Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6872/2023/1
Works approval holder	Shire of Coolgardie
Registered business address	Shire of Coolgardie Sylvester Street COOLGARDIE WA 6429
DWER file number	DER2023/000730
Duration	03/05/2024 to 02/05/2029
Date of issue	03/05/2024
Premises details	Coolgardie Waste Facility Coolgardie Tip Road, Coolgardie WA 6429 Legal description - Crown Reserve 3497 Lot 501 on Deposited Plan 255090 As defined by the coordinates in Schedule 3

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 61 Liquid Waste Facility: premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	5,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 3 May 2024, by:

Digitally signed
by Adam Green
Date: 2024.05.03
15:00:27 +08'00'

Adam Green
A/MANAGER, WASTE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
03/05/2024	W6872/2023/1	Works approval granted.

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct the critical containment infrastructure;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location,

as set out in Table 1.

Table 1: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Anaerobic ponds 1 and 2	The anaerobic ponds must be designed and constructed in accordance with Schedule 1, Figure 2, and to meet the following specifications: (a) Reinforced concrete with a minimum 150 mm thickness; (b) Each pond constructed to be 10 m length x 10 m width x 3.5 m depth; (c) Must have an operational volume of 117 m^3; (d) Each pond must be lined with a 0.6 mm vapour barrier; (e) One concrete-lined receival pit must be installed at each pond; (f) Each pond must be constructed with a concrete bund; and (g) Anaerobic ponds and associated pipework to be constructed as free of leaks and defects.	Schedule 1 Figure 1 and Figure 2
2.	Evaporation pond	The evaporation pond must be designed and constructed to meet the following specifications: (a) Constructed to be 70 m length x 75 m width x 2.4 m depth; (b) Must have an operational volume of 7,743 m^3; (c) Must be constructed with a sump; (d) Site preparation and subgrade to be constructed as specified in Schedule 2, Table 6; (e) Lined with a 2 mm HDPE double-textured geomembrane to achieve ≤1 x 10^{-9} m/sec, as specified in Schedule 2, Table 7; and (f) Evaporation pond and associated pipework to be constructed as free of leaks and defects.	Schedule 1 Figure 1 and Figure 2

Compliance reporting

2. The works approval holder must within 30 calendar days of the Critical Containment Infrastructure identified by condition 1 being constructed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.

3. The Critical Containment Infrastructure Report required by condition 2 must include as a minimum the following:

(a) certification by a suitably qualified civil or geotechnical engineer (or equivalent) that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in conditions 1;

(b) as constructed plans and a detailed site plan showing each item of critical containment infrastructure or component thereof, as specified in condition 1;

(c) photographic evidence of the installation of the infrastructure;

(d) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person;

4. The Critical Containment Infrastructure Report required by Condition 2 must be accompanied by a Construction Quality Assurance Validation Report that:

(a) is written and certified by a suitably qualified civil or geotechnical engineer (or equivalent);

(b) assesses test results against the relevant minimum values;

(c) documents all repairs to subgrade and resulting from non-destructive weld testing;

(d) certifies that the constructed infrastructure is free of fault of defect, built to the design specification and fit for the intended purpose; and

(e) includes copies of drawings, inspections, monitoring, and testing results required by the corresponding Specifications referenced in Schedule 2.

Time limited operations phase

Commencement and duration

5. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 1 when at least 30 business days have passed after the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 3 condition and the Construction Quality Assurance Validation Report required by condition 4 have been submitted to the CEO.

6. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 7:

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 5 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the Environmental Protection Act 1986, if one is granted before the end of the period specified in condition 6(a).

Time limited operations requirements

7. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 2 is maintained and operated in accordance with the corresponding operational requirement set out in Table 2

Table 2: Infrastructure and equipment requirements during time limited operation

	Site infrastructure and equipment	Operational requirement
1	Anaerobic ponds	(a) Must be maintained free from leaks, tears and defects. (b) Must be managed to prevent damage to and ensure the integrity of the HDPE liner. (c) Must maintain a minimum freeboard of 0.5 m at all times; and (d) Must undertake the removal of sludge to ensure a maximum sludge depth of 1.5m from the pond base.
2	Evaporation pond	(a) Maintain the pond and associated pipework to be free of leaks and defects; (b) Must be maintained free from leaks, tears and defects; and (c) Maintain a minimum freeboard of 0.5 m at all times.

8. The works approval holder must only accept onto the premises waste of a waste type, which does not exceed the corresponding rate at which waste is received, and which meets the corresponding acceptance specification set out in Table 3

Table 3: Types of waste authorised to be accepted onto the premises

Waste type	Waste code	Rate at which waste is received	Acceptance specification
Animal effluent and residues	K100	Not more than 5,000 tonnes per annual period	All liquid waste must be unloaded into the receival pits
Waste from grease traps	K110		
Septage wastes	K210		
Car and truck wash waters	L100		
Industrial wash waters contaminated with a controlled waste (excluding PFAS contaminated materials).	L150		
Fire debris or fire wash waters (excluding PFAS contaminated materials).	N140		

Monitoring during time limited operations

9. The works approval holder must undertake the monitoring outlined in Table 4 during the time limited operations.

Table 4: Emissions and discharge monitoring during time limited operation

Input	Parameter	Units	Frequency
All liquid waste accepted to liquid waste facility. (K100, K110, K210, L100, L150, and N140)	Waste inputs	Tonnes or m^3	Each load arriving at the premises.

Compliance reporting

10. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner.

11. The works approval holder must ensure the report required by condition 10 includes the following:

(a) a summary of monitoring results obtained during time limited operations under condition 9;

(b) a review of performance and compliance against the conditions of the works approval; and

(c) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

12. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

13. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 7;

(c) monitoring programmes undertaken in accordance with condition 9; and

(d) complaints received under condition 12 .

14. The books specified under condition 13 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 5 have the meanings defined.

Table 5: Definitions

Term	Definition
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
critical containment infrastructure	means the items of infrastructure listed in condition 1.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
suitably qualified geotechnical engineer	means a person who: (a). holds a Bachelor of Engineering degree recognised by Engineers Australia; and (b). has a minimum of five years of experience working in a supervisory role of geotechnical engineering; and

Term	Definition
	(c). is employed by an independent third party external to the Works Approval Holder's business; or is otherwise approved in writing by the CEO to act in this capacity.
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Figure 1: Map of the boundary of the prescribed premises

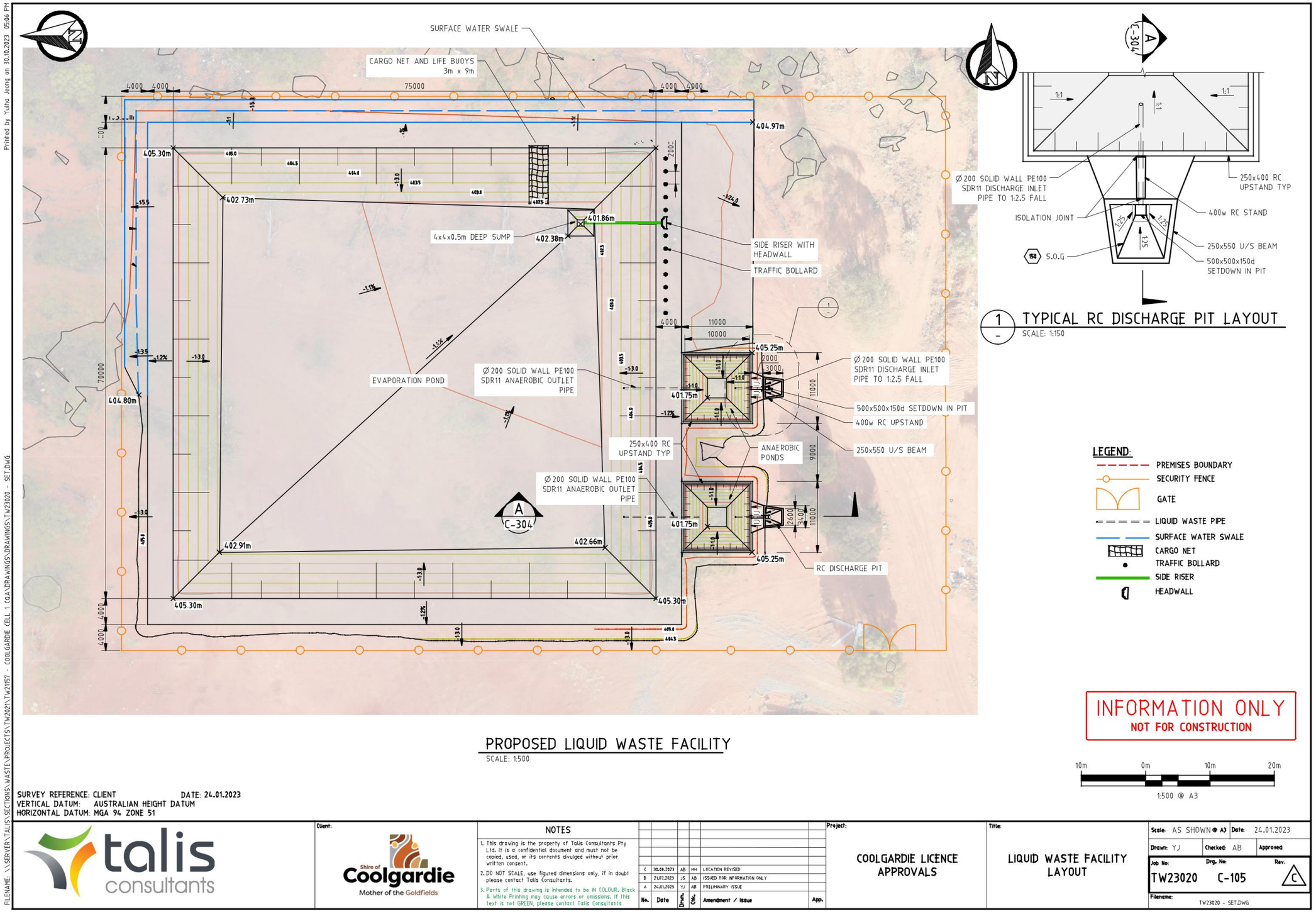

Figure 2: Premises Layout

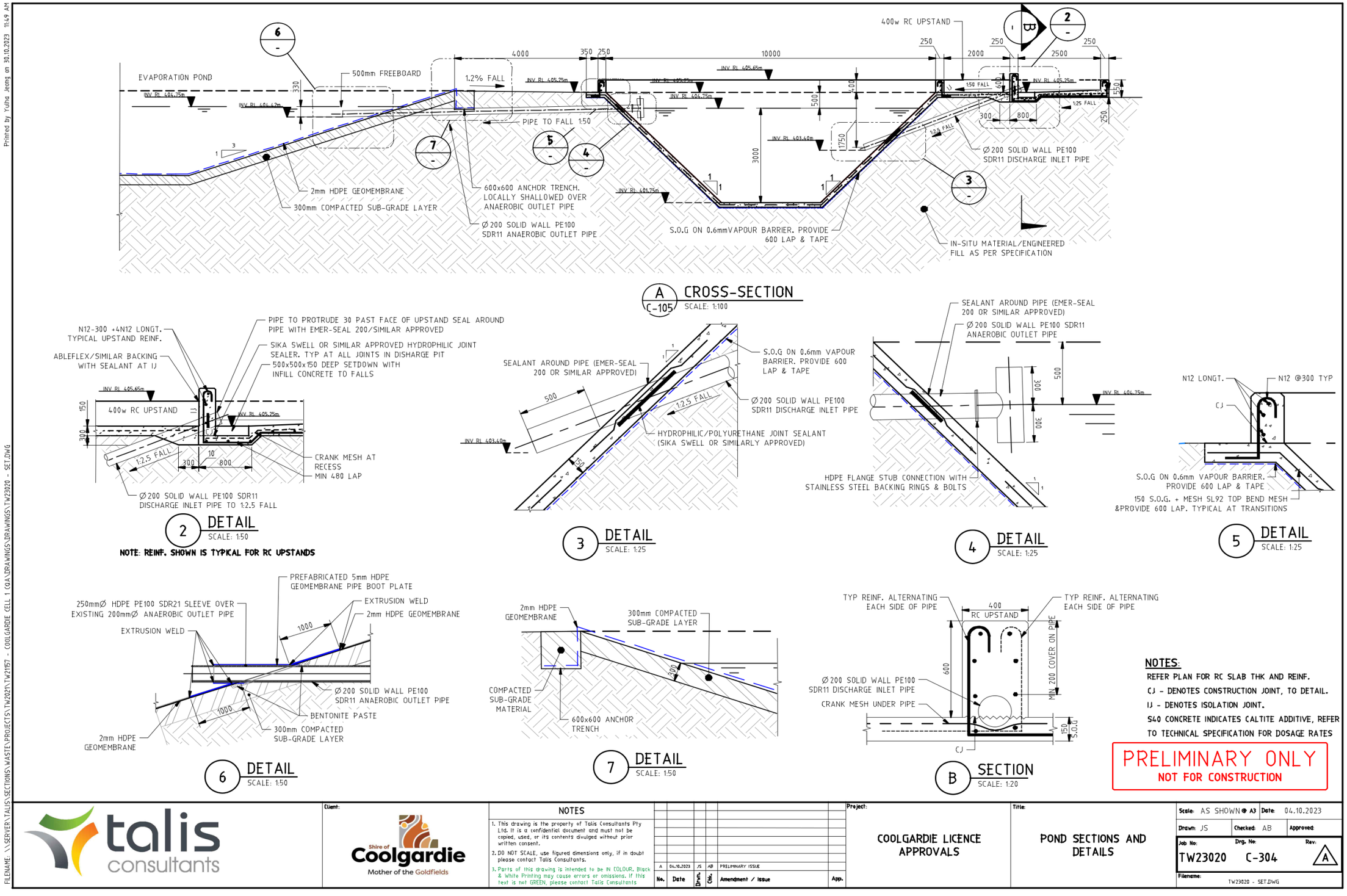

Figure 3: Pond section and details

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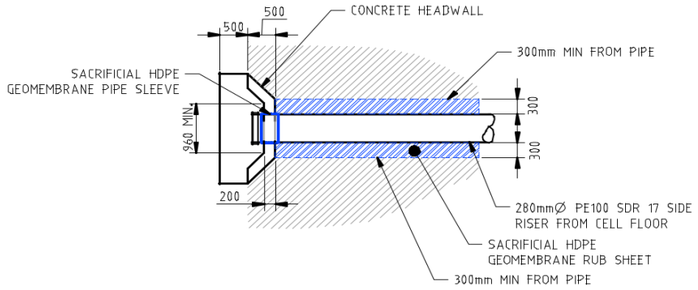
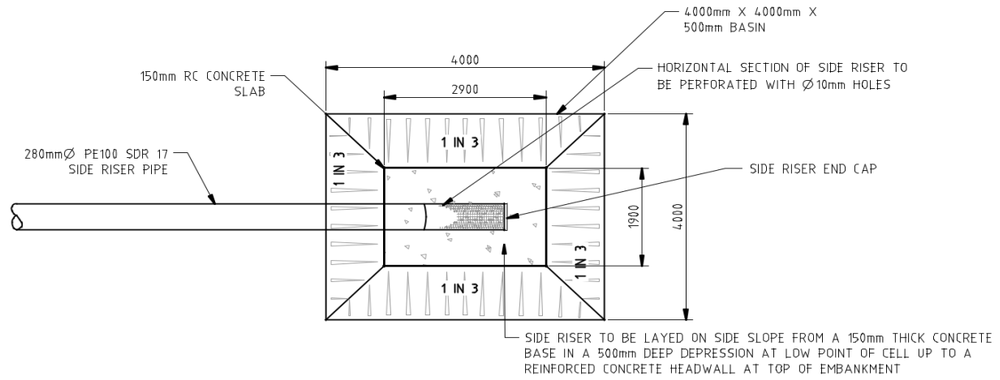


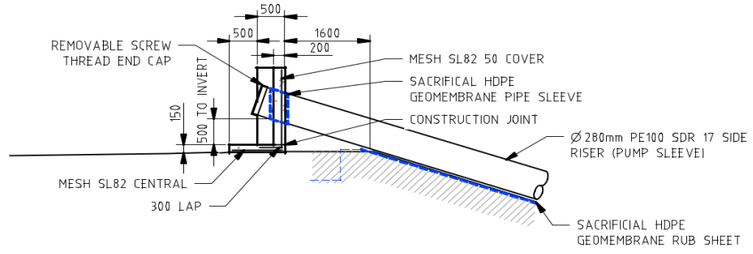
TYPICAL DETAIL - SIDE RISER HEADWALL

SCALE: NTS



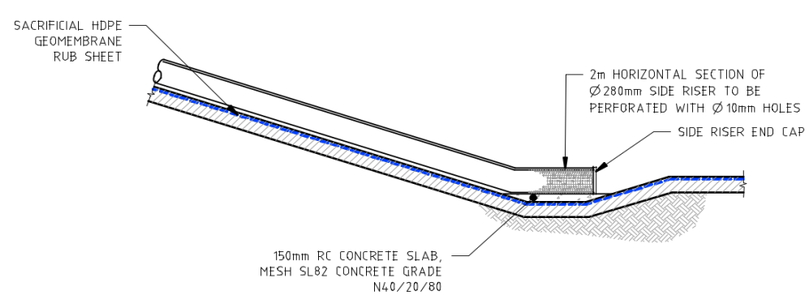
TYPICAL PLAN - COLLECTION SUMP

SCALE: NTS



TYPICAL SECTION - SIDE RISER HEADWALL

SCALE: NTS



TYPICAL SECTION - COLLECTION SUMP

SCALE: NTS

LEGEND:

HDPE GEOMENBRANE RUB SHEET

HDPE LINER

PRELIMINARY ONLY
NOT FOR CONSTRUCTION

SURVEY REFERENCE: CLIENT DATE: 24.01.2023
VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
HORIZONTAL DATUM: MGA 94 ZONE 51

talis consultants

Client: Shire of Coolgardie, Mother of the Goldfields

NOTES

1. This drawing is the property of Talis Consultants Pty Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
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No.	Date	Drn.	Chk.	Amendment / Issue	App.
A	04.10.2023	JS	AB	PRELIMINARY ISSUE	

Project: COOLGARDIE LICENCE APPROVALS

Title: SUMP AND SIDE RISER DETAILS

Scale: AS SHOWN @ A3 | Date: 04.10.2023
Drawn: JS | Checked: AB | Approved:
Job No: TW23020 | Drg. No: C-305 | Rev: A
Filename: TW23020 - SET.DWG

FILENAME: \\SERVER\TALIS\SECTIONS\WASTE\PROJECTS\TW2021\TW21157 - COOLGARDIE CELL 1 (QA\DRAWINGS\DRAWINGS\TW23020 - SET.DWG

Figure 4: Sump and side riser layout

Schedule 2: Minimum specification for excavation and HDPE geomembrane installation

The construction works and requirements described in the following tables are required to be completed in accordance with Condition 1.

Table 6: Pond Subgrade Construction Specifications

Infrastructure or Equipment	Requirements (design and construction)
Site Preparation and Subgrade construction	The following site preparation works must be undertaken: • Clearing and grubbing of entire pond footprint including embankments, bunds and base. • Excavation of all unsuitable materials to a minimum depth of -300mm from final surface level (FSL) to form a suitable subgrade, and replace with engineered fill material, moisture condition and compact to Standard Maximum Dry Density (SMDD) of 95% and Optimum Moisture Content (OMC) of -3% to +3% in layers to FSL not exceeding 300mm and not less than 100mm. • If suitable material (meeting requirements for engineered fill material) exists in the pond footprint, the material shall be excavated to -250mm of FSL, ripped and treated as per engineered fill material for moisture conditions and compaction requirements. • Internal batters cut to 1:3. • Proof roll entire footprint including pond floor and embankments • following rolling, the surface is to have no irregularities in excess of 15 mm deep over a straightedge length of 3 m, as demonstrated by CQA acceptance of the subgrade.

Table 7: HDPE Liner Design, Construction and Quality Assurance Specifications

<table>
<tr><th></th><th>Parameter</th><th>Requirements (design and construction)</th></tr>
<tr><td>1</td><td>High Density Polyethylene liner</td><td>

To extend over the entire pond base and up the side embankments;
Must be uniform and free of pin holes, blisters, blemishes, striations, bubbles, roughness, contaminants and permanently attached raw materials;
Completely sealed and waterproof along all joins and seams with heat welded joints;
Panels of the liner should be overlapped by a minimum of 100mm, prior to heat welding; and
Leak detection survey to be carried out following installation.

</td></tr>
<tr><td>2</td><td>Quality Assurance and Quality Control</td><td>
Construction and installation performance must be measured by the following specifications:

Construction requirements (as specified by condition 1 and this table);
Conformance testing – to show materials meet the following minimum requirements;

<table>
<tr><th>Property</th><th>Units</th><th>Value</th><th>Test</th><th>Testing Frequency</th></tr>
<tr><td>Thickness (minimum, average)</td><td>mm</td><td>1.9</td><td>ASTM D5199</td><td rowspan="3">per roll</td></tr>
<tr><td>Lowest Individual Thickness (for 8 out of 10 Values)</td><td>mm</td><td>1.8</td><td>ASTM D5199</td></tr>
<tr><td>Lowest Individual Thickness (for any of the 10 Values)</td><td>mm</td><td>1.7</td><td>ASTM D5199</td></tr>
</table>
</td></tr>
</table>

	Parameter	Requirements (design and construction)					
		Density (minimum average)		g/cm^3	0.940	ASTM D1505/D792	One sample per 5,000m^2, or every five rolls delivered to Site, whichever is the greatest number of tests
		Tensile properties	Break strength	kN/m	21	ASTM D6693 Type IV	One sample per 5,000m^2, or every five rolls delivered to Site, whichever is the greatest number of tests
			Yield strength	kN/m	29	ASTM D6693 Type IV	
			Yield elongation	%	12	ASTM D6693 Type IV	
			Break elongation	%	100	ASTM D6693 Type IV	
		Tear resistance (min. ave.)		N	249	ASTM D1004	
		Puncture resistance (min. ave.)		N	534	ASTM D4833	
		Carbon black content (range)		%	2.0 – 3.0	ASTM D1603	
		Carbon black dispersion		Cat	9 in Cat 1 or Cat 2; 1 in Cat 3	ASTM D5596	
		Destructive fusion weld testing on-site tests undertaken by Contractor, witnessed	Fusion/Wedge Weld - Shear strength	N/25 mm	701	ASTM D6392	Every 300m along weld
			Fusion/Wedge Weld - Peel strength		530		

	Parameter	Requirements (design and construction)					
		by CQA Consultant	Extrusion Weld – Shear Strength		701		Every 150m along weld
			Extrusion Weld – Peel Strength		455		
		Non - destructive weld testing – tests undertaken by Contractor, witnessed by CQA Consultant	Air pressure test	-	pass/fail	Note 1	All seams over full length
			Vacuum box test			Note 2	
			Spark test			Note 3	

Note 1: Air pressure testing - The test length should be sealed at both ends and an approved pressure feed divide inserted into the air channel. The channel should then be pumped to a pressure of between 25 and 30 psi (~2bar) and allowed to stabilise for 1 minute. The test will have deemed to have failed if the loss of pressure exceeds 10% over a 5-minute period following stabilisation.

Air pressure tests shall be released from the opposite end of the seam to the gauge to verify that the entire seam has been tested and there is no blockage part way along the seam. All pressure test perforations shall be repaired by grinding and welding over the perforation (this also includes needle holes).

Note 2: Vacuum box testing - The seam should be tested and observed for a period of not less than 10 seconds. Apply a generous amount of a strong soapy solution and water to the area to be tested to help create a vacuum. Turn on the vacuum pump and set it to produce approximately 0.35bar of vacuum. It is important that an overlap of a minimum of 75mm is maintained every time the vacuum box is moved along the seam.

Note 3: Spark testing – A length of copper wire shall be placed along the edge of the repair or extrusion welded seam prior to welding. Following welding, a high-tension electrode is passed over the seam, and any faults in the seam are highlighted by a characteristic increased sparking sound and electrical discharge. Any faults shall then be ground to remove any dirt and a further layer of extrudate applied to ensure a seal is formed. The defect shall then be tested again to ensure that the area has been remediated to a suitable manner.

Schedule 3: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 8.

Table 8: Premises boundary coordinates (GDA2020)

	Easting	Northing	Zone
1.	894300	6569006	50
2.	894904	6568975	50
3.	894880	6568303	50
4.	894275	6568325	50