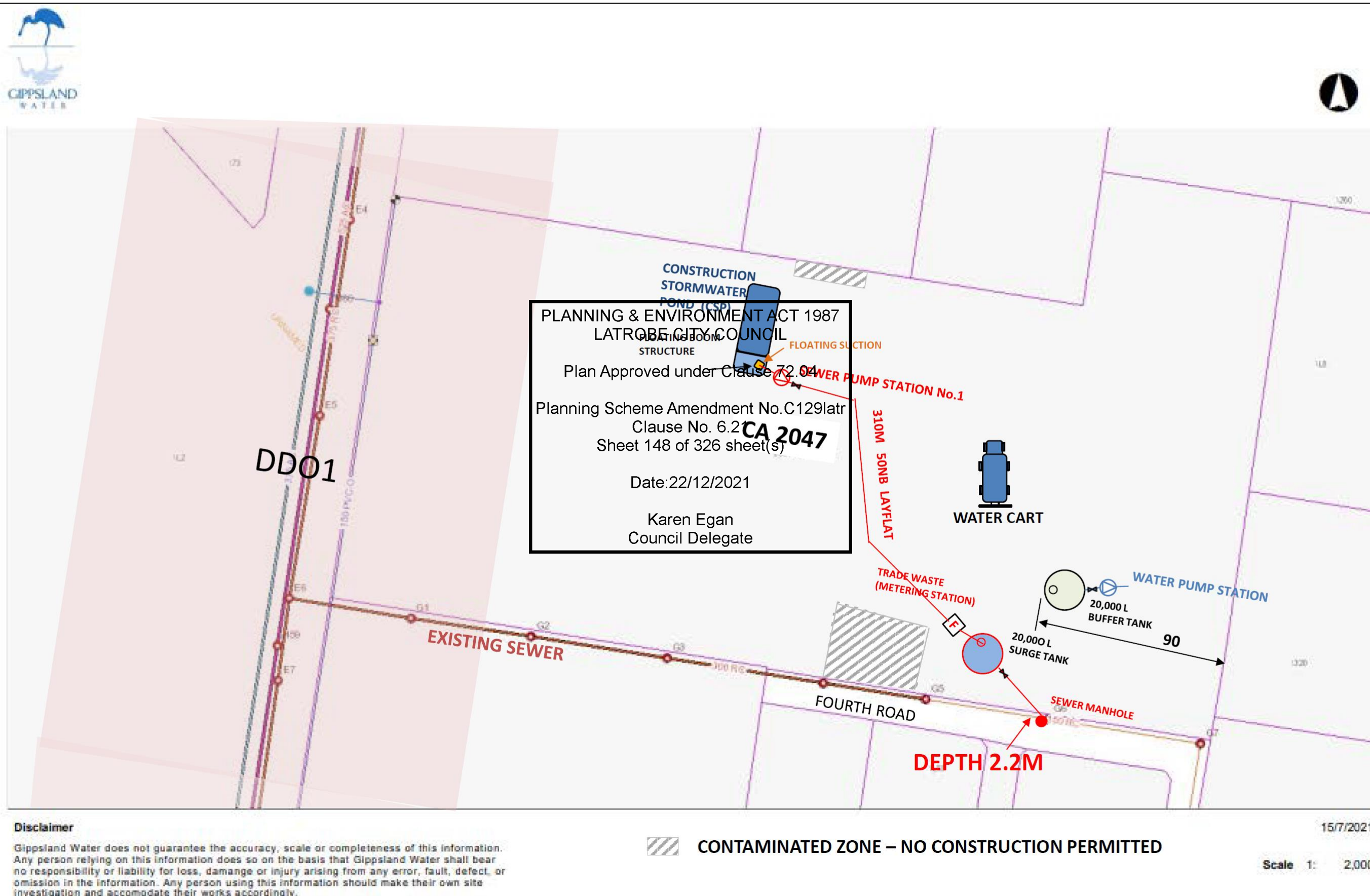


Figure 27 Potable (Construction) Water Supply and Trade Waste Connection Point – Construction Phase (Temporary)

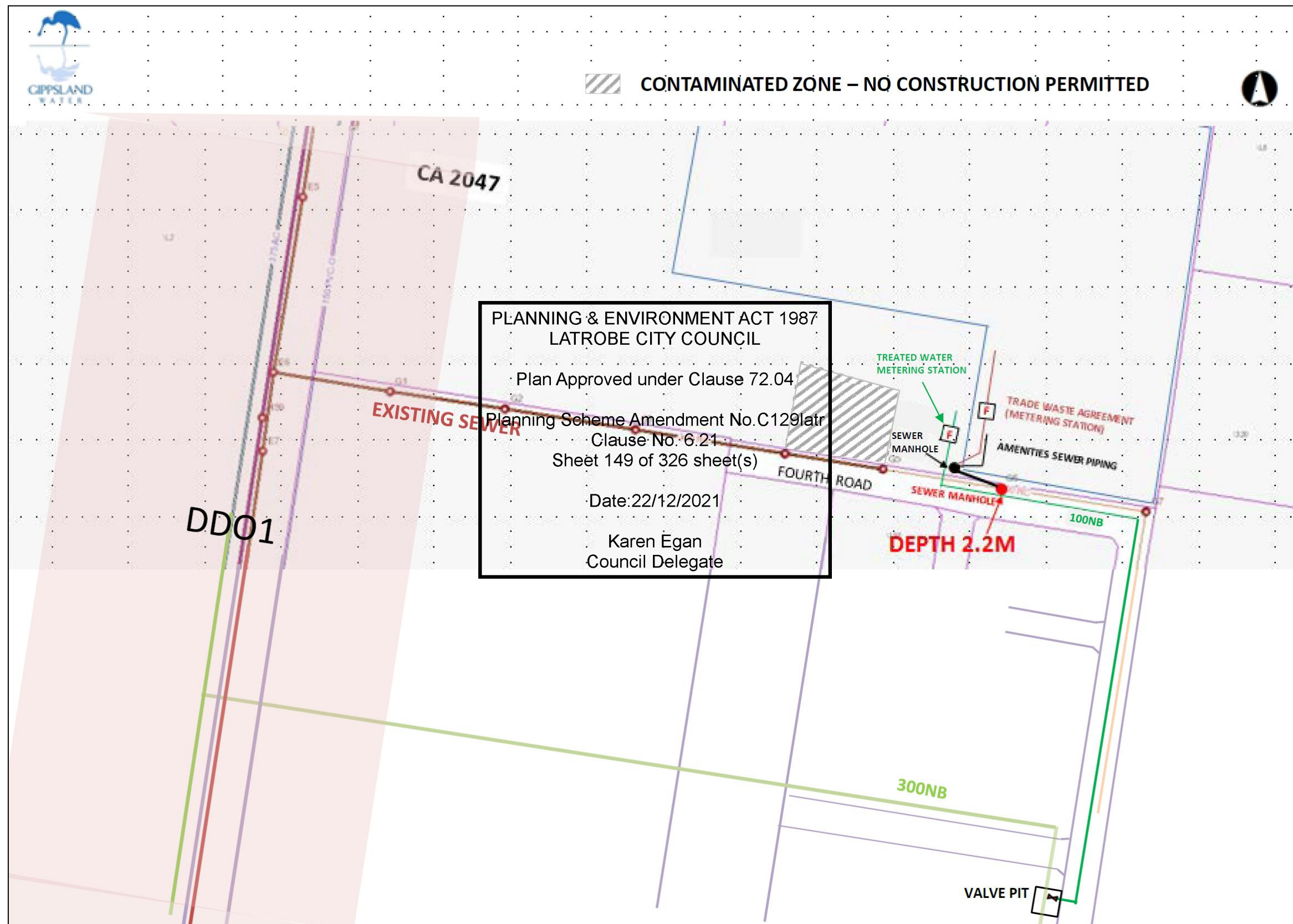


Figure 28 Potable Water Supply and Trade Waste Connection Point –Operations Phase (Permanent)

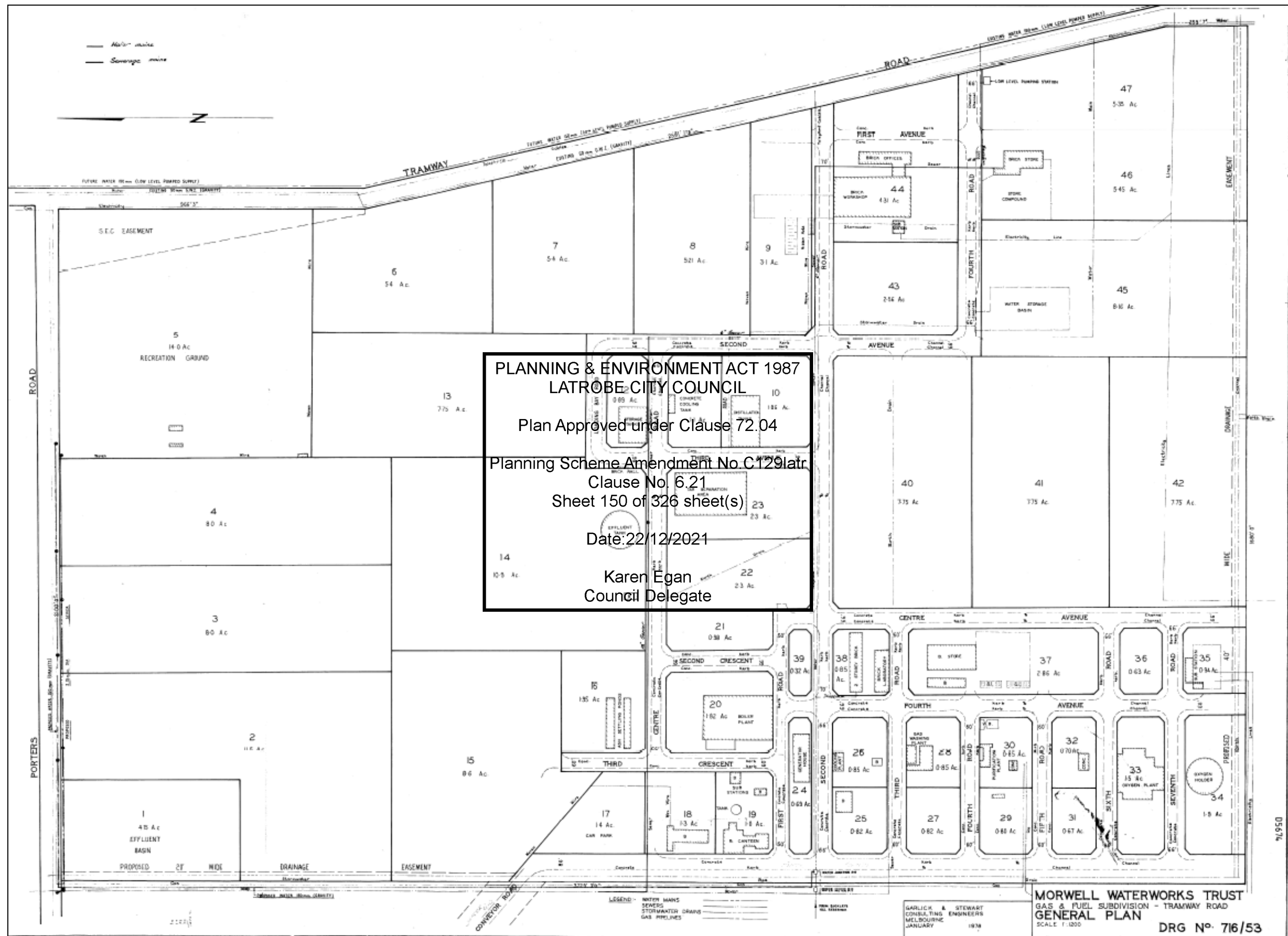


Figure 29 Tramway Road General Plan

PLANNING PROPERTY REPORT

From www.planning.vic.gov.au at 13 July 2021 09:30 PM

PROPERTY DETAILS

Crown Description: **Allot. 2047 PARISH OF HAZELWOOD**
Address: **FOURTH ROAD HAZELWOOD NORTH 3840**
Standard Parcel Identifier (SPI): **2047\PP2749**
Local Government Area (Council): **LATROBE**
Council Property Number: **55744 (Part)**
Planning Scheme: **Latrobe**
Directory Reference: **Vicroads 97 H6**

www.latrobe.vic.gov.au

[Planning Scheme - Latrobe](#)

This parcel is one of 2 parcels comprising the property. For full parcel details get the free Property report at [Property Reports](#)

UTILITIES

Rural Water Corporation: **Southern Rural Water**
Urban Water Corporation: **Gippsland Water**
Melbourne Water: **Outside drainage boundary**
Power Distributor: **AUSNET**

STATE ELECTORATES

Legislative Council: **EASTERN VICTORIA**
Legislative Assembly: **MORWELL**

OTHER

PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL
Aboriginal Land and Waters
Aboriginal Corporation

[View location in VicPlan](#)

Planning Zones

INDUSTRIAL 2 ZONE (IN2Z)

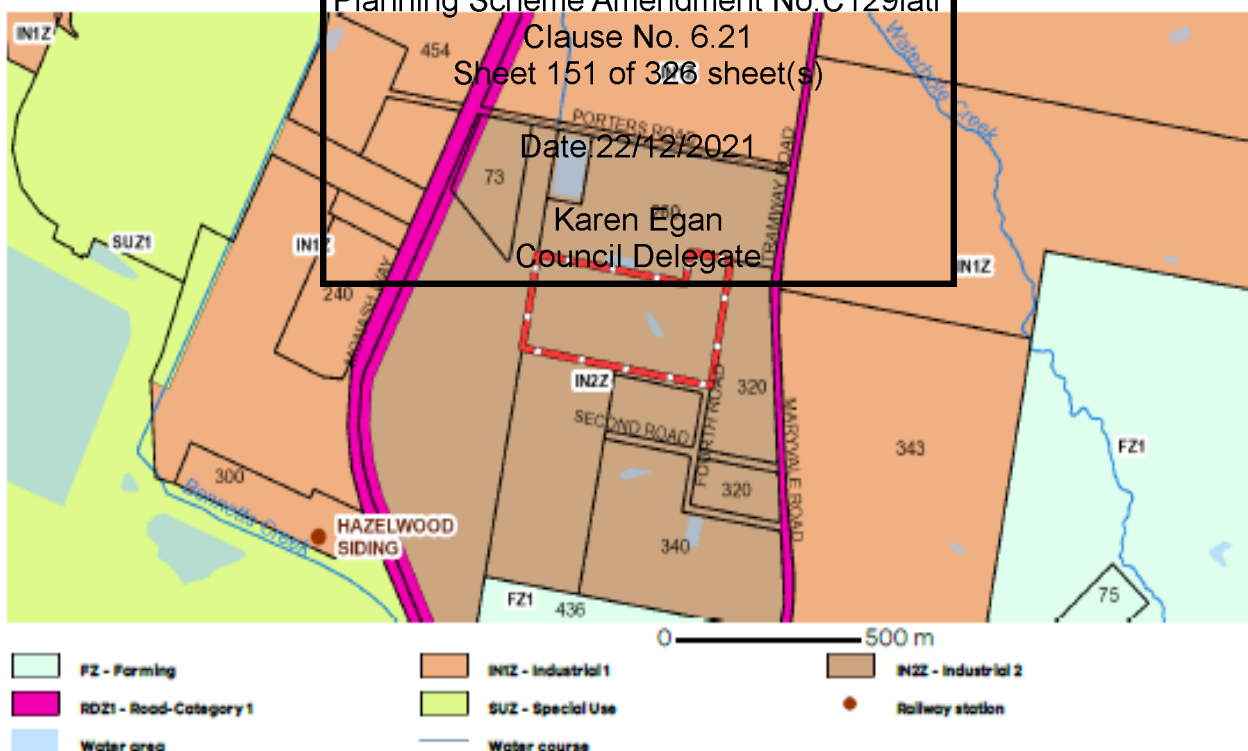


Figure 30 Property Planning Report

PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 152 of 326 sheet(s)

Date:22/12/2021

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Annexure A

Erosion and Sediment Control Plan

PLANNING & ENVIRONMENT ACT 1987
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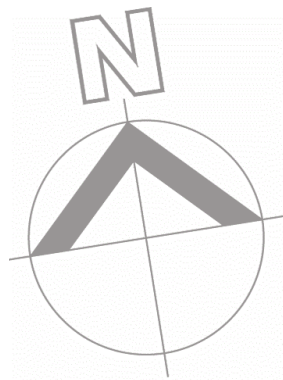
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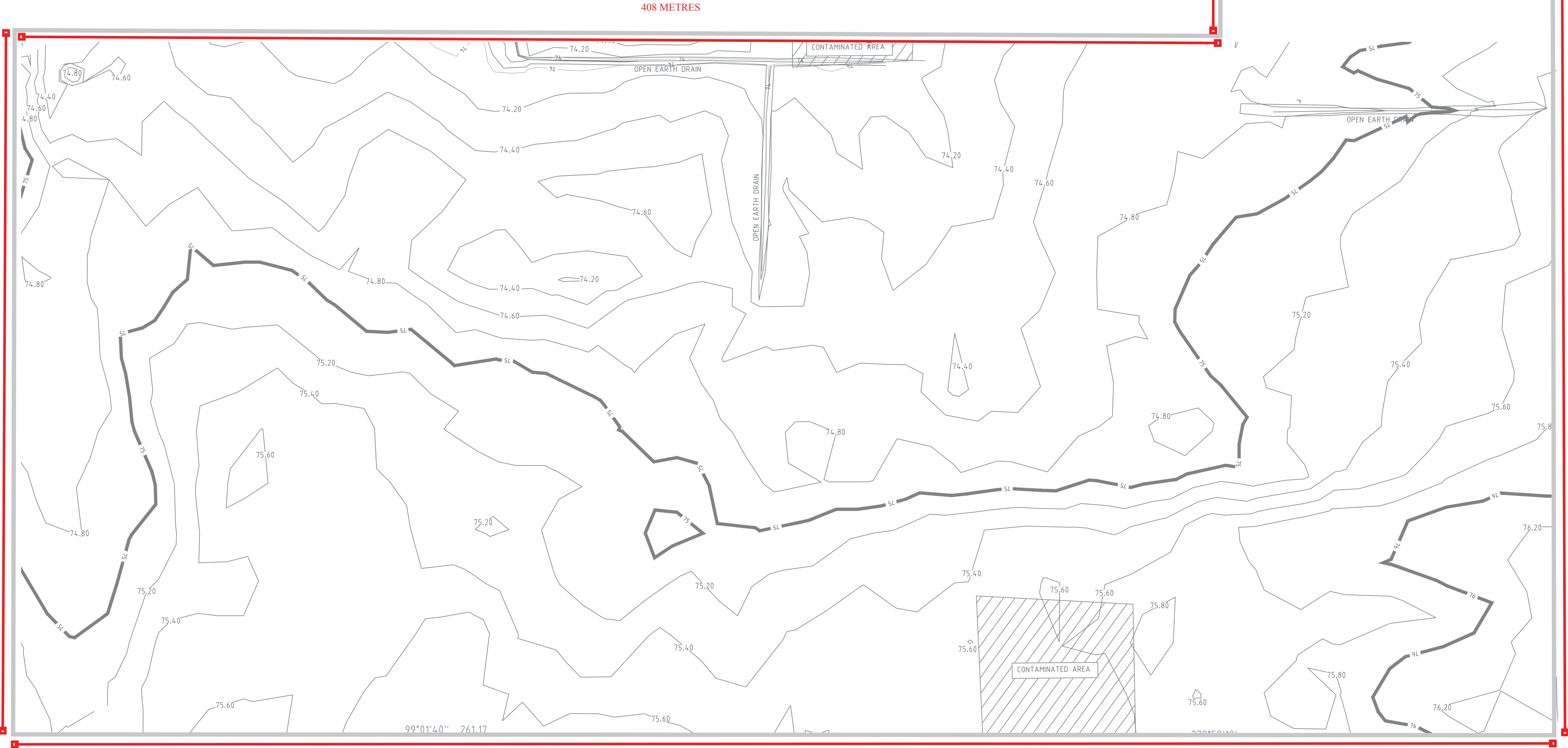
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Clause No. 6.21
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Date:22/12/2021

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Council Delegate



240 METRES



- 1 Primary slope direction is southeast (76.2 mAHd) to northwest (74.2 mAHd) with approximately 2.0m of relief over 500m (0.23 degrees or 0.4% slope). The site also slopes gently to the north.
 - 2 Surface water enters existing open earth drains along the northern boundary (drains westwards) and along the western boundary (drains northwards) before discharging into a grated pit (legal point of discharge)
 - 3 An existing earthen bund is found along the eastern boundary
 - 4 Property surface area is 13,4500m2. Property perimeter is 1,687m (western boundary = 240m / southern boundary = 520m / eastern boundary = 306m / northern boundary = 520m (112m + 408m)
- * Map/figures are not georeferenced.

Erosion and Sediment Control Plan (Conceptual): Sheet 0
Property Attributes (Preconstruction)

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria

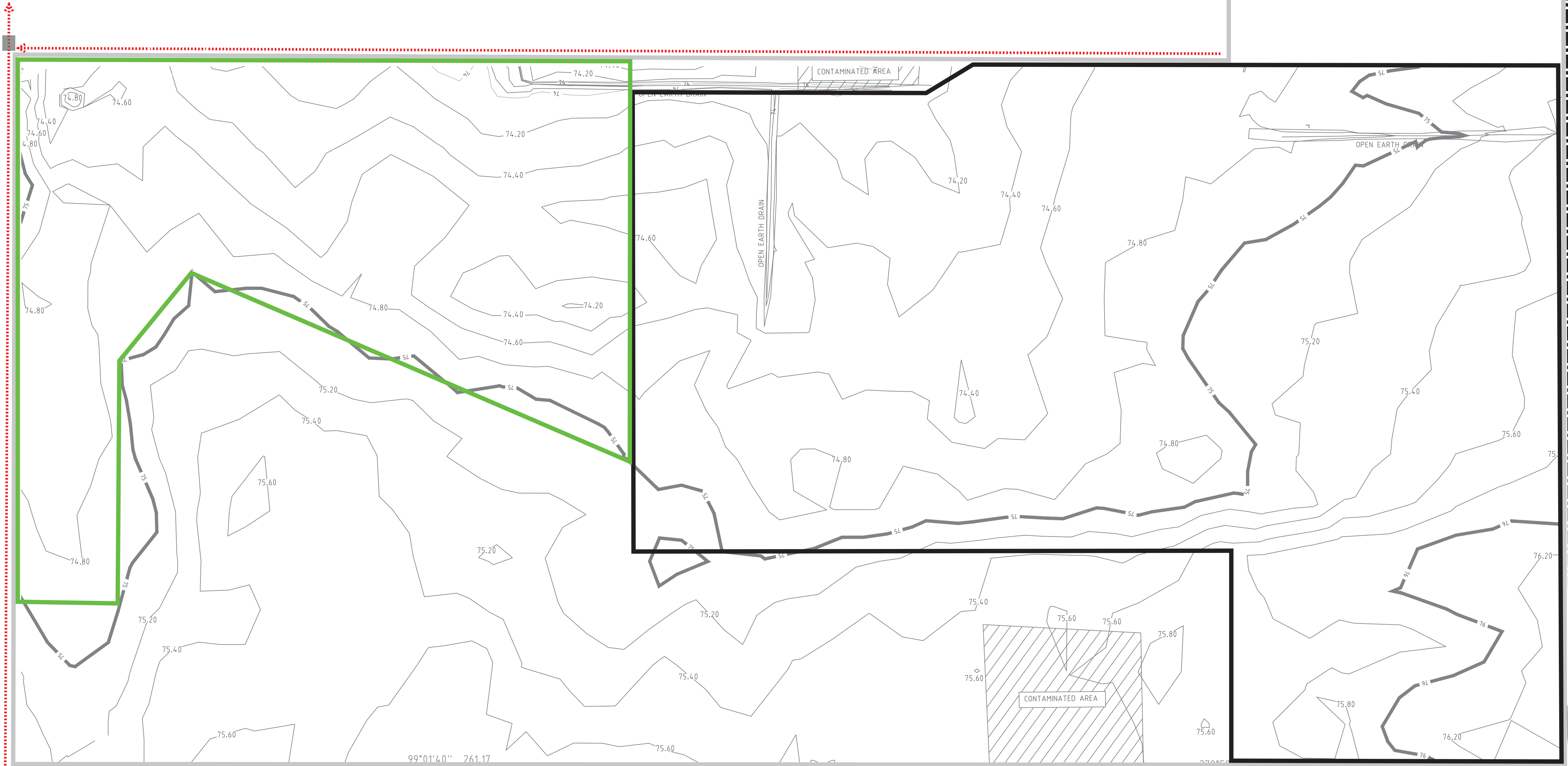
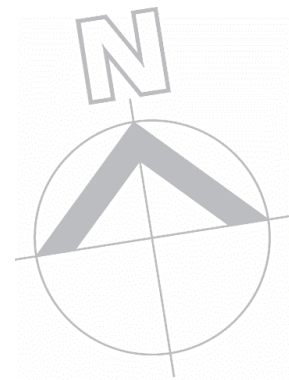
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Council Delegate



NOTES:

1 Primary slope direction is southeast (76.2 mAHd) to northwest (74.2 mAHd) with approximately 2.0m of relief over 500m (0.23 degrees or 0.4% slope). The site also slopes gently to the north.

2 Surface water enters existing open earth drains along the northern boundary (drains westwards) and along the western boundary (drains northwards) before discharging into a grated pit (legal point of discharge)

3 An existing earthen bund is found along the eastern boundary

* Map/figures are not georeferenced.

Erosion and Sediment Control Plan (Conceptual): Sheet 1
Property, Construction & Western Buffer Zone Footprints

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria

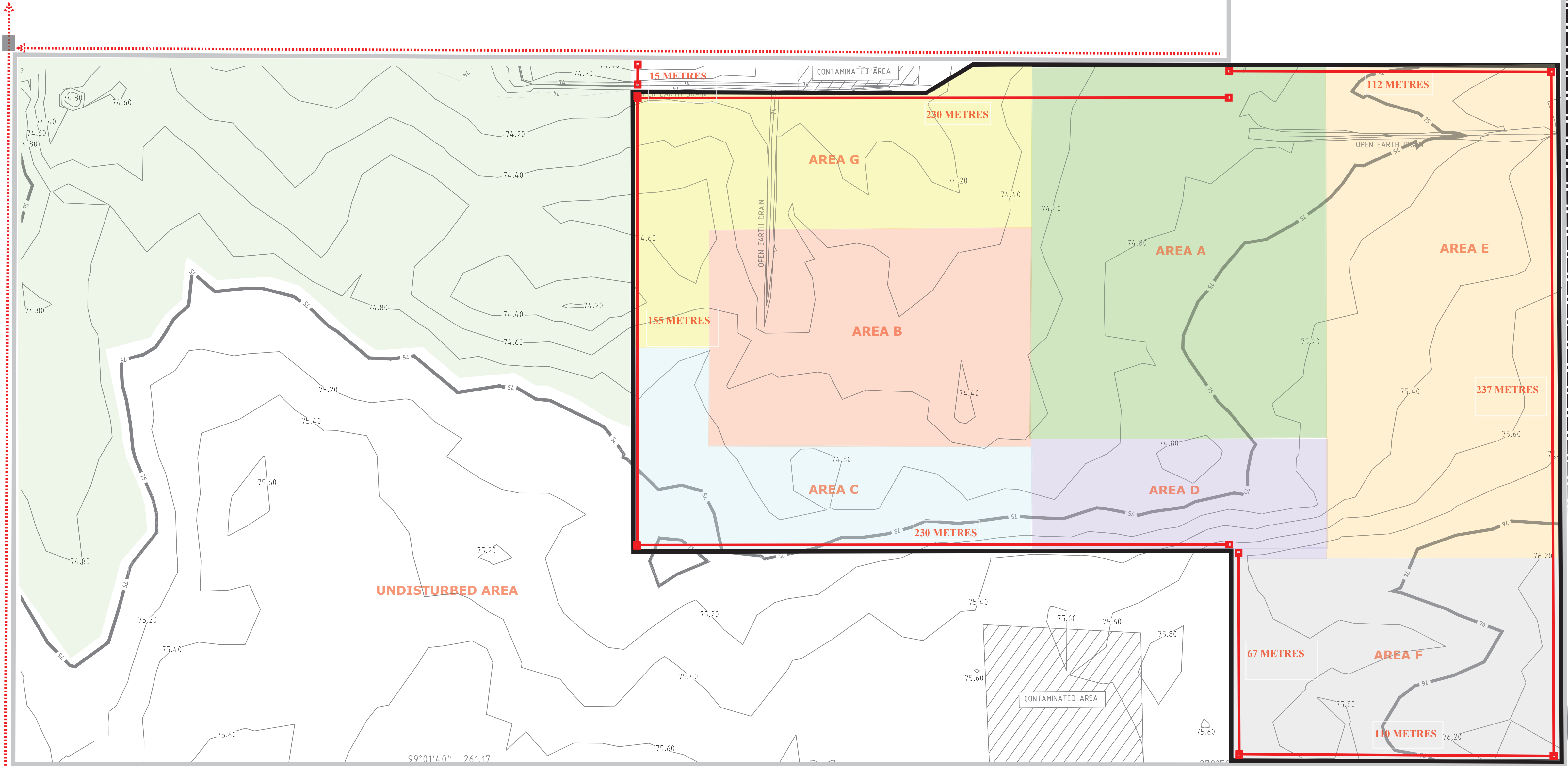
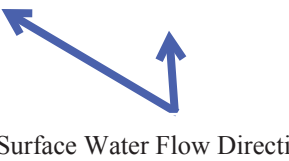
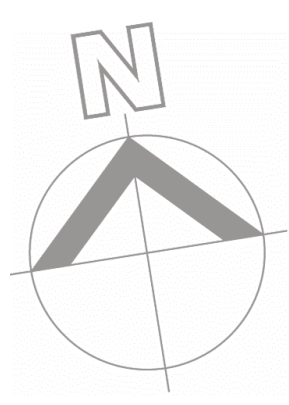
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LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

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Date:22/12/2021

Karen Egan
Council Delegate



Erosion and Sediment Control Plan (Conceptual): Sheet 2 (a)
Work Areas A - G

NOTES:

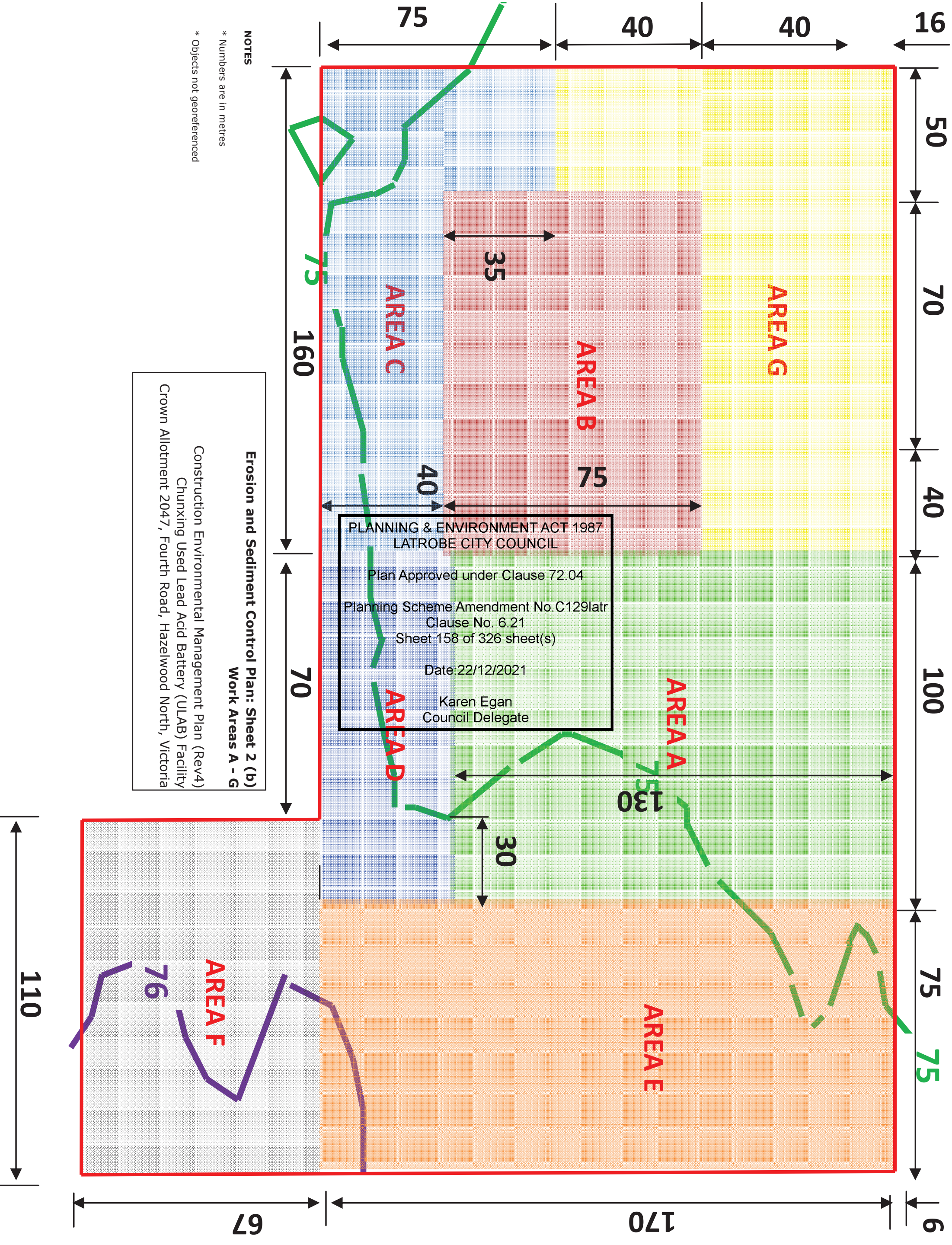
CONSTRUCTION FOOTPRINT - 58,265 m²
AREA A 13,000 m²
AREA B 8,250 m²
AREA C 8,150 m²
AREA D 4,000 m²
AREA E 12,750 m²
AREA F 3,115 m²
AREA G 9,000 m²

UNDISTURBED AREAS - 49,815 m² (approx.)

Spatial extent for work areas can be seen on Erosion and Sediment Control Plan: Sheet 2 (b)

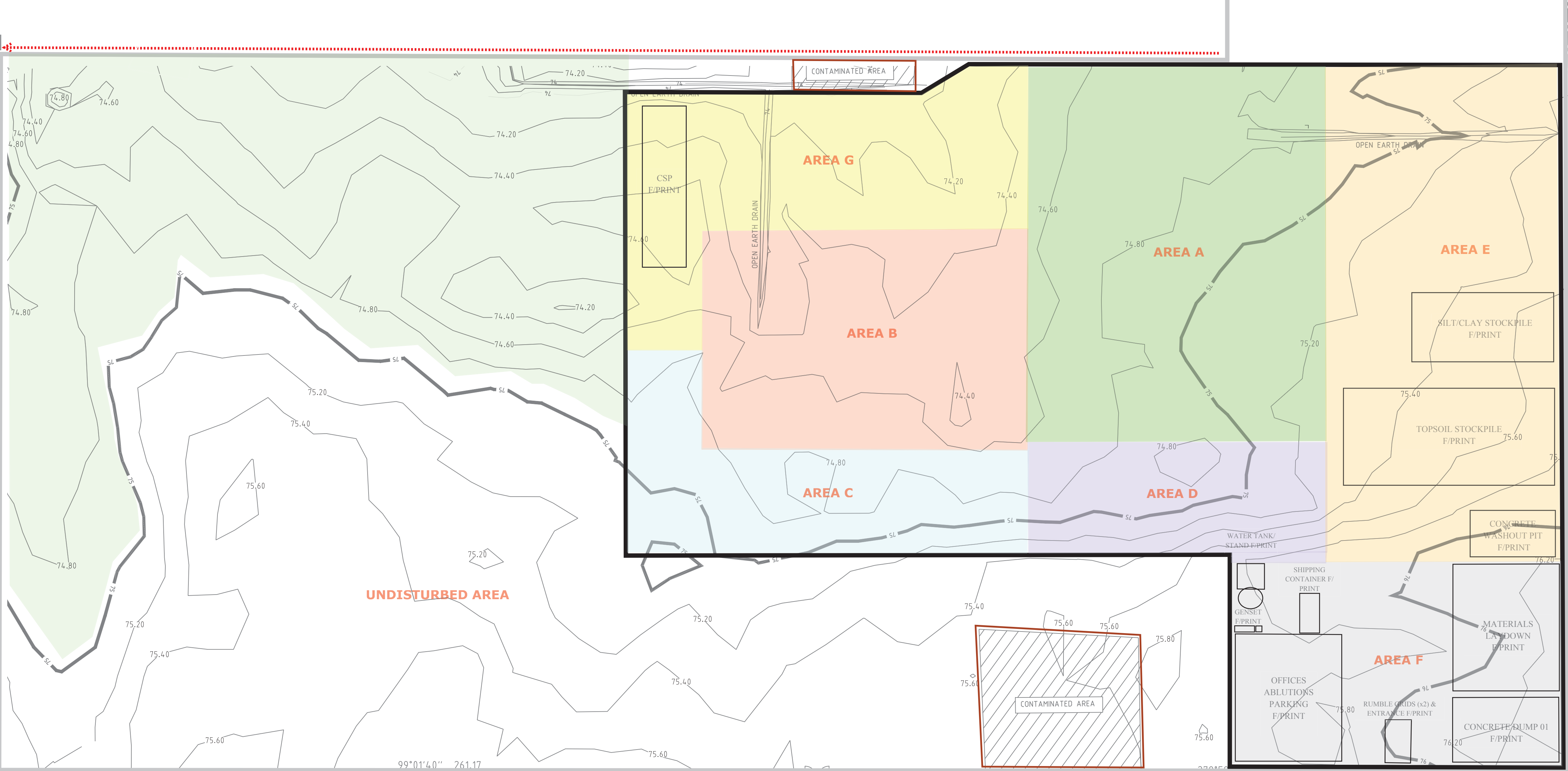
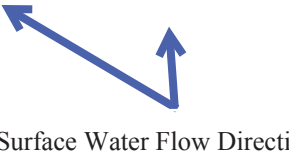
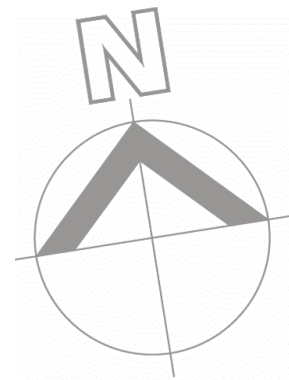
* Objects not georeferenced

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria



ACTIVITES

- 1 Set-out/peg Construction Footprint with white survey flagging tape.
- 2 Set-out and install protective fencing (metal stakes installed every 5m and at corners with tracer wire on the top) around the northern contaminated area (coordinates: E450145.4 / N5765447 (NE), E450143.4 / N5765438 (SE), E450103.2 / N5765442 (SW) and E450104.9 / N5765453 (NW)). Affix red survey flagging tape to each metal stake.
- 3 Set-out/peg the southern (EOT) contaminated site with red survey flagging (offset pegs 1.0m outside coordinates: E450131 / N5765205 (SW), E450136.7 / N5765256 (NW), E450188.5 / N5765245 (NE) and E450181.9 / N5765197 (SE).
- 4 Attach red survey flagging tape to the top of the bore casing of all groundwater/monitoring wells (MW01-MW06) with an additional 1m standing PVC piping to be affixed to the casing of the groundwater wells that will be retained (MW1, MW2 and MW6). See 'Notes' for well locations.
- 5 Set-out/peg Work Areas A - G will with pink survey flagging tape.
- 6 Set-out/peg Topsoil Stockpile (60m x 75m) and Silt/Clay (40 x 45m) stockpile footprints in Area E.
- 7 Set-out and ground mark (spray paint) construction stormwater pond (CSP) temporary facilities footprints (temporary water tank & stand-pipe, genset/diesel tank, rumble/shaker grid, concrete wash-out pit, concrete dump 01, shipping container (for hazardous and inert goods and materials laydown)).



Erosion and Sediment Control Plan (Conceptual): Sheet 3
Survey & Set-Out

NOTES:

BORE ID (EASTING / NORTHING)

- MW1 (450317.31 / 5765274.84)
- MW2 (450229.13 / 5765209.56)
- MW3 (450218.35 / 5765355.77)
- MW4 (450165.99 / 5765413.47)
- MW5 (450072.55 / 5765326.87)
- MW6 (450100.99 / 5765441.92)

CSP = Construction Stormwater Pond

* Objects not georeferenced

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Council Delegate

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria

ACTIVITIES: Erosion & Sediment Controls - Construction Footprint (1)

Strip topsoil/vegetation (grasses) to a depth of 0.2m in the silt/clay & topsoil footprint across the northern half of Area E (place in Area E topsoil stockpile area) and excavate ~750m3 of silt/clay (204m3 + 350m3 + 95m3 + + 35m3 + 38m3 + 19m3) from northern area in Area E to construct and install Clean Water Diversion (CWDB) and Dirty Water Diversion (DWDB) Bunds:

a Southern Boundary CWDB (2.0m W x 340.0m L x 0.3m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the southern construction footprint boundary and turn-out near the southwest corner of the construction footprint meet.

b Northern Boundary DWDB (2.0m W x 350.0m L x 0.5m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the northern construction footprint boundary and turn-out 1m from the construction stormwater pond.

c Western Boundary DWDB A (2.0m W x 95.0m L x 0.5m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the western construction footprint boundary from the southeast corner of the construction footprint extending 95m to the north towards the Construction Stormwater Pond. The bund/channel is to turn-out 2m from the construction stormwater pond.

d Western Boundary DWDB B (1.0m W x 70.0m L x 0.5m bund H + 0.15m deep x 0.5m wide channel) is to be installed along the western boundary of Area F. The lower end of the bund/channel is to daylight into Work Area D. Install straw Bales in the channel to slow flow velocities (see Reference Drawing 'SD 6-7').

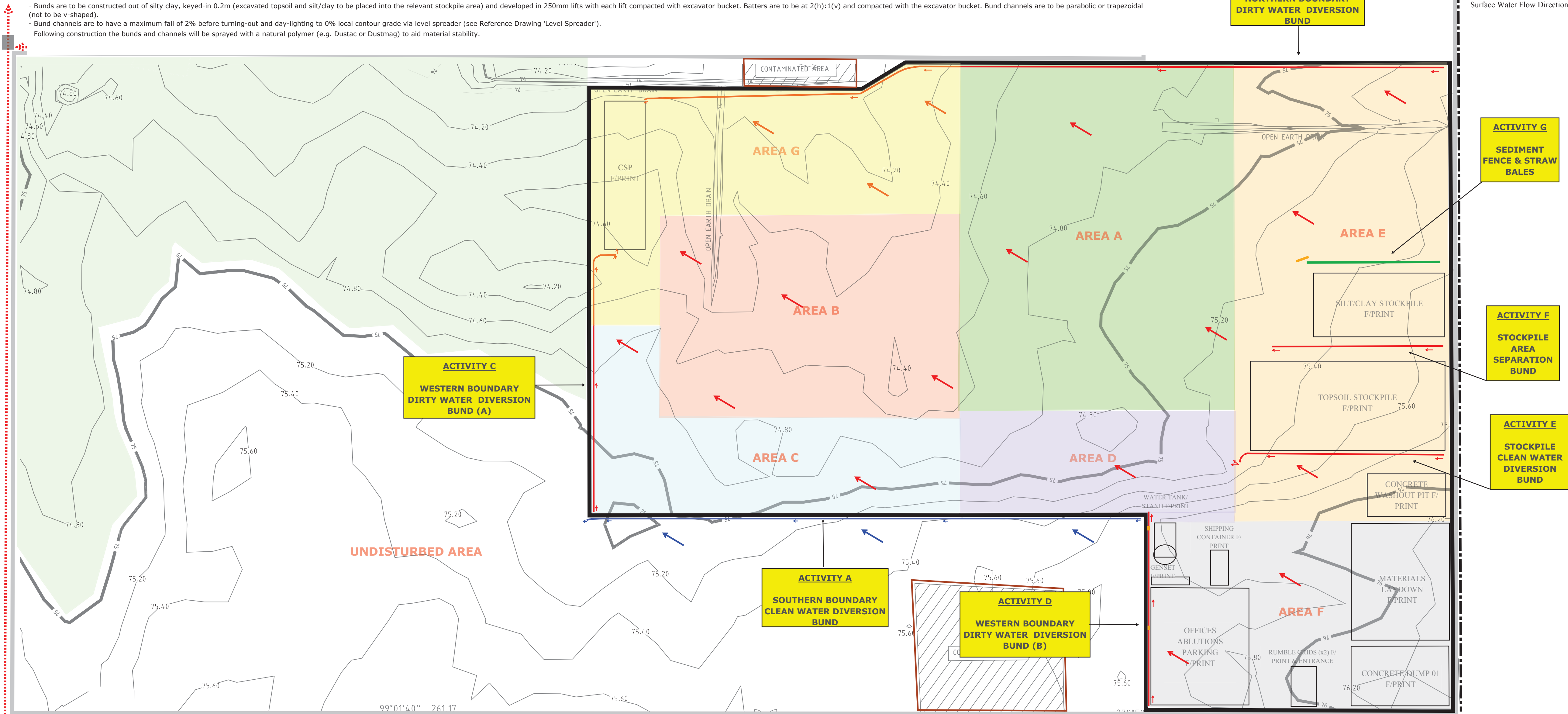
e Stockpile Area CWDB (1.0m W x 75.0m L x 0.5m H bund + 0.15m deep x 0.5m wide channel) is to be installed upslope of the topsoil stockpile area. The lower end of the bund/channel will daylight into the construction footprint.

f Stockpile Area Separation Bund (0.5m W x 75.0m L x 0.5m H) is to be installed primarily as delineation between the topsoil and silt/clay stockpile areas. This bund will be compacted with batters and daylight into Work Area D however will not include a channel.

g Install sediment fencing 5 metres downslope of the silt/clay stockpile and straw bale controls at the down-gradient and of the sediment fence (see Reference Drawing 'SD 6-8').

Installation Notes

- Bunds are to be constructed out of silty clay, keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v) and compacted with the excavator bucket. Bund channels are to be parabolic or trapezoidal (not to be v-shaped).
- Bund channels are to have a maximum fall of 2% before turning-out and day-lighting to 0% local contour grade via level spreader (see Reference Drawing 'Level Spreader').
- Following construction the bunds and channels will be sprayed with a natural polymer (e.g. Dustac or Dustmag) to aid material stability.



Erosion and Sediment Control Plan (Conceptual): Sheet 4
Erosion and Sediment Controls - Construction Footprint (1)

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria

NOTES:
Primary slope direction is southeast (76.2 mAHd) to northwest (74.2 mAHd) with approximately 2.0m of relief over 500m (0.23 degrees or 0.4% slope). The site also slopes gently to the north.

Once the water diversions are in-place the construction footprint will have a 0.38 degree / 0.6% slope (over 300m) from the southeast to the northwest and the Western Buffer Zone will have a 0.34 degree / 0.33% slope (over 200m) from the southeast to the northwest. The site will continue to slope gently to the north.

Surface water from the WBZ will continue to enter existing open earth drains along the northern boundary (drains westwards) and along the western boundary (drains northward) and into the grated pit at the northwest corner.

CSP = Construction Stormwater Pond

'SD' Reference Drawings are extracted from 'Managing Urban Stormwater: Soils and Construction' aka 'the Blue Book' (Landcom, 2006).

* Objects not georeferenced

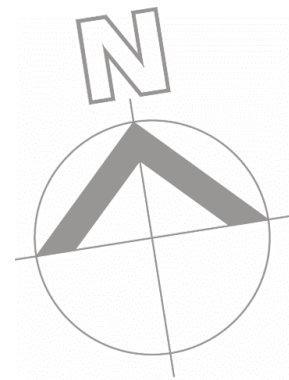
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Karen Egan
Council Delegate



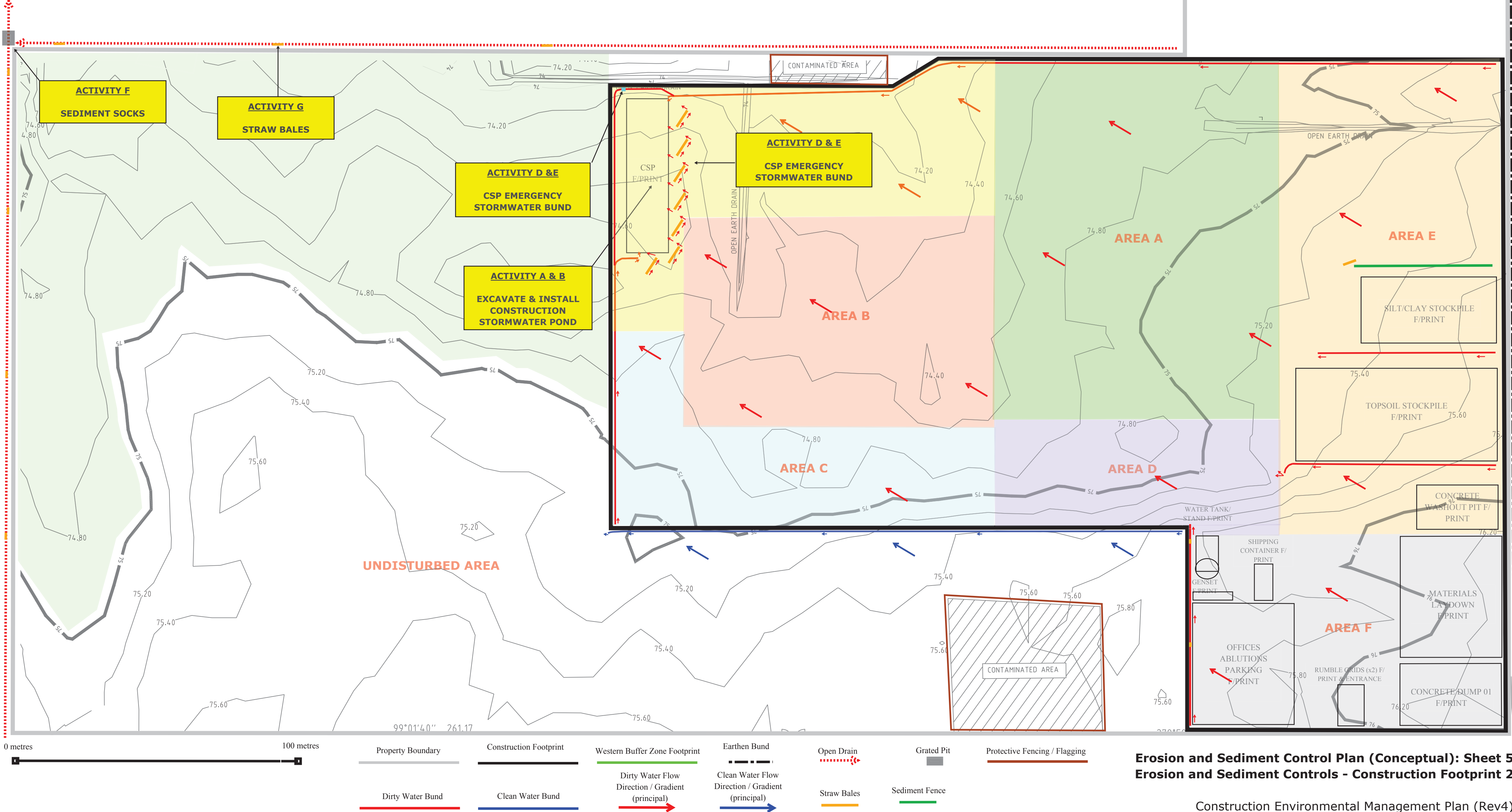
Surface Water Flow Direction

ACTIVITIES: Erosion & Sediment Controls - Construction Footprint (2)

- a Excavate Construction Stormwater Pond (75.0m long x 15.0m wide x 2.0m deep (72.0 mAHD) = 2,250m³. Place 90m³ of excavated pond material to the West of the construction stormwater pond (CSP) to construct CSP dirty water bund (CSP DWB) and remainder in silt-clay stockpile in Area E.
- b Excavate CSP trench pond liner trenches (0.5m), line CSP with 3mm HDPE Geomembrane Pond Liner, place liner into trench and backfill trench. Heat weld joints and fill CSP with 5,000 litres of water to secure floor.
- b Use excavated 90m³ of silt/clay material from the construction stormwater pond (CSP) excavation to build the CSP emergency stormwater water bund (CSP ESWB) downslope of the pond (2.0m W x 90.0 L x 0.5 H). The CSP ESWB is to be merged with the Northern Boundary Dirty Water Bund and the Western Boundary Dirty Water Bund.
- d Construct 0.1m high x 3.0m wide rock-lined spillway in the northwest corner of the bund. Geofabric is to underlay spillway area within bund structure and in the ground below toe of bund batters).
- e Install straw bales upslope of the CSP (installed per Reference Drawing 'SD 6-7') ensuring that bales are orientated perpendicular to flow and down-gradient bales are positioned to not to interfere with overflow from the closest up-gradient bale flowing directly into the CSP (see Reference Drawing 'Sediment-Straw Bale Principles').
- f Install sediment socks around the grated pit in the northwest corner of the Western Buffer Zone (see Reference Drawing 'Sediment Sock').
- g Install straw bales (see Reference Drawing 'SD 6-7') in the existing open drains along the northern and western boundary of the Western Buffer Zone at 50m intervals).

Installation Notes

- Bund is to be constructed out of silty clay, keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket.
- Batters are to be at 2(h):1(v) and compacted with the excavator bucket.
- Following construction the bunds and channels will be sprayed with a natural polymer (e.g. Dustac or Dustmag) to aid material stability.



Erosion and Sediment Control Plan (Conceptual): Sheet 5
Erosion and Sediment Controls - Construction Footprint 2

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria

NOTES:

Once the water diversions are in-place the construction footprint will have a 0.38 degree / 0.6% slope and will also continue to drain gently to the north.

The CSP ESWB will merge the Northern Boundary Dirty Water Bund and the Western Boundary Dirty Water Bunds creating an emergency stormwater retention system capable of temporarily holding an additional 2,811m³ of stormwater between the 74.2 and 74.6 (height of CSP ESWB spillway) mAHD contours during a storm-event if the construction stormwater pond is full.

Emergency storage volume area between the 74.2 - 74.4 mAHD contours is 1,275m³ and between the 74.4 - 74.6 mAHD contours is 1,535m³ (approx.); see sub-table E in Table 19 Rainfall Depths & Runoff - Chunxing ULAB Facility in the CEMP.

The combined CSP + emergency stormwater storage volume of 5,061m³ (approx.) is higher than stormwater run-off volume associated with a 1 in 50 year AEP 24-hour rainfall depth (assuming 20% infiltration across the construction footprint) and nearly a 1 in 100 year AEP 24-hour rainfall depth (assuming 10% infiltration across the construction footprint); see sub-table E in Table 19 Rainfall Depths & Runoff - Chunxing ULAB Facility in the CEMP.

Surface water from the WBZ will continue to enter existing open earth drains along the northern boundary (drains westwards) and along the western boundary (drains northward) and into the grated pit at the northwest corner.

'SD' Reference Drawings are extracted from 'Managing Urban Stormwater: Soils and Construction' aka 'the Blue Book' (Landcom, 2006).

* Objects not georeferenced

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ACTIVITIES: Erosion & Sediment Controls - Construction Footprint (3)

- a Strip topsoil (depth of 0.2m) in Area F and place in Area E topsoil stockpile area.
- b Compact and place 60mm rock (200mm depth including compaction) across Area F.
- c Install x2 sets (4.0m x 4.0m for each set) of rumble/shaker grids at Site entrance/exit point at Fourth Road.
- d Deliver and install Temporary Site Offices and Amenities (including generator (& self-bunded diesel tank), electrical and plumbing connections), enclosed septic tank (pump out) and shipping container in Area F.
- e Install 20,000 litre temporary mains water tank and portable standpipe in Area F.

Installation Notes

NA

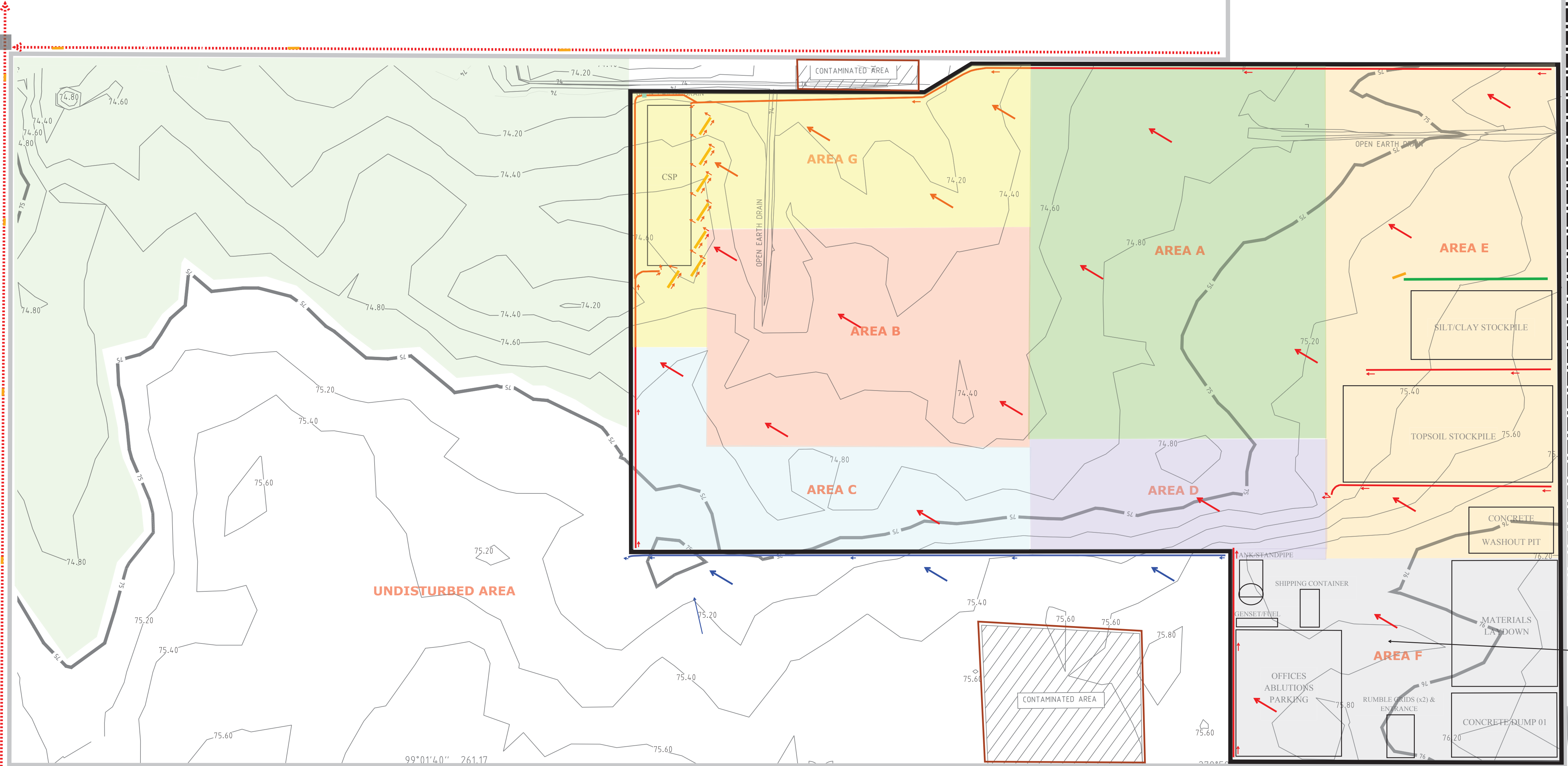
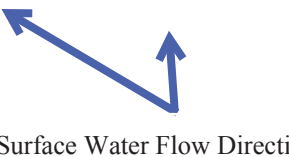
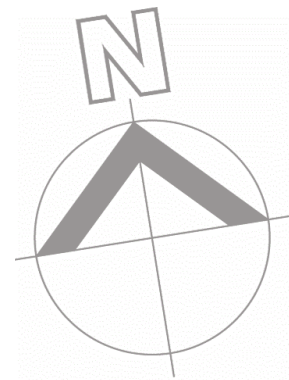
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Council Delegate



0 metres 100 metres

Property Boundary

Construction Footprint

Western Buffer Zone Footprint

Earthen Bund

Open Drain

Grated Pit

Protective Fencing / Flagging

Dirty Water Bund

Clean Water Bund

Dirty Water Flow
Direction / Gradient
(principal)

Clean Water Flow
Direction / Gradient
(principal)

Straw Bales

Spillway

Sediment Fence

Erosion and Sediment Control Plan (Conceptual): Sheet 6
Erosion and Sediment Controls - Construction Footprint 3

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria

NOTES:

The time to complete the installation of the ESCs and other works outlined in ESCP Sheets 3 - 6 inclusive is expected to take 1-month.

The ESCs will remain in-place until the completion of the permanent concrete perimeter bunds. Topsoil stockpiled in Area E (~8,000m3) will be relocated & reused within the Construction Footprint so that stripping, excavation & conditioning for plant building foundation preparations can proceed in Work Areas E, F & G.

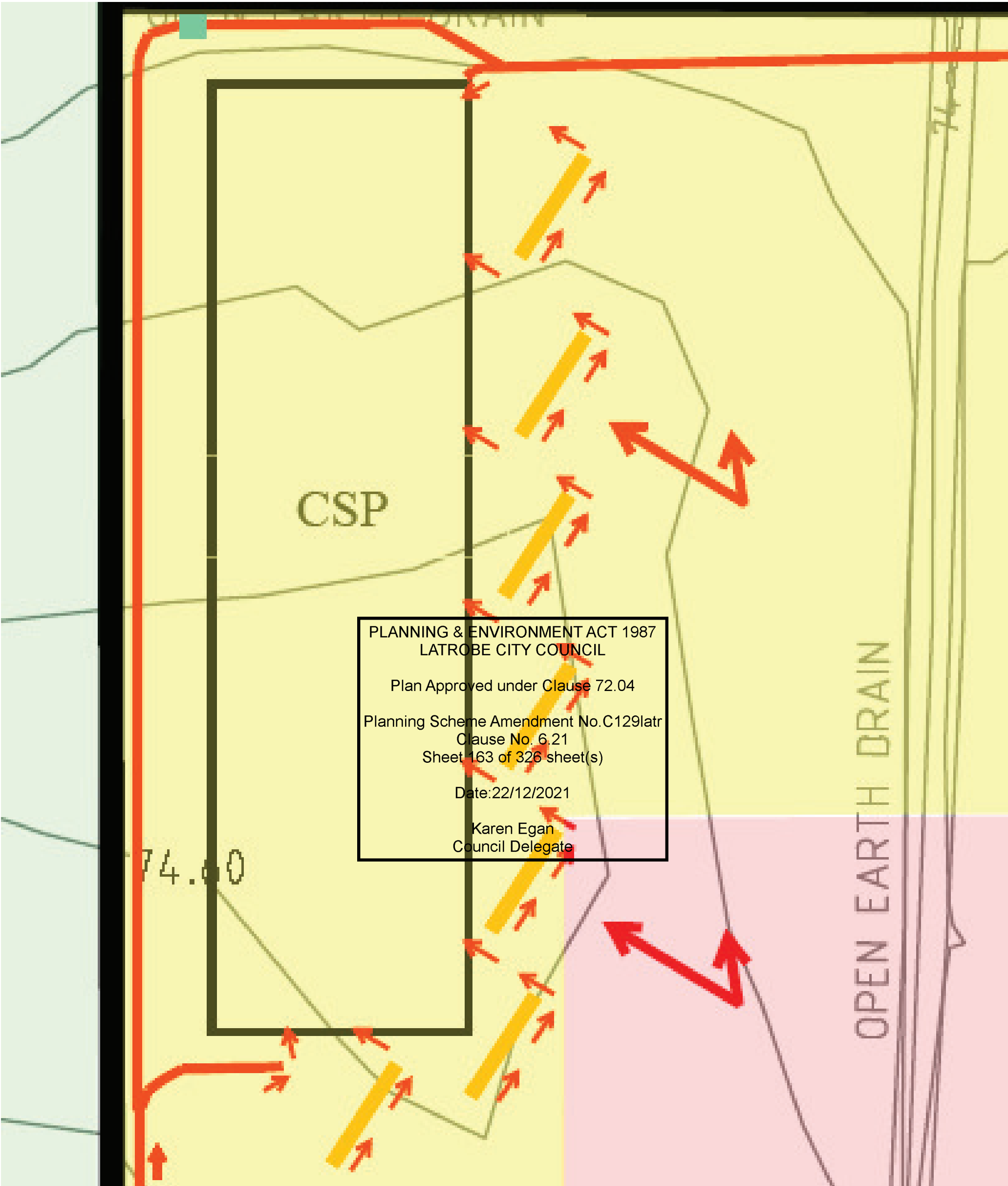
Any silt/clay stockpiled in Area E at this point will have been exhausted with all topsoil stripped from the remaining half (southern) of Area E (~4,000m3) reused

The Construction Stormwater Pond will be backfilled and the emergency stormwater bund will be removed, 9-months after the commencement of works, for the installation of the final section of the site concrete perimeter bund walls (constructed to a height of 76.0 mAHD, these works are expected to take 1-week).

Once the concrete perimeter bund walls are in-place (scheduled to take place after the installation of the permanent site stormwater ponds and plant/external pavement concreting) the construction footprint will not discharge any stormwater offsite unless it experiences a 1:100 year design rainfall event (being the drainage & stormwater retention system design criteria).

* Objects not georeferenced

ACTIVITIES A - E



Reference Drawing 'Sediment Fence / Straw Bale Principles'

The aim of installing straw bales up-gradient of the Construction Stormwater Pond (CSP) is to slow down flows into the CSP from Work Areas and encourage sediment drop-out before it enters the Construction Stormwater Pond (CSP).

Straw bales are to be installed upslope of the CSP per Reference Drawing 'SD 6-7' with the orientation of each bale perpendicular to primary flow and positioned so that down-gradient bales do not stop overflow from the corresponding up-gradient bale flowing directly into the CSP.

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Council Delegate

Erosion and Sediment Control Plan (Conceptual)

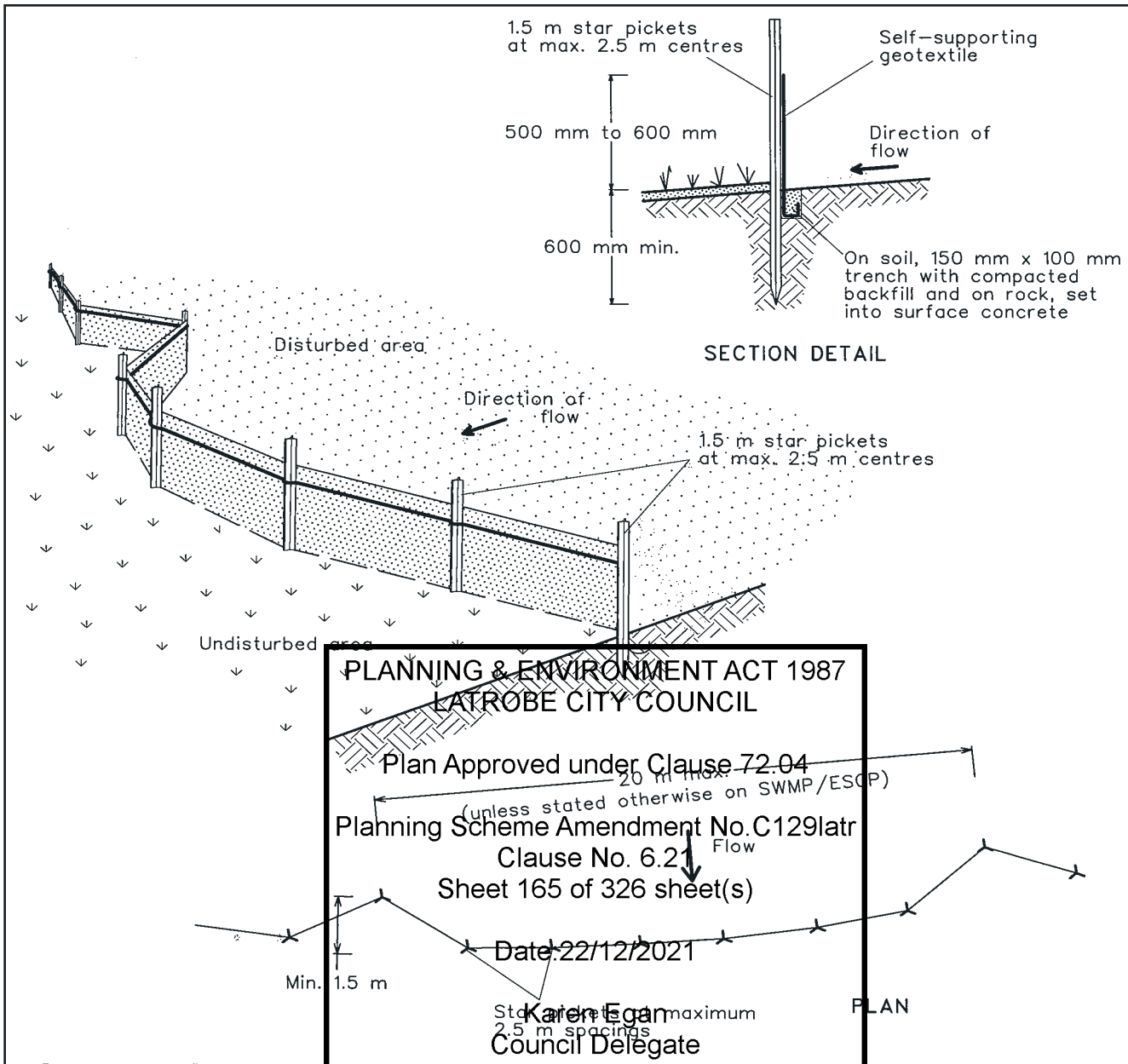
Reference Drawing - SD 6-7

(Source - EPA Publication 1834, 2020)

Construction Environmental Management Plan (Rev4)

Chunxing Used Lead Acid Battery (ULAB) Facility

Green Allotment 2047, Fourth Road, Hazelwood North,
Victoria



Construction Notes

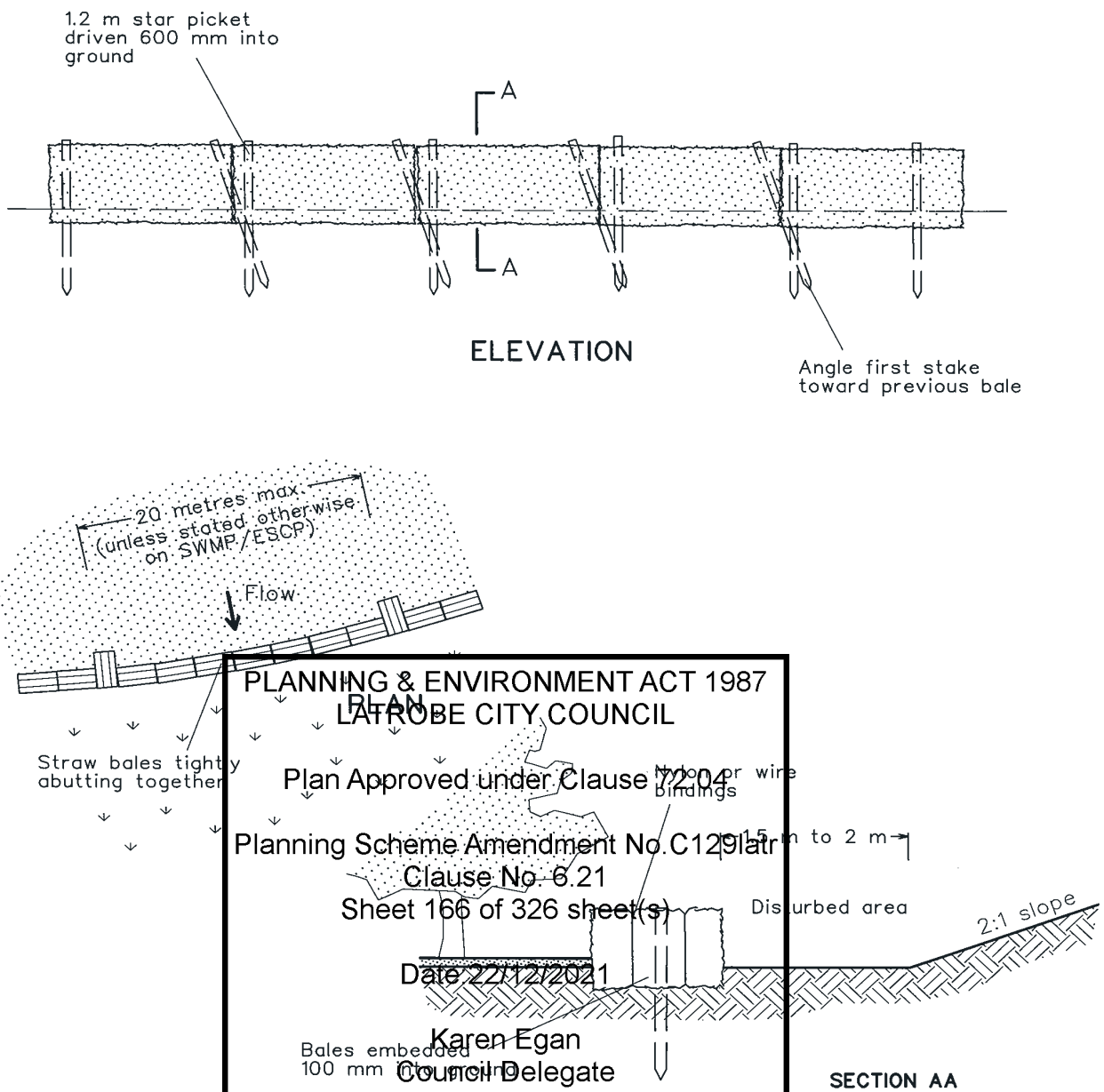
1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE

SD 6-8

Erosion and Sediment Control Plan (Conceptual)
Reference Drawing - SD 6-8
(Source - Landcom, 2006)

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility



Construction Notes

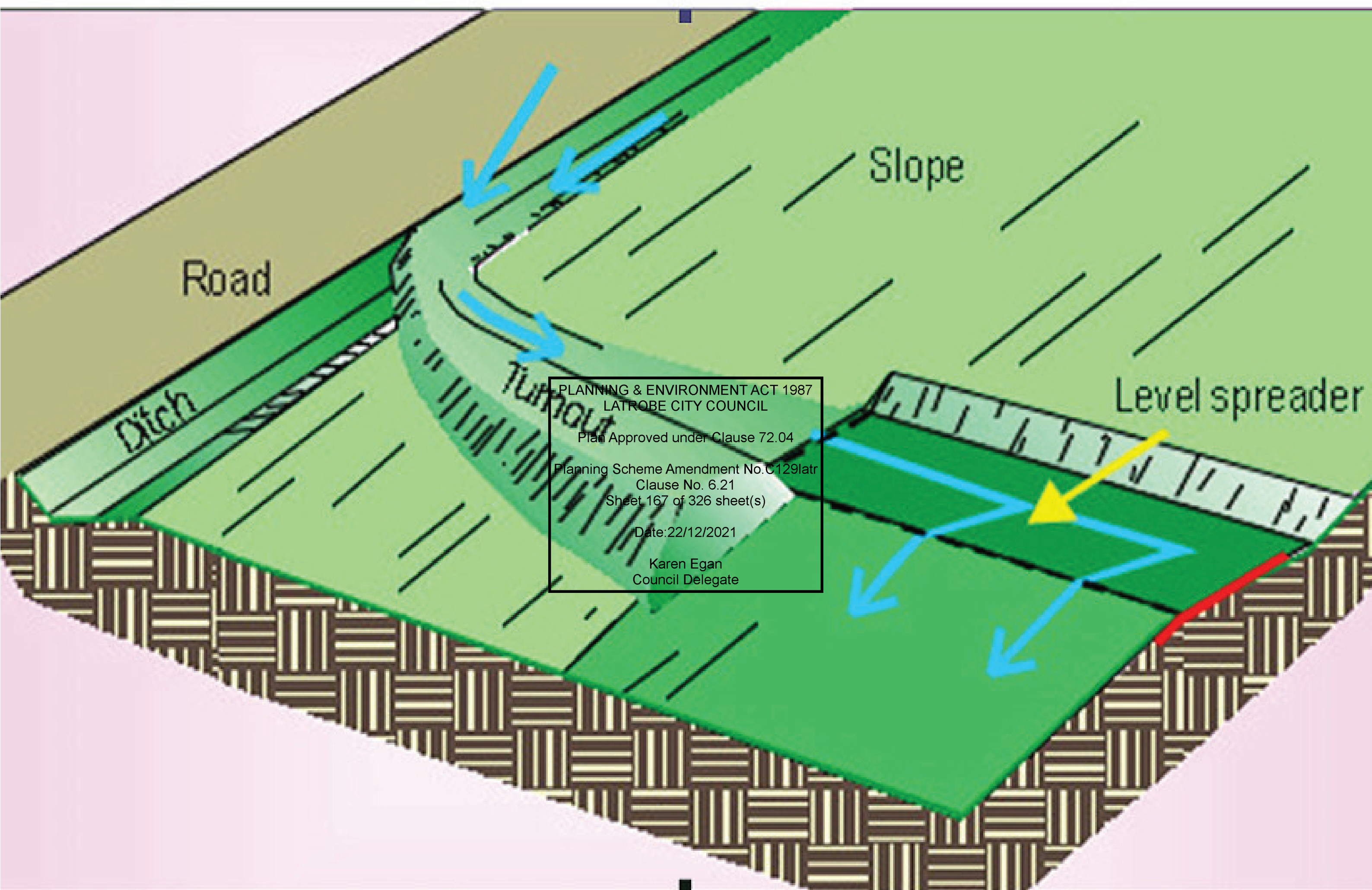
1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake in each bale towards the previously laid bale. Drive them 600 mm into the ground and, if possible, flush with the top of the bales. Where star pickets are used and they protrude above the bales, ensure they are fitted with safety caps.
5. Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1 to 2 metres downslope from the toe.
6. Establish a maintenance program that ensures the integrity of the bales is retained - they could require replacement each two to four months.

STRAW BALE FILTER

SD 6-7

Erosion and Sediment Control Plan (Conceptual)
Reference Drawing - SD 6-7
(Source - Landcom, 2006)

Construction Environmental Management Plan (Rev4)
Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria



Reference Drawing Turn-out and Level Sill

Annexure B

Trade Waste Agreement (Gippsland Water) - Construction Phase - Approved

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Karen Egan
Council Delegate



CENTRAL GIPPSLAND REGION WATER CORPORATION

Application for Consent to Discharge Commercial Trade Waste

In accordance with the Water (Trade Waste) Regulations 2014, made under section 324 of the Water Act 1989

GENERAL CONDITIONS OF CONSENT

1. COMPLIANCE STANDARDS FOR DISCHARGE & CUSTOMER RIGHTS

- a) The discharge of Trade Waste to Gippsland Water's Systems must at all times comply with Gippsland Water's Acceptance Standards as defined in attachment three of the application, and in accordance with Gippsland Water's Trade Waste Policy. The Gippsland Water Trade Waste Policy can be viewed at Gippsland Water's office at 55 Hazelwood Road Traralgon, or on the Gippsland Water website.

- b) Trade Waste service information including respective rights and responsibilities of Gippsland Water and its customers are contained within the Trade Waste Customer Charter which can also be viewed at Gippsland Water's office at 55 Hazelwood Road Traralgon, or on the Gippsland Water's website:

Plan Approved under Clause 72.04

Planning Scheme Amendment No. C12914

Clause No. 6.24

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www.gippswater.com.au

Date: 22/12/2021

2. TRADE WASTE CHARGES

- a) Charges for Commercial Trade Waste Customers will be applied as per the 'Gippsland Water Notice of Tariffs' published annually. In certain circumstances, additional charges may be applied. These charges may consist of, but are not limited to:

- Administration charges
- Quality charges
- Volumetric charges
- Monitoring charges

3. SPECIAL CONDITIONS OF AGREEMENT

- a) Customers shall notify Gippsland Water in writing of its intention to make any change in its operation which, in any way whatsoever, could affect the details of this agreement. This includes process, business changes or the sale or vacation of a property.
- b) Gippsland Water requires customers to retain written evidence of each pump out of their pre-treatment apparatus for a period of two years. This documentation must be presented to Gippsland Water's Authorised Officer during periodic inspections or audits. All Waste Removal Contractors must be registered with the Environment Protection Authority (EPA Victoria)
- c) This Agreement should be read in conjunction with the Water (Trade Waste) regulations 2014 and Trade Waste Policy.
- d) Gippsland Water reserves the right to update, amend or renew this agreement as may be determined by Gippsland Water from time to time, and in such instances will notify customer accordingly in writing.

PLEASE ENSURE THAT ALL DETAILS ON THIS APPLICATION ARE COMPLETED ACCURATELY.

Please note this application is for the Construction Phase only

**SHOULD YOU REQUIRE ASSISTANCE COMPLETING THIS APPLICATION PLEASE CONTACT
GIPPSLAND WATER
PH: 1800 066 401**

OFFICE USE ONLY:

Utility A/C # 02005944-01 Parcel # 322688

CDR App # U68934 Date Registered: 21/10/2021

ADDRESS OF BUSINESS PREMISES

Street No Street: Fourth Road (SPI - 2047\PP2749)

Town: Hazelwood North Post Code: 3840

DETAILS OF CUSTOMER

Customer / Company Name: Chunxing Corporation Pty Ltd

Director: Dr Lakshman Jayaweera

Business Name: Chunxing Corporation Pty Ltd

Postal Address (if different from above): 51-213 Princess Drive, Morwell, VIC 3840

Contact Name: Robin Krause Planning Scheme Amendment No. C129latr Ph: 0447 178 662

Email: r.krause56@gmail.com Clause No. 6:21- Sheet 170 of 326 sheet(s) Fax:

Date: 22/12/2021

DETAILS OF PROPERTY OWNER Karen Egan
Council Delegate

Owner / Company Name: Chunxing Corporation Pty Ltd

Contact Name: Dr Lakshman Jayaweera Ph: 0418 239 441

Email: office@chemmet.com.au Fax:

If a Tenant will be occupying the property, has a 3rd Party Registration Form been completed and forwarded to Gippsland Water? YES ☐ NO ☒

DETAILS OF BUSINESS

Please specify the type of business that is/will be operating on the property?

General Business Types

Specific Business Type

☐ Food Preparation and Handling

☐ Potential Petroleum Source

☒ Other

Used Lead Acid Battery Recycling Facility - Construction Phase only

DISCHARGE/ RESIDUAL SUBSTANCES

Please specify the substances / chemicals / contaminants that may be present in your Trade Waste.

- | | | | |
|--|---|--|---|
| ☐ Grease / Cooking Oils | ☐ Food Particles | ☐ Laundry Waste | ☐ Photo Waste |
| ☐ Disinfectants | ☐ Motor Oils / Petroleum | ☐ Acids / Alkalis | ☒ Dirt / Sand |
| ☐ Detergents | ☒ Other (please specify) Construction Phase only | | |

FIXTURES GENERATING TRADE WASTE

Please specify the number of fixtures that will generate Trade Waste on the premises.

- | | | | |
|---|--|-------------------------------------|--|
| ☐ Single Bowl Sink | ☐ Bain Marie | ☐ Dishwasher | ☐ Commercial Dishwasher |
| ☐ Double Bowl Sink | ☐ Cooking Table (ie: Wok) | ☐ Brine Tub | ☐ Washing Machines |
| ☐ Pot Sink | ☐ Other (please specify)..... | | |

Construction Stormwater Pond; see Attachment A (Construction Phase)

PLANNING & ENVIRONMENT ACT 1987

LATROBE CITY COUNCIL

Planning Scheme Amendment No. C129

Plan Approved under Clause 72.04

IS SAMPLING A REQUIREMENT?

Yes ☒ No ☐

Clause No. 6.21

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SAMPLING PARAMETERS REQUIRED

- | | | | |
|---|--|---|-----------------------------------|
| ☐ Colour | ☐ BOD – 5 day | ☐ Suspended Solids | ☐ TDS |
| ☐ Organic N | ☐ Ammonia as N | ☐ EC mS/m – Lab | ☐ pH – Lab |
| ☐ Temp – Field | ☐ Oil & Grease* | | |
| ☐ Specified Others..... TBC Discharger to ensure compliance | | | |

Note: Gippsland Water may alter the sampling parameters to be tested based on associated risk. Gippsland Water will notify the customer in writing of any required changes. Sampling costs are to be met by the customer.

APPLICATION CLASSIFICATION

Application assessed against Gippsland Waters Trade Waste Classification process.

- | |
|--|
| ☐ Category 1: Major Trade Waste Customer |
| ☒ Category 2: Commercial Trade Waste Customer |
| ☐ Category 3: Deemed Trade Waste Customer |

Please see Attachment A - This application is for the Construction Phase only of the ULAB Facility

PRE-TREATMENT APPARATUS TYPE

Specify the number of pre-treatment apparatus on the premises, or to be installed on the premises.

- | | | | |
|--|--|--|--|
| ☐ Grease Interceptor Trap | ☐ Silt Pits | ☐ Neutralizer Tank | ☐ Mixing Tank |
| ☐ Triple Interceptor Trap | ☐ Settling Pits | ☐ Strainer Pit | ☐ Silver Recovery |
| ☐ Plate Separator | ☐ Cooling Pits | Erosion and Sediment Controls and Flocculation of Construction Stormwater Pond if required. Please see 'Attachment A' and 'Attachment A-1' | |
| ☒ Other (please specify) | | | |

EXISTING PRE-TREATMENT APPARATUS DETAILS

Please specify the type and size of any existing pre-treatment apparatus on the premises:
(ie: 1,000 Litre Grease Interceptor Trap)

Size:

Type:

Please see 'Attachment A' and 'Attachment A-1'

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PROPOSED PRE-TREATMENT APPARATUS DETAILS

If pre-treatment is yet to be installed, please specify the basis for determining the type and size of apparatus to be used:

Size:

Type:

Date: 22/12/2021 Determined by:



Gippsland Water Guidelines



Specified by Plumber/Consultant



Other (Please specify)

Council Delegate

Please see 'Attachment A'

EXISTING BUSINESSES

Please specify the Cleanout Contractor used and the frequency that pre-treatment apparatus are cleaned out:

Contractor:

Please see 'Attachment A'

Frequency:

Date Last Cleaned:

DISCHARGE VOLUME

If discharge volume is to be greater than 1000kl per annum please specify.....

Average daily flow: 80.0m3

Maximum instantaneous flow rate: 0.6m3 per minute

OFFICE USE ONLY

PRE-TREATMENT APPARATUS PUMP OUT FREQUENCY

The customer is to have the pre-treatment apparatus pumped out on a * **N/A** basis and/or as directed by Gippsland Water's Authorised Officer.

- *To be advised by Gippsland Water's Authorised Officer upon application. Gippsland Water may alter the pre-treatment pump out frequency following on site inspections if deemed necessary.*
- *The customer will be notified in writing of any required changes to pre-treatment pump out frequencies.*

TREATMENT PLANT RECEIVING WASTE... Gippsland Water Factory.....

SITE PLAN OF THE PREMISES

A site plan detailing Trade Waste generating fixtures, pre-treatment apparatus, sample point (if applicable) and sewer discharge acceptance point is to be provided with this application. The plan can be attached to this application, or can be shown on the A4 page provided (Attachment 1).

Has a site plan been submitted with this application?

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YES



NO



CUSTOMERS STATEMENT

Plan Approved under Clause 72.04

The information provided in this form is true and correct and should be approved by Gippsland Water. I agree to abide with the terms and conditions in the Commercial Trade Waste agreement and Water (Trade Waste) regulations 2014.

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Name (Please Print):

Dr Lalitha 22/12/2021

Customers Signature:

[Signature]

Karen Egan
Council Delegate

Date: 12-12-2021

TERM OF AGREEMENT

The term of the Trade Waste agreement will be ongoing subject to the customer meeting the requirements of this Trade Waste agreement. Trade Waste agreements are issued to the Occupier of the business and are non-transferable. It is the customer's responsibility to notify Gippsland Water of a change of occupancy or any change to the Trade Waste generating process. A new occupier would need to complete a new Trade Waste application.

GIPPSLAND WATER APPROVAL

Gippsland Water approves this application to discharge Trade Waste under the conditions detailed in this agreement.

Name (Authorised Gippsland Water Officer):

Peter Morris

Signed:

[Signature]

Date: 28/10/2021

ATTACHMENT 1

SITE PLAN FOR TRADE WASTE APPLICATION

Street No Crown Allotment 2047 Street: Fourth Road (SPI - 2047\PP2749)

Town: Hazelwood North Post Code: 3840

Please see 'Attachment A' and 'Attachment A-1'

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Karen Egan
Council Delegate

PLEASE INDICATE NORTH POINT, PROPERTY DIMENSIONS AND SEWER DISCHARGE ACCEPTANCE POINT

ENFORCEMENT

ACCESS AND INSPECTIONS

A person authorized by an Authority to do so may-

- a) at any reasonable time, but in an emergency at any time, **enter land** and -
 - I. measure flows of trade waste; or
 - II. take samples of any trade waste that is to be received by the Authority or of any matter used or produced in a process involving trade waste, and analyse those samples; or
 - III. inspect any fitting, private works and works ancillary to them that are used or provided for conveying trade waste to the Authority's sewerage system.

COMPLIANCE WITH WATER (TRADE WASTE) REGULATIONS 2014 AND TRADE WASTE AGREEMENTS

A *Person* who fails to comply with Water (Trade Waste) Regulations 2014 or *Trade Waste agreement* is guilty of an offence and is liable to penalty:

- a) not exceeding 200 penalty units; and
- b) in the case of a continuing contravention, an additional penalty of 80 *Penalty Units* for each day on which the offence continues:
 - I. after service of a notice of contravention on the *Person* under section 151 of the *Act*; or
 - II. if no notice of contravention is served, after conviction of the *Person* for the offence.

CONDITION OF TRADE WASTE AGREEMENTS

It is a condition of a trade waste agreement that a water corporation may disconnect a trade waste connection -

- a) during an emergency; or
- b) during a period where there is a threat of damage to any system used by the water corporation for the conveyance, treatment, re-use or supply, of wastewater; or
- c) during a period where the water corporation's sewage system may cause the water corporation to breach a licence issued under section 20 of the **Environment Protection Act, 1970** that the water corporation holds for the reprocessing, treatment, storage, containment, disposal or handling of waste.

Dispute Resolution

If a customer has a complaint, they should follow the procedure as set out in the Gippsland Water Customer Charter part B *Complaints* section 2.1.2 available on the Gippsland Water website

www.gippswater.com.au

Where a complaint escalates beyond Gippsland Water's Customer Charter and relates to technical or economic aspects of Trade Waste management, as per the Gippsland Water Trade Waste Customer Charter 7.1 Gippsland Water will:

- with consent from the customer, engage the services of an independent expert or mediator to help the complaint; and
- advise the customer that it may request that the Commission consider whether the water business has complied with the Trade Waste Code, the Customer Service Code or Gippsland Water's price determination.

The Gippsland Water Trade Waste Customer Charter is available on the Gippsland Water website

www.gippswater.com.au

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Plan Approved under Clause 72.04

Planning Scheme Amendment No. C129 at

Clause No. 6.21

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Date: 22/12/2024

Karen Egan

Council Delegate

a) Attachment 2 - Guidelines for Size of Pre-Treatment Apparatus

GIPPSLAND WATER GUIDELINES FOR SIZE OF PRE-TREATMENT APPARATUS

Food Preparation – Fast Food – Restaurants etc		
Business Type	Guide for Pre-treatment required	Origin of Waste (Fixtures)
Large Commercial Kitchens (Hospitals/Nursing Homes)	2000 litre Grease Trap	Pot Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes Ovens & Steam Ovens. (Oil, Grease, Fats & Food Particles)
Restaurant (Large) Including Hotels, Motels & Clubs	2000 litre Grease Trap Plan Approved under Clause 72.04 Planning Scheme Amendment No. C129latr	Pot Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes Ovens & Steam Ovens. (Oil, Grease, Fats & Food Particles)
Restaurant (Small) Including Hotels, Cafés & Wine Bars etc	1100 litre Grease Trap Clause No. 6.21 Sheet 176 of 326 sheet(s)	Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes (Oil, Grease & Food Particles)
Fast Food (Asian/Noodle Bars)	800 litre Grease Trap Date: 22/12/2021 Karen Egan Council Delegate	Sinks, Floor Waste Gully Wok Tables (constant water wash) (Cooking Oil & Food Particles)
Fast Food (Pizza Restaurant/Takeaway)	1100 litre Grease Trap	Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes (Flour & Cooking Oil)
Fast Food (Fish & Chips/Deep Frying/Hamburgers)	800 litre Grease Trap	Sinks, Hand basins, Floor Waste Gully (Batter, Oils & Grease)
Fast Food (Roasting Chicken/Kebabs etc)	800 litre Grease Trap	Sinks, Hand Basins, Floor Waste Gully (Fat, Grease, Oil & Food Particles)
Motel Kitchen (Breakfast Cooking Only)	Minimum 250 litre Grease Trap	Sinks & Domestic Dishwasher (Grease, Oil & Food Particles)

Bakery (Small) (Bread & Savories) eg: Bakers Delight	Minimum 600 litre Grease Trap Large Sinks, Hand Basins & Floor Waste Gully	(Oil, Food Particles & Flour)
Bakery (Large) (Bread, Pastries, Pies, Pasties, Sausage Rolls etc)	Minimum 1100 litre Grease Trap	Large Sinks, Hand Basins, Commercial Dish Washer & Floor Waste Gully (Oil, Fat, Food Particles & Flour)
Butcher Shop	Minimum 600 litre	Sinks, Hand Basin & Floor Waste Gully (Fat from Meat, Sausage Making etc)
Delicatessen	Minimum 250 litre Grease Trap	Sinks, Hand Basin (Dish Washer) (Vegetable Oils, Grease from Small Goods & Food Particles)
Super Market (Butchers, Bakers, Deli's & Chicken Rotisseries etc)	Minimum 1100 litre Grease Trap (May require 2000 & larger if all related departments are combined)	Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes (Fat from Meat, Grease, Oil, Flour & Food Particles)

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Vehicle – Parts Washing/Truck Washing etc		
Business Type	Pre-treatment required	Origin of Waste (Fixtures)
Vehicle Washing (Single Bay) Wash Bay attached to garage/mechanic work shop etc.	Silt Pit, Roofing or Storm Water Diversion, 1000 litres/hour Oil & Petrol Separator	Washing of vehicles & Motor Parts etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Vehicle Washing (Multiple Bays) (Two (2) Wash Bays Plus)	Silt Pit, Roofing or Storm Water Diversion, Oil & Petrol Separator capable of minimum 1000 litres/hr for multiples of two (2) bays.	Washing of vehicles & Trailers/Boats etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Vehicle Washing (Multiple Bays) (Three (3) Wash Bays Plus Automatic Wash) eg: Dazzlers	Silt Pit, Roofing or Storm Water Diversion, Oil & Petrol Separator capable of minimum 1000 litres/hr for multiples of two (2) bays. eg: 3 Bays + Auto Wash = 2000 litres/hr Minimum.	Washing of vehicles & Trailers/Boats etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Heavy Vehicle (Truck Wash other than Stock Trucks)	Silt Pit, Roofing or Storm Water Diversion, 1000 litres/hr Oil & Petrol Separator.	Washing of vehicles & Motor Parts etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Heavy Vehicle/Machinery (Contractor)	Silt Pit, Roofing or Storm Water Diversion, Minimum of 1100 litre/hr Petrol & Oil Interceptor. Date: 22/12/2021	Washing of Trucks, Machinery, Graders/Bobcats/Backhoes & Motor Parts etc. (Road Grime, Dirt, Mud, Grass, Oils, Petrol/Diesel & Grease)
Truck Wash attached to Saleyards.	Treat each application as individual assessment. May require Settling Pit & Screening etc.	Washing of Trucks & Trailers. (Road Grime, Dirt, Mud, Grass, Animal Manure)
Farm Machinery Repair Work Shops.	Roofing or Storm Water Diversion, Silt Pit, Minimum of 1100 litre/hr Petrol & Oil Interceptor or Combination of P&O Interceptor & 1000 litre/hr P&O Separator	Washing of Trucks, Farm Machinery, Tractors & Motor Parts etc. (Dirt, Mud, Grass, Oils, Petrol/Diesel & Grease)

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b) Attachment 3 – Gippsland Water Trade Waste Quality Limits

1 PHYSICAL CHARACTERISTICS

(a) Temperature

The temperature shall not exceed 28 degrees Celsius.

(b) Solids

(i) The suspended solids concentration in any waste shall not exceed 600 grams per cubic metre.

(ii) Gross solids shall pass a bar screen with 13 millimetres openings between bars, and solids shall have a quiescent settling velocity of not greater than 3 metres per hour, in the wastewater.

(iii) The total suspended solids concentration in any waste shall not exceed 600 grams per cubic metre. Further Sodium shall not exceed 200 grams per cubic metre and the Sodium Absorption Ratio shall not exceed 4.0.

(iv) Planning Scheme Amendment No. C129 Water in the opinion of the Authorised Officer is likely to cause obstructions in the sewer.

(c) Oils, Greases and Solvents

(i) There shall be no free or floating layer of oils, fats or grease.

(ii) The concentration of grease emulsified oil, fat and grease shall not exceed 100 grams per cubic metre as determined using the methodology specified in the current edition of APHA-AWWA-WEF "Standard Methods for the Examination of Water and Wastewater".

(iii) There shall be no free solvent or organic liquid other than those specifically permitted under the terms of this Agreement.

(iv) There shall be no solvents which are miscible in water.

(v) There shall be no flammable or toxic organic liquid present other than those specifically permitted under the terms of this Agreement.

(d) Resins

Natural or synthetic resins, plastic monomers, synthetic adhesives, unstable rubber or plastic emulsions or any like material shall not be present.

(e) Radioactive Wastes

Radioactive wastes shall comply with the standards specified in the Radiation Regulations 2007 (Vic).

(f) Colour

The Colour of the wastes when measured on the Platinum Cobalt scale shall not exceed 1000

(g) Electrical Conductivity

The Electrical Conductivity shall not exceed 160 mS/m.

(h) Flammable Substances

There shall be no petrol or other flammable or explosive substance whether solid liquid or gaseous.

2 CHEMICAL CHARACTERISTICS

(a) pH Value

The pH value shall not be higher than 9.0 or less than 6.0

(b) Organic Strength

The concentration of the Biochemical Oxygen Demand shall not exceed 600 g/m³.

(c) Nitrogen

(i) The concentration of Total Nitrogen shall not exceed 100 grams per cubic metre.

(ii) Notwithstanding the limitations specified in Clause (c) (i), the separate chemical forms of Nitrogen shall not exceed the maximum allowable concentration values as stated in the table hereunder:

Ammonia	50 grams per cubic metre calculated as Nitrogen
Nitrate	30 grams per cubic metre calculated as Nitrogen
Organic Nitrogen	60 grams per cubic metre calculated as Nitrogen

(d) Sulphur

(i) The concentration of Total Oxidized Sulphur including Sulphate, Thiosulphate, and Sulphite shall not exceed 100 grams per cubic metre calculated as Sulphate.

- (ii) The concentration of Sulphate shall not exceed 100 grams per cubic metre calculated as Sulphate.
- (iii) The concentration of Sulphide shall not exceed 1 gram per cubic metre calculated as Sulphur.
- (iv) The concentration of Sulphite shall not exceed 30 grams per cubic metre calculated as Sulphur.

(e) Corrosive and Toxic Substances

- (i) The maximum allowable concentration in grams per cubic metre of the under mentioned substances shall be as stated in the table hereunder:

Chloride	200
Fluoride	5.0
Cyanide	5.0
Boron	1.0
Total Phenols (incl. Resorcinol)	100
Pentachlorophenol 1	
Formaldehyde.....	50
Selenium	0.030

Organohlorine Pesticides

Aldrin	0.001
Chlordane	0.006
DDT	0.003
Dieldrin	0.001
Heptachlor	0.003
Lindane	0.100
Organophosphate Pesticides	0.100

- (ii) No substance, which in the opinion of the Authorised Officer may be deemed to be toxic to personnel, to sewage treatment processes or to the environment receiving treated effluent, shall be discharged to a sewer.

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(f) Metals

The maximum allowable concentrations in grams per cubic metre of the metals discharged to the sewer shall be as stated in the table hereunder:

	CONCENTRATION
	mg/l
Cadmium	0.050
Chromium	0.100
Copper	0.100
Lead	0.300
Mercury	0.001
Silver	1.0
Zinc	0.300
Iron	10

(g) Precipitable Ions

The concentrations of Calcium, Magnesium and other precipitable ions shall be kept at levels which do not cause solids deposition on the internal walls of any pipeline or conveyance structure which GW is responsible for.

(h) Dissolved Oxygen

The dissolved oxygen concentration in the waste shall at all times be greater than 2 grams per cubic metre.

(i) Total Phosphorous

The maximum allowable concentration of phosphorous shall be 15 grams per cubic metre.

(j) MBAS

The maximum allowable concentration of methylene blue active substances shall be 200 grams per cubic metre.

3 OTHER PARAMETERS

Allowable levels of all other compounds present but not listed in this Agreement shall be assessed by the Authorised Officer, who in consultation with the Manager of Waste Water Environment and Sustainability will determine the maximum allowable concentration of such waste components.

4 RATE OF DISCHARGE

The maximum rate of discharge will be to be determined at time of application.

Annexure C1

Trade Waste Agreement (Gippsland Water) - Construction Phase - Approval Letter

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Date:22/12/2021

Karen Egan
Council Delegate

28th October 2021Our reference:
Your reference:

02005944-01



Chunxing Corporation Pty Ltd
S1 213 Princes Drive
Morwell VIC 3840

Dear Robin,

Re: Application to discharge Commercial Trade Waste**955137/CA2047 Fourth Rd Hazelwood North Vic 3840**

I refer to your recent application for consent to discharge commercial trade waste effluent to Gippsland Water's sewer system at the above mentioned premises.

I wish to advise that Gippsland Water has approved your application and enclose a copy of the signed Trade Waste Agreement for your information.

The discharge of Trade Waste to Gippsland Water's systems must at all times comply with Gippsland Water's Acceptance Standards as defined in Gippsland Water's Commercial Trade Waste agreement. The Gippsland Water Trade Waste Policy and Water (Trade Waste) Regulations 2014 can be viewed at Gippsland Water's office at 55 Hazelwood Road, Traralgon or by visiting the Gippsland Water website at:

www.gippswater.com.au

As per the Gippsland Water Notice of Tariffs for the period 1 July 2021 to 30 June 2022, an annual charge of \$329.03 will be invoiced to you in three instalments of \$109.68 issued on a four monthly basis.

Should you require any further information in relation to the above matters please contact me on the details listed below.

Kind regards,

Peter Morris
Customer Trade Waste Officer
Gippsland Water
T 03 5177 4612
M 0429 474 389

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Karen Egan
Council Delegate

Annexure C2

Gippsland Water: Letter on volumetric discharge

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Date:22/12/2021

Karen Egan
Council Delegate

15 July 2021

Dr. Lakshman Jayaweera
CEO / Director
Chunxing Corporation Pty Ltd
Suite 104 Level 1 Unit 7
11 Lord St
BOTANY NEW 2019

Dear Dr. Jayaweera,

**Proposed Used Lead Acid Battery recycling facility at No 2047 Fourth Road,
Hazelwood North, Victoria**

I refer to our earlier letter dated 20 January 2020 and your request to re-confirm our capacity to supply you water and take your wastewater (received via e-mail dated 13 July 2021).

Gippsland Water has adequately sized water and sewerage services for this site.

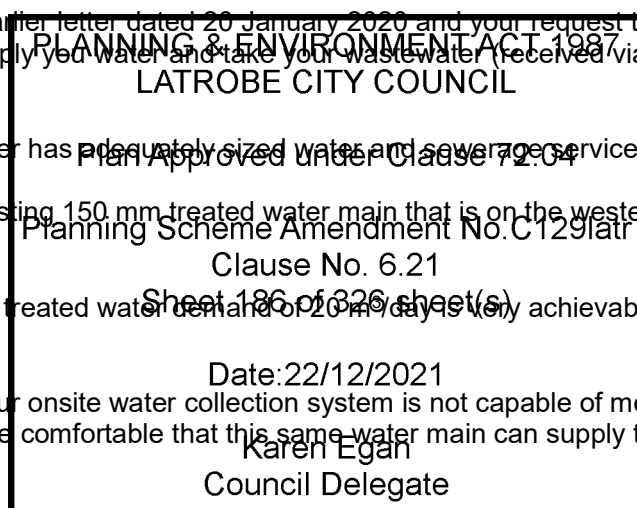
There is an existing 150 mm treated water main that is on the western boundary of the site.

Your proposed treated water demand of 20 m³/day is very achievable using this existing infrastructure.

In the event your onsite water collection system is not capable of meeting your full demand, we are comfortable that this same water main can supply the 735 m³/day or 8.4 L/s if needed.

There is an existing sewer on the Southern boundary of the site and this has sufficient capacity to accommodate sewer discharged from the office, shower, kitchen and laboratory buildings. Furthermore, the existing sewer has sufficient capacity for emergency discharges of up to 80 m³/day of total wastewater subject to meeting our trade waste acceptance criteria.

In our last meeting with Robin Krause, we clarified that any wastewater discharged should be trade waste and domestic wastewater. We remain concerned that the facility may be expecting to discharge storm water directly to our sewerage network in an uncontrolled manner. While we can manage the capacity noted above, uncontrolled discharge of storm water direct to our sewer will not be allowed.



For further information or enquiries, please contact me on 0447 100 886 or
nigel.gerreyn@gippswater.com.au.

Yours sincerely



Nigel Gerreyn
Manager Property Services

cc. Robin Krause

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Council Delegate

Annexure D

Chunxing Environmental Policy



Chunxing Corporation Pty Ltd

A.C.N. 632 456 538
A.B.N. 50 632 456 538

Environmental Policy Statement

Chunxing Corporation Pty Ltd is committed to caring for and protecting the natural environment.

As an environmentally conscious and responsible company, our aim is to integrate responsible environmental management into what we do.

We ensure our employees, contractors and subcontractors understand our environmental policy and the significant aspects and risks associated with our activities.

Consistent with this, Chunxing will, where possible, identify and manage any potential impacts and harm that may be determinantal to the environment.

All Chunxing employees, contractors and subcontractors receive information about this policy and Chunxing's expectations during company inductions.

A copy of this policy will be displayed in Council Delegates.

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Karen Egan

Council Delegate

Scope and Coverage

All Chunxing employees, subcontractors and visitors are expected to comply with this policy.

Purpose and Intended Outcomes

- Comply with all environmental statutory requirements and other applicable environmental obligations.

- Continually improve our environmental performance, use resources efficiently, minimise the consumption of energy and water and minimise generation of waste to the extent practicable.
- Ensure the disposal of all wastes are removed by waste contractors, and disposed of at facilities, appropriately certified and permitted by the relevant regulatory authorities.
- Promote throughout the company a strong environmental ethic as part of its' culture.
- Provide employees, contractors, subcontractors and visitors with environmental education, training and resources appropriate to the activities they will undertake.
- Strive for continuous improvement through setting targets, monitoring performance and alignment with our future corporate strategies.
- Investigate incidents, implementing preventative actions and sharing learning's with all applicable parties to prevent reoccurrences.
- Consulting and communicating with employees, contractors, subcontractors, visitors and persons impacted by our activities to maintain continual environmental improvements.
- Commit to ongoing sustainable management of environmental impacts.
- Commit to actively considering the use of alternative energy sources and low emissions technology as they become economically viable.

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Council Delegate

Responsibilities

Management

- Provide and maintain information and resources to meet the objectives outlined in this policy.
- Provide and maintain sustainable systems of work, including ay information, training and supervision needed to make sure that all employees, subcontractors and visitors are aware of their environmental responsibilities.
- Facilitate open consultation and communication among stakeholders.

Employees / Subcontractors / Visitors

- Comply with requirements of this policy.
- Eliminate environmental impacts where able to do so.
- Report all environmental incidents, near-misses and hazards.
- Flag with management opportunities for improvement in environment performance.
- Comply with any reasonable direction given by management that relates to environmental management.
- Conduct routine environmental inspections.

Evaluation

This policy will be evaluated on a yearly basis and modified when required to meet evolving community and industry environmental stewardship expectations and changes to environmental laws and regulations.

Breaches

Non-compliances arising from a breach against this policy may result in disciplinary action being taken.

Signature:



Lakshman Jayawera
Managing Director

Effective Date: 4 August 2021

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Annexure E

Weekly Environmental Inspection Checklist

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Karen Egan
Council Delegate



WEEKLY ENVIRONMENTAL INSPECTION CHECKLIST

DATE:

TIME:

A = ACCEPTABLE

AR = ACTION REQUIRED

N/A = NOT ASSESSED

#	ITEM				COMMENTS and/or EVIDENCE
		A	AR	NA	
GENERAL					
1.	Are inspection records available, current and complete?				
2.	Are Chunxing's most up-to-date CEMP and ESCP readily accessible to personnel onsite (electronic or hard-copy)?				
3.	Are good house-keeping practices being performed in Work Areas?				
4.	Is evidence of required monthly reporting environmental data available and accurate?				
5.	Is a suitably qualified or experienced environmental representative onsite during key Project activities?				
6.	Does survey flagging/pegs, signage and other controls require reinstallation (e.g. EOT and Northern contamination areas, groundwater wells, work area and construction boundary footprints)?				
7.	Is the Topsoil Tracking Register being updated?				
8.	Are volumes of stripped, excavated, stockpiled and reused (placed) materials deviating from the Bulk Material Movement Table (Table 9 in the CEMP)?				
9.	Has the Project Engineer advised the Environmental Officer of any changes to foundation or excavation design depths and provided 'as-built' survey for all excavations to confirm excavations will not intercept or intercept groundwater?				
10.	Are the Superintendent and/or Environmental Officer in attendance at all excavations expected to extend to depths beyond 1.75 metres below ground level? Do excavators completing excavations works have an operating Trimble (or similar) system with a 50mm accuracy?				
11.	Does the concrete washout pit require decanting (50% capacity has been reached)?				
12.	Is periodic reporting to regulatory authorities being completed (e.g. National Pollution Inventory (NPI) or National Greenhouse and Energy Reporting (NGER) data being collected and reported (where required)?				
DUST					
13.	Are appropriate dust control measures being implemented to minimise dust emissions (e.g. - handling/transport of materials, application of water, application of dust suppressants etc)?				
14.	Are soil stockpiles located away from drainage lines and other sensitive receivers?				
15.	Are highly excessive dust emissions travelling beyond Project boundaries?				
AIR					
16.	Do excessive black smoke emissions from vehicles and equipment occur >30 seconds?				
17.	Are odorous materials and equipment stored or operated so as to reduce/diffuse odour?				
WASTES					

18.	Is there evidence of liquid waste standing/pooling in bunded areas (inc. water)?				
19.	Are enough waste receptacles available to segregate waste streams (e.g. oily rags, plastics, wood, steel)?				
20.	Do waste receptacles require emptying/removal?				
21.	Are waste streams being segregated into clearly labelled and appropriate receptacles (e.g. oily rags, plastics, wood, steel)?				
22.	Is there any evidence of unreported leaks/spills (e.g. hydrocarbon spills)?				
23.	Are waste tracking certificates being properly recorded and maintained?				

CHEMICALS, HYDROCARBONS AND SPILLS

24.	Are hazardous chemicals/liquids positioned inside a bund that satisfies secondary containment criteria (i.e. 110% volume of the largest storage container)?				
25.	Are hydrocarbon spill kits and drip-trays (for field refuelling) available to the Work Areas and/or vehicles?				
26.	Have all transfer connections (shut-off mechanisms, hoses, pipes and seals) on the trailer-mounted fuel delivery system been inspected for integrity?				
27.	Are hazardous materials segregated, stored, and captured in the Hazardous Materials Register? Are MSDS's readily available?				
28.	Does the concrete wash-out pit require dewatering into an IBC?				
29.	Prior to discharge of the concrete wash-out pit to sewer, IBC has analyte sampling been completed and recorded and the Onsite Discharge Register completed?				

EROSION AND SEDIMENT CONTROL - Construction Footprint

30.	Are erosion control structures (ESCs) installed in proper working order and being regularly inspected/maintained (inc. after every rainfall event)?				
31.	Is there any evidence of erosion or sedimentation occurring within, or external to, the construction footprint?				
32.	Is there evidence of any surface water discharge from the construction footprint?				
33.	Is there evidence of mud and debris at the site entrance or roads from site traffic?				
34.	Is there evidence of drainage shadows, changes to drainage flows or impediment to surface water flows (e.g. material stockpiled within, or vehicular impacts to drainage lines or bunds)?				
35.	Are topsoil stockpiles no greater than 2.0m in height and silt/clay no greater than 5.0m in height?				
36.	Are topsoil batters meeting 2:1 criteria?				
37.	Is the construction stormwater pond being discharged?				
38.	Is the floating intake for the construction stormwater pond in proper working order (e.g. floating on surface of pond)?				
39.	Is analyte sampling (e.g. grab samples) and discharge volumes from the CSP holding tank (and emergency groundwater holding tank) being recorded in the Offsite Discharge Register completed?				
40.	Does the construction stormwater pond have 80% capacity?				

EROSION AND SEDIMENT CONTROL - Western Buffer Zone

41.	Are erosion control structures (ESCs) installed correctly, in proper working order and being regularly inspected/maintained (inc. after every rainfall event)?				
-----	--	--	--	--	--

	event)?				
42.	Is there any evidence of erosion or sedimentation occurring within, or external to, the Western Buffer Zone footprint?				
43.	Is there evidence of any surface water discharge from the Western Buffer Zone?				
44.	Is there evidence of drainage shadows, changes to drainage flows or impediment to surface water flows (e.g. material stockpiled within, or vehicular impacts to drainage lines)?				
WILDLIFE PROTECTION					
45.	Have excavations/trenches and the construction stormwater pond been inspected daily for the presence of fauna?				
46.	Are fauna egress points in good working order on the construction stormwater pond?				
COMPLAINTS					
47.	Have there been any environmental-related complaints relating to the project from the workforce or local community e.g. excessive noise, dust)?				
48.	Have environmental-related complaints or queries relating to the project from the workforce or local community (e.g. excessive noise, dust) been responded to within 14-days of receiving the complaint (as specified in the Chunxing Community Engagement Plan)?				
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VEHICLES AND TRAFFIC					
49.	Are vehicles and equipment operating within the approved Project Footprint?				
STOCKPILES					
50.	Is silt/clay (surplus to immediate requirements within a work area) being stockpiled in the approved stockpile location in Area A?				
51.	Is topsoil being stockpiled in the approved stockpile location in Area E?				
SIGNAGE / DEMARCATION					
52.	Is all signage clear on and legible for the emergency groundwater holding tank (do not use), construction stormwater pond (do not use) and potable/construction water supply tank (do not drink), concrete wastewater IBC (do not use), soil stockpiles and HAZCHEM products?				
53.	Is demarcation in good working order (e.g. Western Buffer Zone, contaminated zones etc)?				
NOISE					
54.	Is plant/machinery being serviced per manufacturer's requirements?				
55.	Are acoustic blankets in working-order?				
RECORDS					
56.	Are records being maintained including offsite discharge register, potable water deliveries, sampling and monitoring (field sampling for groundwater ingress, during discharge as well as laboratory samples)?				
57.	Are actions identified in the Weekly Environmental Inspection Checklist and actions resulting from Incidents being closed-out?				
OTHER					
58.					
ADDITIONAL COMMENTS/REQUIRED ACTIONS:					

INSPECTION TEAM:			
NAME(S):	SIGNATURE:	NAME:	SIGNATURE:

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Annexure F

Schedule of Works

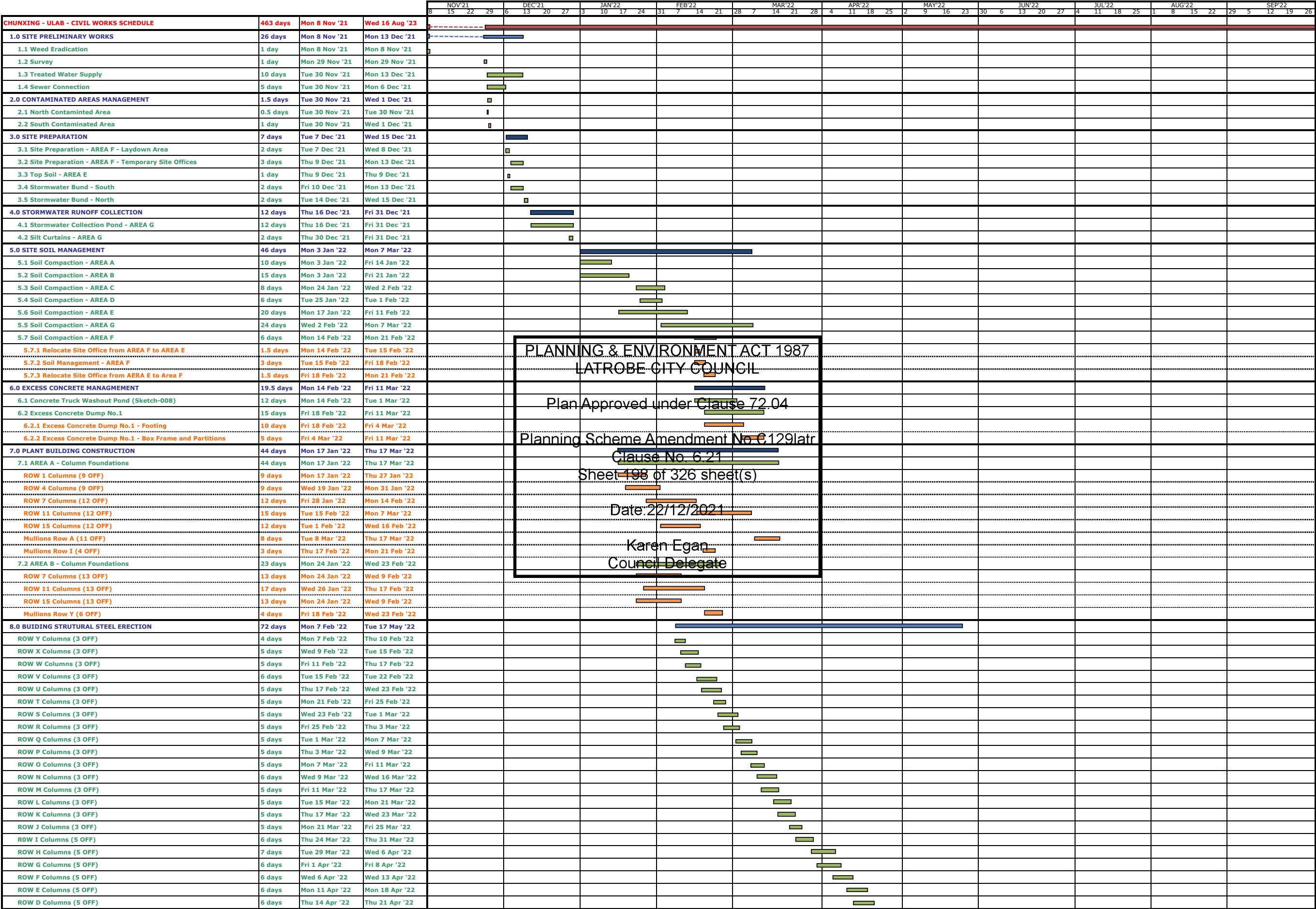
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				OCT'22	NOV'22	DEC'22	JAN'23	FEB'23	MAR'23	APR'23	MAY'23	JUN'23	JUL'23	AUG'23
				3 10 17 24	31 7 14 21 28	5 12 19 26	2 9 16 23	30 6 13 20 27	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24	31 7 14 21 28
CHUNXING - ULAB - CIVIL WORKS SCHEDULE	463 days	Mon 8 Nov '21	Wed 16 Aug '23											
ROW C Columns (5 OFF)	7 days	Tue 19 Apr '22	Wed 27 Apr '22											
ROW B Columns (5 OFF)	7 days	Fri 22 Apr '22	Mon 2 May '22											
ROW A Columns (5 OFF)	7 days	Wed 27 Apr '22	Thu 5 May '22											
Mullions ROW Y (6 OFF)	4 days	Thu 24 Feb '22	Tue 1 Mar '22											
Mullions ROW I (4 OFF)	3 days	Tue 19 Apr '22	Thu 21 Apr '22											
Mullions Row A (10 OFF)	8 days	Fri 6 May '22	Tue 17 May '22											
9.0 PLANT BUILDINGS - ROOF CLADDING AND SKYLIGHTS	40 days	Fri 18 Mar '22	Thu 12 May '22											
9.1 Plant Buildings - Install Safety Access	4 days	Fri 18 Mar '22	Wed 23 Mar '22											
9.2 Plant Buildings - Install Safety Mesh	24 days	Thu 24 Mar '22	Tue 26 Apr '22											
9.2.1 Plant Building - Install Safety Mesh	10 days	Thu 24 Mar '22	Wed 6 Apr '22											
9.2.2 Storage Building - Install Safety Mesh	3 days	Fri 22 Apr '22	Tue 26 Apr '22											
9.3 Main Plant Building - Install Vented Skylight	18 days	Wed 30 Mar '22	Fri 22 Apr '22											
9.3.1 Install Vented Skylight Frames	10 days	Wed 30 Mar '22	Tue 12 Apr '22											
9.3.2 Install Vented Skylight Mechanism	13 days	Wed 6 Apr '22	Fri 22 Apr '22											
9.4 Plant Buildings - Install Roof Insulation	16 days	Tue 12 Apr '22	Tue 3 May '22											
9.4.1 Main Building - Install Roof Insulation	12 days	Tue 12 Apr '22	Wed 27 Apr '22											
9.4.2 Storage Building - Install Roof Insulation	4 days	Thu 28 Apr '22	Tue 3 May '22											
9.5 Plant Buildings - Install Roof Cladding	22 days	Wed 13 Apr '22	Thu 12 May '22											
9.5.1 Main Building - Install Roof Cladding	16 days	Wed 13 Apr '22	Wed 4 May '22											
9.5.2 Storage Building - Install Roof Cladding	6 days	Thu 5 May '22	Thu 12 May '22											
10.0 INTERNAL FLOORS & FOUNDATIONS	35 days	Wed 18 May '22	Tue 5 Jul '22											
10.1 INSTALL FLOORS & FOUNDATIONS - AREA B	32 days	Wed 18 May '22	Thu 30 Jun '22											
10.1.1 Culverts and Sumps - AREA B	8 days	Wed 18 May '22	Fri 27 May '22											
10.1.2 Refinery Kettles Pit - AREA B	20 days	Wed 18 May '22	Tue 14 Jun '22											
10.1.3 Smelters Foundations - AREA B	7 days	Tue 24 May '22	Wed 1 Jun '22											
10.1.4 Refinery Kettles Foundations - AREA B	4 days	Tue 24 May '22	Fri 27 May '22											
10.1.5 Internal Floor - AREA B	12 days	Wed 15 Jun '22	Thu 30 Jun '22											
10.2 INSTALL FLOORS & FOUNDATIONS - AREA A	35 days	Wed 18 May '22	Tue 5 Jul '22											
10.2.1 Culverts and Sumps - AREA A	8 days	Wed 18 May '22	Fri 27 May '22											
10.2.2 ULAB Pit - AREA A	12 days	Wed 18 May '22	Thu 2 Jun '22											
10.2.3 Breaker Foundation - AREA A	3 days	Fri 3 Jun '22	Tue 7 Jun '22											
10.2.4 Press Filters Foundations	6 days	Wed 8 Jun '22	Wed 15 Jun '22											
10.2.5 Internal Floor - AREA A	14 days	Thu 16 Jun '22	Tue 5 Jul '22											
11.0 BUILDINGS PERIMETER 500mm NIB WALL	12 days	Fri 1 Jul '22	Mon 18 Jul '22											
11.1 500mm NIB WALL - AREA B	8 days	Fri 1 Jul '22	Tue 12 Jul '22											
11.2 500mm NIB WALL - AREA A	9 days	Wed 6 Jul '22	Mon 18 Jul '22											
12.0 CONCRETE BUND WALLS	189 days	Wed 2 Feb '22	Mon 24 Oct '22											
12.1 CONCRETE BUND WALL - EAST BOUNDARY	14 days	Wed 2 Mar '22	Mon 21 Mar '22											
12.1.1 Bund Wall Transition No.1 - AREA E	6 days	Wed 2 Mar '22	Wed 9 Mar '22											
12.1.2 East Concrete Bund Wall - AREA E	6 days	Thu 10 Mar '22	Thu 17 Mar '22											
12.1.3 East Concrete Bund Wall - AREA F	7 days	Fri 11 Mar '22	Mon 21 Mar '22											
12.2 CONCRETE BUND WALL - NORTH BOUNDARY - AREA A, E, G	17 days	Fri 18 Mar '22	Mon 11 Apr '22											
12.2.1 North Concrete Bund Wall - AREA E	6 days	Fri 18 Mar '22	Fri 25 Mar '22											
12.2.2 North Concrete Bund Wall - AREA A	8 days	Tue 22 Mar '22	Thu 31 Mar '22											
12.2.3 North Concrete Bund Wall - AREA G	12 days	Fri 25 Mar '22	Mon 11 Apr '22											
12.3 CONCRETE BUND WALL - SOUTH BOUNDARY - AREA C, D	72 days	Wed 2 Feb '22	Thu 12 May '22											
12.3.1 Stormwater Pond No.1 - AREA D	24 days	Wed 2 Feb '22	Mon 7 Mar '22											
12.3.2 Bund Wall Transition No.2	3 days	Tue 8 Mar '22	Thu 10 Mar '22											
12.3.3 Stormwater Pond No.2 - AREA D	24 days	Fri 11 Mar '22	Wed 13 Apr '22											
12.3.4 South Concrete Bund Wall - AREA D	7 days	Thu 14 Apr '22	Fri 22 Apr '22											
12.3.5 Emergency Site Water Pond No.1 - AREA C	30 days	Wed 2 Feb '22	Tue 15 Mar '22											
12.3.6 Emergency Site Water Pond No.2 - AREA C	30 days	Wed 16 Mar '22	Tue 26 Apr '22											
12.3.7 South Concrete Bund Wall - AREA C	12 days	Wed 27 Apr '22	Thu 12 May '22											
12.4 CONCRETE BUND WALL - WEST BOUNDARY - AREA C, F, G	162 days	Fri 11 Mar '22	Mon 24 Oct '22											
12.4.1 West Concrete Bund Wall - AREA F	6 days	Fri 11 Mar '22	Fri 18 Mar '22											
12.4.2 Emergency Site Water Pond No.3 - AREA C	24 days	Wed 16 Mar '22	Mon 18 Apr '22											
12.4.3 West Concrete Bund Wall - AREA C	8 days	Tue 19 Apr '22	Thu 28 Apr '22											
12.4.4 Fill in Stormwater Collection Pond - AREA G	12 days	Wed 17 Aug '22	Thu 1 Sep '22											
12.4.5 Stormwater Pond No.3 - AREA G	20 days	Fri 2 Sep '22	Thu 29 Sep '22											
12.4.6 Transformers Foundations - AREA G	12 days	Fri 30 Sep '22	Mon 17 Oct '22											
12.4.7 West Concrete Bund Wall - AREA G	5 days	Tue 18 Oct '22	Mon 24 Oct '22											
13.0 INSTALL PAVEMENT AREAS	286 days	Wed 13 Jul '22	Wed 16 Aug '23											
13.1 INSTALL PAVEMENT - AREA D	25 days	Wed 13 Jul '22	Tue 16 Aug '22											
13.1.1 Develop AREA D – Pavement Slope	2 days	Wed 13 Jul '22	Thu 14 Jul '22											
13.1.2 Develop AREA D – South Footpath	5 days	Fri 15 Jul '22	Thu 21 Jul '22											
13.1.3 Develop AREA D – Culverts and Sumps	5 days	Fri 22 Jul '22	Thu 28 Jul '22											
13.1.4 Sump Pit SEP6 – AREA D	6 days	Fri 29 Jul '22	Fri 5 Aug '22											
13.1.5 Develop AREA D – South Road	7 days	Mon 8 Aug '22	Tue 16 Aug '22											

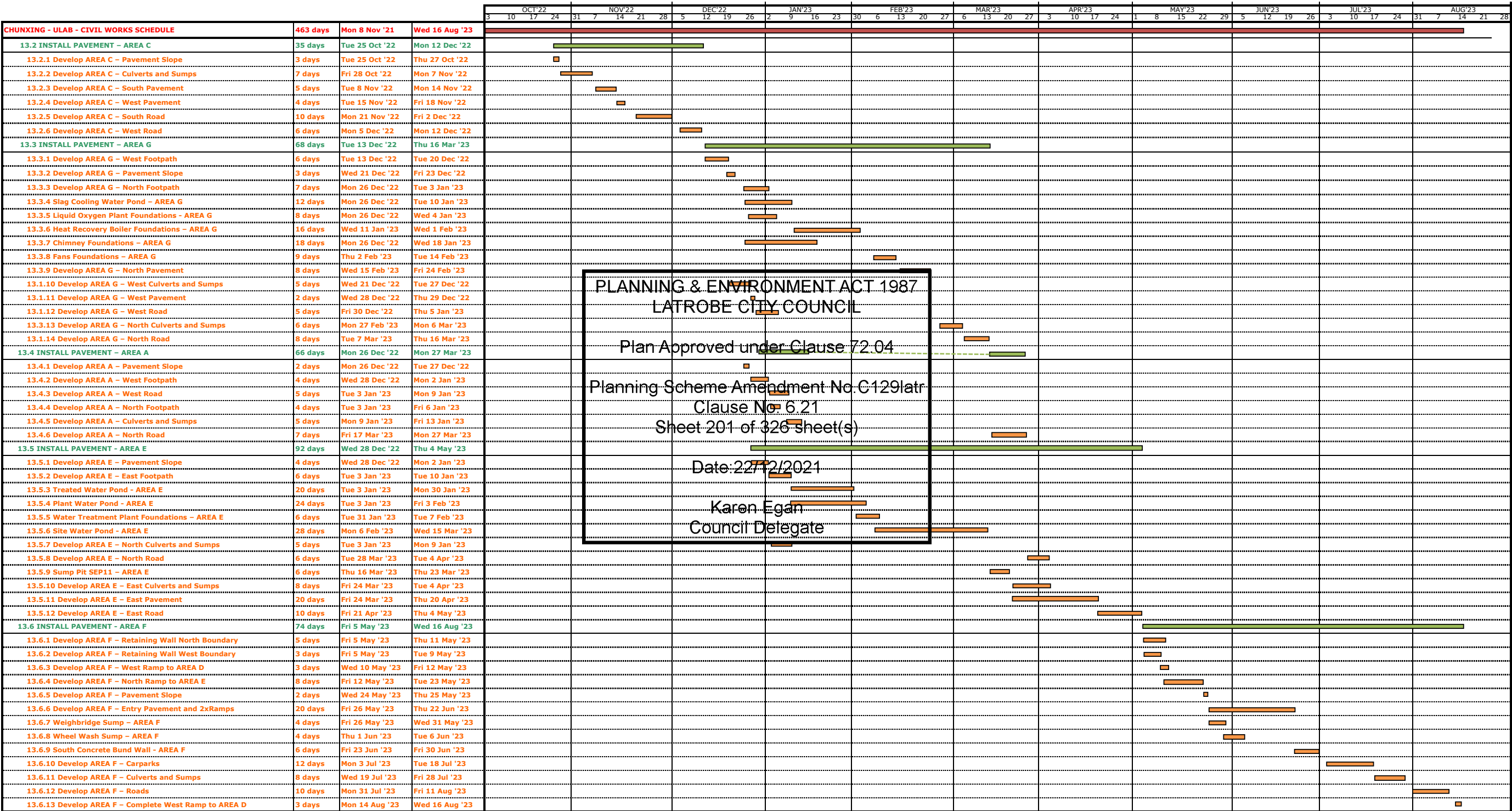
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Annexure G

Environmental Action Tracking Register

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Annexure H

Land Areas Subject to EPA Clean-Up Notices (1989 & 2002) & Statement of Environmental Audit (2008)

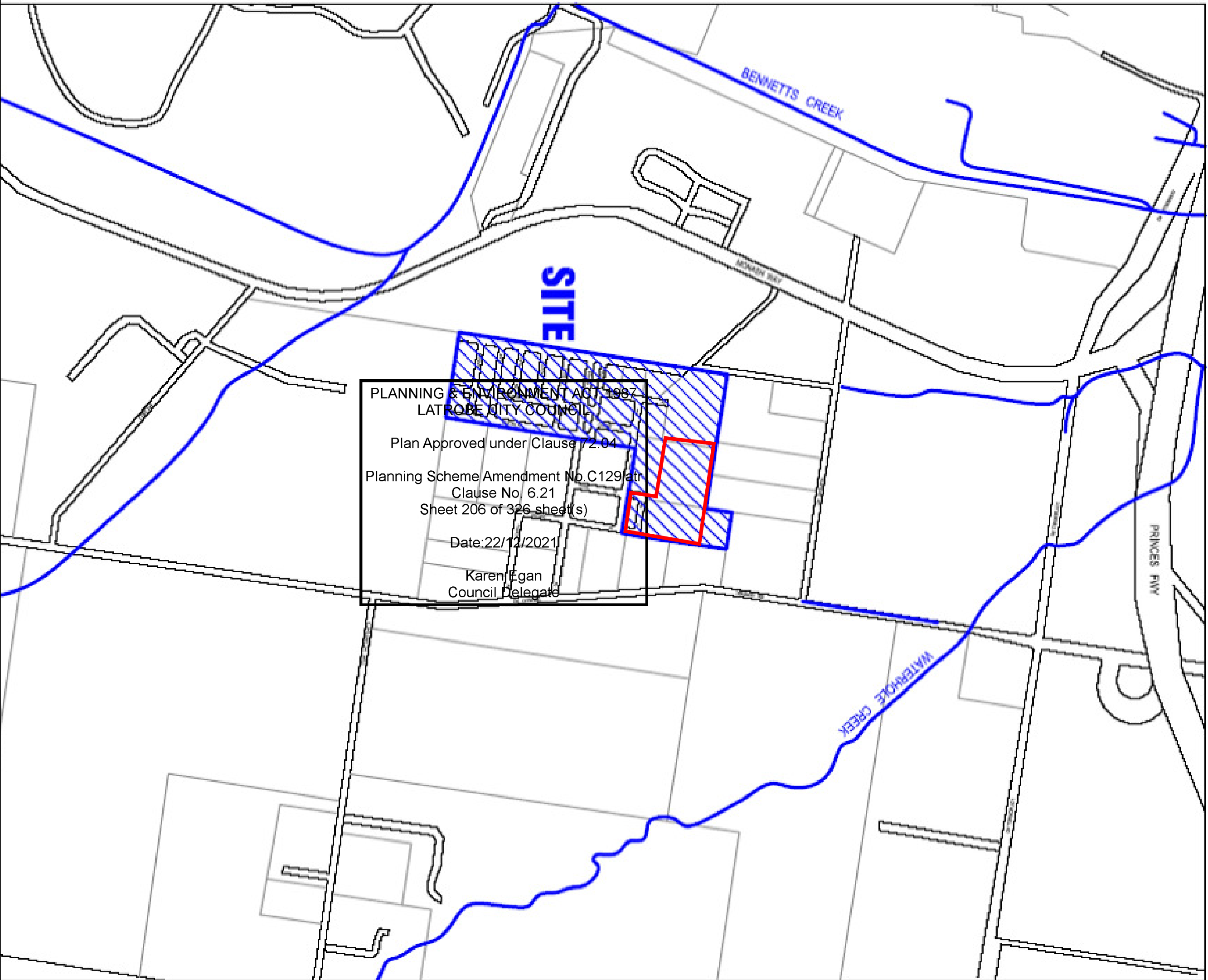
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ANNEXURE H (FIGURE)

Land Area Subject to EPA Clean-Up Notices, Remediation Works and 'Environmental Audit Report: Former Lurgi Gasworks, Morwell, Victoria' (Coffey Environments Pty Ltd, 29 September 2008) (blue outline / hatch) and Chunxing Property (red outline)



Annexure I

Offsite Discharge Tracking Register

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OFFSITE DISCHARGE TRACKING REGISTER																							
Date / Time / Method									Volume / Dischagre Rate							Sampling							
Source	Date Start	Time Start	Date Finish	Time End	Total Time (hours)	Total Time (minutes)	Method of Discharge to sewer	Comment	Total Volume Discharged (litres)	Total Volume Discharged (m3)	Discharge Rate (l/h)	Discharge Rate (m3/h)	Discharge Rate (l/m)	Discharge Rate (m3/m)	Comment	Grab Sample Taken	Grab Sample Time	Temp. (Deg C)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	pH	Sheen	Sampler
CSP	20210901	0900	20210901	1500	6	360	Water Cart	Water Cart full prior to commencing discharge. Pump specifications (pump curves) indicate flow rate of Water Cart full prior to commencing discharge	10,000	10	1,667	1.67	27.78	0.0278	NA	Y	1100	18	140	550	7.2	N	EXAMPLE
CSP	20210902	0900	20210902	1700	8	480	Pump		80,000	80	10,000	10.00	166.67	0.1667	NA	Y	1300	19	133	600	7.2	N	EXAMPLE
Concrete Washout Pit TRC	20210905	0900	20210905	1000	1	60	Water Cart		1,000	1	1,000	1.00	16.67	0.0167	NA	Y	0930	18	140	550	9	N	EXAMPLE

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Annexure J

Waste Tracking Register

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WASTE TRACKING REGISTER																	
Provided By	Bin ID	Bin / Storage Type	Bin Location	Volume (m3)	Waste Form	Waste Type	Date Bin Delivered / Last Removal Date	Removal Date	Removed By	Waste Run Sheet No.	Waste Code / Classification per EPA Vic Industrial Waste Resource Guidelines	Waste Tracking Form No.	Registration Plate of Vehicle Removing Waste	Sampling & Other Tracking Data Located at:	End (Disposal) Location	Comments	Entry Author
Veolia Environmental Services Veolia	XXX	Skip	Area A	9	Solid	Metal	20210901	20210915	Veolia Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX		EXAMPLE
Environmental Services Veolia	XXX	Skip	Area B	9	Solid	Wood	20210901	20210915	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX	Had to remove general waste from skip prior to removal from Site	EXAMPLE
Environmental Services Veolia	XXX	Front-Lift	Area A	4.5	Solid	General Waste	20210901	20210915	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX		EXAMPLE
Environmental Services	XXX	Front-Lift	Area E	4.5	Solid	Hydrocarbons	20210901	20211215	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX	Contained hydrocarbon impacted rags, pipping and absorbent padding from clean-ups	EXAMPLE
-	NA	IBC	Area A	1	Liquid	Hydrocarbon impacted water	20210901	20211215	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX	Water removed from drip-trays and bunds	EXAMPLE
-	NA	IBC	Area F	1	Liquid	Concrete Pit Water	20210901	20211215	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX	Unable to buffer pH lower than 9	EXAMPLE
Veolia Environmental Services Veolia	XXX	Skip	Area E	9	Solid	Contaminated Soil	20210901	20210915	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX	Soil impacted from tank spill from moxy on 20210910	EXAMPLE
Environmental Services Veolia	NA	Sewerage Tank Construction	Area F	10	Liquid	Sewerage Effluent	20210901	20211215	Environmental Services Veolia	XXX	XXX	NA	XXX	XXX	XXX	Sewerage effluent from portable toilets (aboveground plastic sewerage tanks)	EXAMPLE
Environmental Services	NA	Stormwater Pond	Area G	20	Liquid	Sludge	20210901	20211215	Environmental Services	XXX	XXX	NA	XXX	XXX	XXX	Sludge from floor of Construction Stormwater Pond	EXAMPLE
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Annexure K

Topsoil Tracking Register

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Annexure L

CVs for Key Personnel

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Council Delegate

RESUME

Dr. Lakshman Jayaweera
MSc. (Moscow), PhD. Chem. Eng. (NSW)
Unit 205/29, Baringa Road, Northbridge NSW 2063, Australia
Mobile: [+61 418 239 441](tel:+61418239441)
Email: office@chemmet.com.au

Dr. Lakshman Jayaweera is an established industrialist in Australia since 1978, by profession a Chemical Engineer and a Metallurgist with a wealth of knowledge over 40 years of experience in mineral processing, smelting, hydrometallurgy and chemical manufacturing in Australia and overseas.

He possesses significant leadership talents in operations, environmental management, marketing, technical and business development sector, predominately due to his experience as the founding Chairman/Director and a major shareholder of ASX listed company, HydroMet Corporation Ltd for 25 years from 1987 to 2012. HydroMet was one of the successful industrial waste and smelter residue processing companies in Australia servicing some of the major mining and smelting companies in Australia at that time. His area of specialization and expertise include Used Lead Acid Battery (ULAB) Recycling, Metallurgical processing of smelter residues predominantly containing base metals such as Lead, Copper, Zinc, Nickel and Cobalt. He stepped down from the above position following a successful takeover offer for the company from a foreign party and accepting the offer with the shareholders in 2012.

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Since 2013 to Dec 2017, he was the Chairman of Queensland Mining Corporation Ltd (ASX listed) and he stepped down from the position following a successful takeover from Moly Mine Ltd for \$51 mil in 2017. Thereafter on an invitation from the new owners of Moly Mines Ltd, he continued as a non-executive director until April 2019.

Karen Egan

Council Delegate

During the period from 2013 to 2015 he was also the Chairman of the Board of Investment of Sri Lanka on an invitation from the President of Sri Lanka at that time to spearhead the foreign direct investment promotion into the country. During his period Sri Lanka attracted the record level of foreign direct investment (FDI) over US\$ 4 billion which was the highest ever achieved in Sri Lankan history.

He began his career as a Senior Metallurgist with the mining giant Rio Tinto Ltd from 1980 to 1987 involved in major base metals projects within the group and he resigned from the position in 1987 to form the ASX listed HydroMet Corporation Ltd (HMC).

He is currently the CEO/ Director of Chunxing Corporation Ltd, Australia, involved in assisting to setting up a Secondary Lead Smelter in Victoria with an investment of \$50 mil for Chunxing Resource Recycling Group based in China who are the second largest Used Lead Acid Battery Recyclers in the world. The Chairman of Chunxing Group has been closely associated with Dr. Lakshman Jayaweera since 2009 as a major shareholder of HydroMet and at that time and therefore he has been recently invited him to assist Chunxing Group in their Australian venture. In the last 2 years Chunxing has been able to make a significant progress in getting all the necessary approval for this project with plans to start the construction in Sept 21

Date of Birth: 29 April 1948

Place of Birth: Sri Lanka

Citizenship: Australian (migrated to Australia in 1976)

Educational Qualifications

1967 – 1972

Master of Science - Chemistry & Chemical Engineering (First Class)

Peoples' Friendship University, Moscow, USSR

Scholarship awarded by the Governments of USSR and Sri Lanka

1977 – 1982

Doctor of Philosophy – Chemical Engineering

University of New South Wales (UNSW), Sydney, Australia

Scholarship awarded by the Aluminum Development Council of Australia

Awards

1986

John Brodie Medal awarded by the Institution of Engineers, Australia and the Royal Institute of Chemistry for an innovative Hydrometallurgical Copper extraction process developed in the field of Chemical Engineering.

Summary of Professional Experience

Jan 2019 to present

Chunxing Corporation Pty Ltd (Australia) (Subsidiary of Chunxing Resource Recycling Group)
CEO/Director

2013 to 2017

Queensland Mining (ASX: QMC)

Chairman

Former Chairman of Queensland Mining Corporation Ltd, stepping down following a successful takeover bid by Moly Mines Ltd in December 2017. During this period, he acquired an extensive knowledge of White Range project where through his technical expertise and also assisting the CEO in his equity funding matters, project development, operational and environmental matters and finally in the successful takeover offer.

2013 to 2015

Board of Investment (BOI), Sri Lanka

Chairman

Chairman of BOI, Sri Lanka by invitation from the government of Sri Lanka to spearhead the foreign direct investment into the country. During his period, Sri Lanka recorded the highest foreign direct investment ever achieved which totaled USD 4 billion within a 2-year period predominantly flowing from China, HK, India, Singapore, Malaysia, USA and Australia.

1987- 2012

HydroMet Corporation Ltd (ASX: HMC)

Founding Director and Chairman

Dr. Jayaweera founded HydroMet from a humble beginning as a small start-up operation in 1987 and steered the company into a well renowned, leading industrial waste recycling company in Australia. HydroMet is an ASX listed company with an annual turnover of approximately \$70 million and a well-established network of international clientele.

Today, it is one of the major Secondary Lead Recyclers (Used Lead Acid Battery Recycling) in Australia and is also a well-recognized Selenium producer in the world. Under his leadership, HydroMet has also developed and commercialized several unique, innovative hydrometallurgical processes to treat various complex types of hazardous smelter residue streams to produce value added metals and chemicals in an environmentally sound manner. Some of the successfully established operations under his guidance include production of Zinc Sulphate from smelter flue dust and EAF dust, Copper Sulphate from smelter dross and Cobalt Sulphate and Oxide from smelter by-product streams. Furthermore, the company has also established successful commercial facilities to process and immobilize hazardous industrial toxic waste and contaminated soil to be disposed safely to landfill. The companies above quality of work and pioneering technologies have been held in high esteem by both their clients and regulatory authorities in Australia. During his time at HydroMet, he was also instrumental in receiving number of research and development grants for the company from the Commonwealth Government of Australia in the excess of \$3 million for commercialising its innovative technology.

Dr. Lakshman Jayaweera has held numerous positions within HydroMet as the Founding Director (1987 – 2012), Chairman (2000 – 2012), Managing Director (2012) and the Head of the Business Development and Technical Team. He stepped down from the above roles effective 22 May 2012, after serving the company for nearly 25 years following a recent takeover bid for the company by a foreign party.

1980 - 1987

CRA Ltd (Con Zinc Rio Tinto Australia)

Senior Group Metallurgist

Prior to HydroMet, Dr. Jayaweera was with CRA Ltd. (Con Zinc Rio Tinto Australia) from 1980 to 1987 as a Senior Group Metallurgist working in several project development and process improvement areas, predominantly in the hydrometallurgical field. During this period, he was also responsible for solving a major technical and quality issue at Dampier Salt (Lake McLeod Division), which saw his final technical finding assist the company from preventing the eventual closure of the mine at the time. His above contribution was highly acclaimed by the Board of Rio Tinto in 1985.

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Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 217 of 326 sheet(s)

Date:22/12/2021

Karen Egan
Council Delegate



Geoff Latimer | Managing Director

**Ascend Waste and Environment
Melbourne, Australia**

+61 478 416 798 | glatimer@ascend2042.com | www.ascend2042.com

Ascend Waste and Environment Pty Ltd was formed in 2014 as a waste and environmental consulting company specialising in the regulatory interface governing hazardous waste, environmental chemicals and emissions management in Australia and the Pacific region, from a compliance (private sector) and development (government) perspective. As Director and sole operator of the company, Geoff Latimer is an Australian hazardous waste regulatory expert with over 30 years' experience throughout the region, working on projects as diverse as:

- Numerous company regulatory assessments, approval applications and licence compliance projects with a particular focus on air quality, emissions management and control technologies and hazardous waste management.
- Projects for governments in Australia, New Zealand, Philippines and across the South Pacific concerning management and regulation of Multilateral Environmental Agreement-based wastes and chemicals, concerning the Stockholm Convention, Basel Convention and the Montreal Protocol.
- Numerous government hazardous waste data analysis, industry engagement and policy reform projects.
- A series of Australian-first hazardous waste market analysis, data compilation, material flows, projections and infrastructure planning projects.
- Establishment of new standards, protocols and data mapping practices between Australian States, Territories and the Commonwealth to improve consistency in hazardous waste management.
- Major engineering project management, from both plant design/ build/ supply and government monitoring and assessment perspectives.

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**Karen Egan
Council Delegate**



Gareth Glover

Environmental Consultant & Project Manager

Security Clearance

ASIC Aviation
Security Card

Qualifications

Bachelor of
Environmental
Science –
Management
(Charles Sturt
University, 2008)

ePM Project
Management
(AECOM, 2018)

Advanced Incident
Investigation & Root
Cause Analysis-
Taproot Investigator
(SAI Global, 2014)

Certified
Professional in
Erosion and
Sediment Control
(pending.)

Career Summary

Gareth is a senior environmental practitioner and project manager with nearly 14 years' experience in various technical and project management roles in industry and consulting.

Gareth has been involved in writing functional and performance specifications, developing form/s of contract, developing and participating in technical, commercial and probity evaluations, developing, negotiating and managing tenders and proposals (service and plant/equipment) and monitoring contract and subcontractor performance.

Gareth has been responsible for managing environmental risk across the full project life cycle on large capital-sized greenfield and brownfield projects within the Oil & Gas, Energy, Transport (Road) and Mining sectors.

Gareth was Bechtel's (EPCM) Senior Environmental Coordinator (and acting Supervisor for quarrying works) on the Wheatstone LNG (Chevron) and APLNG (ConocoPhillips) Projects. Gareth was primarily responsible for monitoring and managing the environmental performance of a number of subcontractor work scopes during the site preparation and early works phases. Gareth also assisted with the development and management of tender packages and service delivery agreements for environmental, engineering and field works packages. Key tasks included reviewing/approving subcontractor submittals (SCNs, RFIs, NCRs, BoDs, Claims, Measurement for Payment requests, Plans, Work Method Statements etc), completing ITPs, punch-lists and take off's and assisting with development and management of schedules. Gareth also led complex cross-discipline (environmental, engineering and safety) incident investigations using both TapRoot and RCA models.

Gareth worked for the Country Fire Authority (VIC) where he was primarily responsible for Project Managing the Procurement and Delivery of seven water treatment plants (WTPs) to remove per- and poly-fluoroalkyl substances (PFAS) from surface and ground water (delivered by a single vendor under a stand-alone DBOM contract). Responsibilities included designing and managing the PFAS investigation sampling programs (to inform on the specifications), development of the functional and performance specifications for the WTPs, assisting with the CAPEX and OPEX cost models, development of the full DBOM contract documentation (in conjunction with DLA Piper and Ashurst Legal) and the technical, performance and financial evaluation of tender submissions, including negotiations with preferred tenderers.

Prior to his time with Bechtel, Gareth spent a number of years working in environmental management and coordination roles on projects in the mining, energy generation, transmission and distribution and road sectors.

Gareth's experience in industry and consulting has given him a well-rounded strategic, commercial, project management and technical/scientific skill set.

Representative Project Experience

Chunxing ULAB Facility (Chunxing Corporation Pty Ltd), VIC

Environmental advice surrounding the development and construction of Chunxing's (AUD50 million) used lead acid battery (ULAB) recycling facility to be located on the former Lurgi Gasification Plant site in Morwell, Victoria.

Includes providing technical advice to management and engineering disciplines, liaising with

planning authorities (EPA Vic, Latrobe City Council etc) and external consultants for the development of the baseline environmental site assessment (led by historical Site Auditors Tetra Tech Coffey) and associated construction approach (including compilation of the CEMP and SWMP and other construction documentation) to meet Conditions of Approval.

Rio Tinto Koodaideri Iron Ore Mine (NRW Civil & Mining), WA

Environmental advice and management for NRW's three scopes of work on the Rio Tinto Koodaideri Iron Ore Project; Mine Prestrip (AUD 100 million), Civil/Plant (AUD 65 million) and Railway Formation South Earthworks (AUD 140 million).

Includes managing subcontractors, assisting with the development and administration of subcontractor contracts, managing and evaluating tender responses, developing and managing claims, acting as an interface and providing technical advice to construction, contracts and engineering disciplines and periodic and formal reporting-writing for internal/external stakeholders.

Wheatstone LNG Project & Australia Pacific LNG Projects (Bechtel), WA & QLD

Environmental management (working for EPCM) of subcontractor packages on Chevron's AUD 40 billion WLNG and ConocoPhillips' AUD 30 billion APLNG Projects including 'Site Preparation' (clearing & grubbing, bulk earthworks, quarrying/mining, road/track/batter & causeway construction, PASS/AASS management & earthworks to rough-grade), 'Early Works' (dynamic replacement/compaction, piling, subsurface foundations & utilities services, earthworks to final grade & erection of concrete & steel structures) and 'Site Restoration/Rehabilitation' including management of earthworks and remediation of areas impacted by the Projects (e.g. WLNG required 10 000 000 m³ of cut material for the site preparation phase; this entire borrow area required extensive remediation).

Key tasks on both Projects included:

- managing subcontractor reporting and field compliance with Project Conditions of Approval and subcontractor contracts (Pills/CPB, Laing O'Rourke, John Holland, NRW, Kiewit/Ertech, Monadelphous, Mammoet, NTC and other smaller providers);
- assisting with the development and administration of subcontractor contracts (e.g. measurement of subcontractor performance for payment and reviewing/approving financial & progress claims);
- managing and evaluating tender responses (e.g. compiling tenders and preferred supplier & panel agreements and reviewing proposals) and developing tender responses;
- reviewing/approving subcontractor submittals (SCNs, RFIs, NCRs, BoDs, Claims, Measurement for Payment requests, Plans, Work Method Statements etc.);
- completing ITPs, punch-lists and take off's;
- assisting with development and management of schedules;
- engaging Local/State/Commonwealth Government Agencies and Regulatory Authorities regarding environmental impact assessment, environmental licensing/permits/ approvals and stakeholder negotiations;
- completing scheduled audits, periodic/event-based site inspections and leading/accompanying client, government & other 3rd-party stakeholder personnel during key site inspections/audits;
- acting as an interface between ESH and the construction, contracts and engineering disciplines (both field & home-office in AU and USA), particularly in identifying emerging trends and technical issues, responding to subcontractor and client queries, issuing instructions and ensuring subcontractor designs were compliant with contract

and basis of design requirements (managed via Subcontractor Change Notices, Requests for Information, Memos, Scopes of Work, Work Instructions and Non-Conformance Reports);

- leading complex cross-discipline incident Taproot and RCA investigations;
- implementing audit, compliance and quality assurance frameworks and completing associated field and systems inspections, monitoring & audits (as auditor & auditee within ISO14000 frameworks);
- periodic and formal reporting-writing for internal/external stakeholders (including Chevron, CoP and Bechtel Home Office USA) and Australian Regulatory Authorities;
- attend construction, contract, progress/schedule, engineering and other technical meetings; and
- provide technical advice to engineering, construction, legal and contract disciplines.

Development and Commercialisation of PFAS Destruction Technology – Asia Pacific Region (AECOM)

Assisted with the development of the commercial model, ongoing business development, program management and the vendor selection for the build of the commercial-scale field unit for AECOM's DE-FLUORO™ technology (FAIT 1987).

Gareth's role included reviewing and analysing proof of performance/technical data (bench/pilot), assisting with the management of regional costs and budget, developing and maintaining project schedules, completing detailed market research, representing the client interests in internal and external technical and operational working groups, securing and managing partner service and technology providers, developing and negotiating supplier and client contracts and developing the scope and program for the first DE-FLUORO™ field unit build in the Southern hemisphere.

Preliminary and Detailed Site Investigations (PSIs/DSIs) – PFAS (Major Australian Commercial and Defence Airports/Facilities) (AECOM)

Development of proposals for, and the design of, preliminary and detailed site investigations (soils, sediment, groundwater and surface water) for the purpose of and informing clients on presence of PFAS and potential ecological and human health risks.

Included synthesising broad historical and current data sets for the purpose of informing the client's key decision-makers as to the extent of likely contamination impacts resulting directly from the client activities, and by implication, the likely impacts resulting from other party's activities.

Gareth's roles included developing PSI/DSI proposals, managing project cost and budget, vetting, securing and managing service providers, maintaining project schedules, managing delivery personnel and guiding and representing the client's interests in technical and operational working group/s.

Environmental Compliance Program – PFAS & Civil Infrastructure (CFA), VIC

Procurement and delivery of 8 water treatment plants (and ass. Civil infrastructure upgrades) for CFA's operational Regional Training Campuses (RTCs) to remove PFAS and other contaminants from ground and surface water, and from fixed assets.

Due to an absence of an existing suitable form of contract, Gareth developed the DBOM contract documentation (in conjunction with DLA Piper and Ashurst) and was a key person managing the procurement process including leading technical, financial and operational evaluation of tender submissions and negotiations with preferred tenderers.

Also managed the asset performance and suitability evaluations followed by the subsequent civil

infrastructure upgrades at 7 Regional Training Campuses. Tasks included asset history reviews, development of engineering and performance specifications, selection and development of suitable forms of contract (with legal), review and selection of preferred service providers and subsequent contract and subcontractor performance management during delivery of civil infrastructure upgrades including addressing impacts to the different site and subcontractor schedules.

Provided technical advice on PFAS (ecological and OHS) and other environmental matters as well as contract development and contractor management for other civil works across the broader CFA, and associated organisations. Represented the CFA on PFAS issues with external stakeholders (Unions, Regulatory Authorities, sister-Emergency services and Industry).

Remediation Feasibility Assessments (AECOM)

Reviewed and recommended technology (ies) for the remediation of PFAS-impacted surface water for a range of clients in Australia and in Asia-Pacific (Gas Facilities, Emergency Services Training Grounds, Fuel Refineries and Defence Agencies). Required development of proposals, analysis of environmental data, development of project scope and costs, selecting suitable partner vendors, reviewing vendor responses and recommending vendor solutions based on technical, commercial, logistical and risk profiles.

PFAS Risk Assessment and Management Program - Wind Farm
High Level Ecological and OHS Risk Assessment for an Emerging Contaminant impacting a wind farm (100+ turbines).

Included a detailed analysis of engineering controls and impacts to the construction schedule for presentation to key decision-makers in Australia and China (the issue was not identified until works were planned to commence in Australia). Presentation of acceleration strategies to minimise and offset the impacts and guiding senior management through the regulatory, legal and financial aspects of managing the contaminant.

Also included representing the EPCM's interest during liaison and negotiation with regulatory authorities and the primary polluter and the development of procedures and protocols to guide the Balance of Plant Contractor to manage the contaminant of concern and meet all imposed regulatory requirements throughout the construction phase.

Class B Foam Replacement Project (CFA), VIC

Review and selection of preferred product (non-PFAS, Fluorotelomer, F3s etc) to replace the legacy PFAS Aqueous Film Forming Foams (AFFFs) and Protein Foams used at CFA.

Required detailed cost-benefit analysis of performance, pricing, availability, useability, financial stability (of providers) and integration factors associated with the acquisition and deployment of AFFFs v Fluorotelomer v F3 v competing Protein-based Fire-Fighting Foams.

Required synthesising key information pieces for reporting to key internal and external stakeholders (unions, personnel, MFB, working committees) and key decision-makers (STEERCO).

PFAS Decontamination Project (CFA), VIC

Design of decontamination and wastewater management program to remove legacy PFAS from 1500+ of CFA's key mobile assets including large fire-fighting trucks (e.g. pumpers and tanker units) and fixed infrastructure (e.g. dump and fill points and training facilities directly linked to the mobile assets).

Key tasks included establishing PFAS project-success (decontamination) criteria, development of field OHS operational controls, review and development of cost model, engagement and negotiation with key internal and external stakeholders, development of the approved schedule and management of the subcontractors during the delivery phase (still on-going).

Project was completed in close collaboration with the Metropolitan Fire Brigade and Environmental Consultants GHD (advised on establishing PFAS OHS risk-based exposure values for workers implementing the works).

Fire Investigation Building (FIB) - Thermal Oxidiser (CFA), VIC

Technical advice on requirements and functionality for thermal oxidiser proposed for a new Fire Investigation Building.

Included detailed options cost and performance analysis for different technologies (direct fire, catalytic, recuperative or and regenerative), development of project schedule, development of tender documentation and financial and technical analysis of tender responses.

Professional History

July 2021– curr.

Chunxing Corporation Pty Ltd (VIC, Australia)

Contract Environmental Consultant

March 2020 – July 2021.

NRW Civil & Mining (Koodaideri, WA, Australia)

Contract Environmental Consultant

September 2018 – February 2020

AECOM Australia (Melbourne, Victoria, Australia)

Principal Environmental Scientist

August 2016 – August 2018

Country Fire Authority (Melbourne, Victoria, Australia)

Project Manager (Contract)

September 2012 – September 2015

Bechtel OG&C (Australia Pacific & Wheatstone LNG Projects, Australia)

Senior Environmental Coordinator

October 2009 – April 2011

Downer EDI Engineering (various locations, Australia)

Site Environmental Lead

October 2007 – September 2009

Environmental (various locations, Australia)

Consultant - Environmental Management

2004 - June 2007

Freelance Technology and Environmental Consultant & studying (BEnvSc)

1999 - 2004

Electronic Trading Concepts (Melbourne & Sydney, Victoria, Australia)

Director & Project Manager

Contact

+61 4 27 438 240 / technologistau@gmail.com

Robin Krause
Senior Project Management Specialist

77 Sutton Street
Warragul, Victoria, 3820
Mobile: 0447178662
Email: r.krause56@gmail.com

EMPLOYMENT HISTORY

ROK Consulting Pty Ltd

July 2008 to Current

Managing Director

ROK Consulting Pty Ltd was established in 2008 and has contributed to the successful completion of allocated assignments utilizing my diverse knowledge, skills and abilities for several Clients. Assignments have included all aspects of projects in diverse domestic and international companies in mining, oil & gas, power plant, pulp and paper, process plant, water and waste water, materials handling and petrochemical industries. Specializing in the review of projects status and recommending strategies to re-establish progress. Skilled in the total project cycle including project definition, risk mitigation, success criteria, design review and facilitation, estimating, procurement, construction methodologies, work packs, schedules, execution, commissioning to closeout and handover of the project to the Client. Strong management, commercial and strategic skills with advanced understanding of the total project and interrelationships between disciplines, actively contributed to the success of the projects with an attention to detail and ability to work within and lead a team. Effectively managed large multi-disciplined workforces including, design groups, staff and field engineers, clerical and technical staff, sub-contractors and tradesmen. Through training and mentoring has developed, supported and motivated staff to improve performance and meet safety, environment, and quality and schedule requirements. Senior Project Mechanical Engineer with strong technical skills, who consistently accomplishes more than expected by meeting challenges with enthusiasm and hard work. Demonstrating analytical, problem-solving, invention and decision-making skills coupled with excellent communication and presentation skills. Assignments have utilized the following skills

- Project Management / Site Management / Construction Management
- Engineering Management / Design Management / Project Controls Management
- Senior Project Engineer / Senior Mechanical Engineer
- Contract Administration / Cost Management / Cost Engineer
- Estimating / Quality Assurance / Commissioning / Closeout
- Document Control
- Asset Management
- Business Development

Nyrstar, Port Pirie, SA

Mechanical Shutdown Planner / Boiler Engineer - April 2018 to December 2020

- Developed the Budget, Risk Ranking, Risk Mitigation and Capital Expenditure Applications for the \$16M 2018, \$12M 2019, and \$20M 2020 Shuts
- Developed and updated 74 Work Packs, Work Methodologies and Schedules for Compliance of Pressure Vessels and Slag Fumer Boilers. Shutdown Execution of Compliance Work Packs, Engineering support during Shuts.
- Developed the Scope of Work, Budget and Quality Requirements for Service Providers including Scaffolding, NDT Inspection, Demolition Works, Refractory Works, Cleaning and Painting and Grit Blasting and Insulation and Cladding Works. Co-ordinated Service Providers during the Shut.
- Facilitated the design and fabrication of a New HP Condensate Tank. Operating conditions 450 PSI at 250°C. Successfully installed during planned yearly Shut
- Wrote the Compliance Condition Reports of the Pressure Vessels and Boilers in line with Safework SA requirements detailing current condition, NDT Inspection and repairs carried out and recommendations and maintenance strategy for 4 to 6 year inspection cycles.

Nyrstar, Port Pirie, SA

Shutdown Co-ordinator / Boiler Engineer - November 2014 to December 2017

- Successfully completed Work Packs, Work Methodologies and Schedules for 140 Work Packs over several areas of plant including, Pressure Vessels, Slag Fumer Boilers, LP Steam Plant, MP Steam Plant, Coal Plant, Fume Recovery, Scaffolding, NDT Inspections. Shut Execution of work on Pressure Vessels and Slag Fumer Boilers.
- Modified an existing Boiler Panel to provide a replacement section for a deformed and worn section in the Slag Chamber
- Facilitated the design and fabrication of a replacement Boiler including Quality Assurance Documentation. Monthly visits to the fabrication Shop in China to confirm progress, quality, documentation and delivery of the New Boiler.
- Facilitated the design and fabrication of New LP Steam Drums x 2. Operating conditions 100 PSI at 120°C. Development of methodology and design and fabrication of components to hydraulically lift and skid Old Vessels from inside the Building. Successfully installed the New LP Steam Drums x 2 during the Shut
- Wrote the Compliance Condition Reports of the Pressure Vessels and Boilers in line with Safework SA requirements detailing current condition, NDT Inspection and repairs carried out and recommendations

BHP Olympic Dam, Roxby Downs, SA

Work Pack Specialist / Field Engineer - November 2013 to December 2014

- Successfully completed Work Packs, Work Methodologies and Schedules for Waste Heat Boiler and Electrostatic Precipitator scope of work – Engineering support for SCM14 Shut execution.
- Developed and presented Client Management Documentation to obtain approval for SIMOPS (Simultaneous Operations) Attending safety meetings for successful execution of work by multiple work groups and interfaces in congested areas under tight schedules.
- Investigated brownfield tie-ins for ESFR & PPU Projects to determine interfaces and risk mitigation strategies

ERA Ranger - Borneo Concentrator, Jabiru, NT

Field Engineer / Quality Engineer - May 2013 to June 2013

- Successfully managed the Quality Assurance sign-off for construction of structural steel, mechanical equipment, tanks, fire services and piping for the \$200M project.
- Instigated and implemented check sheet and tracking system for hydro test work packs for field supervision.

Evolution - Mt Carlton Gold Mine, Kunbarling

Mechanical Construction Engineer - May 2012 to February 2013

- Member of Larpro Client Side Project Management Team, managing field engineering associated with installation of structural steel, materials handling plant, mechanical equipment, tanks, fire services and piping for the \$180M project.
- Reviewed design of project and listed omissions not compliant with Client Specifications.
- Commissioned materials handling plant including crusher, conveyors, stacker and reclaimers, filter press and packaging plant for handover to client

OneSteel – Iron Baron Ore Beneficiation Project – Whyalla SA

Senior Project Engineer / Package Lead - February 2011 to April 2012

- Managed piping, conveyors, stackers, reclaimers, vibrating screens, valving, samplers, belt scales, crane & hoists, water tanks, fire services packages for the \$80M project.
- Completed Work Scope documentation, Tender Specification, recommend awarding contracts in a timely manner to meet required on site schedule dates.
- Commissioned materials handling plant including crusher, feeders, conveyors, vibrating screens, filter press and stackers for handover to client
- Developed and monitored cost structure for subcontractor packages, reported committed expenditure against budget in a timely manner.
- Developed, monitored and reported earned value for management weekly report.

ExxonMobil - SPT Mech2 Project - Singapore**Engineering Manager - February 2009 to December 2011**

- Managed engineering staff, subcontractors and field engineering facets for the \$200M project.
- Established the Staff Engineering Team of 17 within restricted skill availability in local area.
- Mentored and trained junior engineers work pack and field engineering.
- Managed installation and commissioning of columns, tanks, pumps and piping systems
- Instigated Document Control procedures for monitoring and control of piping and structural steel drawing revisions, scope changes, RFI's, SI's, audits and reviews.

Australian Paper - Pulp Mill Project - Maryvale**Project Engineer - October 2008 to December 2008**

- Developed the work packs for installation of piping isometrics.
- Site inspection and monitoring of daily progress against agreed implementation plan.
- Managed scope change process and documentation of variations to the Client.
- Managed closeout of the project at completion of works and invoicing client

Kwinana Nickel Refinery EMP**Project Control Engineer - July 2008 to September 2008**

- Developed the resourced schedule for unplanned shutdown, daily updating of progress against plan and forecasting completion date.
- Developed schedule for 100 day shut brought forward by Apache Explosion.

John Holland

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2004 to 2008**Construction Manager, Nystar, SA**

- Management of the fabrication and installation of a replacement slag fumer boiler and balance of plant shutdown works.
- Administration of site contracts, scope control, invoicing, management of staff and labour.
- Demolished the existing slag fumer within an operating plant with zero safety incidents.
- Completed total project works on budget and to schedule.

Senior Estimator, Latrobe Valley Area, Vic

- Produced all major and minor estimates for workshop and site works for Latrobe Valley. Region. Preparation of subcontractor tender documentation, review of tender submissions and recommendation for the selection of subcontractors.
- Bid preparation and tender submission to Clients. Successfully estimated, bid and awarded \$450M value of contracts in Victoria and Interstate.
- Created work breakdown structures and payment schedules fro multiple projects to \$20M.

Australian Paper, VIC**2002 to 2004****Maintenance Planner**

- Daily planning and scheduling of maintenance in the Fiberlines Area for multi-discipline work groups for daily, weekly and shut periods. Shut co-ordinator for weekly shuts.
- Co-ordination of external service contractors including crane hire companies, maintenance of air conditioners and communications.

Traralgon Insulations, VIC**1997 to 2002****Project Manager / Senior Estimator / Bid Manager**

- Management of all workshop and site works in the diversified industries of power, paper and general industries. Business development, design, estimating, tendering, project management, office administration and invoicing.
- Diversified the operations to include aluminium and stainless steel fabrication

Plant Engineer

- Management and administration of a multi-disciplined maintenance staff for the new tannery at Rosedale, including sub-contractors and consultants. Managed the installation of tannery plant and equipment on budget and schedule.
- Established maintenance workforce and maintenance strategy for tannery equipment.

Trio Insulations, NSW**1994 to 1995****State Manager, Vic**

- Management of the fabrication workshop including site contracts supporting oil industry in Melbourne.
- Business development of the company to increase industry share 10% of contract work.
- Project Management of construction contracts at Loy Yang B2 Power Station.

EDUCATION

Bachelor of Engineering (Mechanical)

Victoria University (Ballarat College of Advanced Education)

Graduate Diploma in Engineering Maintenance (Terotechnology)

Monash University Gippsland

PROFESSIONAL ASSOCIATIONS

Member, Association of Professional Engineers, Scientists and Managers, Australia

TRAINING & DEVELOPMENT

- Master Builders Association Victoria, Construction Industry Safety Supervisor Course Project Management and Project Control (Cost & Schedule)
- Financial Management & Economic Justification Estimating Techniques
- Interaction Management (Supervisory Development) (Negotiation & Influencing Skills)
- Root Cause Analysis
- HAZOP Investigation
- Estimating Packages
- White Card

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Karen Egan
Council Delegate

Annexure M

Design for Rumble/Shaker Grids

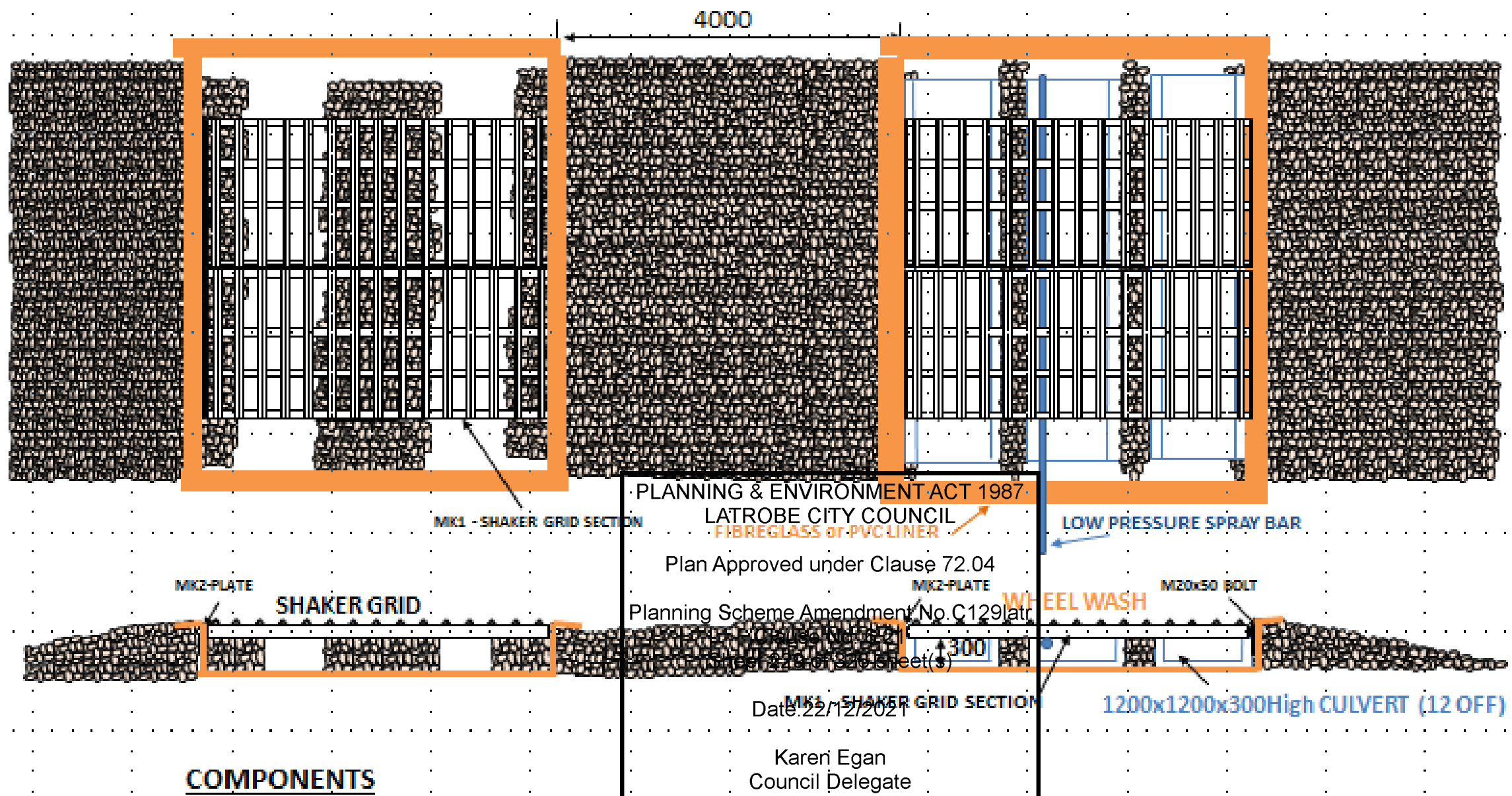
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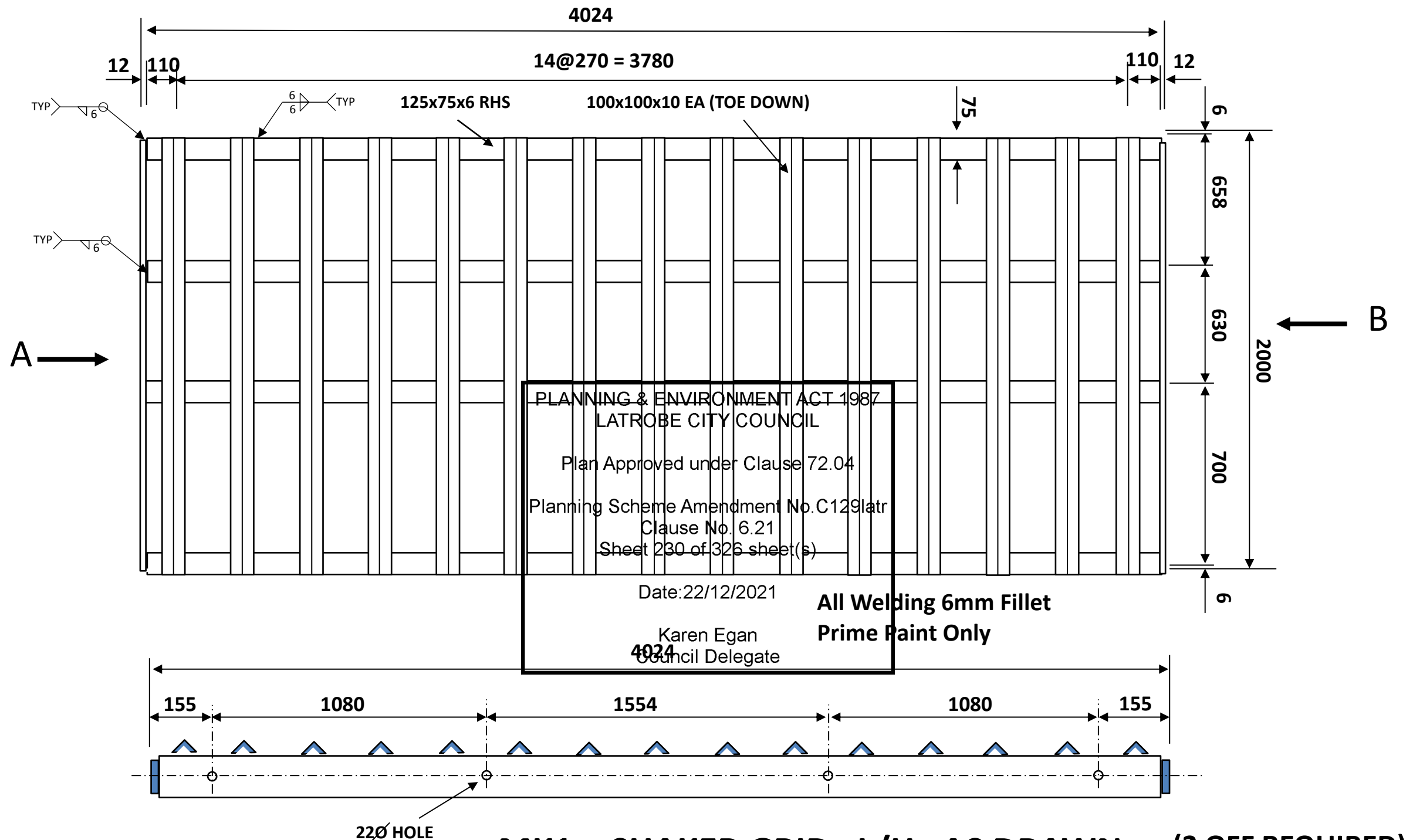
Karen Egan
Council Delegate



COMPONENTS

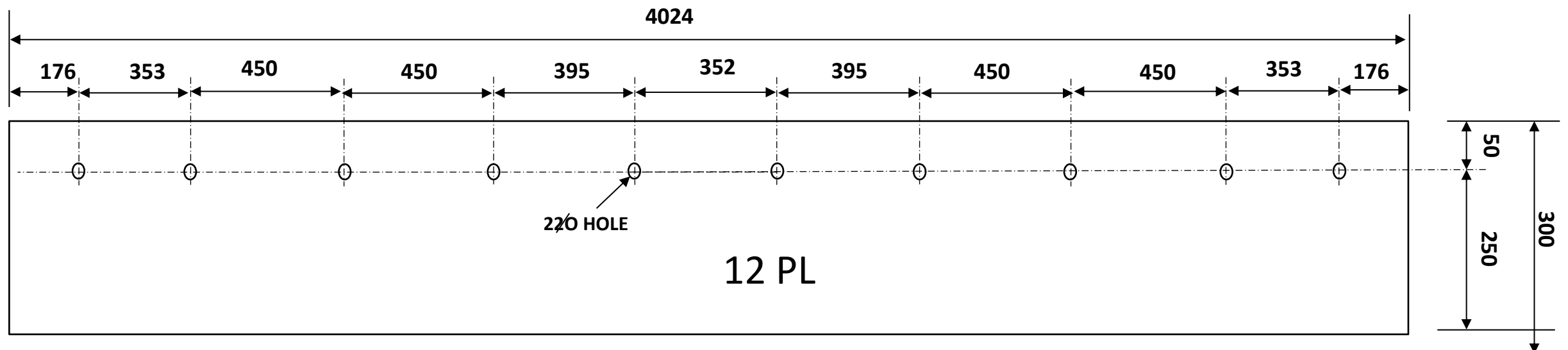
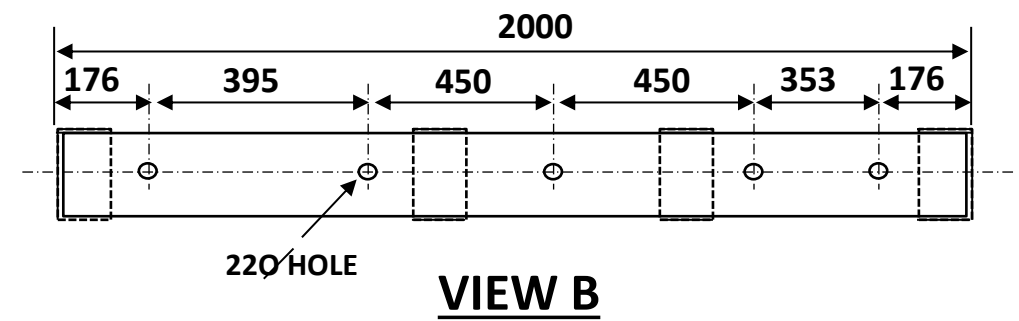
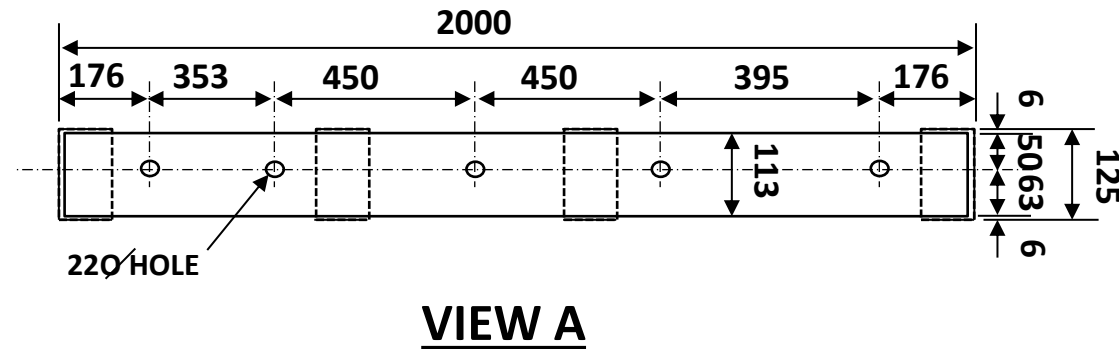
MK1 – SHAKER GRID L/H	2 OFF
MK2 – SHAKER GRID R/H	2 OFF
MK3 – PLATE	4 OFF
M20x50mm GALV	40 OFF
M20x180mm GALV	8 OFF
1200x1200x300 CULVERT	12 OFF

Sketch-001 – ULAB Shaker Grid / Wheel Wash Assembly



MK1 – SHAKER GRID L/H AS DRAWN (2 OFF REQUIRED)
MK2 – SHAKER GRID R/H OPPOSITE (2 OFF REQUIRED)

SKETCH-002 – ULAB – MK1,MK2 – SHAKER GRID DETAILS



MK3 - PLATE

(4 OFF REQUIRED)

Prime Paint Only

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Council Delegate

SKETCH-002 – ULAB – MK3, SHAKER GRID DETAILS

Annexure N

Trade Waste Application - Construction Phase

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Karen Egan
Council Delegate



CENTRAL GIPPSLAND REGION WATER CORPORATION

Application for Consent to Discharge Commercial Trade Waste

In accordance with the Water (Trade Waste) Regulations 2014, made under section 324 of the Water Act 1989

GENERAL CONDITIONS OF CONSENT

1. COMPLIANCE STANDARDS FOR DISCHARGE & CUSTOMER RIGHTS

- a) The discharge of Trade Waste to Gippsland Water's Systems must at all times comply with Gippsland Water's Acceptance Standards as defined in attachment three of the application, and in accordance with Gippsland Water's Trade Waste Policy. The Gippsland Water Trade Waste Policy can be viewed at Gippsland Water's office at 55 Hazelwood Road Traralgon, or on the Gippsland Water website.

- b) Trade Waste service information including respective rights and responsibilities of Gippsland Water and its customers are contained within the Trade Waste Customer Charter which can also be viewed at Gippsland Water's office at 55 Hazelwood Road Traralgon, or on the Gippsland Water's website:

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2. TRADE WASTE CHARGES

- a) Charges for Commercial Trade Waste Customers will be applied as per the 'Gippsland Water Notice of Tariffs' published annually. In certain circumstances, additional charges may be applied. These charges may consist of, but are not limited to:

- Administration charges
- Quality charges
- Volumetric charges
- Monitoring charges

3. SPECIAL CONDITIONS OF AGREEMENT

- a) Customers shall notify Gippsland Water in writing of its intention to make any change in its operation which, in any way whatsoever, could affect the details of this agreement. This includes process, business changes or the sale or vacation of a property.
- b) Gippsland Water requires customers to retain written evidence of each pump out of their pre-treatment apparatus for a period of two years. This documentation must be presented to Gippsland Water's Authorised Officer during periodic inspections or audits. All Waste Removal Contractors must be registered with the Environment Protection Authority (EPA Victoria)
- c) This Agreement should be read in conjunction with the Water (Trade Waste) regulations 2014 and Trade Waste Policy.
- d) Gippsland Water reserves the right to update, amend or renew this agreement as may be determined by Gippsland Water from time to time, and in such instances will notify customer accordingly in writing.

PLEASE ENSURE THAT ALL DETAILS ON THIS APPLICATION ARE COMPLETED ACCURATELY.

Please note this application is for the Construction Phase only

**SHOULD YOU REQUIRE ASSISTANCE COMPLETING THIS APPLICATION PLEASE CONTACT
GIPPSLAND WATER
PH: 1800 066 401**

OFFICE USE ONLY:

Utility A/C # Parcel #

CDR App # Date Registered:

ADDRESS OF BUSINESS PREMISES

Street No Street: **Fourth Road (SPI - 2047\PP2749)**

Town: **Hazelwood North** Post Code: **3840**

DETAILS OF CUSTOMER

Customer / Company Name: **Chunxing Corporation Pty Ltd**

Director: **Dr Lakshman Jayaweera**

Business Name: **Chunxing Corporation Pty Ltd**

Postal Address (if different from above): **51-213 Princess Drive, Morwell, VIC 3840**

Contact Name: **Robin Krause** **Planning Scheme Amendment No. C129latr** **Ph: 0447 178 662**

Email: **office@chemmet.com.au** **Clause No. 6.21** **Sheet 234 of 326 sheet(s)** **Date: 22/12/2021** **Fax:**

DETAILS OF PROPERTY OWNER **Karen Egan**
Council Delegate

Owner / Company Name: **Chunxing Corporation Pty Ltd**

Contact Name: **Dr Lakshman Jayaweera** **Ph: 0418 239 441**

Email: **office@chemmet.com.au** **Fax:**

If a Tenant will be occupying the property, has a 3rd Party Registration Form been completed and forwarded to Gippsland Water? YES ☐ NO ☐

DETAILS OF BUSINESS

Please specify the type of business that is/will be operating on the property?

General Business Types

Specific Business Type

☐ Food Preparation and Handling

☐ Potential Petroleum Source

☐ Other **Used Lead Acid Battery Recycling Facility - Construction Phase only**

DISCHARGE/ RESIDUAL SUBSTANCES

Please specify the substances / chemicals / contaminants that may be present in your Trade Waste.

- | | | | |
|--|--|--|---|
| ☐ Grease / Cooking Oils | ☐ Food Particles | ☐ Laundry Waste | ☐ Photo Waste |
| ☐ Disinfectants | ☐ Motor Oils / Petroleum | ☐ Acids / Alkalis | ☒ Dirt / Sand |
| ☐ Detergents | ☐ Other (please specify) Construction Phase only | | |

FIXTURES GENERATING TRADE WASTE

Please specify the number of fixtures that will generate Trade Waste on the premises.

- | | | | |
|---|---|-------------------------------------|--|
| ☐ Single Bowl Sink | ☐ Bain Marie | ☐ Dishwasher | ☐ Commercial Dishwasher |
| ☐ Double Bowl Sink | ☐ Cooking Table (ie: Wok) | ☐ Brine Tub | ☐ Washing Machines |
| ☐ Pot Sink | ☐ Other (please specify) | | |

Construction Stormwater Pond; see Attachment A (Construction Phase)

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IS SAMPLING A REQUIREMENT?

Yes ☐

No ☐

SAMPLING PARAMETERS REQUIRED

- | | | | |
|--|--|---|-----------------------------------|
| ☐ Colour | ☐ BOD – 5 day | ☐ Suspended Solids | ☐ TDS |
| ☐ Organic N | ☐ Ammonia as N | ☐ EC mS/m – Lab | ☐ pH – Lab |
| ☐ Temp – Field | ☐ Oil & Grease* | | |
| ☐ Specified Others TBC | | | |

Note: Gippsland Water may alter the sampling parameters to be tested based on associated risk. Gippsland Water will notify the customer in writing of any required changes. Sampling costs are to be met by the customer.

APPLICATION CLASSIFICATION

Application assessed against Gippsland Waters Trade Waste Classification process.

- ☐ **Category 1:** Major Trade Waste Customer
- ☒ **Category 2:** Commercial Trade Waste Customer
- ☐ **Category 3:** Deemed Trade Waste Customer

Please see Attachment A - This application is for the Construction Phase only of the ULAB Facility

PRE-TREATMENT APPARATUS TYPE

Specify the number of pre-treatment apparatus on the premises, or to be installed on the premises.

- | | | | |
|--|--|--|--|
| ☐ Grease Interceptor Trap | ☐ Silt Pits | ☐ Neutralizer Tank | ☐ Mixing Tank |
| ☐ Triple Interceptor Trap | ☐ Settling Pits | ☐ Strainer Pit | ☐ Silver Recovery |
| ☐ Plate Separator | ☐ Cooling Pits | Erosion and Sediment Controls and Flocculation of Construction Stormwater Pond if required. Please see 'Attachment A' and 'Attachment A-1' | |
| ☒ Other (please specify) | | | |

EXISTING PRE-TREATMENT APPARATUS DETAILS

Please specify the type and size of any existing pre-treatment apparatus on the premises:
(ie: 1,000 Litre Grease Interceptor Trap)

Size:
Type:
Please see 'Attachment A' and 'Attachment A-1'

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PROPOSED PRE-TREATMENT APPARATUS DETAILS

If pre-treatment is yet to be installed, please specify the basis for determining the type and size of apparatus to be used:

Size:
Type:
Date: 22/12/2021 Determined by:
☒ Gippsland Water Guidelines
☐ Specified by Plumber/Consultant
☒ Karen Egan
☐ Council Delegate
Other (Please specify)
Please see 'Attachment A'

EXISTING BUSINESSES

Please specify the Cleanout Contractor used and the frequency that pre-treatment apparatus are cleaned out:

Contractor:
Frequency:
Date Last Cleaned:

DISCHARGE VOLUME

If discharge volume is to be greater than 1000kl per annum please specify.....

Average daily flow: 80.0m3

Maximum instantaneous flow rate: 0.6m3 per minute

OFFICE USE ONLY

PRE-TREATMENT APPARATUS PUMP OUT FREQUENCY

The customer is to have the pre-treatment apparatus pumped out on a * basis and/or as directed by Gippsland Water's Authorised Officer.

- To be advised by Gippsland Water's Authorised Officer upon application. Gippsland Water may alter the pre-treatment pump out frequency following on site inspections if deemed necessary.
- The customer will be notified in writing of any required changes to pre-treatment pump out frequencies.

TREATMENT PLANT RECEIVING WASTE.....

SITE PLAN OF THE PREMISES

A site plan detailing Trade Waste generating fixtures, pre-treatment apparatus, sample point (if applicable) and sewer discharge acceptance point is to be provided with this application. The plan can be attached to this application, or can be shown on the A4 page provided (Attachment 1).

Has a site plan been submitted with this application? **YES** ☒ **NO** ☐

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CUSTOMERS STATEMENT

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The information provided in this form is true and correct and should be approved by Gippsland Water. I agree to abide with the terms and conditions in the Commercial Trade Waste agreement and Water (Trade Waste) regulations 2014.

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Name (Please Print): **Date: 22/12/2021**

Customers Signature: **Karen Egan**
Council Delegate **Date: 12-12-2021**

TERM OF AGREEMENT

The term of the Trade Waste agreement will be ongoing subject to the customer meeting the requirements of this Trade Waste agreement. Trade Waste agreements are issued to the Occupier of the business and are non-transferable. It is the customer's responsibility to notify Gippsland Water of a change of occupancy or any change to the Trade Waste generating process. A new occupier would need to complete a new Trade Waste application.

GIPPSLAND WATER APPROVAL

Gippsland Water approves this application to discharge Trade Waste under the conditions detailed in this agreement.

Name (Authorised Gippsland Water Officer):

Signed: Date:

ATTACHMENT 1

SITE PLAN FOR TRADE WASTE APPLICATION

Street No Crown Allotment 2047 Street: Fourth Road (SPI - 2047\PP2749)

Town: Hazelwood North Post Code: 3840

Please see 'Attachment A' and 'Attachment A-1'

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PLEASE INDICATE NORTH POINT, PROPERTY DIMENSIONS AND SEWER DISCHARGE ACCEPTANCE POINT

ENFORCEMENT

ACCESS AND INSPECTIONS

A person authorized by an Authority to do so may-

- a) at any reasonable time, but in an emergency at any time, **enter land** and -
 - I. measure flows of trade waste; or
 - II. take samples of any trade waste that is to be received by the Authority or of any matter used or produced in a process involving trade waste, and analyse those samples; or
 - III. inspect any fitting, private works and works ancillary to them that are used or provided for conveying trade waste to the Authority's sewerage system.

COMPLIANCE WITH WATER (TRADE WASTE) REGULATIONS 2014 AND TRADE WASTE AGREEMENTS

A *Person* who fails to comply with Water (Trade Waste) Regulations 2014 or *Trade Waste agreement* is guilty of an offence and is liable to penalty:

- a) not exceeding 200 penalty units; and
- b) in the case of a continuing contravention, an additional penalty of 80 *Penalty Units* for each day on which the offence continues:
 - I. after service of a notice of contravention on the *Person* under section 151 of the *Act*; or
 - II. if no notice of contravention is served, after conviction of the *Person* for the offence.

CONDITION OF TRADE WASTE AGREEMENTS

It is a condition of a trade waste agreement that a water corporation may disconnect a trade waste connection -

- a) during an emergency; or
- b) during a period where there is a threat of damage to any system used by the water corporation for the conveyance, treatment, re-use or supply, of wastewater; or
- c) during a period where the water corporation's sewage system may cause the water corporation to breach a licence issued under section 20 of the **Environment Protection Act, 1970** that the water corporation holds for the reprocessing, treatment, storage, containment, disposal or handling of waste.

Dispute Resolution

If a customer has a complaint, they should follow the procedure as set out in the Gippsland Water Customer Charter part B *Complaints* section 2.1.2 available on the Gippsland Water website

www.gippswater.com.au

Where a complaint escalates beyond Gippsland Water's Customer Charter and relates to technical or economic aspects of Trade Waste management, as per the Gippsland Water Trade Waste Customer Charter 7.1 Gippsland Water will:

- with consent from the customer, engage the services of an independent expert or mediator to help the complaint; and
- advise the customer that it may request that the Commission consider whether the water business has complied with the Trade Waste Code, the Customer Service Code or Gippsland Water's price determination.

The Gippsland Water Trade Waste Customer Charter is available on the Gippsland Water website

www.gippswater.com.au

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Council Delegate

a) Attachment 2 - Guidelines for Size of Pre-Treatment Apparatus

GIPPSLAND WATER GUIDELINES FOR SIZE OF PRE-TREATMENT APPARATUS

Food Preparation – Fast Food – Restaurants etc		
Business Type	Guide for Pre-treatment required	Origin of Waste (Fixtures)
Large Commercial Kitchens (Hospitals/Nursing Homes)	2000 litre Grease Trap	Pot Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes Ovens & Steam Ovens. (Oil, Grease, Fats & Food Particles)
Restaurant (Large) Including Hotels, Motels & Clubs	2000 litre Grease Trap Plan Approved under Clause 72.04 Planning Scheme Amendment No. C129latr	Pot Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes Ovens & Steam Ovens. (Oil, Grease, Fats & Food Particles)
Restaurant (Small) Including Hotels, Cafés & Wine Bars etc	1100 litre Grease Trap Clause No. 6.21 Sheet 240 of 326 sheet(s)	Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes (Oil, Grease & Food Particles)
Fast Food (Asian/Noodle Bars)	800 litre Grease Trap Date: 22/12/2021 Karen Egan Council Delegate	Sinks, Floor Waste Gully Wok Tables (constant water wash) (Cooking Oil & Food Particles)
Fast Food (Pizza Restaurant/Takeaway)	1100 litre Grease Trap	Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes (Flour & Cooking Oil)
Fast Food (Fish & Chips/Deep Frying/Hamburgers)	800 litre Grease Trap	Sinks, Hand basins, Floor Waste Gully (Batter, Oils & Grease)
Fast Food (Roasting Chicken/Kebabs etc)	800 litre Grease Trap	Sinks, Hand Basins, Floor Waste Gully (Fat, Grease, Oil & Food Particles)
Motel Kitchen (Breakfast Cooking Only)	Minimum 250 litre Grease Trap	Sinks & Domestic Dishwasher (Grease, Oil & Food Particles)

Bakery (Small) (Bread & Savories) eg: Bakers Delight	Minimum 600 litre Grease Trap Large Sinks, Hand Basins & Floor Waste Gully	(Oil, Food Particles & Flour)
Bakery (Large) (Bread, Pastries, Pies, Pasties, Sausage Rolls etc)	Minimum 1100 litre Grease Trap	Large Sinks, Hand Basins, Commercial Dish Washer & Floor Waste Gully (Oil, Fat, Food Particles & Flour)
Butcher Shop	Minimum 600 litre	Sinks, Hand Basin & Floor Waste Gully (Fat from Meat, Sausage Making etc)
Delicatessen	Minimum 250 litre Grease Trap	Sinks, Hand Basin (Dish Washer) (Vegetable Oils, Grease from Small Goods & Food Particles)
Super Market (Butchers, Bakers, Deli's & Chicken Rotisseries etc)	Minimum 1100 litre Grease Trap (May require 2000 & larger if all related departments are combined)	Sinks, Hand basins, Floor Waste Gully Commercial Dish Washes (Fat from Meat, Grease, Oil, Flour & Food Particles)

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Vehicle – Parts Washing/Truck Washing etc		
Business Type	Pre-treatment required	Origin of Waste (Fixtures)
Vehicle Washing (Single Bay) Wash Bay attached to garage/mechanic work shop etc.	Silt Pit, Roofing or Storm Water Diversion, 1000 litres/hour Oil & Petrol Separator	Washing of vehicles & Motor Parts etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Vehicle Washing (Multiple Bays) (Two (2) Wash Bays Plus)	Silt Pit, Roofing or Storm Water Diversion, Oil & Petrol Separator capable of minimum 1000 litres/hr for multiples of two (2) bays.	Washing of vehicles & Trailers/Boats etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Vehicle Washing (Multiple Bays) (Three (3) Wash Bays Plus Automatic Wash) eg: Dazzlers	Silt Pit, Roofing or Storm Water Diversion, Oil & Petrol Separator capable of minimum 1000 litres/hr for multiples of two (2) bays. eg: 3 Bays + Auto Wash = 2000 litres/hr Minimum.	Washing of vehicles & Trailers/Boats etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Heavy Vehicle (Truck Wash other than Stock Trucks)	Silt Pit, Roofing or Storm Water Diversion, 1000 litres/hr Oil & Petrol Separator.	Washing of vehicles & Motor Parts etc. (Road Grime, Dirt/Mud, Oils, Petrol/Diesel & Grease)
Heavy Vehicle/Machinery (Contractor)	Silt Pit, Roofing or Storm Water Diversion, Minimum of 1100 litre/hr Petrol & Oil Interceptor. Date: 22/12/2021	Washing of Trucks, Machinery, Graders/Bobcats/Backhoes & Motor Parts etc. (Road Grime, Dirt, Mud, Grass, Oils, Petrol/Diesel & Grease)
Truck Wash attached to Saleyards.	Treat each application as individual assessment. May require Settling Pit & Screening etc.	Washing of Trucks & Trailers. (Road Grime, Dirt, Mud, Grass, Animal Manure)
Farm Machinery Repair Work Shops.	Roofing or Storm Water Diversion, Silt Pit, Minimum of 1100 litre/hr Petrol & Oil Interceptor or Combination of P&O Interceptor & 1000 litre/hr P&O Separator	Washing of Trucks, Farm Machinery, Tractors & Motor Parts etc. (Dirt, Mud, Grass, Oils, Petrol/Diesel & Grease)

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b) Attachment 3 – Gippsland Water Trade Waste Quality Limits

1 PHYSICAL CHARACTERISTICS

(a) Temperature

The temperature shall not exceed 28 degrees Celsius.

(b) Solids

(i) The suspended solids concentration in any waste shall not exceed 600 grams per cubic metre.

(ii) Gross solids shall pass a bar screen with 13 millimetres openings between bars, and solids shall have a quiescent settling velocity of not greater than 3 metres per hour, in the wastewater.

(iii) The total suspended solids concentration in any waste shall not exceed 600 grams per cubic metre. Further Sodium shall not exceed 200 grams per cubic metre and the Sodium Absorption Ratio shall not exceed 4.0.

(iv) Planning Scheme Amendment No. C129 Water in the opinion of the Authorised Officer is likely to cause obstructions in the sewer.

(c) Oils, Greases and Solvents

(i) There shall be no free or floating layer of oils, fats or grease.

(ii) The concentration of grease emulsified oil, fat and grease shall not exceed 100 grams per cubic metre as determined using the methodology specified in the current edition of APHA-AWWA-WEF "Standard Methods for the Examination of Water and Wastewater".

(iii) There shall be no free solvent or organic liquid other than those specifically permitted under the terms of this Agreement.

(iv) There shall be no solvents which are miscible in water.

(v) There shall be no flammable or toxic organic liquid present other than those specifically permitted under the terms of this Agreement.

(d) Resins

Natural or synthetic resins, plastic monomers, synthetic adhesives, unstable rubber or plastic emulsions or any like material shall not be present.

(e) Radioactive Wastes

Radioactive wastes shall comply with the standards specified in the Radiation Regulations 2007 (Vic).

(f) Colour

The Colour of the wastes when measured on the Platinum Cobalt scale shall not exceed 1000

(g) Electrical Conductivity

The Electrical Conductivity shall not exceed 160 mS/m.

(h) Flammable Substances

There shall be no petrol or other flammable or explosive substance whether solid liquid or gaseous.

2 CHEMICAL CHARACTERISTICS

(a) pH Value

The pH value shall not be higher than 9.0 or less than 6.0

(b) Organic Strength

The concentration of the Biochemical Oxygen Demand shall not exceed 600 g/m³.

(c) Nitrogen

(i) The concentration of Total Nitrogen shall not exceed 100 grams per cubic metre.

(ii) Notwithstanding the limitations specified in Clause (c) (i), the separate chemical forms of Nitrogen shall not exceed the maximum allowable concentration values as stated in the table hereunder:

Ammonia	50 grams per cubic metre calculated as Nitrogen
Nitrate	30 grams per cubic metre calculated as Nitrogen
Organic Nitrogen	60 grams per cubic metre calculated as Nitrogen

(d) Sulphur

(i) The concentration of Total Oxidized Sulphur including Sulphate, Thiosulphate, and Sulphite shall not exceed 100 grams per cubic metre calculated as Sulphate.

- (ii) The concentration of Sulphate shall not exceed 100 grams per cubic metre calculated as Sulphate.
- (iii) The concentration of Sulphide shall not exceed 1 gram per cubic metre calculated as Sulphur.
- (iv) The concentration of Sulphite shall not exceed 30 grams per cubic metre calculated as Sulphur.

(e) Corrosive and Toxic Substances

- (i) The maximum allowable concentration in grams per cubic metre of the under mentioned substances shall be as stated in the table hereunder:

Chloride	200
Fluoride	5.0
Cyanide	5.0
Boron	1.0
Total Phenols (incl. Resorcinol)	100
Pentachlorophenol 1	
Formaldehyde.....	50
Selenium	0.030

Organohlorine Pesticides

Aldrin	0.001
Chlordane	0.006
DDT	0.003
Dieldrin	0.001
Heptachlor	0.003
Lindane	0.100
Organophosphate Pesticides	0.100

- (ii) No substance, which in the opinion of the Authorised Officer may be deemed to be toxic to personnel, to sewage treatment processes or to the environment receiving treated effluent, shall be discharged to a sewer.

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(f) Metals

The maximum allowable concentrations in grams per cubic metre of the metals discharged to the sewer shall be as stated in the table hereunder:

	CONCENTRATION
	mg/l
Cadmium	0.050
Chromium	0.100
Copper	0.100
Lead	0.300
Mercury	0.001
Silver	1.0
Zinc	0.300
Iron	10

(g) Precipitable Ions

The concentrations of Calcium, Magnesium and other precipitable ions shall be kept at levels which do not cause solids deposition on the internal walls of any pipeline or conveyance structure which GW is responsible for.

(h) Dissolved Oxygen

The dissolved oxygen concentration in the waste shall at all times be greater than 2 grams per cubic metre.

(i) Total Phosphorous

The maximum allowable concentration of phosphorous shall be 15 grams per cubic metre.

(j) MBAS

The maximum allowable concentration of methylene blue active substances shall be 200 grams per cubic metre.

3 OTHER PARAMETERS

Allowable levels of all other compounds present but not listed in this Agreement shall be assessed by the Authorised Officer, who in consultation with the Manager of Waste Water Environment and Sustainability will determine the maximum allowable concentration of such waste components.

4 RATE OF DISCHARGE

The maximum rate of discharge will be to be determined at time of application.

ATTACHMENT A - CONSTRUCTION PHASE

GIPPSLAND WATER TRADE WASTE APPLICATION (Category 2 - Commercial Trade Waste Customer)

CONSTRUCTION PHASE OF CHUNXING ULAB FACILITY (Crown Allotment (CA) 2047 Fourth Rd, Hazelwood North)

BACKGROUND

Chunxing Corporation Pty Ltd propose to establish a state-of-the-art technology Used Lead Acid Battery (ULAB) recycling plant at Crown Allotment (CA) 2047 Fourth Rd, Hazelwood North, near Morwell, Victoria with a secondary lead smelter to process 50,000 tonnes of used lead acid batteries and recycle them into 28,000 tonnes of refined lead per year.

The ULAB Facility will consist of the following key components:

a. Recycling processing facility consisting of:

- ULAB storage and sorting
- a continuous ULAB breaking process unit
- acid neutralisation using hydrated lime, $\text{Ca}(\text{OH})_2$
- pre-desulphurisation of lead paste process
- a set of dual chamber furnaces, each 3m in diameter and with a capacity of 75 tonnes for smelting lead paste
- slag tapping and quenching
- metalics melting in one kettle, 3m in diameter and with a capacity of 120 tonnes
- five refining kettles (each 3m in diameter and with a capacity of 120 tonnes) and refinery process
- by-product productions
- plastics processing plant
- lead ingot moulding

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- b. Air emission control system for flue gas designed to emit to the atmosphere via a 30m stack.
- c. Air emission control system for fugitive emissions designed to emit to the atmosphere via 20m stack.
- d. Fit for purpose wastewater treatment plant capable of treating all process water generated to the standards suitable for reuse on-site and/or discharge to sewer.
- e. Stormwater management system which is designed to contain stormwater run-off in one in 100-year rainfall event and firefighting water.
- f. Fit for purpose storage facilities designed for chemicals, dangerous goods and combustible materials.

An artist's impression of the completed facility is shown in Figure 1.

SITE DESCRIPTION

The property (Crown Allotment 2047) is 13.45 hectares in size with the ULAB facilities/construction footprint assuming approximately half (approximately 6.0 hectares) of area within the property (see Figure 2). The property forms a subsection within a parcel of 155.4 hectares of land which was purchased by the Gas and Fuel Corporation of Victoria in 1953 for the purpose of brown coal gasification (the Former Lurgi Gasworks).

Construction of the gasification plant was completed in 1956 and the plant operated from 1956 to 1969. After the plant closed, the site remained inactive. Prior to the development as gasification plant the Former Lurgi Gasworks property was understood to have been used for farming / grazing.

The property resides within industrial 2-zoned land, surrounded by recycling and heavy industry facilities (also within Industrial 2 zoning).

Site Address	Crown Allotment 2047, Fourth Road, Hazelwood North
Legal Identification	Crown Allotment 2047, Fourth Road, Hazelwood North (Parish of Hazelwood, Title Plan 955137G; contained in Certificate of Title Vol. 11814 Fol. 404)
Local Government Area	Lalor City Council
Zoning	Industrial 2 Zone (IN2Z)
Property Size	13.45 hectares
Construction (ULAB Facility) Footprint	6.0 hectares (approx.)
Current Use	Vacant
Surrounding Land Use	north: industrial fertiliser / soil conditioner facility east: fly-ash processing plant (under construction) & Tramway Road. south: Fourth Road & industrial mulch facility west: vacant land
Proposed Future Land Use	Used Lead Acid Battery Recycling facility, being scheduled categories I02 – Metal works and A02 – Other Waste Treatment

The slope direction on the site is southeast (76.2 mAHD) to northwest (74.2 mAHD) with approximately 2.0m of fall over 500m, equating to a 0.23 degrees or 0.4% slope (the Site also slopes gently to the north).

Surface water across the property generally drains south-east to north-west (~2.0m of relief over 500m) with surface water moving into open drainage systems along the northern and western boundaries (the latter is situated within a gas-line easement that runs north/south). The western and northern open drains converge in the northwest corner of the Site and discharge into a grated pit ('legal point of discharge'). Water then travels northwards approximately 330m in an open council drain between land occupied by Morwell Transfer Station (Lot 1 on PS533418, 73 Porters Road) and Omnia Specialties Australia (Lot 4 on LP91437, 260 Tramway Road) towards Porters Road. From there stormwater runs under Porters Road via a drain and enters an irrigation channel that extends 500m northwards and finally discharges into Firmins Lane Wetlands.

In the absence of a flooding events, the property does not (and will not upon completion of the works) accept

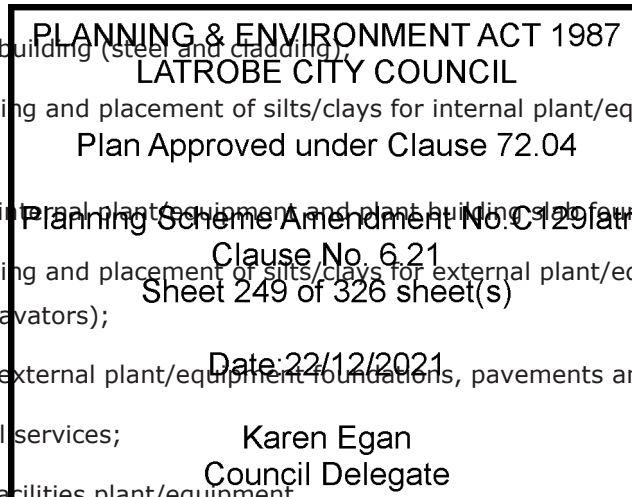
any run-on water from surrounding properties due to Fourth Road forming a barrier along the southern boundary of the property, an existing small bund along the eastern boundary, a small open drain along the northern boundary (draining to the west) and an open drain in the gas-easement running along the western boundary. Land parcels to the north and the east are at lower elevations than the Property.

CONSTRUCTION ACTIVITIES

Whilst the property owned by Chunxing is 13.45 hectares in size, Chunxing have elected to only use 6.0 hectares of the land area, comprising the eastern half of the land parcel, for the ULAB Facility (see Figure 2); referred to as the 'Construction Footprint'.

Construction activities and the overall construction approach comprise;

1. connection of services, setting-out the site, placement of temporary buildings (facilities) and installation of erosion and sediment controls;
2. stripping topsoil (graders);
3. placement of topsoil in the Western Buffer Zone;
4. excavation, conditioning and placement of silts/clays for internal and external slab foundations (excavators);
5. erection of the plant building (steel and cradding);
6. excavation, conditioning and placement of silts/clays for internal plant/equipment foundations (excavators);
7. concrete pouring for internal plant/equipment and plant building slab foundations;
8. excavation, conditioning and placement of silts/clays for external plant/equipment foundations and pavement areas (excavators);
9. concrete pouring for external plant/equipment foundations, pavements and roads;
10. connection of internal services;
11. installation of ULAB facilities plant/equipment



The period between commencement of construction and commissioning of the ULAB facility is expected to take approximately 18 months, with works anticipated to commence in the last quarter of the 2021 calendar year.

It is expected that at during peak construction activity at the front-end of the Project there will be ~100 construction personnel onsite each day with ~60 personnel at the non-peak back-end of the Project.

Construction approach will be sequenced with the construction footprint will be broken up unto Work Areas A - E (see Figure 3) to limit the period of time excavated materials are exposed to the elements during Steps 1 - 4.

~12,000m³ of topsoil/vegetation will be stripped with a grader across the construction footprint (to a depth of 0.2m) and progressively stockpiled in Area E as work proceeds from Areas A - G, for later use in the Western Buffer Zone. 38,000m³ of silt/clay will be excavated with excavators, conditioned and then reused within the construction footprint during cut and fill activities.

It is expected that ~1200m³ of silt/clay material will be conditioned (addition of 1% cement or lime) each day in a continuous operation using x2 crews. Placed fill will be compacted with padfoot and smooth drum rollers.

Topsoil stripped from the construction footprint will be carted with moxy dump trucks to the Western Buffer Zone, paddock dumped, spread with a wheel-loader and brought to final grade with a grader.

Steps 2 and 3 (topsoil stripping) will assume a general sequence of commencing in Work Area A then progressing to B, C, D, E, G and finally to F. Steps 2 and 3 are expected to take 2-months.

SURFACE/STORMWATER MANAGEMENT

Stripping, excavation, stockpiling and foundation preparation activities (including development of the site emergency stormwater and storage ponds) are expected to commence late in the last quarter of 2021 (or early in the in the first quarter of the 2022 calendar year) extending into the end of the second quarter of the 2022 calendar year. Based on available climate data, yearly climate averages for the area indicate that these work aspects will take place in weather conditions characterised by low (less intense) rainfall, strong and gusty winds, clear days and high evaporation rates (relative to other calendar quarters).

An earthen clean water diversion bund will be constructed across the southern boundary of the construction footprint that will divert clean-run water from the Property from entering the construction footprint. This bund will discharge into the Western Buffer Zone via a level sill.

All construction footprint surface water will be directed into a construction stormwater pond (CSP) via earthen dirty water bunds constructed along the northern and western boundaries of the construction footprint.

Earthen stormwater bunds will be constructed from compacted clay and purposed to prevent ponding and be free-draining, capitalising on clay's low permeability/transmissivity and tendency to form an outer crust limiting the potential for erosion and sedimentation of surface water.

Bunds are to be keyed-in 0.2m (excavated topsoil and silt/clay to be placed into the relevant stockpile area) and developed in 250mm lifts with each lift compacted with excavator bucket. Batters are to be at 2(h):1(v).

Silt/clay will be conditioned (with 1% lime or cement) and compacted for foundations across each Work Area greatly reducing the potential for infiltration of stormwater into the placed material.

Once the construction stormwater pond and dirty water diversions are in-place the construction footprint will have a 0.38 degree / 0.6% slope (over 300m) from the south-east to the north-west and the Western Buffer Zone will have a 0.34 degree / 0.33% slope (over 200m) from the south-east to the north-west.

Attachment A-1 shows the proposed site layout and soil and water controls during the construction phase of the project.

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**Karen Egan
Council Delegate**

Construction Stormwater Pond

All construction footprint surface water will be directed into a construction stormwater pond (CSP) via dirty water bunds installed along the northern and western boundaries of the construction footprint (an existing earthen bund runs along the eastern boundary).

The CSP has the capacity to accept all stormwater run-off associated with a 1 in 2 year AEP 24-hour rainfall depth (assuming 20% infiltration across the construction footprint) or a 1 in 1.58 year AEP 24-hour rainfall depth (assuming 10% infiltration across the construction footprint); see Table 1 Rainfall Depths & Runoff - Chunxing ULAB Facility.

The construction stormwater pond (CSP) will be discharged into the Trade Waste discharge acceptance point to ensure 90% capacity (2,025m³) in the CSP at all times. Discharge from the CSP will be pumped to a surge tank and then pumped from the surge tank to the TWA discharge acceptance point. Discharge to the TWA discharge acceptance point will not exceed 80m³ per day (flow rates will not exceed 36.0m³ per hour / 0.6m³ per minute / 0.01m³ per second).

A CSP emergency stormwater water bund (CSP ESWB) will be installed along the western boundary of the construction footprint that will merge into the north and western boundary of the water diversions creating an additional emergency stormwater holding area of approximately 11m³ between the 74.2 and 74.6 mAHD contours within the construction footprint. The approximate storage volume area within the construction footprint between the 74.2 - 74.4 mAHD contours is 1,275m³ and between the 74.4 - 74.6 mAHD contours is 1,535m³ (see sub-table E in Table 1 Rainfall Depths & Runoff - Chunxing ULAB Facility).

The combined CSP and emergency stormwater bund storage volume is approximately 5,061m³. This volume is higher than a stormwater run-off volume associated with a 1 in 50 year AEP 24-hour rainfall depth (assuming 20% infiltration across the construction footprint) and is nearly enough capacity to retain a 1 in 100 year AEP; see Table 1 Rainfall Depths & Runoff - Chunxing ULAB Facility.

Discharges from the CSP to sewer will be recorded in an 'Offsite Discharge Tracking Register' (see Figure 6 Offsite Discharge Tracking Register) with field sampling of discharge water undertaken to measure compliance with Gippsland Water's TWA Water Quality using a multimeter probe (capable of measuring temperature, electrical conductivity, total suspended solids/turbidity and pH).

The intake from the CSP to the surge tank will sit within a floating-boom structure that floats on the surface of the CSP to reduce the potential for sending water with elevated sediment loadings into the surge tank (and into the TWA discharge point).

If flocculation of the construction stormwater pond is required to meet TWA waste quality limits, guidelines contained in Appendix E (Settlement of Dispersed Fines) in 'Managing Urban Stormwater: Soils and Construction' aka 'the Blue Book' (Landcom, 2006) will be followed.

If the water level in the CSP needs to be reduced during construction and the daily volumetric TWA limit has been reached, an appropriately licensed contractor (e.g. Veolia Environmental Services) will be engaged to

transport wastewater offsite (likely as L100 or L150) to a licensed facility. Relevant waste certificates will be completed and retained as required for verification purposes.

TRADE WASTE APPLICATION - CONSTRUCTION PHASE

Chunxing Corporation Pty Ltd (Chunxing) submitted its' final works approval application (WAA) to the Environment Protection Authority of Victoria (EPA) on 15 November 2019 which was approved on 31-08-2021 under Works Approval number 232330.

One of the requirements of the EPA Works Approval (WA_W1 (6)) was the development (and EPA approval) of a Construction Environmental Management Plan (CEMP) to manage environmental impacts during the construction phase. The CEMP was submitted to the EPA on October 4, 2021 for final approval. The CEMP requires that all construction footprint surface water will be directed into a construction stormwater pond (CSP) via dirty water bunds installed along the northern and western boundaries of the construction footprint (an existing earthen bund runs along the eastern boundary) that is then discharged to sewer under a Trade Waste Agreement with Gippsland Water.

A copy of the CEMP (& Erosion and Sediment Control Plan) can be provided to Gippsland Water upon request once the CEMP is approved by EPA Victoria.

The construction stormwater pond (CSP) will be discharged into the Trade Waste discharge acceptance point to ensure 90% capacity (2,025m³) in the CSP at all times. Discharge from the CSP will be pumped to a surge tank and then pumped from the surge tank to the TWA discharge acceptance point. Discharge to the TWA discharge acceptance point will not exceed 80m³ per day (flow rates will not exceed 30.0m³ per hour / 0.6m³ per minute / 0.01m³ per second).

The discharge acceptance point for Chunxing's ULAB facility trade waste is proposed to be on Fourth Road into an existing 150mm RC sewer pipe that runs east/west along Fourth Road² approximate MGA 55 coordinates are E 450185.99 / N 5765197.50.

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Figure 4 Chunxing ULAB Facility - Water Connections show the location of the water infrastructure (location of mains water supply line, construction stormwater pond, line to surge tank and line to TWA discharge acceptance point) and Attachment A-1 shows the site layout (location of temporary amenities and soil/water controls) for the construction phase of the project.

Chunxing Corporation Pty Ltd would like to apply for a Gippsland Water Trade Waste Agreement for the construction phase of the Project. Water discharged to sewer under a Trade Waste Agreement is expected to meet Gippsland Water Trade Waste Quality Limits.

Chunxing will submit a separate application to Gippsland Water for a Trade Waste Agreement for the commissioning/operational phase of the Project. This submission will take place at least 3-months prior to the commencement of commissioning activities.

² Fourth Road is also referred to in some formal documentation as 'Centre Road' (e.g. see Figure 5 Area General Plan - Water Connections).

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Figure 1 Artist's impression of the Final ULAB Facility (as viewed from the east)

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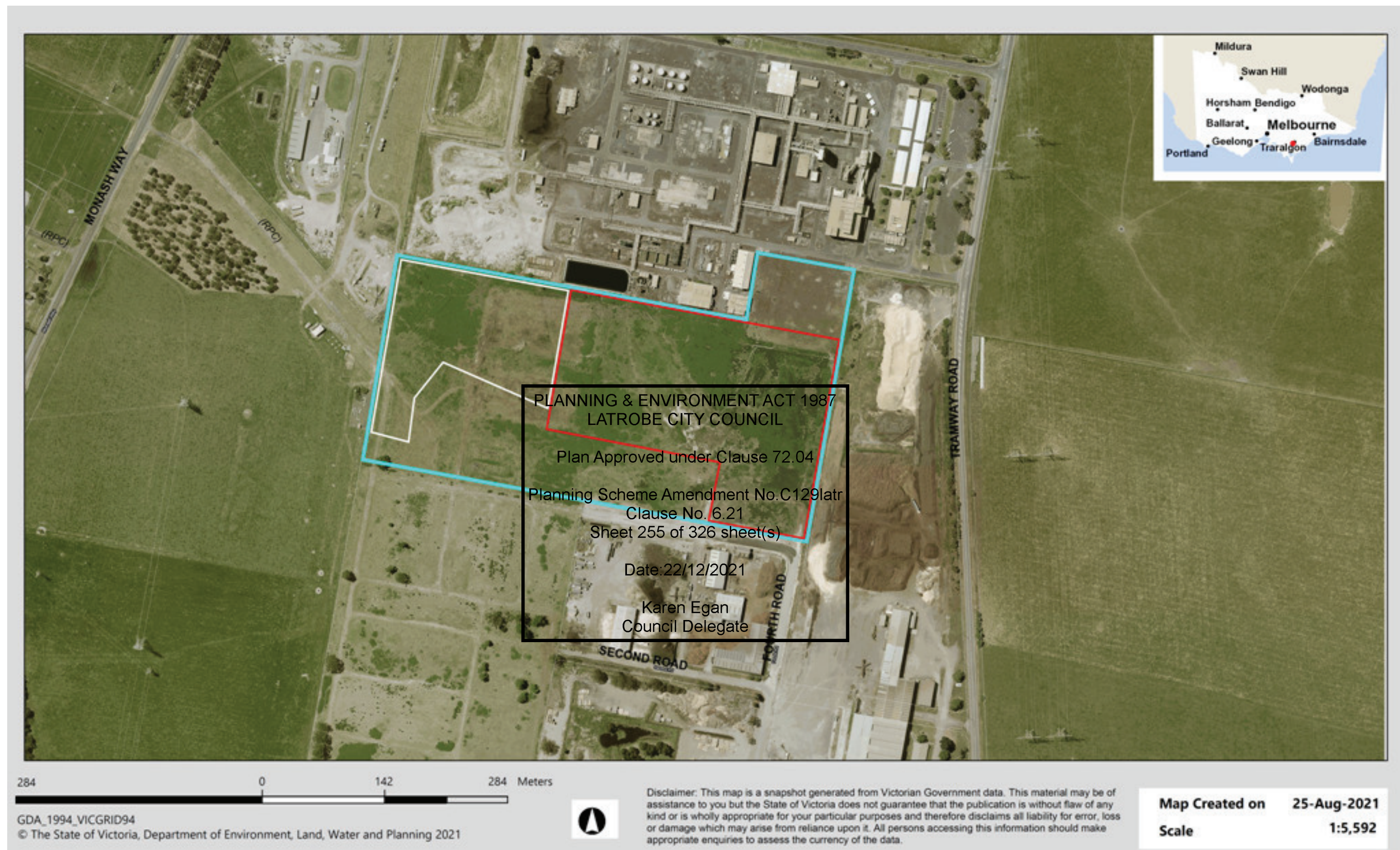


Figure 2 Chunxing ULAB Site Boundary, Construction Footprint & Western Buffer Zone Footprint
(source: <https://mapshare.vic.gov.au/MapShareVic>)
(Blue Outline = site boundary / Red Outline = Construction Footprint / White Outline = Western Buffer Zone)

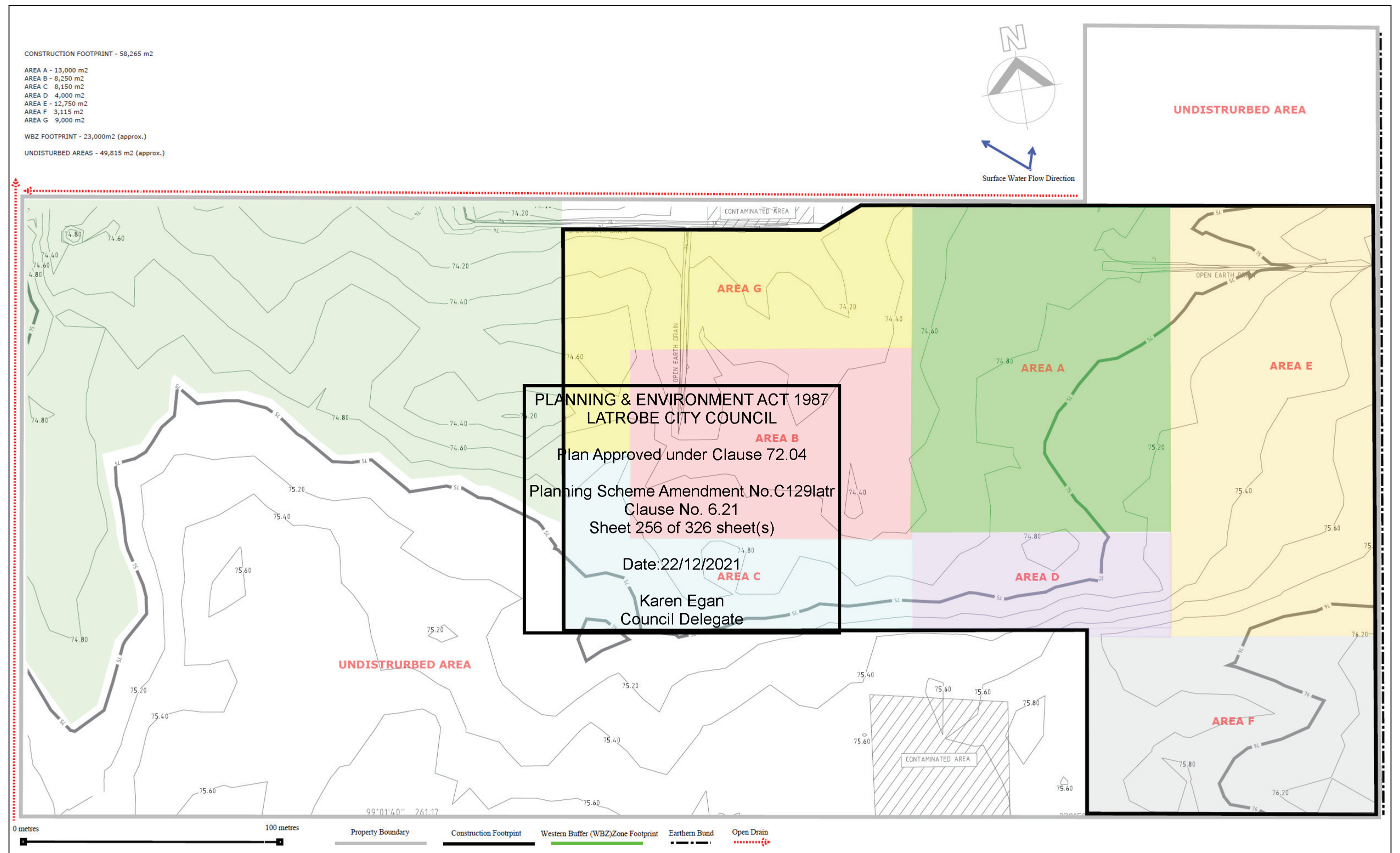


Figure 3 Construction Sequence Work Areas

Table 1 Rainfall Depths & Runoff - Chunxing ULAB Facility

A - Rainfall Depth (mm) for Different Durations							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63	50	20	10	5	2	1
Duration							
12 hours	33	37	50	59	70	85	98
24 hours	41	46	62	74	87	106	123
48 hours	51	56	76	91	107	131	151
3 days	57	63	84	100	118	144	166
5 days	64	71	94	111	129	156	180
7 days	70	76	99	115	132	159	182
* Source BOM online (http://www.bom.gov.au/water/designRainfalls/revised-ifd/?multipoint)							

B - Run-off (m3) Generated from Rainfall Depths of Different Durations (0% infiltration)							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63.2	50	20	10	5	2	1
Duration							
12 hours	1,923	2,144	2,896	3,461	4,061	4,941	5,681
24 hours	2,492	2,889	3,807	4,512	5,663	6,176	7,167
48 hours	2,966	3,285	4,416	5,285	6,234	7,633	8,798
3 days	3,304	3,659	4,894	5,821	6,875	8,390	9,672
5 days	3,741	4,131	5,454	6,467	7,516	9,089	10,488
7 days	4,049	4,446	5,757	6,700	7,691	9,264	10,604

* Catchment Area = 58,625m²

C - Run-off (m3) Generated from Rainfall Depths of Different Durations (10% infiltration)							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63.2	50	20	10	5	2	1
Duration							
12 hours	1,730	1,930	2,606	3,115	3,655	4,447	5,113
24 hours	2,171	2,412	3,246	3,880	4,557	5,558	6,450
48 hours	2,669	2,958	3,975	4,756	5,611	6,869	7,918
3 days	2,973	3,293	4,405	5,244	6,188	7,551	8,705
5 days	3,367	3,718	4,908	5,821	6,765	8,180	9,439
7 days	3,644	4,001	5,181	6,030	6,922	8,338	9,544

* Catchment Area = 58,625m²

C - Run-off (m3) Generated from Rainfall Depths of Different Durations (20% infiltration)							
AEP (1 in X year)	1.58	2	5	10	20	50	100
AEP (%)	63.2	50	20	10	5	2	1
Duration							
12 hours	1,538	1,715	2,317	2,769	3,249	3,953	4,545
24 hours	1,930	2,144	2,885	3,449	4,051	4,941	5,733

48 hours	2,373	2,629	3,533	4,228	4,987	6,106	7,038
3 days	2,643	2,927	3,915	4,661	5,500	6,712	7,738
5 days	2,992	3,305	4,363	5,174	6,013	7,271	8,390
7 days	3,240	3,556	4,605	5,360	6,153	7,411	8,483

* Catchment Area = 58,625m²

D - Run-off (m3) Generated from Average Rainfall Depth Periods				
	Annual	Monthly	Weekly	Daily
Rainfall (m)	0.733	0.061	0.014	0.002
Run-off (m3) - no infiltration	42,708.245	3,559.020	819.736	117.009
Run-off (m3) - 10% infiltration	38,437.421	3,203.118	737.762	105.308
Run-off (m3) - 20 infiltration	34,166.596	2,847.216	655.789	93.607

* Catchment Area = 58,625m²

E - Emergency Storage Volume of the Construction Footprint*			
mAHD Contour	Area (m ²)	Depth (m)	Storage Volume (m ³)
74.4 - 74.6	7,677.0	0.2	1,535.4
74.2 - 74.4	6,378.0	0.2	1,275.6
74.2 - 74.6	14,055.0	-	2,811.0
			+
CSP Storage Vol.			2,250.0
Total Emerg. Stormwater Volume			5,061.0

*Following the Installation of Construction Stormwater Pond Emergency Stormwater Bund

* Note - The height of the CSP ESWB spillway is 74.6 mAHD therefore assumption is area between the 74.2 mAHD and 74.6 mAHD contours will provide emergency storage for stormwater in the event the construction stormwater pond is full.

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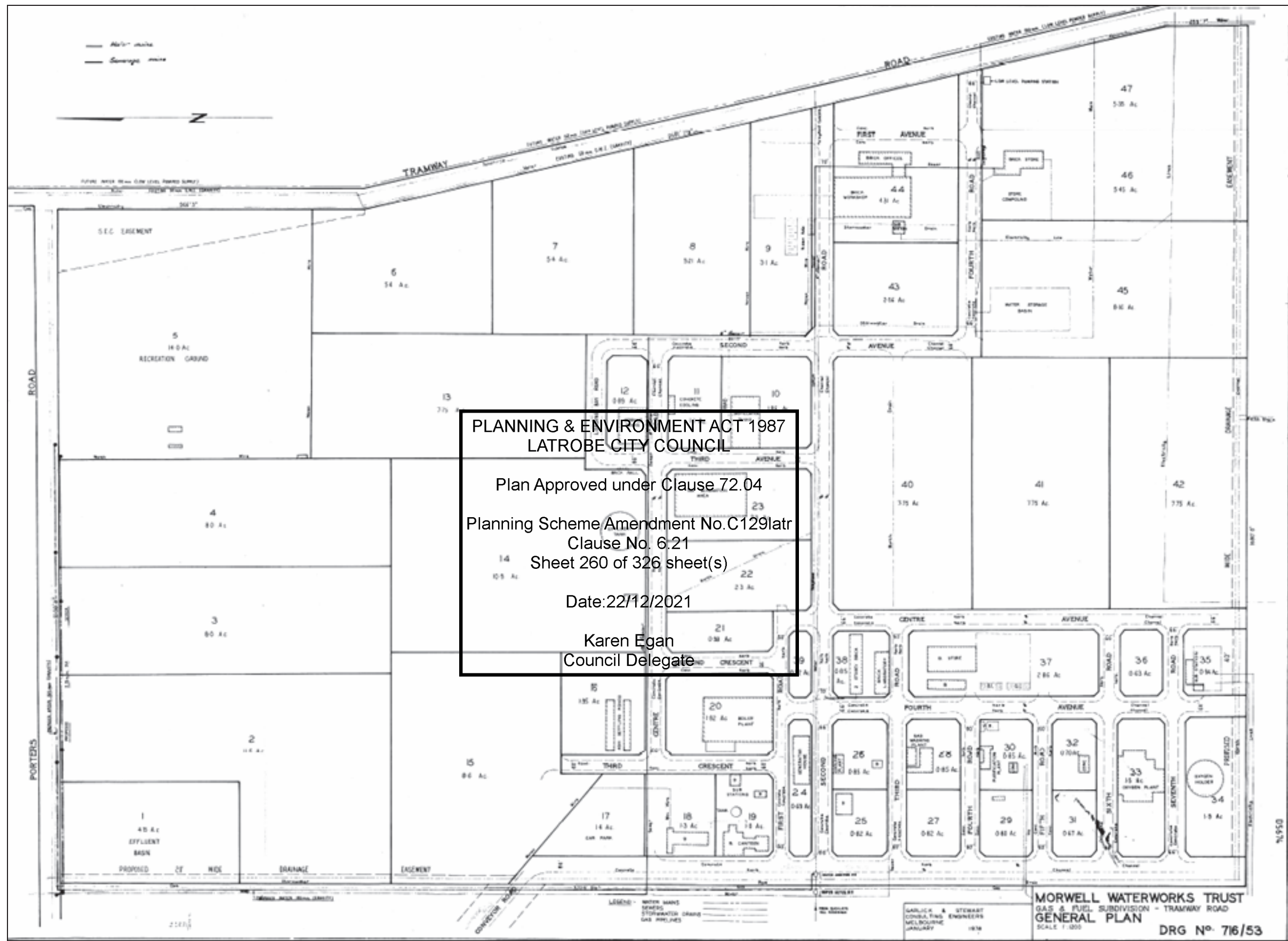


Figure 5 Area General Plan - Water Connections

OFFSITE DISCHARGE TRACKING REGISTER																							
Date / Time / Method									Volume / Discharge Rate							Sampling							
Source	Date Start	Time Start	Date Finish	Time End	Total Time (hours)	Total Time (minutes)	Method of Discharge to sewer	Comment	Total Volume Discharged (litres)	Total Volume Discharged (m3)	Discharge Rate (l/h)	Discharge Rate (m3/h)	Discharge Rate (l/m)	Discharge Rate (m3/m)	Comment	Grab Sample Taken	Grab Sample Time	Temp. (Deg C)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	pH	Sheen	Sampler
CSP	20210901	0900	20210901	1500	6	360	Water Cart	Water Cart full prior to commencing discharge Pump specifications (pump curves) indicate flow rate of Water Cart full prior to commencing discharge	10,000	10	1,667	1.67	27.78	0.0278	NA	Y	1100	18	140	550	7.2	N	EXAMPLE
CSP	20210902	0900	20210902	1700	8	480	Pump		80,000	80	10,000	10.00	166.67	0.1667	NA	Y	1300	19	133	600	7.2	N	EXAMPLE
Concrete Washout Pit IBC	20210905	0900	20210905	1000	1	60	Water Cart		1,000	1	1,000	1.00	16.67	0.0167	NA	Y	0930	18	140	550	9	N	EXAMPLE

Figure 6 Offsite Discharge Tracking Register

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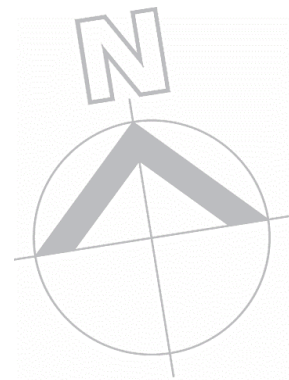
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Attachment A-1: Site Layout - Construction Phase



Surface Water Flow Direction

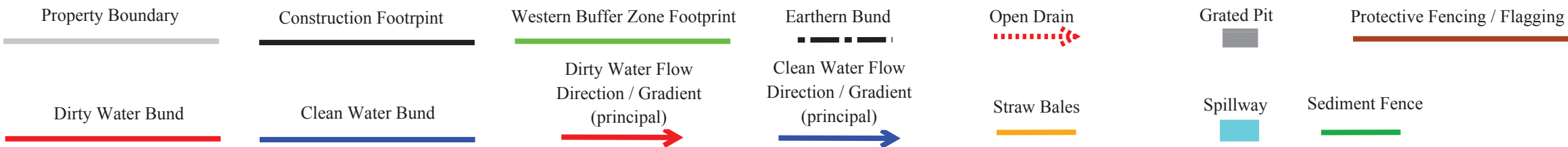
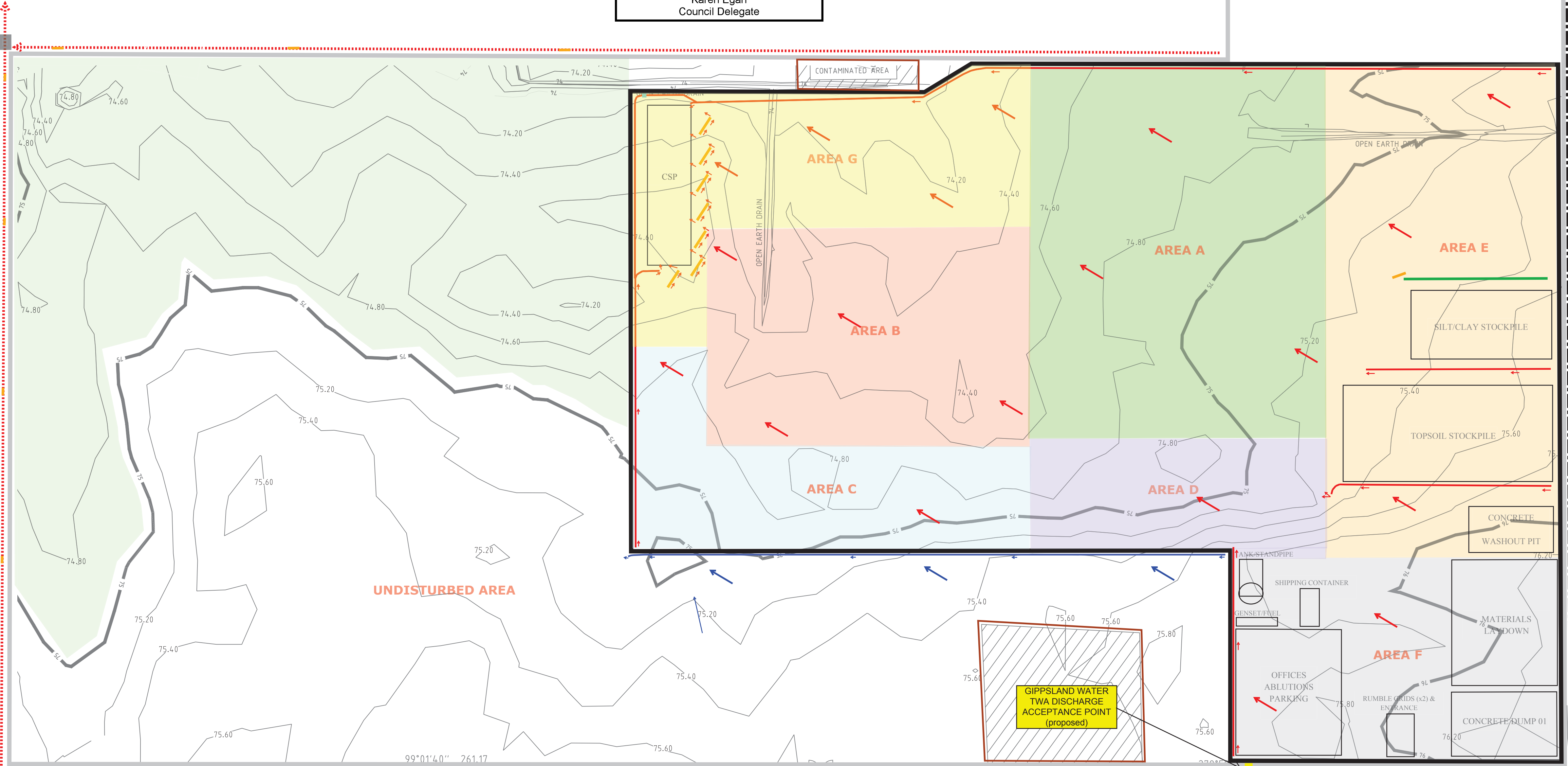
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NOTES:

* Objects not georeferenced

Gippsland Water Trade Waste Application - Construction Phase
Attachment A-1
Site Layout - Construction Phase

Chunxing Used Lead Acid Battery (ULAB) Facility
Crown Allotment 2047, Fourth Road, Hazelwood North, Victoria



15 July 2021

Dr. Lakshman Jayaweera
CEO / Director
Chunxing Corporation Pty Ltd
Suite 104 Level 1 Unit 7
11 Lord St
BOTANY NEW 2019

Dear Dr. Jayaweera,

**Proposed Used Lead Acid Battery recycling facility at No 2047 Fourth Road,
Hazelwood North, Victoria**

I refer to our earlier letter dated 20 January 2020 and your request to re-confirm our capacity to supply you water and take your wastewater (received via e-mail dated 13 July 2021).

Gippsland Water has adequately sized water and sewerage services for this site.

There is an existing 150 mm treated water main that is on the western boundary of the site.

Your proposed treated water demand of 20 m³/day is very achievable using this existing infrastructure.

In the event your onsite water collection system is not capable of meeting your full demand, we are comfortable that this same water main can supply the 735 m³/day or 8.4 L/s if needed.

There is an existing sewer on the Southern boundary of the site and this has sufficient capacity to accommodate sewer discharged from the office, shower, kitchen and laboratory buildings. Furthermore, the existing sewer has sufficient capacity for emergency discharges of up to 80 m³/day of total wastewater subject to meeting our trade waste acceptance criteria.

In our last meeting with Robin Krause, we clarified that any wastewater discharged should be trade waste and domestic wastewater. We remain concerned that the facility may be expecting to discharge storm water directly to our sewerage network in an uncontrolled manner. While we can manage the capacity noted above, uncontrolled discharge of storm water direct to our sewer will not be allowed.

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Council Delegate

For further information or enquiries, please contact me on 0447 100 886 or
nigel.gerreyn@gippswater.com.au.

Yours sincerely



Nigel Gerreyn
Manager Property Services

cc. Robin Krause

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Council Delegate

Annexure O

Environmental Auditor Letter (P.Sinclair Tetra Tech Coffey)

1 October 2021

Our ref: 754-MELEN285057 - L01-Rev1

Chunxing Corporation Pty Ltd
Fourth Road, Hazelwood North, Victoria, 3840

Attention: Dr Lakshman Jayaweera

Dear Dr Jayaweera,

**PLANNING & ENVIRONMENT ACT 1987
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Updated Environmental Auditor letter regarding Baseline Environmental Study and Construction Environmental Management Plan (WA 232330); part of Crown Allotment 2047, Fourth Road, Hazelwood North, 3840, "the Site")

This letter is to confirm that I, Phil Sinclair:

- am an Environmental Auditor appointed pursuant to the Environment Protection Act 1970. My EPA Environmental Auditor number is 75667 and my term of appointment expires on 1 December 2021. The notice of appointment confirming my Environmental Auditor appointment details is provided as Attachment 1.

The EPA Works Approval (232330), Works Condition WA_W1 clause 6 requires provision of:

- a) an investigation of the existing land and groundwater conditions at the site and in the surrounding areas.*
- b) construction environmental management plan (CEMP) for managing contaminated soil and groundwater to meet the requirements in the Environmental management Plan Former Lurgi Gasworks Site Morwell, Victoria, 24 September 2008.*
- c) recommendation for revising the contaminated land EMP, because of the redevelopment of the site.*

In response to these requirements, I confirm that for the part of the former Lurgi gasworks site that is subject to the Works Approval, I (Phil Sinclair of Tetra Tech Coffey)

- issued the report "*Morwell Used Lead Acid Battery Recycling Facility Baseline Environmental Site Assessment*" (Tetra Tech Coffey dated 30 September 2021, reference 754-MELEN285057-R01-Rev1); and
- had the soil and groundwater contamination components of the *Construction Environmental Management Plan* (CEMP), prepared under my advice and direction that, in my opinion, meets the requirements of the *Environment Management Plan Former Lurgi Gasworks Site Morwell Victoria*, dated 24 September 2008 (also issued by me) for the ULAB part of the former Lurgi gasworks site¹.

¹ Note that at the time of issue of this letter related to the soil and groundwater contamination components of the CEMP, the final version of the CEMP was being compiled. I have reviewed the final draft of the CEMP and my review found there to be no matters needing to be addressed that would materially affect the suitability of the CEMP for its intended purpose; i.e. to protect human health and the environment from potential impacts due to soil and groundwater contamination.

The Baseline Environmental Site Assessment report and the soil and groundwater contamination components of the CEMP have been prepared and will be issued with my agreement in order to comply with condition WA_W1_6 a) and b) of Works Approval 232330 dated 31 August 2020.

The Baseline ESA report includes recommendations relating to WA_W1 clause 6 c) i.e.;

- *With respect to WA_W1 clause 6 c) it is recommended that:*
 - *the environmental improvement plan (EIP) required by WA Reporting Condition WA_R3 for the ULAB component of the former Lurgi gasworks supercedes the EMP (2008) at the time of acceptance of the EIP by EPA; and*
 - *the EMP dated 24 September 2008, remain in force for the remainder of the former Lurgi gasworks site.*

I have provided the Baseline Environmental Site Assessment report to EPA concurrently with this letter, on the understanding that the CEMP will be provided to EPA later on 1 October 2021.

The CEMP is provided in Attachment 1.

I note there are components of the CEMP which address matters other than soil and groundwater contamination. The Works Approval condition WA_W1_6 does not require me to issue nor have I issued those components of the CEMP.

Please contact me (phil.sinclair@coffey.com, 0403 24 24 75) if you have any questions about this letter or the attachments.



Phil Sinclair
Principal Scientist
Environmental Auditor appointed pursuant to the Environment Protection Act 1970

cc Ms Wendy Tao, Senior Project Manager, Approvals, Development Assessments, EPA Victoria
(via email: wendy.tao@epa.vic.gov.au)

Attachments

1. EPA Notice of Appointment as Environmental Auditor

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Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 267 of 326 sheet(s)

Date:22/12/2021

Karen Egan
Council Delegate

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Council Delegate

Attachment 1

NOTICE OF APPOINTMENT

The Environment Protection Authority HEREBY GIVES NOTICE that on 30/08/2019 pursuant to Section 53S(1) of the *Environment Protection Act 1970* ("the Act"), it extended the appointment of Phillip Leigh Sinclair, from 02/06/2020 to 01/12/2021, for the purposes of environmental auditing in the following category:

CONTAMINATED LAND

The appointment is subject to compliance with the Act and any guidance issued by the Authority for the purposes of the Act including the most recent edition of *Environmental Auditor Guidelines for Appointment* Publication 865.

The following special conditions apply:

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Maria Koukoulas
Unit Manager

DELEGATE OF THE ENVIRONMENT PROTECTION AUTHORITY

DATE OF ISSUE: 30/08/2019

Date: 22/12/2021

Karen Egan
Council Delegate

Annexure P

CivilTest - Geotechnical & Soil Testing Report

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Date:22/12/2021

Karen Egan
Council Delegate

REPORT No. : 2210049-1

CLIENT : Chunxing Corporation Pty Ltd
S104 Level 1 Unit 7
11 Lord Street
BOTANY NSW 2019

PROJECT : Fourth Road
HAZELWOOD

PROPOSAL : **PLANNING & ENVIRONMENT ACT 1987**
It is proposed to develop this site with a battery recycling plant including heavy machinery and plant equipment.

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1. COMMISSION:

Planning Scheme Amendment No.C129latr

Carry out relevant in-situ soil tests, log test bores and recommend suitable bearing pressures and founding depths for the proposed structure.

All testing and observations carried out to follow the relevant provisions of AS 1726:2017 (Geotechnical Site Investigations).

Date: 22/12/2021
Karen Egan
Council Delegate

2. SITE GEOLOGY:

Geological maps show that this site is in an area of Quaternary Alluvium - SANDS, SILTS and CLAYS. The natural soils encountered during the site investigation confirmed this.

3. SITE TOPOGRAPHY:

The site is relatively level and the ground cover comprises of natural grasses.

4. INVESTIGATION:

Fourteen boreholes were drilled by mechanical auger at the approximate locations shown on the attached plan.

5. FINDINGS – Field and laboratory work:

The boreholes revealed that the natural soil profile predominantly consisted of upper SILT dominated layer underlain by silty CLAY.

Laboratory quick undrained triaxial test conducted on the undisturbed sample of silty CLAY returned the following undrained shear strength parameters:

- $C_u = 136\text{kPa}$
- $\phi_u = 22$ degrees

Shrink-swell testing conducted on the sample of silty CLAY taken between 2.0 and 2.2 metres depth returned an I_{ss} value of 1.4%.

6. SITE CLASSIFICATION:

Based on the site investigation and the geology of the area, this site would be classified as CLASS P with respect to Australian Standard 2870-2011 (Residential Slabs and Footings) due to the clay content. However, the classification is technically not correct for the proposed type of structure, therefore is given as a guide only. It is anticipated that the seasonal surface movement at this site will not exceed 40mm.

It must be emphasized that the heave mentioned and recommendations referred to in this report are based solely on the observed soil profile at the time of the investigation for this report without taking into account the effects of any abnormal moisture conditions that may develop after construction as defined in Clause 1.3.3 (A) (B) (C) (D) (E).

Date: 22/12/2021

The recommendations given in this report have been based largely on the soil conditions encountered at the time of the field investigation. Under inclement weather or prolonged wet weather conditions, the soil conditions noted and reported in this report could vary. It is advisable to undertake construction during and following good weather conditions - i.e., dry weather conditions - not during or following inclement weather or prolonged wet weather conditions.

7. RECOMMENDATIONS:

7.1 For Load Bearing Pad and/or Strip Footing Foundations:

Taking into consideration the area geology, the information obtained from the bore holes and the proposed superstructure, it is recommended that a founding depth of not less than 1000mm below the finished surface level surrounding the structure should be adopted. However, the depth must be at least 100mm into any of the naturally occurring silty CLAY soils as described in the Logs of Boring attached.

This is in order to be below the zone of significant seasonal moisture movement which may otherwise result in damage to the structure. Based on the site investigation and any measured shear strength values of the soils found in the bores, an allowable bearing pressure of at least 150kPa will exist beneath the footings at the above mentioned depth.

However, allowable bearing pressures of 200kPa and 250kPa at depths of 300mm and 600mm respectively into any of the naturally occurring silty CLAY soils can be assumed.

As a guide, with reference to the information obtained from the bores, the minimum founding depth mentioned above will be up to 1600mm in relationship to the existing surface where this surface is to be the finished surface level surrounding the structure.

In accordance with Appendix D of AS2870-2011, the soil profile and site conditions should be inspected at footing excavation stage by CIVILTEST PTY LTD to confirm the soil profile and site classification.

7.2 Floor Paving Slab Foundations:

7.2.1 Paving Slabs: Plan Approved under Clause 72.04

The floor slab and any stiffening beams may be placed on or in the existing site surface soil. Slopes providing the road 120m along vegetation and any soil containing deleterious Clause No 6.21 have been removed and any soft areas have been well compacted Sheet 27 of 326 sheets in condition with a small vibratory roller or vibratory plate compactor. This surface material will provide a subgrade for the slab Date 23/12/2021. The field observations and tests can be assumed to have a modulus of subgrade reaction of 30kPa/mm.

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Council Delegate

If the walls of the proposed structures are supported on piers or piles, it is likely that there will be some differential movement between walls and internal paving slabs. It is therefore recommended that allowance should be made for this movement in the design, particularly where fixtures are fitted to both floors and walls (i.e. amenities buildings).

7.2.2 Levelling Fill:

Where levelling fill is used the floor slab and any stiffening beams required may be placed on or in levelling fill provided that not more than 400mm of site derived clayey or 800mm of site derived sandy or imported granular fill is used (excluding existing fill), provided that the fill is placed in 150mm thick layers and densely compacted in a moist condition with a small vibratory roller or vibratory plate compactor. After allowing for the likely wetting up under the slab and the condition of the fill after compaction, this surface can be assumed to have a modulus of subgrade reaction of 40kPa/mm for SAND fill and 30kPa/mm for CLAY fill.

7.3 Piers:

If piers are used they should be founded not less than 100mm into naturally occurring silty CLAY as described in the logs of boring, which from the site investigation can be assumed to have an allowable bearing capacity of 150kPa at this depth. At a depth of 500mm into naturally occurring silty CLAY, a bearing capacity of 250kPa can be assumed.

A maximum allowable skin friction of 35kPa will exist between the piers and the naturally occurring silty CLAY except for the soil within 1500mm of the surface and FILL soils, where no skin friction should be assumed.

In the design of bored piers or driven piles, consideration should be given to the possibility of adverse lateral loading on the piers/piles induced by foundation movements as a result of permanent moisture changes in the foundation material after construction or by variable moisture changes in the foundation material due to seasonal influences. The above is of particular importance at the edge of fill batters and adjacent to service trenches. Changes in moisture contents of the foundation material are not equivalent at the edges of the proposed building. If piers/piles are used to protect the building from the influence of existing trees.

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8. FILLING:

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Where filling is to be placed on the project, whether under pavements, general filling and/or under buildings, the following should be carried out.

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The surface should be stripped of grass and root matter to a depth of not less than 150mm. This surface should be ripped and moisture conditioned to between 90% and 120% of optimum moisture content and compacted to not less than 95% of AS1289 5.1.1 (Standard Compaction).

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Council Delegate

Filling should then be placed in compacted layers not exceeding 200mm thickness and compacted to not less than 95% of AS1289 5.1.1 (Standard Compaction). Under proposed pavement areas, the top 400mm should be compacted to 98% of AS1289 5.1.1 Standard Compaction.

All filling should be placed and compacted at a moisture content between 90% and 110% of optimum moisture content.

Fill material should comply with the following:

8.1 Fill Material Over CLAYS

Maximum Plasticity Index	45
Minimum Plasticity Index	20
Maximum Particle Size	20mm
Maximum Passing 4.75mm	90%
0.075mm	80%

Moderately reactive silty CLAYS or sandy CLAYS are suitable. Low plasticity or non plastic soils are not suitable as fill material over CLAYS unless the depth of filling is less than 400mm.

8.2 Fill Material Over Clayey SILTS, Silty SANDS or SANDS (or where filling over CLAY does not exceed a depth of 400mm)

Maximum Plasticity Index	15
Minimum Plasticity Index	NP
Maximum Particle Size	20mm
Maximum Passing 4.75mm	85%
0.075mm	25%

All fill material should be tested for compaction compliance with the above at a rate of one test for every 500m³ or three tests per site visit whichever is the greater. Not more than two layers of fill should be placed without first testing for compliance with compaction.

The quality of imported fill material should be checked visually daily and by testing every 10,000m³ or when there is an obvious visual change in the material coming on to site.

Site derived fill materials should be checked visually daily and checked by laboratory testing every 20,000m³.

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9. CONDITIONS OF THE RECOMMENDATIONS:

- 9.1 The recommendations made in this report may need to be reviewed should any site works disturb any soil 300mm below the founding depth of the structure.
- 9.2 Since the soil horizons and layers can vary in depth and in thickness over the site, the depths and bearing pressures given above are given as a guide only. If the footings are founded at the minimum depth, as stated and are in the soil as described in the logs of boring for this site, then the requirements of this report have been met.
- 9.3 Where any filling is to be placed (other than under the floor slab, refer to 7.2 above) the footing founding depths recommended in this report will need to be increased accordingly by the depth of that fill, unless:

9.3.1 The base of the footing is founded in the founding soil recommended in 7.1.

- 9.4 It is recommended that where any footings are to be constructed next to existing underground services (sewers etc.), then these footings or edge beams should be founded at a depth above the invert of the service at an angle of repose of 45° for CLAYS and 30° for SANDS, unless special consideration has been given to the founding material.

- 9.5 The descriptions of the soils found in the boreholes closely follow those outlined in AS 1726:2017 (Geotechnical Site Investigations). Colour descriptions can vary with soil moisture content. It should be noted therefore, colour and shade descriptions mentioned in this report are made when the soil is in a moist condition.

In accordance with Appendix D of AS2870-2011, the soil profile and site conditions should be inspected at footing excavation stage by CIVILTEST PTY LTD to confirm the soil profile and site classification.

- 9.6 This report has been compiled and recommendations made based on information supplied in the brief to Civiltest Pty Ltd and from the field investigation and observations made including the extent of, if any, site filling. Every care has been taken within the terms of the brief to ensure that the field investigation is representative of the site. Therefore, if it is found that for any reason information received by Civiltest Pty Ltd is incorrect or conditions on site vary from those described in this report then the comments and recommendations made in this report may need to be amended.

- 9.7 The recommendations given in this report have been based largely on the soil conditions encountered at the time of the field investigation. Under inclement weather or prolonged wet weather conditions, the soil conditions noted and reported in this report could vary. It is advisable to undertake construction during and following good weather conditions - i.e., dry weather conditions - not during or following inclement weather or prolonged wet weather conditions.
- 9.8 To ensure acceptable long term performance of the footing systems recommended in this report, care should be taken that the fundamental building, landscaping and long term maintenance procedures are adhered to as set out in the CSIRO Division of Building, Construction and Engineering: Building Technology File 18-2011, "Foundation Maintenance and Footing Performance: A homeowners guide" which is available on the CSIRO website <http://www.publish.csiro.au/home.htm>. This information sheet forms an integral part of this report.
- 9.9 The information and any recommendations given in this report are limited to the client named herein.
- 9.10 Whilst CIVILTEST PTY LTD has accepted the commission for the work reported herein, the ownership of the report and any liabilities associated with it, remain with CIVILTEST PTY LTD until all relevant accounts have been paid.
- 9.11 Finally, no responsibility will be taken for this report if it is altered in any way or not reproduced in full.

This report consists of eight pages including one site plan. Appendix A (Engineering Logs) and Appendix B (Laboratory Test Results) are attached.



Steve Hennig
CIVILTEST PTY LTD

REF: SH/PO/mg

18 March 2021

CIV. DOC. 004-020 Reissued 29-06-99

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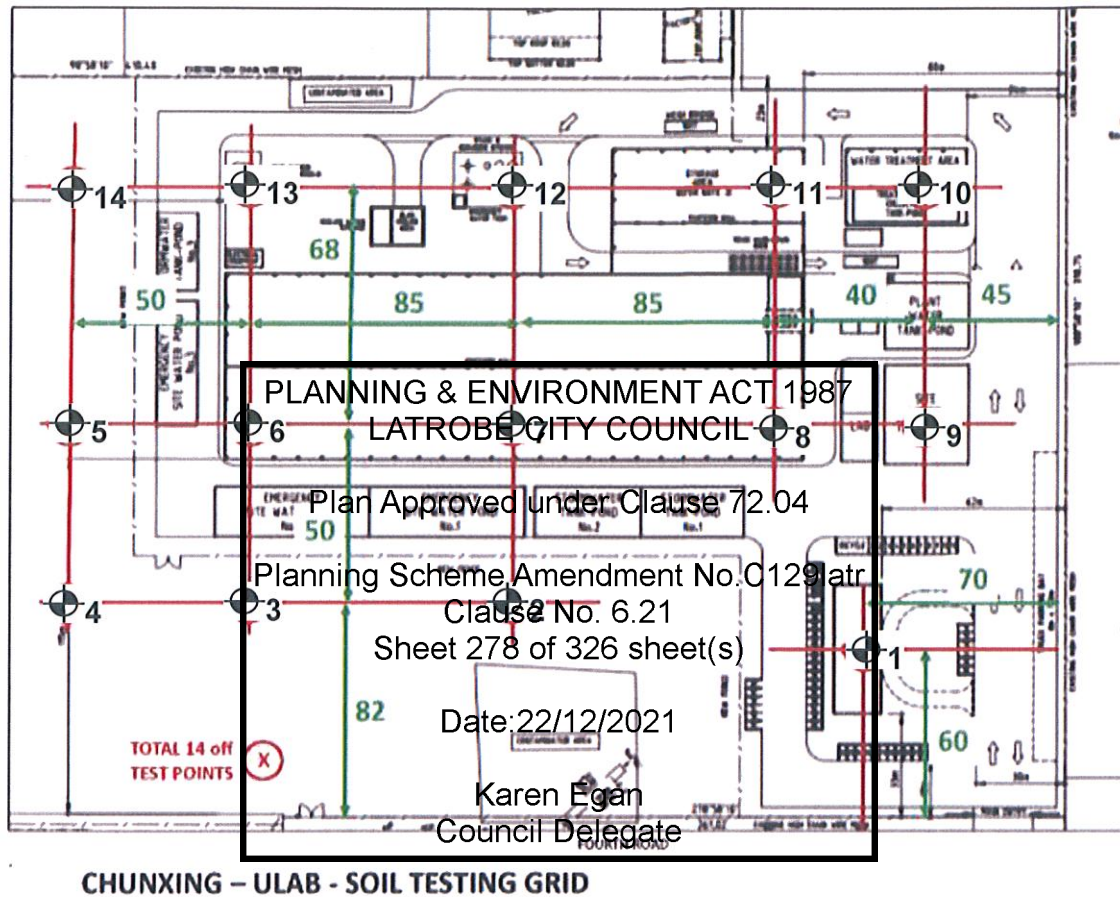
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Council Delegate

LOCATION OF TEST SITES **FOURTH ROAD HAZELWOOD**



⊙ Denotes Test Holes

NOT TO SCALE

THIS SKETCH IS NOT INTENDED TO BE AN ACCURATE DEPICTION OF THE NUMBER, SIZE OR LOCATION OF TREES AND/OR SHRUBS

APPENDIX A

ENGINEERING LOGS

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ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 1
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming pale grey trace gravel at 0.1m Becoming pale grey white at 0.6m			0.1	2			
				0.2	8			
				0.3	12			
				0.4	13			
				0.5	14			
				0.6	14			
				0.7	15			
				0.8	15			
1								
1.20	CL CLAY, silty Orange grey; Moist; Very stiff							
1.80	CL CLAY, silty, trace sand Orange grey; Moist; Very stiff							
2	Sand is sub-rounded, medium grained							
2.50	SC SAND, clayey, with silt Orange brown grey; Dry to moist; Medium dense Sand is sub-rounded, medium grained							
3	3.00 END OF BORE (19-Feb-2021)							
4								

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ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 2
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING						
				DEPTH (m)	RESULTS					
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)	
0	ML SILT Brown; Dry to moist; Medium dense Contains cobble from 0.1m to 0.3m Becoming pale brown at 0.6m			0.1	5					
				0.2	6					
				0.3	7					
				0.4	7					
				0.5	8					
				0.6	8					
				0.7	9					
				0.8	10					
				0.9	12					
1										
1.20	CL CLAY, silty Orange grey; Moist; Very stiff									
1.80	CL CLAY, silty Grey brown; Moist; Very stiff Becoming yellow grey at 2.0m									
2										
	Becoming pale grey orange at 2.5m									
3	END OF BORE (19-Feb-2021)			3.0						
4										

ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 3
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m							
1								
1.20	CL CLAY, silty Brown grey; Moist; Very stiff Becoming orange pale grey at 1.5m							
2								
2.00	END OF BORE (19-Feb-2021)							
3								
4								

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1.8

3.2

CIVIL TEST PTY. LTD.

DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m			0.1	4			
				0.2	5			
				0.3	5			
				0.4	5			
				0.5	6			
				0.6	6			
				0.7	5			
				0.8	6			
				0.9	7			
1				1.0	7			
1.20	CL CLAY, silty Brown grey; Moist; Very stiff Becoming orange pale grey at 1.5m			1.2	7			
				1.3	7			
				1.4	7			
				1.5	7			
				1.6	7			
				1.7	7			
				1.8	7			3.0
2	2.00 END OF BORE (19-Feb-2021)			1.9	7			
				2.0	7			
				2.1	7			
				2.2	7			
				2.3	7			
				2.4	7			
				2.5	7			
				2.6	7			
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				24.3	7			
				24.4	7			
				24.5	7			
				24.6	7			
				24.7	7			
				24.8	7			
				24.9	7			
				25.0	7			
				25.1	7			
				25.2	7			
				25.3	7			
				25.4	7			
				25.5	7			
				25.6	7			
				25.7	7			
				25.8	7			
				25.9	7			

ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 5
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m							
1								
1.50	CL CLAY, silty Brown grey; Moist; Very stiff Becoming orange pale grey at 1.8m							
2 2.00	END OF BORE (19-Feb-2021)							
3								
4								

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BOREHOLE NO. 6
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m								
1									
1.50	CL CLAY, silty Orange grey; Moist; Very stiff								
2	Becoming orange pale grey at 2.0m								
3 3.00	CL CLAY, silty, with sand Yellow grey; Moist to wet; Stiff Sand is sub-rounded, fine grained								
4	Continued on next page								

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DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING						
				DEPTH (m)	RESULTS					
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)	
4										
4.50	CH CLAY, silty Orange pale grey; Moist; Stiff to very stiff									
5										
6	6.00	END OF BORE (01-Mar-2021)								

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FIELD TECHNICIAN: SH

BOREHOLE NO. 7
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m								
1									
1.10	CL CLAY, silty Brown grey; Moist; Very stiff								
2									
3									
4									

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Becoming moist to wet firm to stiff at 2.5m

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ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 7
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
4 4.00	ML SILT, clayey, with sand Grey orange; Wet; Medium dense Sand is sub-rounded, medium grained	PWL@4.5m ▼						
5 5.00	CH CLAY, silty Orange grey; Moist; Very stiff							3.1
6 6.00	END OF BORE (25-Feb-2021)							
7								
8								

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ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 8
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m							
1								
1.50	CL CLAY, silty Brown grey; Moist; Stiff to very stiff							
2								
3								
	Becoming moist to wet firm to stiff at 3.5m							
4	Continued on next page							

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FIELD TECHNICIAN: SH

BOREHOLE NO. 8
DATE: 19-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
4									
4.50	ML SILT, clayey, with sand Grey orange; Moist to wet; Medium dense Sand is sub-rounded, medium grained								
5 5.00	CH CLAY, silty Orange grey; Moist; Very stiff								
6 6.00	END OF BORE (25-Feb-2021)								
7									
8									

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ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 9
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m								
1									
1.50	CL CLAY, silty Orange grey; Moist; Very stiff								
2									
3									
4									

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2.0

3.2

3.0

3.5

Continued on next page

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FIELD TECHNICIAN: SH

BOREHOLE NO. 9
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
4									
5	5.00 CL CLAY, sandy, with silt Yellow grey; Moist to wet; Firm Sand is sub-rounded, fine grained								0.5
5.50	CH CLAY, silty Pale grey orange; Moist; Stiff								
6	6.00 END OF BORE (01-Mar-2021)								
7									
8									

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BOREHOLE NO. 10
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m							
1								
1.50	CL CLAY, silty Pale grey orange; Moist; Very stiff							
2								
3								
4								

PLANNING & ENVIRONMENT ACT 1987
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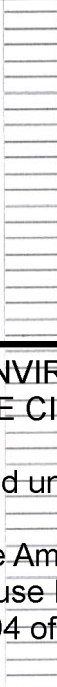
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DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
4 4.00	CL CLAY, silty, trace sand Yellow grey; Moist to wet; Firm Sand is sub-rounded, fine grained								
5									
6 6.00	END OF BORE (25-Feb-2021)								
7									
8									

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ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 11
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m							
1								
1.50	CL CLAY, silty Pale grey orange; Moist; Very stiff							
2								
3								
4								

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REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 12
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m								
1	1.00 CL CLAY, silty Grey brown; Dry to moist; Very stiff Becoming orange grey at 1.5m								
2									
3									
3.50	CL CLAY, silty, trace sand Yellow grey; Moist to wet; Firm Sand is sub-rounded, fine grained								
4	Continued on next page								

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BOREHOLE NO. 12
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
4				4.0				0.9
5	5.00 CH CLAY, silty Orange pale grey; Moist; Very stiff			5.5				4.8
6	6.00 END OF BORE (25-Feb-2021)							
7	PLANNING & ENVIRONMENT ACT 1987 LATROBE CITY COUNCIL Plan Approved under Clause 72.04 Planning Scheme Amendment No.C129latr Clause No. 6.21 Sheet 298 of 326 sheet(s) Date:22/12/2021 Karen Egan Council Delegate							
8								

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BOREHOLE NO. 13
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	ML SILT Brown; Dry to moist; Medium dense Becoming grey at 0.3m								
1	1.00 CL CLAY, silty Grey brown; Dry to moist; Very stiff Becoming orange grey at 1.5m								
2									
2.50	ML SILT, clayey, with sand Grey; Moist to wet; Medium dense Sand is sub-angular, medium grained								
3									
4									

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BOREHOLE NO. 13
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DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	RESULTS			
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
4								
4.50	CH CLAY, silty Orange grey; Moist; Very stiff							
5								2.8
6	6.00 END OF BORE (25-Feb-2021)							
7								
8								

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REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 14
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	FILL , SILT, trace gravel Brown; Dry; Medium dense		↓ ↓						
				0.1	5				
				0.2	7				
				0.3	9				
				0.4	9				
				0.5	5				
0.60	ML SILT Grey; Dry to moist; Medium dense			0.6	5				
				0.7	5				
				0.8	5				
				0.9	6				
1	1.00 CL CLAY, silty Grey brown; Dry to moist; Very stiff								
	Becoming orange grey at 1.5m								
							</		

ENGINEERING LOG

REPORT NO. 2210049-1
FIELD TECHNICIAN: SH

BOREHOLE NO. 14
DATE: 25-FEB-2021



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	TESTING				
				DEPTH (m)	DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%) PP (kg/cm²)
4								
5	5.00 CH CLAY, silty Orange grey; Moist; Very stiff							2.8
5.50	ML SILT, clayey, with sand Grey; Moist to wet; Medium dense Sand is sub-rounded, medium grained							
6	6.00 END OF BORE (25-Feb-2021)			6.0				0.5
7								
8								

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APPENDIX B

LABORATORY TEST RESULTS

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REPORT OF TRIAXIAL COMPRESSION TEST AS 1289.6.4.1

Page 1 of 1

REPORT No: 2210049-2		REPORT DATE: 12/03/21	
PROJECT: FOURTH ROAD, HAZELWOOD			
CLIENT: CHUNXING CORPORATION PTY LTD			
ADDRESS: S104 LEVEL 1 UNIT 7, 11 LORD STREET, BOTANY NSW 2019			
SAMPLE DETAILS		FAILURE PATTERN:	
Sample Date: 24/02/21		Bulging & shear	
Sample Number: 212-8238B			
Location: BH 8 / 2.0-2.2m			
Description: Silty CLAY			
Sampling Method AS 1289.1.3.1 (3.1.3.2) Thin-walled sampler			
TEST DETAILS		PLANNING & ENVIRONMENT ACT 1987	
Date of Test: 10/03/21		LATROBE CITY COUNCIL	
Diameter: 63.1 mm		Plan Approved under Clause 72.04	
Length: 160 mm		Planning Scheme Amendment No. C129latr	
Moisture Content: 22.7%		Clause No. 6.21	
Dry Density: 1.66 t/m ³		Sheet 304 of 326 sheet(s)	
Rate of Strain: 0.75 mm/min		Date: 22/12/2021	
Confining Pressure (kPa):		Karen Egan Council Delegate	
	50	100	160
Maximum Principal Stress (kPa):	493.5	668.9	741.9
Axial Strain (%)	4.5	8.4	13.7
COHESION: 136 kPa			
ANGLE OF SHEARING RESISTANCE: 22 °			
REMARKS:			

Moisture content determined by AS 1289 2.1.1



WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025

CIVILTEST PTY LTD

☒ Mitcham Laboratory - Accreditation Number 790
7/38 Thornton Crescent Mitcham Vic. 3133

[Signature]

P OAI
APPROVED SIGNATORY

CIV5.10.01.006.008
Issue #2 05/07/2013

Material Test Report

Report Number: 2210049-3
Issue Number: 1
Date Issued: 16/03/2021
Client: Chunxing Corporation Pty Ltd
 S104 Level 1 Unit 7, 11 Lord Street, BOTANY NSW 2019
Contact: Florence Chen
Project Number: 2210049
Project Name: Fourth Road HAZELWOOD
Project Location: Fourth Road HAZELWOOD
Work Request: 7303
Date Sampled: 09/03/2021 10:00
Dates Tested: 09/03/2021 - 09/03/2021
Sampling Method: AS 1289.1.3.1 - Undisturbed Samples
Location: Fourth Road HAZELWOOD



Civiltest Pty Ltd
 Mornington Laboratory
 10 Latham Street Mornington Vic 3931
 Phone: (03) 5975 6644
 Fax: (03) 5975 9589
 Email: scott.walsh@civiltest.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Scott Walsh
 Lab Manager
 NATA Accredited Laboratory Number: 1407

Shrink Swell Index AS 1289 7.1.1 & 2.1.1					
Sample Number	211-7303A				
Date Sampled	09/03/2021				
Date Tested	09/03/2021				
Material Source	In situ				
Sample Location	BH6 (1.8m - 2.0m Below)				
Inert Material Estimate (%)	5				
Pocket Penetrometer before (kPa)	**				
Pocket Penetrometer after (kPa)	**				
Shrinkage Moisture Content (%)	18.6				
Shrinkage (%)	1.6				
Swell Moisture Content Before (%)	21.1				
Swell Moisture Content After (%)	28.8				
Swell (%)	1.7				
Shrink Swell Index Iss (%)	1.4				
Visual Description	Clay Silty Grey Orange				
Cracking	MC				
Crumbling	No				
Remarks	**				

Shrink Swell Index (Iss) reported as the percentage vertical strain per pF change in suction.

Cracking Terminology: UC Uncracked, SC Slightly Cracked, MC Moderately Cracked, HC Highly Cracked, FR Fragmented.

NATA Accreditation does not cover the performance of pocket penetrometer readings.

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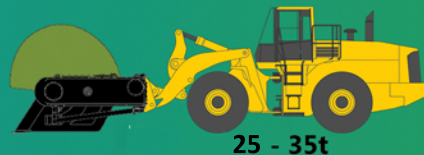
Date:22/12/2021

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Council Delegate

Annexure Q

WL280 Flip Screen Datasheet

WL280 Flipscreen



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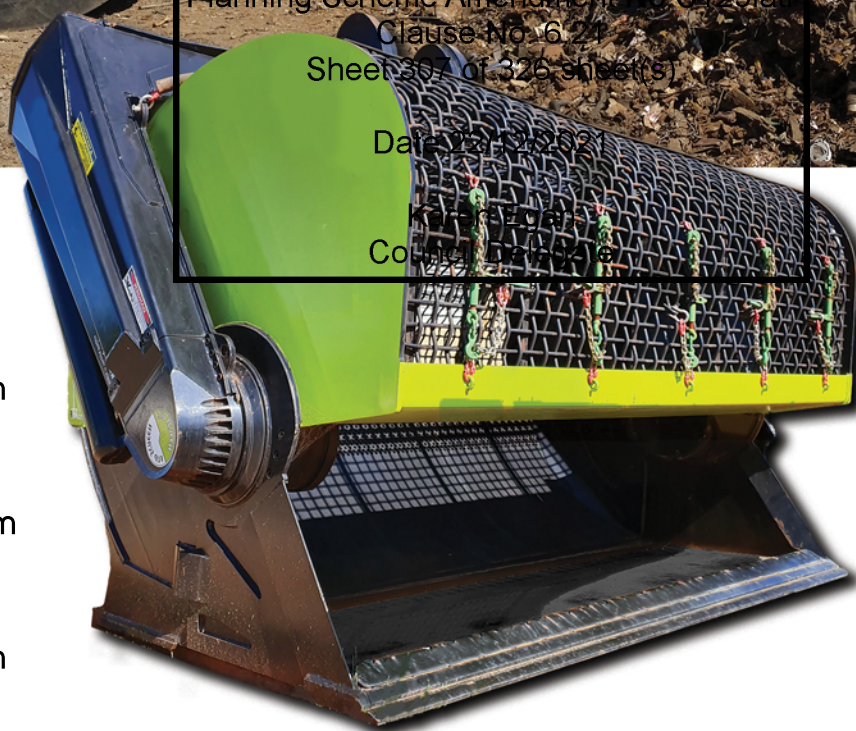
Date 22/09/2021

Kate Zeger
Council Director

HEIGHT:
90"/228cm

WIDTH:
143"/362cm

LENGTH:
91"/232cm



**High Tensile
Steel**

Direct Drive



2.8 m³

8.4 m³

4400 Kg

6 - 300 mm

10.2 m²

3.66 yd³

11 yd³

9700 lbs

1/4" - 12"

110 ft²

Scoop Size

Total Volume

Weight

Mesh Aperture

Mesh size

Annexure R

Engineers Endorsement - Excavation Depths

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Council Delegate

26 November 2021

CEO/ Director,
Chunxing Corporation Pty Ltd, Australia
Level 1, 11 Lord St,
Botany, NSW 2018

Job Number: 6626

enstruct group Pty Ltd

ABN 32 094 570 671
Tel: +61 2 8904 1444
www.enstruct.com.au
Level 4, 2 Glen Street,
Milsons Point,
NSW, 2061,
Australia

For the attention of: - Dr Lakshman Jayaweera

Dear Lakshman,

***Battery Recycling Facility
Endorsement of Excavations***

The proposed new Battery Recycling Facility at Fourth Road Hazelwood North includes the cut and fill across the site to provide a level platform for the construction of the new facility. The aim of the cut and fill is to ensure all construction works remain above the existing groundwater table.

As part of the works, enstruct has been engaged to review the drawings and excavation calculations provided and as I am an appropriately qualified and competent person in this area and as such can endorse the calculations are correct.

enstruct has reviewed the listed documents and have checked that no excavation will be below 2.0 metres below existing ground level and will not reach the Groundwater Contours as shown on Figure 6 - Groundwater Gradient Plan Rev A.

The relevant drawings and calculations are listed below:

DRAWING NUMBER	Revision	Drawing Title
PD2019-0084-009	15	PLANT AREA – EQUIPMENT LAYOUT
PD2019-0084-001_Sht1	17	SITE PLAN
754-MELEN285057	A	FIGURE 6 - GROUNDWATER GRADIENT PLAN
20542 - S1	C	PLANS
20542 - S5	C	DETAILS
20542 - S6	C	DETAILS
20542 - S7	C	DETAILS
Chunxing - Fourth Road - Cut & Fill Quantities (Excavation Depth) – Excel spreadsheet		

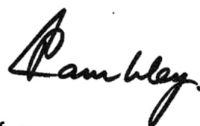
Full Name of Designer:
Qualifications:

Phillip Lambley
BE Civil, CPeng (459495), NER, RPEQ, APEC Engineer IntPE(Aus),
VBA (EC 61812)

Address of Designer:
Business Telephone No:
Email:
Name of Employer:

Level 4, 2 Glen St, Milsons Point
02 8904 1444
phillip.lambley@enstruct.com.au
enstruct Pty Ltd

Yours Sincerely,



for
enstruct group Pty Ltd

Philip Lambley
Director

**PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL**

Plan Approved under Clause 72.04

**Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 309 of 326 sheet(s)**

Date:22/12/2021

**Karen Egan
Council Delegate**

FOOTING SCHEDULE					
MARK	LENGTH / DIAMETER	WIDTH	DEPTH	DESIGN BEARING	REINFORCEMENT
P-1	1700mm	1700mm	500mm	200 kPa	NB @ 300mm CRS C/W
P-2	2250mm	2250mm	500mm	200 kPa	NB @ 250mm CRS C/W
P-3	1200mm	1200mm	500mm	200 kPa	NB @ 375mm CRS C/W
P-4	700mm	700mm	500mm	200 kPa	SLAB MESH BOTTOM
				TOP OF FOOTING R.L.	
				73.80	

CONCRETE STRENGTH NOTES: LOW SHRINK CONCRETE - 500 MICROSTRAIN TO BE APPROVED BY CLIENT	
CONSTRUCTION ITEM	F'C MIN.
BLINDING	15 MPa
FOUNDATIONS	32 MPa
SLAB	32 MPa

PLANT EQUIPMENT FOUNDATIONS
ALL PADS AND STEP DOWNS FOR PLANT EQUIPMENT BY OTHERS.

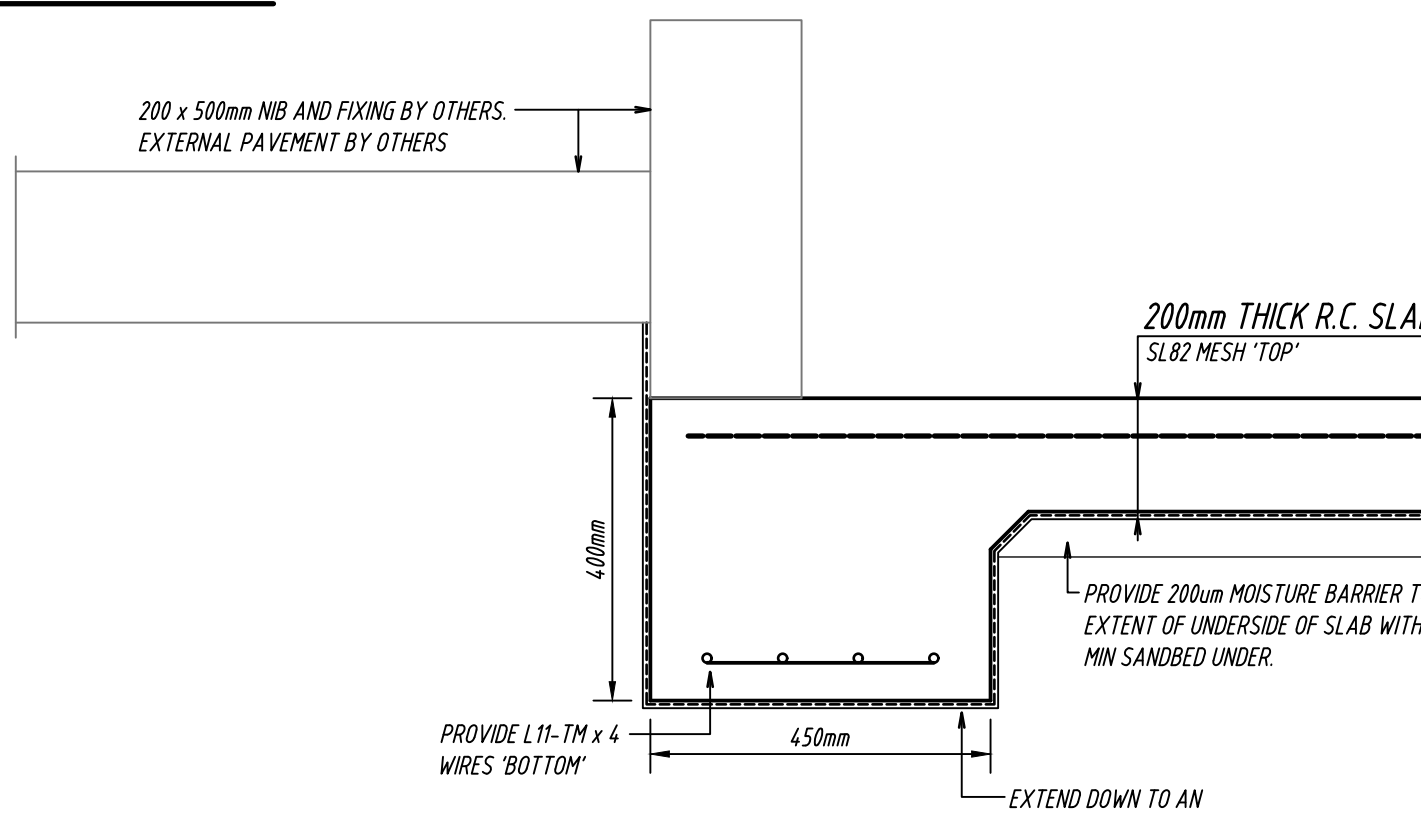
GROUND AND FOUNDATION PLAN

SCALE 1:200

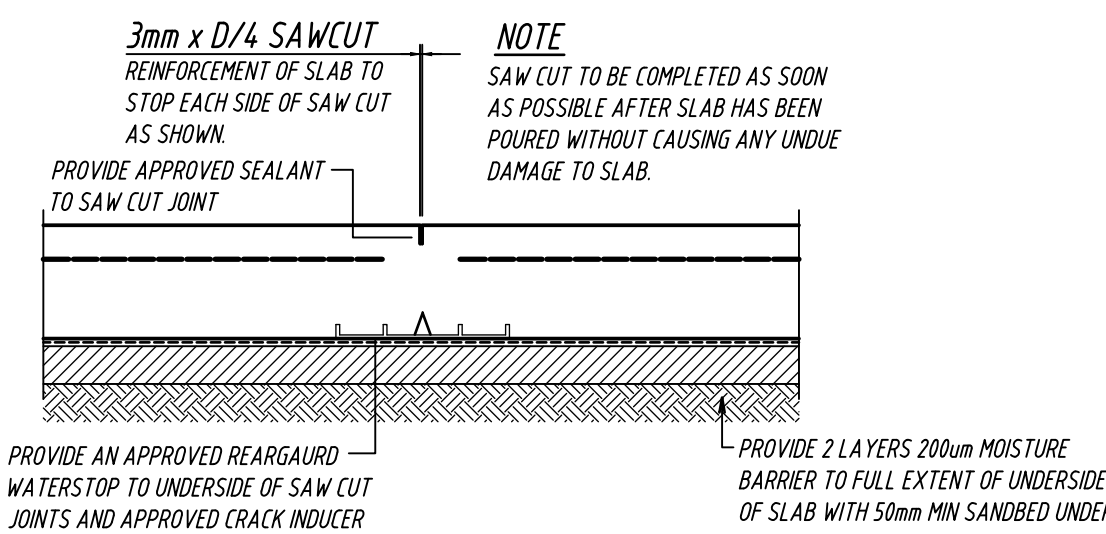
PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL
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Planning Scheme Amendment No C1291atr
Clause No. 6.21
Sheet 310 of 326 sheet(s)
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Karen Egan
Council Delegate

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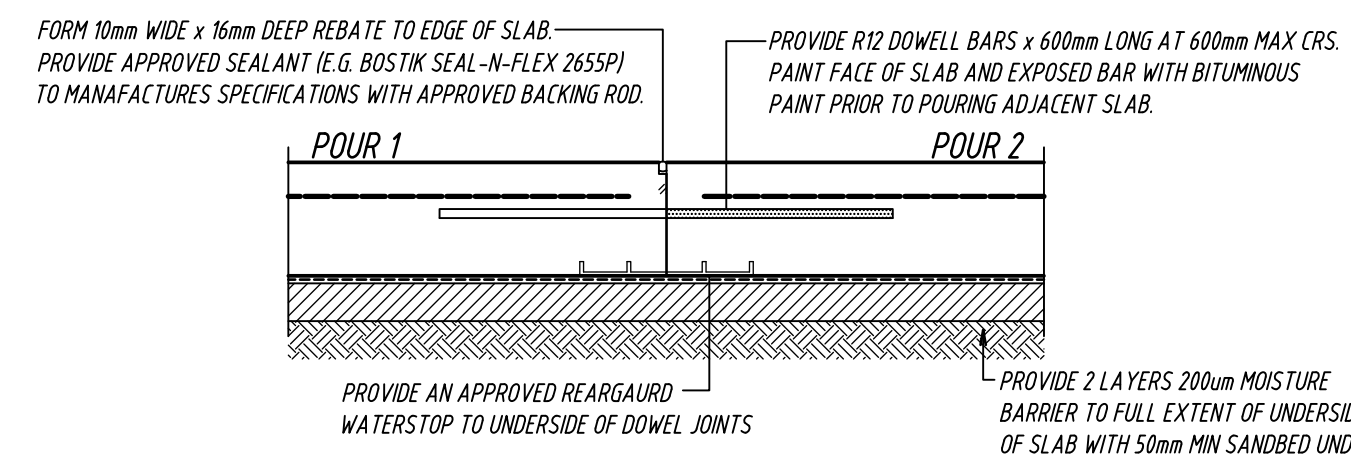
DRAWING NOTES:
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PERIMETER EDGE BEAM DETAIL
SCALE 1:10



SAW CUT JOINT DETAIL
N.T.S.

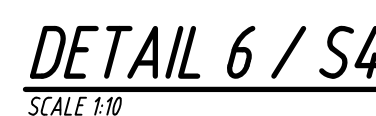
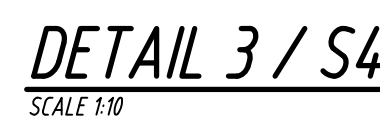


DOWEL CONSTRUCTION JOINT DETAIL
N.T.S.

Pambley

Endorsed 26/11/21

C	29-10	GHOSTING AND ELEVATIONS			
REV	DATE	No.		DATE	
REVISION				PRINTS	
STIRLOCH CONSTRUCTIONS					
-					
-					
PROPOSED BATTERY RECYCLING FACILITY					
FOURTH RD, HAZELWOOD NTH.					
PLANS					
W A M W.A. MOORE & ASSOCIATES CONSULTING STRUCTURAL/CIVIL ENGINEERS 1-3 CHURCH STREET, TRARALGON VIC. 3844 PHONE : (03) 5174 1921 FAX : (03) 5174 8199 email : wamoore@dodo.com.au					
DESIGNED W. MOORE		DRAWN T. LAIRD			
DATE MAY 2021		SCALE AS SHOWN @ A0			
DRAWING No.		ISSUE			
20542 - S1		C			



PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129lat
Clause No. 6.21
Sheet 311 of 326 sheet(s)

Date:22/12/2021

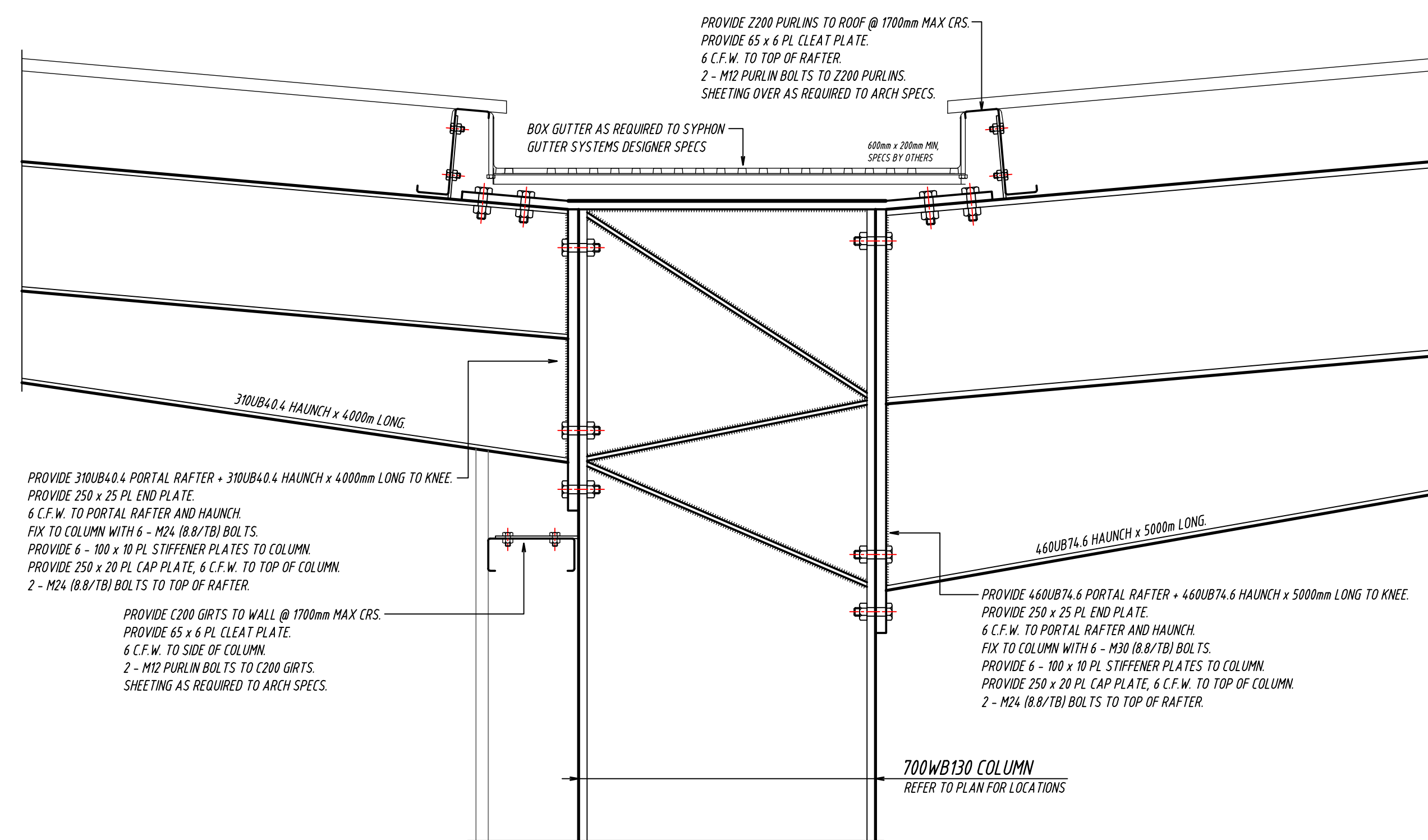
Karen Egan
Council Delegate



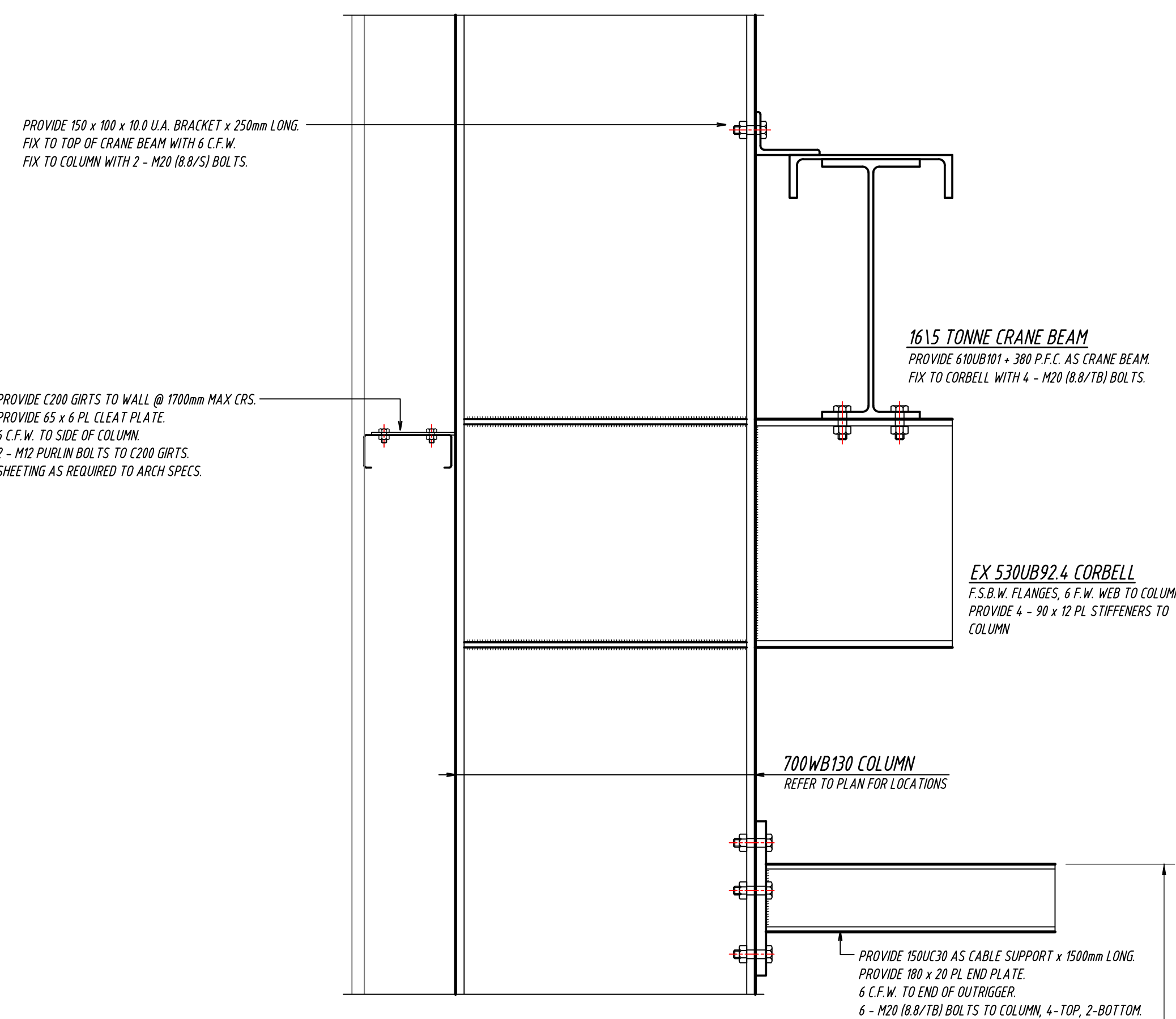
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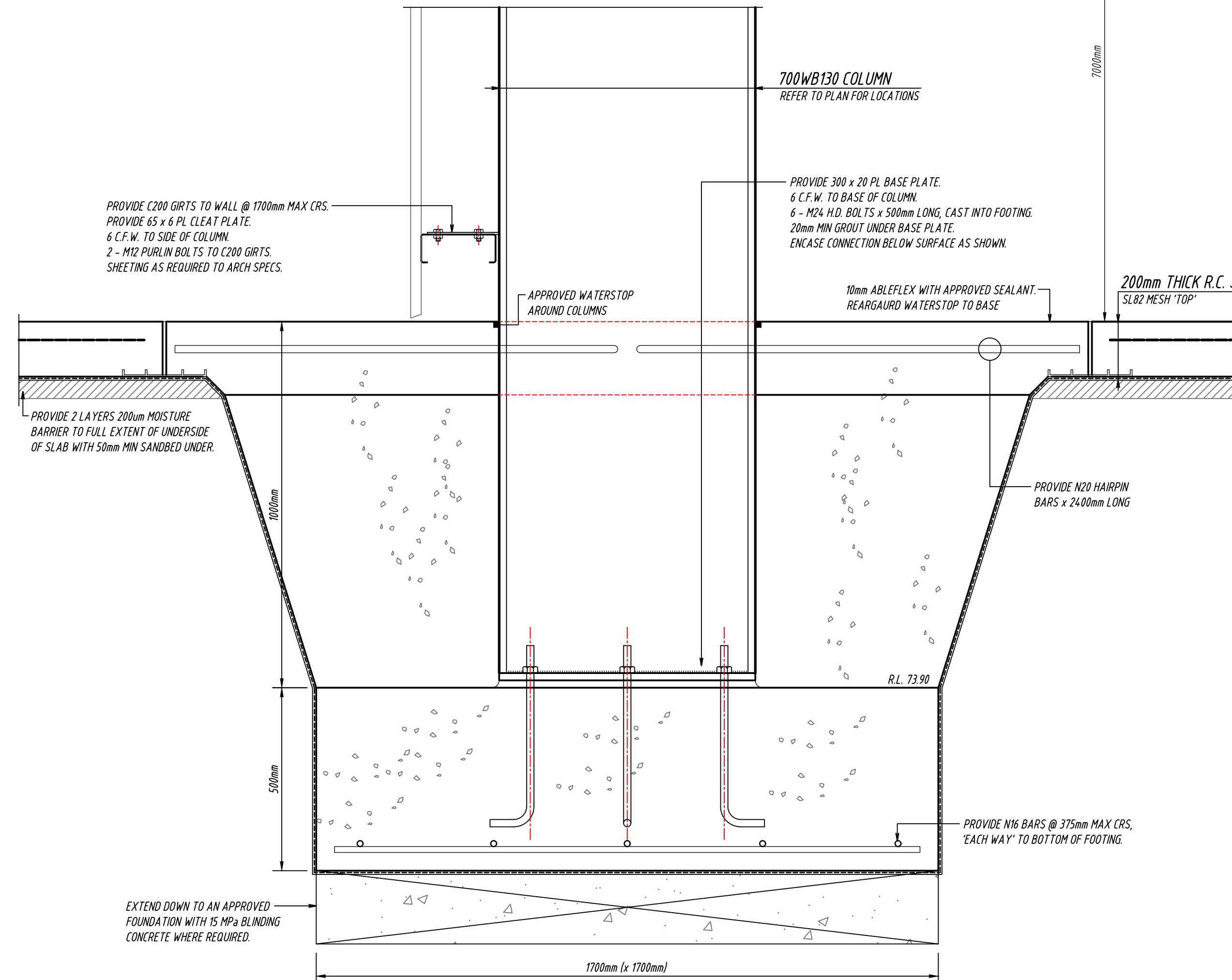
C	29-10	GHOSTING AND ELEVATIONS			
REV	DATE		No.	DATE	
REVISION			PRINTS		
STIRLOCH CONSTRUCTIONS					
-					
-					
PROPOSED BATTERY RECYCLING FACILITY FOURTH RD, HAZELWOOD NTH.					
DETAILS					
W.A.M. W.A. MOORE & ASSOCIATES CONSULTING STRUCTURAL/CIVIL ENGINEERS 1 - 3 CHURCH STREET, TRIBAL-CROSS VIC 3884 PHONE : (03) 51741921 FAX : (03) 5174 8199 email : vamoore@dodo.com.au					
DESIGNED M. MOORE		DRAWN T. LAIRD			
DATE MAY 2021		SCALE AS SHOWN @ A			
DRAWING No. 20542 - S5		ISSUED BY C			



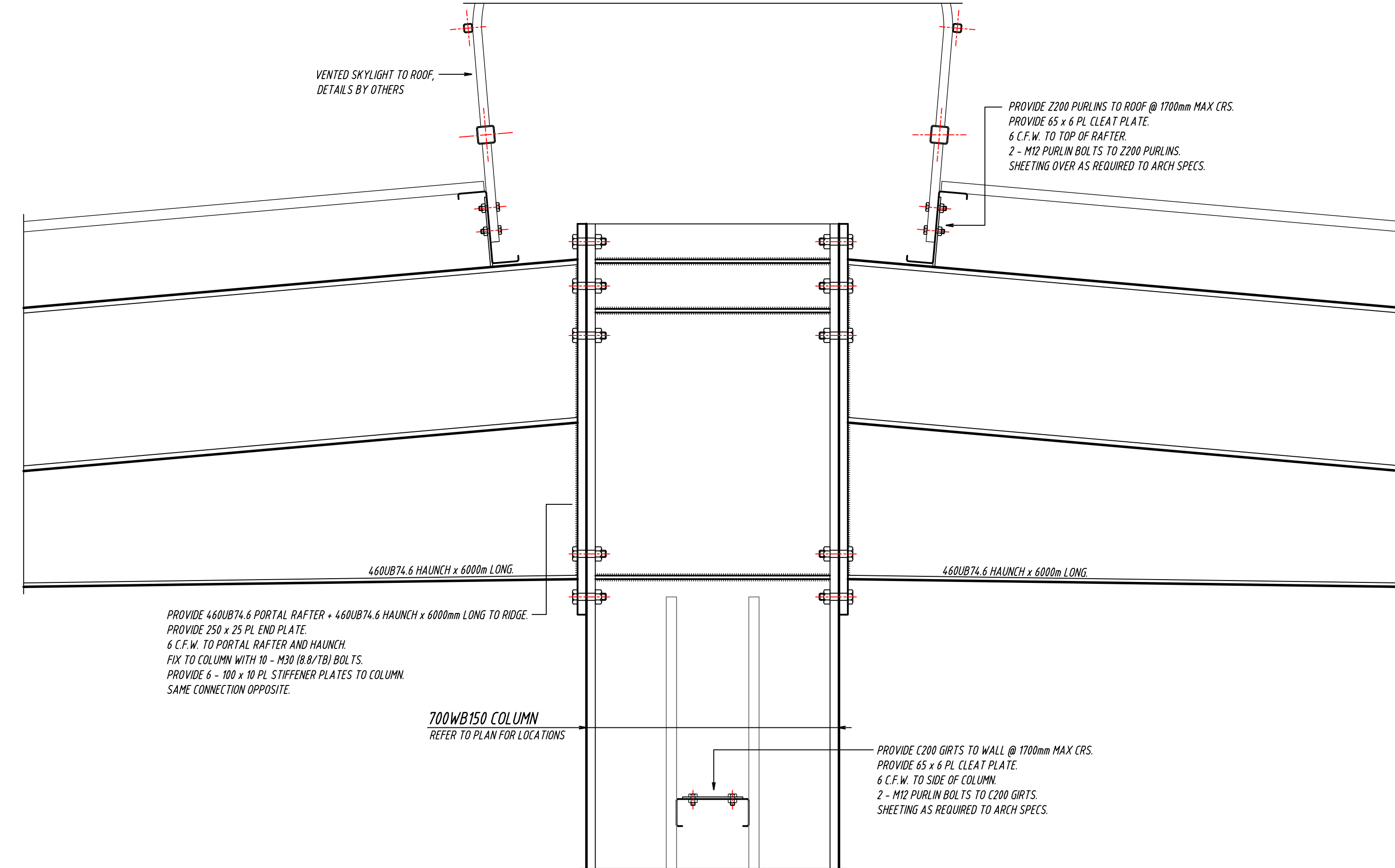
DETAIL 9 / S4
SCALE 1/10



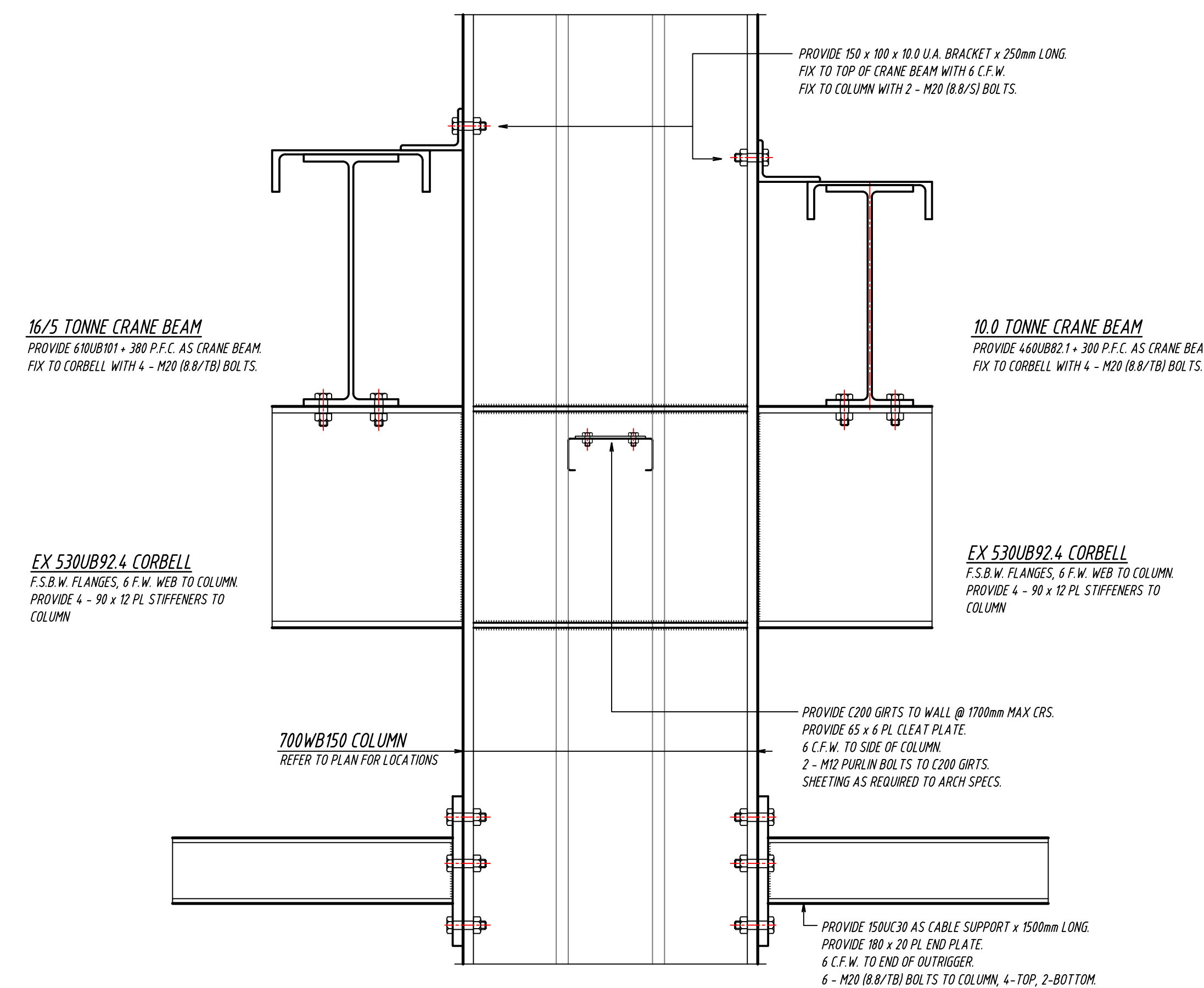
DETAIL 8 / S4
SCALE 1/10



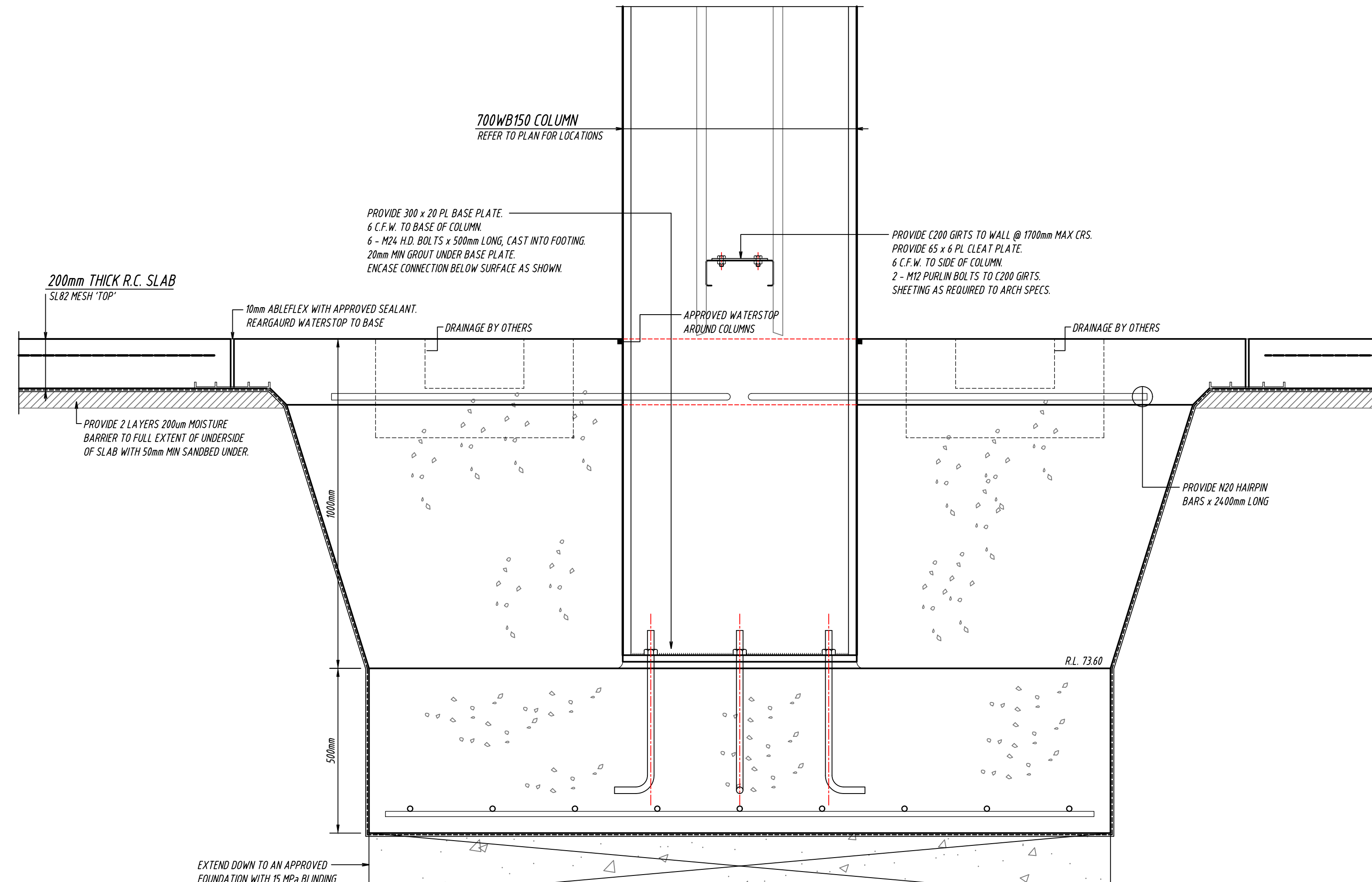
DETAIL 7 / S4
SCALE 1/10



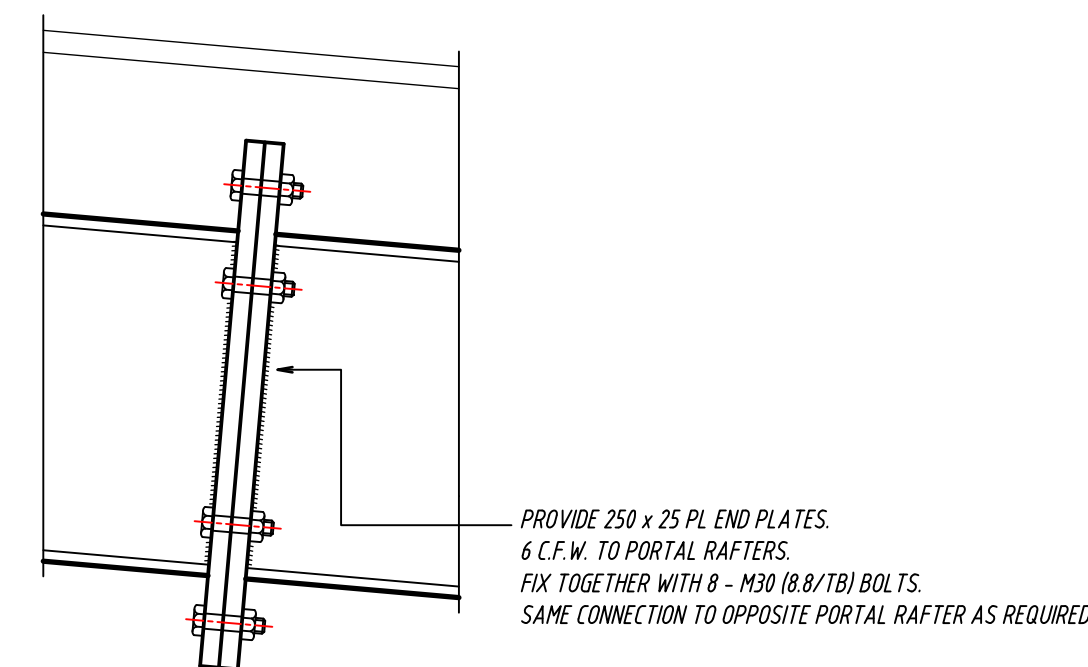
DETAIL 12 / S4
SCALE 1/10



DETAIL 11 / S4
SCALE 1/10



DETAIL 10 / S4
SCALE 1/10



TYPICAL 460UB PORTAL SPLICE
SCALE 1/10

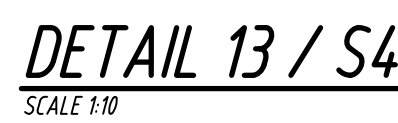
PLANNING & ENVIRONMENT ACT 1987
LATROBE CITY COUNCIL
Plan Approved under Clause 72.04
Planning Scheme Amendment No. C1291atr
Clause No. 6.21
Sheet 312 of 326 sheet(s)
Date: 22/12/2021
Karen Egan
Council Delegate

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Endorsed 26/11/21

C	29-10	GHOSTING AND ELEVATIONS			
REV	DATE	No.	DATE		
REVISION			PRINTS		
STIRLOCH CONSTRUCTIONS					
-					
-					
PROPOSED BATTERY RECYCLING FACILITY					
FOURTH RD, HAZELWOOD NTH.					
DETAILS					
W.A. MOORE & ASSOCIATES CONSULTING STRUCTURAL/CIVIL ENGINEERS 1 - 3 CHURCH STREET, TRARALGON VIC. 3844 PHONE : (03) 5174 1921 FAX: (03) 5174 8199 email : wmoore@dodo.com.au					
DESIGNED W. MOORE		DRAWN T. LAIRD			
DATE MAY 2021		SCALE AS SHOWN @ A			
DRAWING No.		20542 - S6		ISSUE	
				C	



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C	29-10	GHOSTING AND ELEVATIONS					
REV	DATE				No.	DATE	
REVISION					PRINTS		

STIRLOCH CONSTRUCTIONS

PROPOSED BATTERY RECYCLING FACILITY
FOURTH RD, HAZELWOOD NTH.

DETAILS

W.A. MOORE & ASSOCIATES
CONSULTING STRUCTURAL/CIVIL ENGINEERS

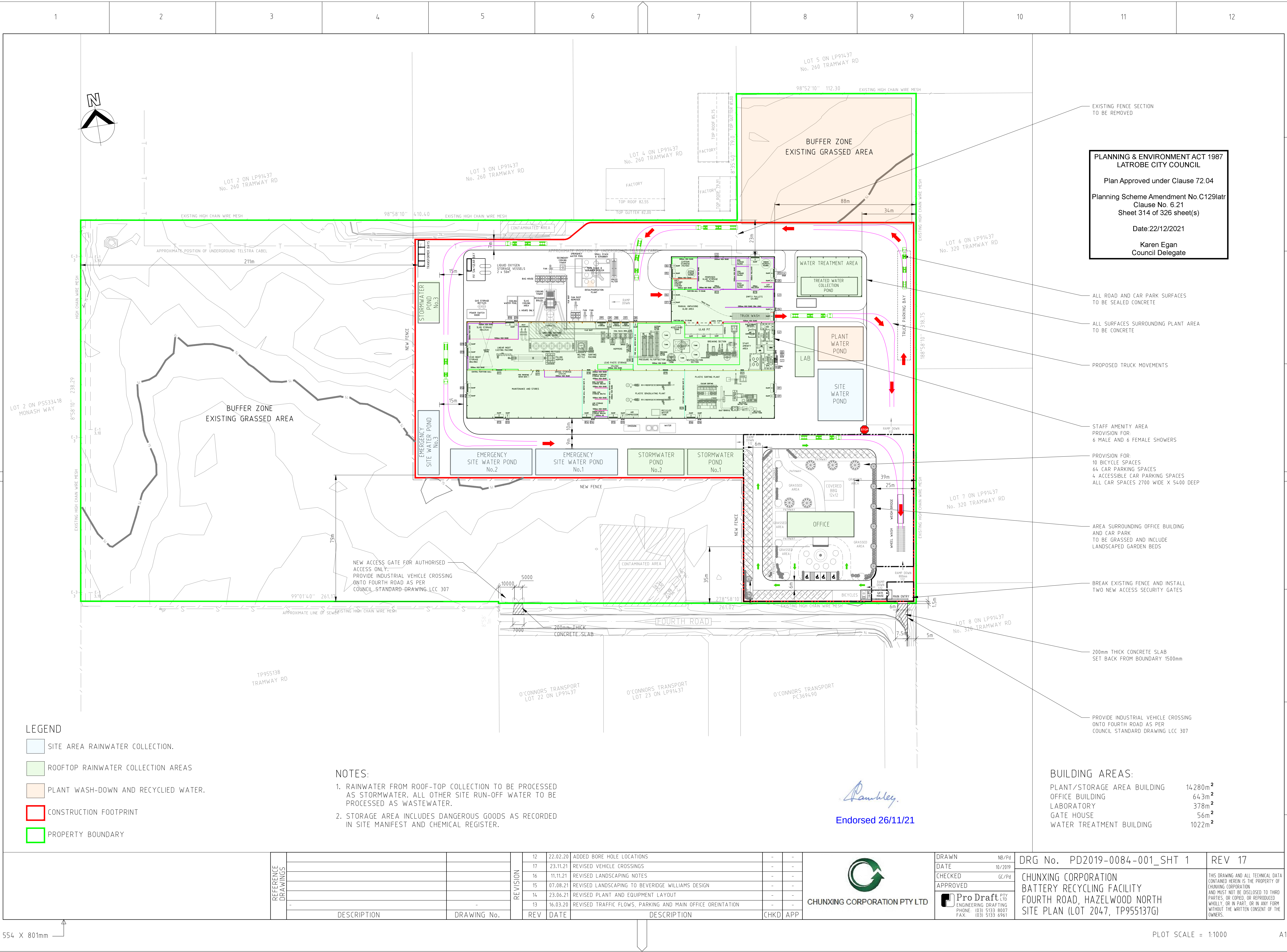
1 - 3 CHURCH STREET,
TRARALGON VIC. 3844
PHONE : (03) 5174 1921

FAX : (03) 5174 8199
email : wamoore@dodo.com.au

DESIGNED <i>W. MOORE</i>	DRAWN <i>T. LAIRD</i>
DATE <i>MAY 2021</i>	SCALE <i>AS SHOWN @ A0</i>
DRAWING No. <i>20542 - S7</i>	ISSUE <i>C</i>

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LATROBE CITY COUNCIL

Plan Approved under Clause 72.04

Planning Scheme Amendment No.C129latr
Clause No. 6.21
Sheet 314 of 326 sheet(s)

Date:22/12/2021

Karen Egan
Council Delegate

- EXISTING FENCE SECTION TO BE REMOVED
- ALL ROAD AND CAR PARK SURFACES TO BE SEALED CONCRETE
- ALL SURFACES SURROUNDING PLANT AREA TO BE CONCRETE
- PROPOSED TRUCK MOVEMENTS
- STAFF AMENITY AREA PROVISION FOR:
6 MALE AND 6 FEMALE SHOWERS
- PROVISION FOR:
10 BICYCLE SPACES
64 CAR PARKING SPACES
4 ACCESSIBLE CAR PARKING SPACES
ALL CAR SPACES 2700 WIDE X 5400 DEEP
- AREA SURROUNDING OFFICE BUILDING AND CAR PARK TO BE GRASSED AND INCLUDE LANDSCAPED GARDEN BEDS
- BREAK EXISTING FENCE AND INSTALL TWO NEW ACCESS SECURITY GATES
- 200mm THICK CONCRETE SLAB SET BACK FROM BOUNDARY 1500mm
- PROVIDE INDUSTRIAL VEHICLE CROSSING ONTO FOURTH ROAD AS PER COUNCIL STANDARD DRAWING LCC 307

Pawbley.

Endorsed 26/11/21

REVISION	DATE	DESCRIPTION	CHKD	APP
12	22.02.20	ADDED BORE HOLE LOCATIONS	-	-
17	23.11.21	REVISED VEHICLE CROSSINGS	-	-
16	11.11.21	REVISED LANDSCAPING NOTES	-	-
15	07.08.21	REVISED LANDSCAPING TO BEVERIDGE WILLIAMS DESIGN	-	-
14	23.06.21	REVISED PLANT AND EQUIPMENT LAYOUT	-	-
13	16.03.20	REVISED TRAFFIC FLOWS, PARKING AND MAIN OFFICE ORIENTATION	-	-

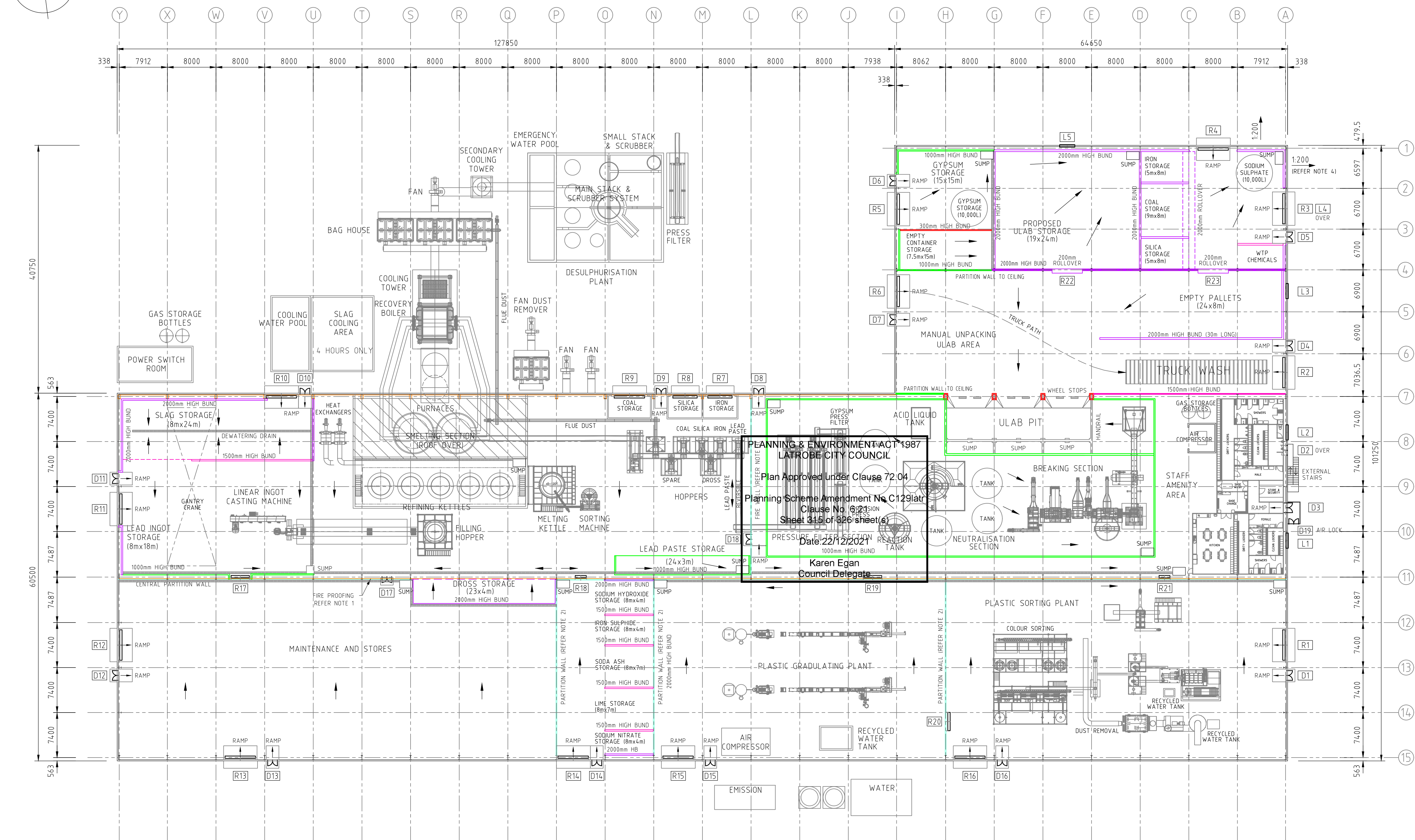
DESCRIPTION	DRAWING No.


CHUNXING CORPORATION PTY LTD

DRAWN	NB/Pd
DATE	10/2019
CHECKED	GC/Pd
APPROVED	


ENGINEERING DRAFTING
PHONE: (03) 5133 8007
FAX: (03) 5133 6961

DRG No. PD2019-0084-001_SHT 1	REV 17
CHUNXING CORPORATION BATTERY RECYCLING FACILITY FOURTH ROAD, HAZELWOOD NORTH SITE PLAN (LOT 2047, TP955137G)	THIS DRAWING AND ALL TECHNICAL DATA CONTAINED HEREIN IS THE PROPERTY OF CHUNXING CORPORATION AND MUST NOT BE DISCLOSED TO THIRD PARTIES, OR COPIED, OR REPRODUCED WHOLLY OR IN PART, OR IN ANY FORM WITHOUT THE WRITTEN CONSENT OF THE OWNERS.



DOOR SCHEDULE	
D1	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D2	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D3	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS (AIR LOCK TO CHANGE RM)
D4	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS (AIR LOCK @ RL 5000)
D5	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D6	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D7	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D8	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D9	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D10	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D11	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D12	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D13	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D14	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D15	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D16	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D17	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D18	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
D19	1640x2040 DOUBLE SELF CLOSING PEDESTRIAN DOORS
L1	2500w x 2000h LOUVRE VENT (11m FLOOR TO BOTTOM)
L2	2500w x 2000h LOUVRE VENT (11m FLOOR TO BOTTOM)
L3	2500w x 2000h LOUVRE VENT (16m FLOOR TO BOTTOM)
L4	2000w x 1000h LOUVRE VENT (6m FLOOR TO BOTTOM)
L5	2000w x 1000h LOUVRE VENT (6m FLOOR TO BOTTOM)
R1	5x5m ROLLER DOOR
R2	5x5m ROLLER DOOR
R3	5x5m ROLLER DOOR
R4	5x5m ROLLER DOOR
R5	5x5m ROLLER DOOR
R6	5x5m ROLLER DOOR
R7	4x4m ROLLER DOOR
R8	4x4m ROLLER DOOR
R9	5x5m ROLLER DOOR
R10	5x5m ROLLER DOOR
R11	5x5m ROLLER DOOR
R12	5x5m ROLLER DOOR
R13	5x5m ROLLER DOOR
R14	5x5m ROLLER DOOR
R15	5x5m ROLLER DOOR
R16	5x5m ROLLER DOOR
R17	3x4m ROLLER DOOR
R18	1.8x2.2m ROLLER DOOR
R19	3x4m ROLLER DOOR
R20	3x4m ROLLER DOOR
R21	1.8x2.2m ROLLER DOOR
R22	5x5m ROLLER DOOR
R23	5x5m ROLLER DOOR

WINDOW AND DOOR SPECIFICATIONS

WINDOWS - CAPRAL 400 SERIES NARROWLINE ALUMINIUM FRAMED
1800Wx2400H SINGLE GLAZED WINDOWS USING AGS 400
NARROWLINE FRAMING SYSTEM

DOORS - METAL CLAD SOLID CORE: METAL CLADDING AND CAPPING.

DOOR FURNITURE - TO BE SPECIFIED ONCE FIRE ASSESSMENT HAS BEEN COMPLETED

ROLLER DOORS - STEELSC100 ROLLER SHUTTER WITH 1hp MOTOR
INCORPORATING STANDARD REVERSING CONTACTOR AND UP,
DOWN, STOP BUTTON CONTROLLER WITH HAND CHAIN OVERRIDE

LEGEND

- | | |
|---|--|
| | 300mm HIGH BUND (100 WIDE TOP to 150 WIDE BOTTOM) |
|  | 1000mm HIGH BUND (150 WIDE TOP to 200 WIDE BOTTOM) |
|  | 1500mm HIGH BUND (150 WIDE TOP to 250 WIDE BOTTOM) |
|  | 2000mm HIGH BUND (150 WIDE TOP to 300 WIDE BOTTOM) |
|  | DEWATERING DRAIN (TYP 300 WIDE) |
|  | FIRE PROOFING |
|  | PARTITION WALL |

NOTES

1. FIRE PROOFING TO BE DETERMINED AFTER STRUCTURAL ERECTION. DESIGN OF THE FIRE PROOFING MATERIALS TO BE PROVIDED BY OTHERS. TO BE INSTALLED AFTER STRUCTURAL ERECTION AS SHOWN.
2. INTERNAL PARTITIONS TO BE INSTALLED AFTER THE PLANT/EQUIPMENT IS INSTALLED. (WALLS TO BE STEEL FRAME COLORBOND CLAD INSULATED SANDWICH PANEL 75 THICK, HEIGHT TO 1m BELOW HOOK HEIGHT).
3. INTERNAL PARTITIONS TO BE INSTALLED AFTER THE PLANT/EQUIPMENT IS INSTALLED. (WALLS TO BE STEEL FRAME COLORBOND CLAD WITH SPRAYED FIRE PROOF MATERIAL SMELTER SIDE, HEIGHT TO 1m BELOW HOOK HEIGHT).
4. ALL OUTSIDE PAVEMENT TO SLOPE AWAY FROM BUILDING @1:200

REFERENCE DRAWINGS			REVISION	12	28.05.21	ADDED DOOR D22	-	-
				11	26.05.21	REVISED STORAGE AREAS	-	-
				10	19.05.21	REVISED STORAGE AREAS	-	-
				15	28.09.21	REVISED DOOR SIZE, ADDED WINDOW AND DOOR SPECS.	-	-
				14	29.06.21	RELOCATED EXTERNAL STAIRS, ADDED D19 AIRLOCK DOOR	-	-
				13	16.06.21	REVISED OPENINGS & DEWATERING	-	-
		-						
	DESCRIPTION	DRAWING No.		REV	DATE	DESCRIPTION	CHKD	APP



CHUNXING CORPORATION PTY LTD

DRAWN	NB/PD
DATE	01/20
CHECKED	GC/PD
APPROVED	X



Pro Draft PTY LTD
 ENGINEERING DRAFTING
 PHONE: (03) 5133 8007
 FAX: (03) 5133 6961

DRG No. PD2019-0084-009

REV 15

CHUNXING CORPORATION
BATTERY RECYCLING FACILITY
FOURTH ROAD, HAZELWOOD NORTH
PLANT AREA - EQUIPMENT LAYOUT

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WITHOUT THE WRITTEN CONSENT OF THE
OWNERS.

CHUNXING CORPORATION PTY LD

ULAB FOURTH ROAD, HAZELWOOD NORTH

CUT AND FILL QUANTITIES

LOCATION	NUMBER OF ELEMENTS	AREA (m2)	SURFACE AVE. RL (m)	SLAB BOTTOM RL (m)	CLAY AVE. RL (m)	EXCAVATION DEPTH (m)	TOP SOIL 0.2M (m3)	SILT REMOVAL (m3)	CLAY REMOVAL (m3)	COMPACTION DEPTH (m)	COMPACTION (m3)
LINED POND*	1	500	74	72	72.8	2.0	120	480	400		
AREA A	1	13000	74.8	74.7	73.6	0.7	2600	6500		0.6	9750
ULAB PIT	1	24.5x10.5 = 257	74.7	73	73.6	1.8			436.9		
PRESSURE FILTERS	1	14x3 42	74.7	73.1	73.6	1.7			67.2		
PRESSURE FILTERS	2	14x2 48	74.7	73.1	73.6	1.7			76.8		
BREAKER	1	5x5= 25	74.7	73.1	73.6	1.7			40		
Row 1 Columns	9	3	74.7	73.1	73.6	1.7			43.2		
Row 4 Columns	9	3	74.7	73.1	73.6	1.7			43.2		
Row 7 Columns	12	5	74.7	73.1	73.6	1.7			96		
Row 11 Columns	12	8	74.5	73.1	73.6	1.7			134.4		
Row 15 Columns	12	5	74.7	73.1	73.6	1.7			96		
Mullions Row A	10	1	74.7	73.1	73.6	1.7			16		
Mullions Row I	4	1	74.7	73.1	73.6	1.7			6.4		
AREA B	1	8250	74.3	74.7	73.1	0.6	1650	4950		0.6	6187.5
SMELTERS	1	15.5x8.5 = 132	74.7	72.7	73.1	1.6			264		
REFINING KETTLE PIT	1	34x9 = 306	74.7	72.7	73.1	1.6			612		
REFINING KETTLE FOUNDATION	2	5x5 = 25	74.7	72.7	73.1	1.6			100		
Row 7 Columns	13	5	74.7	72.7	73.1	1.6			130		
Row 11 Columns	13	8	74.5	72.7	73.1	1.6			187.2		
Row 15 Columns	13	5	74.7	72.7	73.1	1.6			130		
Mullions Row Y	6	1	74.7	72.7	73.1	1.6			12		
AREA C	1	8140	74.8	74.7	73.6	0.7	1628	4070		0.6	6105
EMERG SITE WATER POND #1	1	51.5x16.5 = 849	74.7	73	73.6	1.8			1443.3		
EMERG SITE WATER POND #2	1	51.5x16.5 = 849	74.7	73	73.6	1.8			1443.3		
EMERG SITE WATER POND #3	1	40.5x13.5 = 546	74.7	73	73.6	1.8			928.2		
AREA D	1	4000	75	74.7	73.8	0.9	800	2800		0.6	3000
STORMWATER POND #1	1	35.5x16.5 = 585	74.7	73.2	73.8	1.8			877.5		
STORMWATER POND #2	1	35.5x16.5 = 585	74.7	73.2	73.8	1.8			877.5		
WEST RAMP TO AREA F		126	74.7	74.3	73.8	0.7			50.4		
SUMP PIT - SEP6		8	74.7	73.2	73.8	1.8			12		
AREA E	1	12750	75.6	74.7	74.4	1.3	2550	16575		0.4	6375
TREATED WATER POND	1	35.5x11.5 = 409	74.7	73.8	74.4	1.8			368.1		
PLANT WATER POND	1	28.5x21.5 = 612	74.7	73.8	74.4	1.8			550.8		
SITE WATER POND	1	28.5x32.5 = 926	74.7	73.8	74.4	1.8			833.4		
WATER TREATMENT PLANT	1	656	74.7	74.5	74.4	1.1			200		
CONCRETE WASHOUT POND	1	24	74.7	74.5	74.4	1.1			4.8		
SOUTH RAMP TO AREA F	1	35x14 = 490	74.7	74.5	74.4	1.1			98		
RETAINING WALL TO AREA F		60	74.7	74.5	74.4	1.1			12		
AREA F	1	3115	76	75	74.8	1.2	623	3115		0.2	778.75
EXCESS CONCRETE DUMP	1	336	75	74.8	74.8	1.2		24			
WHEEL WASH PIT	1	7x20 = 140	75	74.6	74.8	1.4			56		
WEIGHBRIDGE PIT	1	7x20 = 140	75	74.6	74.8	1.4			56		
AREA G	1	9000	74.3	74.7	73.1	0.6	1800	5580		1	11250
SLAG COOLING WATER POND	1	4x9 = 21	74.7	72.7	73.1	1.6			42		
LIQUID OXYGEN PLANT	1	20x15 = 300	74.7	74.3	73.1	0.0			120		
HEAT RECOVERY BOILER FOUNDATIONS	4	1.5x1.5 = 2.3	74.7	72.7	73.1	1.6			18.4		
CHIMNEY FOUNDATIONS	1	40x40 = 1600	74.7	73.1	73.1	1.2			2560		
FANS FOUNDATIONS	4	3x4 = 12	74.7	73.1	73.1	1.2			76.8		
TRANSFORMERS FOUNDATIONS	1	20x45 = 900	74.7	73.1	73.1	1.2			1440		
STORMWATER POND #3	1	25.5x13.5 = 344	74.7	72.7	73.1	1.6			688		

* Clay removed will be used to form earth bund behind Lined Pond

3300 Fill Quantity

117712253015247.843446.25

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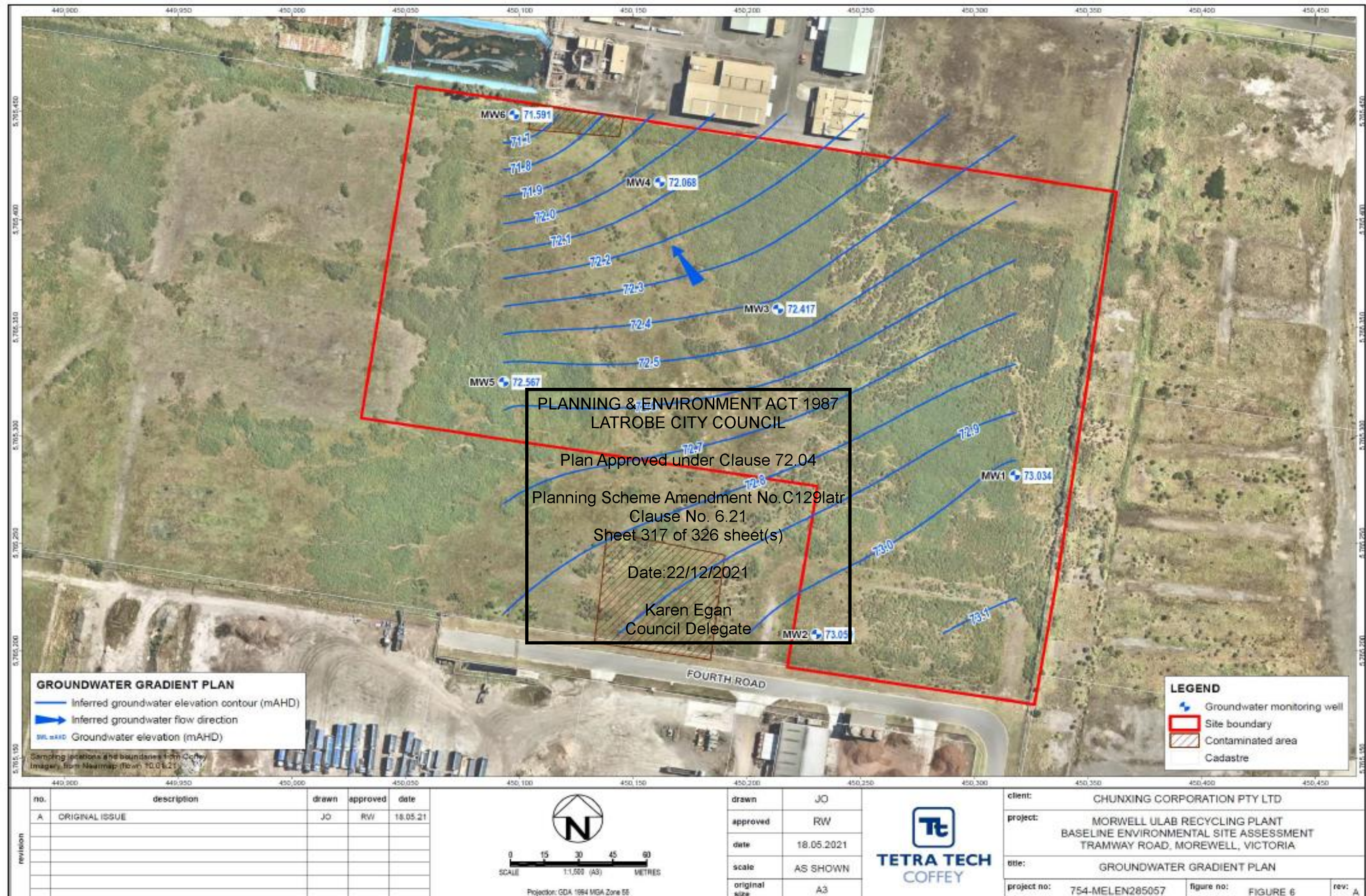
Date:22/12/2021

Karen Egan

Council Delegate

Checked Calculations and
are endorsed as correct.
Dated 26/11/21

Pamhley.



I have reviewed the excavation levels
and they do not go to the groundwater
level.

Dated 26/11/21 *Pamhley.*

Figure 21 Groundwater Depth (mAHd)
(Source: Baseline Environmental Site Assessment, Tetra Tech Coffey, 2021)

Annexure S

Groundwater Holding Tank Volume & Discharge Tracking Register

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GROUNDWATER TANK HOLDING VOLUMES REGISTER																										
Date / Time / Method									Volume / Discharge Rate								Sampling									
Source	Electrical Conductivity (µS/cm)	Date Start	Time Start	Date Finish	Time End	Total Time (hours)	Total Time (minutes)	Method of Discharge to Holding Tank or TWA	Comment	Total Volume pumped to Holding Tank or TWA (litres)	Total Volume pumped to Holding Tank or TWA (m3)	Discharge Rate (l/h)	Discharge Rate (m3/h)	Discharge Rate (l/m)	Discharge Rate (m3/m)	Volume in Holding Tank or Discharged to TWA (litres)	Comment	Grab Sample Taken	Grab Sample Time	Temp. (Deg C)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	pH	Sheet n	Sampler	
ULAB Foundation	1,700	20210901	0900	20210901	0915	0.25	15	Submersible Pump / Layflat		250	0.25	1,000	1.00	16.67	0.0167	250	to holding tank									EXAMPLE
ULAB Foundation	1,800	20210902	0900	20210902	1700	8	480			15,750	15.75	1,969	1.97	32.81	0.0328	16,000	to holding tank									EXAMPLE
																16,000	volume in Holding Tank (20210902)								EXAMPLE Sample sent to Lab for TWA conformance analysis	
GW Holding Tank	-	20210905	0900	20210910	1700	8	480	Layflat	Water in Holding Tank verified as meeting TWA parameters (see Lab Report XXXX dated, 20210909) discharged to TWA	16,000	16	2,000	2.00	33.33	0.0333	16,000	Discharged from Holding Tank to TWA	Y	1530	18	1600	-	6	N	EXAMPLE	
																0	volume in Holding Tank @ end of day									

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Annexure T

Example of Mobile Soil Stabiliser Plant



Maximum quality in every application.

Cold Recyclers and Soil Stabilizers WR Series

WR 200 | WR 200i | WR 240 | WR 240i | WR 250 | WR 250i

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1 - 4 | Soil stabilization involves transforming sub-bases with insufficient bearing capacity into soil that is perfect for paving and compaction.



Technical Specifications

WR 200 | WR 200i | WR 240 | WR 240i | WR 250 | WR 250i

	WR 200	WR 200i	WR 200i	
Emissions standards	EU Stage 3a / US EPA Tier 3	EU Stage 4 / US EPA Tier 4f	EU Stage 5 / US EPA Tier 4f	
Milling and Mixing Rotor				
Working width	2,000 mm			
Working depth*1	0 - 500 mm			
Tool spacing	20 mm			
Number of tools	150			
Cutting diameter	1,480 mm			
Engine				
Engine manufacturer	Mercedes-Benz	Mercedes-Benz / MTU		
Type	OM 460 LA	OM 470 LA / 6R 1100		
Number of cylinders	6			
Power	at 2,000 rpm: 305 kW / 409 HP / 413 PS	at 1,900 rpm: 306 kW / 412 HP / 418 PS	at 1,900 rpm: 316 kW / 421 HP / 430 PS	
Maximum power	at 1,800 rpm: 305 kW / 409 HP / 413 PS	at 1,700 rpm: 306 kW / 412 HP / 418 PS	at 1,600 rpm: 320 kW / 429 HP / 435 PS	
Displacement	12.8 l	10.7 l		
Fuel consumption, full load during mixture of job site operations	80 l / h 39 l / h	75 l / h 35 l / h		
Sound power level in accordance with DIN EN 500-3 engine operator's platform	≤106 dB(A) ≥70 dB(A)		≤106 dB(A) ≥70 dB(A)	
Electrical System				
Power supply	24 V			
Tank Capacities				
Fuel tank	830 l			
Fuel tank when equipped with optional "S-Pack"	-			
AdBlue® / DEF tank*2	-	80 l		
Hydraulic oil tank	200 l			
Binder container	-			
Water tank	380 l			
Additional water tank	-			
Driving Performance				
Operating speed in milling and travel gear	0 - 210 m / min (12.6 km / h)			
Max. cross slope	8°			
Ground clearance	approx. 400 mm			
Tires				
Tire size, front / rear	620 / 75 R26			
Transport Dimensions				
Dimensions for truck transport (L x W x H)	9,160 x 2,550 x 3,000 mm			
Dimensions for truck transport with optional "S-Pack" (L x W x H)	-			

*1 = The maximum working depth may deviate from the value indicated due to tolerances and wear.

*2 = AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA)

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	WR 240	WR 240i	WR 250	WR 250i
	EU Stage 3a / US EPA Tier 3	EU Stage 5 / US EPA Tier 4f	EU not rated / US EPA Tier 2	EU Stage 5 / US EPA Tier 4f
	2,400 mm		2,400 mm	
	0 - 510 mm		0 - 560 mm	
	20 mm		30 mm x 2	
	170		208	
	1,480 mm		1,480 mm	
	Cummins		Caterpillar	
	QSX 15	X-15	C18 ATAAC	
	6			6
	at 2,100 rpm: 447 kW / 600 HP / 608 PS		at 2,100 rpm: 571 kW / 768 HP / 777 PS	at 1,950 rpm: 563 kW / 755 HP / 766 PS
	at 1,900 rpm: 455 kW / 610 HP / 619 PS		at 1,800 rpm: 571 kW / 768 HP / 777 PS	at 1,700 rpm: 563 kW / 755 HP / 766 PS
	15.0 l	14.9 l	18.1 l	18.1 l
	120 l/h 60 l/h	115 l/h 55 l/h	121 l/h 70 l/h	147 l/h 72 l/h
	≤110 dB(A) ≥76 dB(A)	≤109 dB(A) ≥72 dB(A)	≤111 dB(A) ≥78 dB(A)	≤112 dB(A) ≥74 dB(A)
	Date: 22/12/2021			
	24 V Karen Egan Council Delegate			
	1,500 l	1,380 l		1,500 l
	1,300 l	1,180 l		1,300 l
	-	100 l		-
	320 l			
	5.5 m³			
	500 l			
	950 l			
	0 - 210 m / min (12.6 km / h)			
	8°			
	approx. 400 mm			
	28L - 26			
	9,230 x 3,000 x 3,000 mm			
	9,680 x 3,000 x 3,080 mm			

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Technical Specifications

WR 200 | WR 200i | WR 240 | WR 240i | WR 250 | WR 250i

	WR 200	WR 200i
Weight of Standard Machine		
Empty weight of machine with standard equipment without fluids	23,500 kg	23,800 kg
Operating weight, CE *1	24,200 kg	24,500 kg
Maximum operating weight (full tanks, full range of equipment)	26,500 kg	26,800 kg
Weight of Tank Contents		
Water	380 kg	
Additional water tank		
Fuel (0.83 kg / l)	690 kg	
Fuel (0.83 kg / l) when equipped with optional "S-Pack"		
AdBlue® / DEF*2	80 kg	
Binding agent (S-Pack)	-	
Additional Weight		
Operator and Tools		
Machine operator	75 kg	
5 pick buckets	125 kg	
Injection system instead of standard		
Single ESL: Injection system for water or bitumen emulsion	450 kg	
Dual ESL: Injection system for water and bitumen emulsion	760 kg	
ESL foamed bitumen: Injection system for water and foamed bitumen	1,310 kg	
ESL 1800 L: Injection system for water up to 1,800 l / min	410 kg	
Built-in binding agent spreader (S-Pack) with exhaust filter	-	
Optional Additional Equipment		
Additional water tank (empty)	-	

*1 = Machine weight, half-full tanks, vehicle tool kits, machine operator (75 kg), excluding optional equipment

*2 = AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA)

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	WR 240	WR 240i	WR 250	WR 250i
	29,000 kg	29,600 kg	30,750 kg	31,050 kg
	30,000 kg	30,600 kg	31,700 kg	32,000 kg
	40,400 kg	41,000 kg	43,100 kg	43,400 kg
	500 kg			
	950 kg			
	1,245 kg	1,145 kg	1,245 kg	1,245 kg
	1,070 kg	970 kg	1,070 kg	1,070 kg
	–	100 kg	–	–
	3,000 kg			
	125 kg			
	390 kg			
	720 kg			
	1,400 kg			
	390 kg			
	3,800 kg			
	420 kg			

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