



Licence Number	L8871/2014/1
Licence Holder	SUEZ Recycling and Recovery (Perth) Pty Ltd
ACN	118 828 872
Registered business address	Level 3 3 Rider Boulevard RHODES NSW 2138
DWER File Number	DER2014/002858
Duration	09/03/2015 to 08/03/2022
Date of Issue	6 March 2015
Date of amendment	31 October 2019
Premises Details	North Bannister Resource Recovery Park 6264 Albany Highway North Bannister WA 6390

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production or design capacity
Category 57	1,000 tyres
Category 61	16,000 tonnes per annual period
Category 61A	90,000 tonnes per annual period
Category 62	14,000 tonnes per annual period
Category 64	400,000 tonnes per annual period

Category 67A	100,000 tonnes per annual period
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This Licence is granted to the Licence Holder, subject to the following conditions, on 31 October 2019, by:

Stephen Checker
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Interpretation

In this licence:

- (a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;
- 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;
- where tables are used in a condition, each row in a table constitutes a separate condition;
- any reference in this licence to an Australian or other standard, guideline, or code of practice, means the version of that document in force at the time of granting of this licence;
- unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- unless specified otherwise, all definitions are in accordance with the EP Act.

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

Conditions

General

1. The Licence Holder shall only accept waste at the premises if:
 - (a) It is of a type listed in Table 1.1 or 1.2; and
 - (b) The quantity accepted is below any quantity limit listed in Table 1.1 or 1.2 for that activity (category);
 - (c) It meets the Acceptance specification listed in Table 1.1 or 1.2; and
 - (d) In the case of contaminated solid waste, is supported by documentation that demonstrates compliance with the acceptance criteria for Class III landfills.

Table 1.1: Solid Waste Acceptance

Waste type	Category	Quantity limit per annual period	Acceptance specification ¹
Clean fill	62	14,000 tonnes per annual period	None specified
Inert Waste Type 1			Plastic only
Inert Waste Type 2			
Clean fill	64	Combined total of 400,000 tonnes per annual period	None specified
Inert Waste Type 1			Plastic only
Inert Waste Type 2			Cement bonded asbestos only. No fibrous asbestos shall be accepted
Special Waste Type 1			Biomedical/clinical waste which is radioactive must not be accepted ²
Special Waste Type 2			Must meet the acceptance criteria for Class III landfills
Putrescible Waste			
Contaminated solid waste			

Waste type	Category	Quantity limit per annual period	Acceptance specification ¹
Biosecurity waste			Must be accepted in accordance with the DAWR Approved Arrangement 8.2 for the burial of Biosecurity Waste
Tyres	57	1,000 tyres	To a total of 1,000 tyres only ³
Green waste	67A	100,000 tonnes per annual period including up to 30,000 tonnes of biosolids	Solid waste only
Food processing waste			
Biosolids			
Untreated wood waste	61A	50,000 tonnes per annual period	Limited to: - Waste furniture products; - medium-density fibreboard; - particleboard; - untreated timber; - dunnage; - physically treated (kiln dried/heat treated); and - coarse wood screenings from compost processing Wood treated with the following chemicals shall not be received for processing under Category 61A: - organic solvent preservatives laced with c pesticides; - Creosote sealant; - Pyrethroids and other natural pesticides; - Boron based timber treatments; - Copper based timber treatments; - Particle boards containing formaldehyde; and - Methyl Bromide, Sulphuryl Fluoride, or Ethylene Oxide fumigants for pest control purposes
Acid sulfate soils (ASS)		40,000 tonnes per annual period	Limited to naturally occurring acid sulfate soils from land development and excavation activities. Acid sulfate soils contaminated with Cement bonded asbestos only. No acid sulfate soils contaminated with fibrous asbestos shall be accepted.

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

Note 2: Information relating to the classification of radioactive waste can be found in the *Western Australian Radiation Safety Act 1975*.

Note 3: Information relating to the storage of tyres can be found in the *Western Australian Environmental Protection Regulations 1987*.

Table 1.2: Liquid waste acceptance

Waste type	Category	Quantity limit per annual period	Acceptance specification
Non toxic salts	61/67A	16,000 tonnes per annual period (comprising 6, 000 tonnes for discharge to evaporation ponds and 10, 000 tonnes for use in compost manufacture)	Limited to waste process water and wash waters contaminated with non toxic salts
Phosphorus compounds excluding mineral phosphates	67A		Limited to wash waters and process wastewater containing phosphorus fertilizer residues. No waste streams containing ethyl phosphorus or organophosphates shall be received.
Aqueous-based wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	61		Limited to wash waters contaminated with water-based inks and dyes.
Industrial wash waters contaminated with a controlled waste	61/67A		Limited to industrial wash waters or process waters contaminated with one of the waste types contained within column 1 of Table 1.2
Car and truck wash waters	67A		Limited to wash waters from car or truck washing activities contaminated with detergents and hydrocarbons.
Animal effluent and residues	67A		Limited to abattoir effluent, poultry, meat and seafood processing waste, livestock truck washings and wash waters contaminated with animal derived wastes.
Waste from grease traps	67A		Limited to waste from commercial grease traps
Wool scouring wastes	67A		Waste waters from wool washing and scouring operations.

Waste type	Category	Quantity limit per annual period	Acceptance specification
Food and beverage processing wastes Septage wastes	67A		Limited to dairy wastes, vegetable and fruit processing effluent, winery wastes, waste beverages and wash waters contaminated with grain residue.
Septage wastes	67A		Liquid and solid components from the pump-out of domestic and commercial septic tanks
Industrial waste treatment plant residues	61		Limited to landfill leachates which meet the leachable contaminant threshold values for Class III waste (ASLP3) as defined in the Landfill Definitions

2. The Licence Holder shall ensure that where waste does not meet the waste acceptance criteria set out in Condition 1, it is removed from the Premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an appropriately authorised facility as soon as practicable.

Emissions

3. The Licence Holder must not cause any Emissions from the Primary Activities on the Premises except for specified Emissions and general Emissions described in Table 2 subject to the exclusions, limitations or requirements specified in Table 2.

Table 2: Authorised Emissions table

Emission type	Exclusions/Limitations/Requirements
Specified Emissions	
None specified	N/A
General Emissions (excluding Specified Emissions)	

Emission type	Exclusions/Limitations/Requirements
Emissions which: - Arise from the Primary Activities set out in Schedule 2; or - Arise from a Material Change.	Emissions excluded from General Emissions are: - Unreasonable Emissions; or - Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or - Discharges of Waste in circumstances likely to cause Pollution; or - Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or - Emissions or Discharges which do not comply with an Approved Policy; or - Emissions or Discharges which do not comply with a prescribed standard; or - Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or - Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental Protection (Unauthorised Discharges) Regulations 2004.

4. The License Holder shall ensure an adequate water supply and a means of distribution be provided at all times to extinguish a fire at any part of the Premises.
5. In the event of a fire¹ on the Premises, the License Holder shall advise the CEO of the fire by the end of the following working day after which the fire was discovered.

Note 1: Spot fires which have been extinguished within one hour of being discovered are not required to be reported.

Works specifications (construction)

6. The Licence Holder must ensure that the construction works specified in Table 3 meet or exceed the specifications in the corresponding schedule as noted in Table 3.

Table 3: Works specifications

Works type	Works description	Specifications reference
Landfill gas extraction infrastructure	Well hole design and construction	Schedule 4
Leachate Pond No. 2	Fencing Leachate collection infrastructure design and construction Liquid waste evaporation pond design and construction	Schedule 5
Compost area expansion	Subgrade preparation Construction of Leachate Pond B with HDPE liner Decommissioning and installation of groundwater monitoring wells	Schedule 6

Works type	Works description	Specifications reference
Cells 5 and 6	Landfill cell design and construction Installation of composite liner and leachate collection system	Schedule 7
Leachate Ponds No 3 and 4	Leachate Pond design and construction Installation of composite liner and leachate drainage system Fencing Leachate management infrastructure installation	Schedule 8

7. The Licence Holder must not depart from the specifications for the Works description and the corresponding Specifications reference provided in Table 3 except:
 - (a) Where such departure is minor in nature and does not materially change or affect the infrastructure; or
 - (b) Where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment and all other Conditions in the Licence are still satisfied.
8. If any departures outlined in Condition 7 apply, then the Licence Holder must provide the CEO with a list of departures which are certified as complying with Condition 7 at the same time as the certifications under Condition 9.
9. Within 30 days of completion of each of the Works types described in Table 3 the Licence Holder must provide to the CEO a construction compliance report confirming that the infrastructure specified in the Works description in Table 3 has been constructed with no material defects and the requirements specified in the corresponding Specifications reference listed in Table 3. The Licence Holder must ensure that the report:
 - (a) Is certified by the Geotechnical Inspection and Testing Authority (GITA) or a suitably qualified professional engineer;
 - (b) That each of the Works descriptions provided in Table 3 has been constructed in accordance with the design specification and requirements provided in the corresponding Specifications reference listed in Table 3, the conditions of this Licence and any documentation submitted under Condition 9;
 - (c) Contains a detailed site plan showing the location and dimensions of the infrastructure corresponding to the Works descriptions provided in Table 3;
 - (d) Contains as-constructed infrastructure drawings and bore (or well) construction logs;
 - (e) Contains details of any infrastructure (including groundwater monitoring wells) decommissioned as part of the works; and
 - (f) Is signed by a person authorised to represent the Licence Holder and contains the printed name and position of that person within the company.
10. For each of the Works specified in Table 3, the construction compliance report required by Condition 9 must be accompanied by a Construction Quality Assurance Validation Report that:
 - (a) Is written and certified by the GITA that completed the construction quality assurance processed required by the corresponding Specifications reference in Table 3;
 - (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 reference in Table 3.
- 11.** The Licence Holder shall not operate the Works specified in Table 3 until:
- the documents required under Condition 8 and Condition 9 have been submitted to the CEO; and
 - In the case of specified Works for Cells 5 and 6 and Leachate Ponds 3 and 4, waste acceptance shall not be allowed for a period of 30 calendar days following the submission of the documents required by Condition 9(a), or until a lesser date specified by the CEO in a written notification.

Operation specifications

- 12.** The Licence Holder shall ensure that wastes accepted onto the Premises are only subjected to the process(es) set out in Table 4.1 or Table 4.2 and in accordance with any process limits or specifications described therein.

Table 4.1: Solid waste processing

Waste type	Process(es)	Process limits or specifications ^{1,2}
All solid waste (excluding tyres)	Disposal of waste by landfilling	- Shall only take place within Cells 1 to 6 as shown on the Figure S1-1 in Schedule 1. - No waste shall be temporarily stored or landfilled within 35 m from the boundary of the premises. - The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2 m.
Contaminated Solid Waste	Receipt, handling and disposal by landfilling	None specified
Clean Fill	Receipt, handling, Storage prior to removal offsite or disposal by landfilling	None specified
Inert Waste Type 1	Receipt, handling and disposal by landfilling	- Crushing and screening of Inert Waste Type 1 is not permitted. - Inert Waste Type 1 to be stored within the designated C & D waste stockpile area as defined in Figure S1-1 in Schedule 1 prior to disposal other than by landfilling.
Inert Waste Type 2 (excluding tyres)		None specified
Special Waste Type 1	Receipt, handling and disposal by landfilling	- Only to be disposed of into a designated asbestos disposal area within landfill cells as defined in Figure S1-1 in Schedule 1. - Not to be disposed within 2 m of the final tipping surface of the landfill. - No works shall be carried out on the landfill that could lead to a release of asbestos fibres.
Special Waste Type 2		- Only to be disposed of into a designated biomedical waste disposal area within the landfill cells as defined in Figure S1-1 in Schedule 1. - Not to be disposed within 2 m of the final tipping surface of the landfill. - No works shall be carried out on the landfill that could lead to biomedical wastes being excavated or uncovered.

Waste type	Process(es)	Process limits or specifications ^{1,2}
Tyres	Receipt, handling, storage prior to removal offsite or re-use	- Used tyres to be stored within the designated tyre stockpile area (Figure S1-1 in Schedule 1) prior to disposal other than by landfilling. - Used tyres to be stored in piles of up to 100 tyres with a 6 m minimum separation distance between piles. - No more 1,000 used tyres shall be stored in the designated tyre stockpile area at any time.
Solid Green waste and Food processing waste	Receipt, handling and storage prior to composting	To be stored within the designated area of the Green Waste Processing Area (Figure S1-1 in Schedule 1)
Biosolids	Receipt, handling and storage prior to composting	To be stored within the designated area of the Green Waste Processing Area (Figure S1-1 in Schedule 1)
Green waste, food processing waste, stabilised biosolids ³	Treatment by composting and storage of compost prior to removal offsite	- To be processed and stored within the designated area of the Green Waste Processing Area as specified in Table 9 and depicted in Figure S1-1 in Schedule 1. - Liquid waste shall not be added to compost outside of a mixing area with a surface permeability of no greater than 1×10^{-9} m/s (or equivalent). - Any windrows not subject to forced aeration shall be turned regularly to ensure aerobic conditions are maintained. - No liquid waste or leachate shall be added to dry inputs on the mixing area unless there is a complete perimeter of dry feedstock is maintained around the mixing area during mixing suitable to prevent direct discharge of liquid waste or leachate. - No liquid waste or leachate shall be added to dry inputs on the mixing pad if there is pooling or ponding of liquid waste or leachate visible from previous mixing operations; - The core temperature of the composting feedstock windrows shall be maintained between 60 °C and 70 °C for initial aerobic composting process (phase 1 process) during which aeration through perforated pipes is undertaken to achieve pasteurisation. - Moisture level in the composting piles shall be maintained between 50 to 60 percent. - Windrows shall not exceed 3.5 m high, 15 m wide and 39 m long. - Compost stockpile shall not exceed 1500 m³. - A minimum of 5 m firebreak shall be maintained around the green waste and compost stockpiles. - Leachate from Leachate Pond A and Leachate Pond B shall only be applied to phase 1 process windrows. - No more than 100,000 tonnes of compost to be produced per annual period. - Department of Health 'Compost product Approval' shall be obtained for any compost produced using biosolids or septage waste which is intended for retail sale.

Waste type	Process(es)	Process limits or specifications ^{1,2}
Quarantine Waste	Receipt and handling prior to disposal by landfilling	Must be disposed in accordance with the DAWR Approved Arrangement 8.2 for the burial of Biosecurity Waste
Untreated wood waste	Sorting, shredding and stockpiling	- Shredded and unshredded wood waste shall not be stored within 30m of premises boundary; - Shredded and unshredded wood waste stockpiles shall not exceed a maximum length of 50m, a maximum width of 10m and a maximum height of 5m - A minimum 5 metre internal access road shall be maintained between all shredded and unshredded wood waste stockpiles; - Shredding equipment shall be fitted with water sprinklers, or feedstock damped down with water sprayers prior to shredding in order to minimise potential dust emissions - Stockpiles of shredded wood shall be removed from the Premises within 28 days of processing.
Acid sulfate soil	Receipt, storage and neutralization via blending with crushed limestone or agricultural lime.	- To be stored and processed on temporary pads constructed of a minimum 300mm thick layer of compacted, crushed limestone. - Temporary storage and treatment pads shall be raised above natural ground level and incorporate a minimum 150mm perimeter bund. - To be blended with lime and neutralised in accordance with the Identification and investigation of acid sulfate soils and acidic landscapes (DER, 2015) and Treatment and management of soil and water in acid sulfate soil landscapes (DER, 2015). - Neutralised soils to be used as daily cover or capping material in accordance with Condition 14, or blended with compost for the production of manufactured soils. - Soil and lime shall be kept damp during soil blending in order to mitigate fugitive dust emissions. - Neutralised soils contaminated with bonded asbestos to be disposed of into a designated asbestos disposal area within landfill cells as defined in Figure S1-1 in Schedule 1. - Neutralised soils contaminated with bonded asbestos shall not be disposed of within 2 m of the final tipping surface of the landfill.

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

Note 2: Additional requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

Note 3: Further requirements for composting of biosolids are set out in the *Western Australian Guidelines for Biosolids Management 2012* and the Department of Health responses to NBRRP: *North Bannister Composting Facility in Principal Approval for Composting Trial Using Sewage Sludge 1 April 2016*, and the DoH letter (document titled *North Bannister Resource Recovery Facility – Proposed Composting Facility Upgrade*) in Appendix 6 of the *Amendment Notice dated 25 June 2018 for the expansion of the Composting Facility*.

Table 4.2: Liquid waste processing

Waste type	Process(es)	Process limits or specifications
Non toxic salts	I. Receipt, handling and storage prior to treatment via composting; OR II. Discharge to evaporation ponds	Saline solutions and brine wastes uncondusive to compost manufacturing shall be discharged to evaporation ponds.
Phosphorus compounds excluding mineral phosphates	Receipt, handling and storage prior to treatment via composting	To be stored within infrastructure as specified in Table 10 pending incorporation into composting process.
Aqueous-based wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	Discharge to evaporation ponds	N/A
Industrial wash waters contaminated with a controlled waste	I. Receipt, handling and storage prior to treatment via composting; OR II. Discharge to evaporation ponds	- To be stored within infrastructure as specified in Table 10 pending incorporation into composting process. - Industrial wash waters uncondusive to compost manufacturing shall be discharged to evaporation ponds.
Car and truck wash waters	Receipt, handling and storage prior to treatment via composting	To be stored within infrastructure as specified in Table 10 pending incorporation into composting process.
Animal effluent and residues	Receipt, handling and storage prior to treatment via composting	To be stored within infrastructure as specified in Table 10 pending incorporation into composting process.
Waste from grease traps	Receipt, handling and storage prior to treatment via composting	To be stored within infrastructure as specified in Table 10 pending incorporation into composting process.
Wool scouring wastes	Receipt, handling and storage prior to treatment via composting	To be stored within infrastructure as specified in Table 10 pending incorporation into composting

		process.
Food and beverage processing waste	Receipt, handling and storage prior to treatment via composting	To be stored within infrastructure as specified in Table 10 pending incorporation into composting process.
Septage wastes	Receipt, handling and storage prior to treatment via composting	- To be stored within infrastructure as specified in Table 10 pending incorporation into composting process. - To be applied directly to and blended with green waste.
Industrial waste treatment plant residues	Discharge to evaporation ponds	N/A

- 13.** The Licence Holder shall manage the landfilling activities to ensure:
- The size of the tipping face is kept to a minimum and not larger than 50 m in diameter and 6 m high;
 - Waste is levelled and compacted as soon as practicable after it is discharges;
 - Waste is placed and compacted to ensure all faces are stable and capable of retaining rehabilitation material; and
 - Rehabilitation of a cell or phase takes place within 6 months after disposal in that cell of phase has been completed.
- 14.** The Licence Holder shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 5 and that sufficient stockpiles or cover are maintained on site at all times.

Table 5: Cover requirements

Waste type	Cover requirement(s) ¹
Inert Waste Type 1	No cover required.
Inert Waste Type 2	To be covered by the end of the working day in which the waste was disposed with 100 mm of Inert Waste Type 1 or soil.
Special Waste Type 1	- To be covered with 300 mm of soil as soon as practicable and not later than the end of the working day after disposed and before being compacted to prevent the release of asbestos fibres as a result of compaction and other landfilling activities. 1,000 mm of soil within 3 months of achieving final waste contours
Special Waste Type 2	- To be covered with 300 mm of soil as soon as practicable, and not later than the end of the working day after disposal. 1,000 mm of Inert Waste Type 1 or Clean Fill within 3 months of achieving final waste contours.
Putrescible waste and Contaminated Solid Waste	- To be covered with either: 150 mm of Inert Waste Type 1 or Clean Fill; or - A Tarpaulin Cover System incorporating impermeable, Ultra Violet light-resistant, fire retardant tarpaulins which overlap or otherwise completely cover waste; as soon as practicable and not later than the end of the working day; and 1,000 mm of Inert Waste Type 1 or Clean Fill within 3 months of achieving final waste contours.

Note 1: Additional requirements for final cover of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

15. The Licence Holder shall implement the following security measures at the site:
- Erect and maintain suitable fencing to prevent unauthorised access to the site;
 - Ensure that any entrance gates to the Premises are securely locked when the Premises is unattended; and
 - Undertake regular inspections of all security measures and repair damage as soon as practicable.
16. The Licence Holder shall take all reasonable and practical measures to ensure that no wind-blown waste escapes from the Premises and that wind-blown waste is collected on at least a weekly basis and returned to the tipping area or appropriately contained.
17. The Licence Holder shall inspect and monitor the leachate management system weekly to monitor leachate levels in all ponds and sumps, and manage movement of leachate between sumps and ponds and the recirculation system. The Licence Holder shall monitor and record, at a minimum, the Parameters specified in Table 6 at the locations, levels and recording frequency specified in the Table.

Table 6: Leachate Management System monitoring requirements

Parameter	Location	Operational levels	Recording period
Depth of leachate	Leachate Sump 1 (Cell 1) Leachate Sump 2 (Cell 5) Leachate Pond, 1, 2, 3 and 4 Leachate Ponds A and B	High – 300 mm below freeboard as specified in Table 7	Weekly manual record
Depth of Stormwater	Stormwater Dam 1	High – 300 mm below freeboard as specified in Table 7	
Flow of leachate/stormwater (volume)	Pipework within leachate management system	N/A	

18. The Licence Holder shall take all practical measures to ensure that the process control parameters in Table 7 comply with the trigger level specified in that Table.

Table 7: Process controls for leachate management

Reference	Parameter	Operational level	Averaging period
PC1	Leachate head within the leachate sumps (locations PM1 and PM2 as depicted in Figure S-3-X in Schedule 3)	Less than or equivalent to 1,300mm within the sump ¹	Instantaneous
PC2	Leachate Pond 1 freeboard	Greater than or equivalent to 1100mm	
PC3	Leachate Pond A freeboard	Greater than or equivalent to 500mm	
PC4	Leachate Pond B freeboard	Greater than or equivalent to 500mm	
PC5	Leachate Pond 2 freeboard	Greater than or equivalent to 500mm	
PC6	Leachate Pond 3 freeboard	Greater than or equivalent to 500mm	
PC7	Leachate Pond 4 freeboard	Greater than or equivalent to 500mm	

Note 1: A 1,300 mm leachate head within the sump is equivalent to approximately 300 mm of leachate over the composite liner in the vicinity of the sump.

- 19.** In case of the occurrence of an Event at a corresponding reference point as specified in Table 8, the Licence Holder shall take the relevant Management action as specified in Table 8

Table 8: Management actions

Event/ action reference	Event	Process control parameter reference in Table 7	Management action
EA1	Any time the leachate head exceeds the operational level in Table 7.	PC1	a) The Licence Holder shall undertake management measures as defined in EMP – Leachate management within 24 hours of observing the exceedance. b) Where inspection and monitoring indicate failure or blockage of the leachate collection system, the Licence Holder shall remove leachate from the system via liquid waste transport to a licensed liquid waste facility within 72 hours of observing the exceedance. c) Where inspection and monitoring indicate failure or blockage of the leachate collection system, the Licence Holder shall notify the CEO in accordance with Condition 39.
EA2	Any time the freeboard in Leachate Ponds 1, 2, 3 or 4 and/or Leachate Ponds A or B is less than the operational level prescribed in Table 7.	PC2 PC3 PC4 PC5 PC6 PC7	a) The Licence Holder shall undertake management measures as defined in EMP – Leachate management within 24 hours of observing the exceedance. b) Where inspection and monitoring indicate failure or blockage of the leachate collection system, the Licence Holder shall remove leachate from the system via liquid waste transport to a licensed liquid waste facility within 72 hours of observing the exceedance. c) Where inspection and monitoring indicate failure or blockage of the leachate collection system, the Licence Holder shall notify the CEO in accordance with Condition 39.

Infrastructure and equipment (operations)

- 20.** The Licence Holder must ensure that the infrastructure and equipment specified in Table 9 is maintained in good working order and operated and maintained in accordance with the requirements specified in Table 9.
- 21.** The Licence Holder shall ensure that waste material is only disposed, stored and/or treated within infrastructure and equipment with the corresponding infrastructure requirement(s) as detailed in Table 9.

Table 9: Containment Infrastructure

Infrastructure and equipment	Material	Infrastructure requirement(s)
Class II or Class III Putrescible Landfill Cells	Clean Fill Class II and Class III Putrescible and Contaminated Solid Waste Inert Waste Type 1 Inert Waste Type 2 (excluding tyres) Special Waste Type 1 Special Waste Type 2	• Composite lining system to achieve a permeability of less than 1×10^{-9} metres per second or equivalent; and • Leachate collection system that extends across the base and sides of each cell to intercept all vertical and lateral seepage occurring through the waste. • A separation distance of at least two (2) metres shall be maintained between the maximum groundwater table elevation and the base of the lining system (top of constructed subgrade). • A separation distance of at least two (2) metres shall be maintained between the maximum groundwater table elevation and the leachate collection sump invert elevation.
Green Waste Processing Area	Green waste, food processing waste, biosolids, grease trap waste, material undergoing storage, composting and maturation and final compost material	• Asphalt hardstand area shall be graded and draining to direct leachate to Leachate Pond A and Pond B; and occupying the area as depicted in Figure S1-1 in Schedule 1. • Concrete areas shall be graded and draining to direct leachate to leachate Pond A and Pond B; and occupying the area as depicted in Figure S1-1 in Schedule 1.
Liquid waste storage	Non toxic salts, Phosphorus compounds excluding mineral phosphates, Industrial wash waters contaminated with a controlled waste, Car and truck wash waters, Animal effluent and residues, Waste from grease traps, Wool scouring wastes, Food and beverage processing wastes and Septage wastes for incorporation into compost	• Liquid waste tanker stored within the Green Waste Processing Area as needed
Leachate Pond 1	Landfill leachate from active and/or closed cells; and Wastewater from Leachate Pond A	• Composite lining system to achieve a permeability of less than 1×10^{-9} metres per second or equivalent; and • Designed to contain leachate and stormwater produced as a result of a 1:100 year storm event. • Designed to maintain a freeboard of no less than 1100mm

Infrastructure and equipment	Material	Infrastructure requirement(s)
Leachate Pond 2	Landfill leachate from active and/or closed cells; and Liquid wastes	• Composite lining system to achieve a permeability of less than 1×10^{-9} metres per second or equivalent; and • Designed to contain leachate and stormwater produced as a result of a 1:100 year storm event. • Designed to maintain a freeboard of no less than 500mm
Leachate Pond 3	Landfill leachate from active and/or closed cells; and liquid wastes	• Composite lining system to achieve a permeability of less than 1×10^{-9} metres per second or equivalent; and • Designed to contain leachate and stormwater produced as a result of a 1:100 year storm event. • Designed to maintain an operational freeboard of no less than 500mm with a wet freeboard (overflow spillway outlet) at 300mm • A separation distance of at least two (2) metres shall be maintained between the maximum groundwater table elevation and the base of leachate pond sump.
Leachate Pond 4	Landfill leachate from active and/or closed cells; and liquid wastes	• Composite lining system to achieve a permeability of less than 1×10^{-9} metres per second or equivalent; and • Designed to contain leachate and stormwater produced as a result of a 1:100 year storm event. • Designed to maintain a freeboard of no less than 500mm with a wet freeboard (overflow spillway outlet) at 300mm
Leachate Pond A Leachate Pond B	Leachate from the Green Waste Processing Area; and Emergency runoff from the tyre stockpile area	• Geosynthetic lining system to achieve a hydraulic conductivity of not less than 1×10^{-9} metres per second or equivalent; and • Designed to contain leachate and stormwater produced as a result of a 1:100 year storm event. • Designed to maintain a freeboard of no less than 500mm
Stormwater dam 1	Stormwater runoff uncontaminated by activities on the Premises	• Geosynthetic lining system to achieve a permeability of not less than 1×10^{-9} metres per second or equivalent; and • Designed to contain surface water produced as a result of a 1:100 year storm event. • Designed to maintain a freeboard of no less than 500mm
Stormwater dams 2 and 3	Stormwater runoff uncontaminated by activities on the Premises	None specified

22. The Licence Holder shall provide and maintain suitable wheel cleaning facilities to ensure that no waste or other debris is tracked beyond the boundary on the Premises.

23. The Licence Holder must ensure that the infrastructure and equipment specified in Table 10 is maintained in good working order and operated and maintained in

accordance with the requirements specified in Table 10.

Table 10: General operational infrastructure

Infrastructure and equipment	Infrastructure requirement(s)
Plant and Machinery	Installed with exhaust silencers and regularly maintained to limit unnecessary noise
Leachate management system (including pumps, pipework, sensors, monitoring devices and operational controls)	Regularly inspected and maintained to ensure system is free of blockage, and sensors and monitoring devices are operating correctly and in accordance with the requirements of EMP – Leachate Management.
Reticulation infrastructure	Regularly inspected and maintained to ensure correct operation in the conveyance of leachate to active landfill cells for recirculation.
Leachate Pond aerators (Leachate Ponds 3 and 4)	- Regularly inspected and maintained to ensure correct operation for aeration and evaporation of leachate. - Will not be operated in windy weather conditions.

Specified Actions

- 24.** The Licence Holder shall submit to the CEO the Information in Table 11 in accordance with the Requirements and Timescale outlined in Table 11.

Table 11: Specified actions

	Information	Requirement(s)	Timescale
1	Capping Plan	Report including the design, material specifications, landfill gas collection, current and finished surveyed levels, and construction quality assurance planning for each landfill cell.	3 months prior to completion of waste disposal in each cell
2	Completion report for capping works	Report on the completed capping works in accordance with the Capping Plan previously submitted to the CEO for each cell.	6 months after the completion of waste disposal in each cell
3	Landfill Gas Collection Infrastructure	Report providing the location and specification of landfill gas collection wells, and specification for landfill gas management infrastructure	30 October 2019

Monitoring

- 25.** The Licence Holder shall ensure that:
- Monthly monitoring is undertaken at least 15 days apart;
 - Six (6) monthly monitoring is undertaken at least five (5) months apart; and
 - Annual monitoring is undertaken at least nine (9) months apart.
- 26.** The Licence Holder shall undertake the monitoring of parameters specified in Table 12 according to the specifications on that table.

Table 12: Monitoring of inputs and outputs

Input/Output	Parameter	Units	Frequency	Method
Waste Inputs	Clean Fill, Inert Waste Type 1, Inert Waste Type 2, Special Waste Type 1, Special Waste Type 2, Putrescible waste and Contaminated Solid Waste, Solid Green waste, Food processing waste, Liquid waste, Biosolids and Biosecurity waste.	tonnes	Each load arriving at the Premises	None specified
Waste Outputs	Waste types as defined in the Landfill Definitions		Each load leaving or rejected from the Premises	Nne specified
Compost outputs	Final compost material	tonnes	As per sampling procedure required in AS 4454	Sampling and testing in accordance with AS 4454

- 27.** The License Holder must ensure that the testing of all compost product is undertaken in accordance with AS 4454.
- 28.** The License Holder must ensure that products are classified according to the product specification and end use(s) as determined by the physical and chemical quality specifications required by AS 4454.
- 29.** The Licence Holder shall ensure that:
- All liquid samples are collected and preserved in accordance with AS/NZS 5667.1;
 - All wastewater sampling is conducted in accordance with AS/NZS 5667.10;
 - All surface water sampling is conducted in accordance with AS/NZS 5667.4;
 - All groundwater sampling is conducted in accordance with AS/NZS 5667.11;
 - All laboratory samples are submitted to and tested by a laboratory with NATA accreditation for the parameters being measured unless indicated otherwise within the relevant table.
- 30.** The Licence Holder shall undertake the process monitoring at the monitoring point reference locations specified in Table 13, and shown on the map in Schedule 3, according to the specifications in that Table.

Table 13: Process monitoring

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
PM1 and PM2	Leachate head within leachate sumps 1 (Cell 1) and 2 (Cell 5)	Depth	mm	weekly	Depth to be measured after a minimum period of 24 hours after pumping of

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
					leachate from the sump
PM1 and PM2	Leachate extracted from leachate sumps 1 (Cell 1) and 2 (Cell 5)	pH ¹	pH units	Six monthly	In accordance with Condition 0
		Electrical conductivity ¹	µS/cm		
		Total soluble solids	mg/L		
		Cations and anions – Potassium, chloride and sulphate			
		Dissolved metals – arsenic (total) cadmium, chromium, copper, iron (total), lead manganese, mercury, molybdenum, nickel, selenium, zinc			
		Nutrients – Ammoniacal nitrogen, nitrate-nitrogen, total nitrogen, total phosphorus, total organic carbon, chemical oxygen demand			
		Monocyclic aromatic hydrocarbons – benzene, toluene, methylbenzene, xylene (total)	µg/L	annually	
		Polycyclic aromatic hydrocarbons – acenaphthene, anthracene, ben(a)pyrene, fluoroanthene, naphthalene, pyrene			
		Organochlorine pesticides – Aldrin, chlordane (and metabolites), DDT (and metabolites), dieldrin, chloropyrifos, HCB, heptachlor (and its epoxide), lindane			
		Organaphosphates – parathion, demeton-S-methyl, maldison, diazinon, demthoate, fenamiphos, fenthion			
Other – atrazine, TCE, PCE and polychlorinated biphenyls (total)					
PM3 and PM4	Leachate drainage from depressurisation laver outlet in	Volume	L	Monthly	Estimated volume

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
	Leachate Ponds 3 and 4.				
Compost windrows	Composting materials	Temperature ²	°C	At least three times per week	Representative samples of windrow condition
		Moisture content ²	%	At least Weekly	
		Oxygen	%	At least Weekly	

Note 1: In-field non-NATA accredited analysis permitted

Note 2: Monitoring Undertaken in accordance with NBRP Product Quality Manual MAN016

- 31.** The Licence Holder shall undertake the monitoring at the monitoring point reference locations specified in Table 14 and Table 15, and shown on the map in Schedule 3 according to the specifications in those tables.

Table 14: Monitoring of ambient surface water quality

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency	Method
SD1, SD2, SD3	pH ¹	pH units	Spot sample	Two sampling events between the months of June and September, separated by at least 30 days	In accordance with Condition 0
	Electrical conductivity ¹	µS/cm			
	Total soluble solids	mg/L	Spot sample		
	Cations and anions – Potassium, chloride and sulphate				
	Dissolved metals – arsenic (total) cadmium, chromium, copper, iron (total), lead manganese, mercury, molybdenum, nickel, selenium, zinc				
	Nutrients – Ammoniacal nitrogen, nitrate-nitrogen, total nitrogen, total phosphorus, total organic carbon, chemical oxygen demand				

Note 1: In-field non-NATA accredited analysis permitted

Table 15: Monitoring of ambient groundwater quality

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency	Method
GMB1, GMB2, GMB3,GMB4; GMB6, GMB7, MW01, MW02, MW03, MW04A, MW05, MW06,	Standing water level ¹	mAHD	Instantaneous	Six monthly	In accordance with Condition 0
	pH ¹	pH units	Spot sample		
	Electrical conductivity ¹	µS/cm			
	Total soluble solids	mg/L	Spot sample		
	Cations and anions – Potassium, chloride and sulphate				

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency	Method
MW07, MW08, MW09, MW10, MW11	Dissolved metals – arsenic (total) cadmium, chromium, copper, iron (total), lead manganese, mercury, molybdenum, nickel, selenium, zinc				
	Nutrients – Ammoniacal nitrogen, nitrate-nitrogen, total nitrogen, total phosphorus				
	Monocyclic aromatic hydrocarbons – benzene, toluene, methylbenzene, xylene (total) Polycyclic aromatic hydrocarbons – acenaphthene, anthracene, ben(a)pyrene, fluoroanthene, naphthalene, pyrene Organochlorine pesticides – Aldrin, chlordane (and metabolites), DDT (and metabolites), dieldrin, chlorpyrifos, HCB, heptachlor (and its epoxide), lindane Organophosphates – parathion, demeton-S-methyl, maldison, diazinon, demthoate, fenamiphos, fenthion Other – atrazine, TCE, PCE and polychlorinated biphenyls (total)	µg/L		Annually	

Note 1: In-field non-NATA accredited analysis permitted

32. Sampling methodology should be undertaken in accordance with Condition 0. Field records should be kept and must include as a minimum:

- Date, location and time of sampling;
- Sampling equipment and methodology of sample collection;
- Depth sample was collected from;
- Sample collection point description and information (height of water depth, height of casing, total depth of water, etc.);
- SWL before and after sampling (where relevant);
- Purge volume (where relevant);
- Observations of sample (e.g. colour, turbidity, odour, presence of sheen, effervescence etc.)

33. The Licence Holder must adhere to the following field quality assurance and quality

control procedures as specified in Schedule B2 of the Assessment of Site Contamination NEPM and must include as a minimum:

- (a) Decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;
- (b) Field instruction calibration for instruments used on site;
- (c) Blind replicate samples and rinsate blanks must be collected in the field and sent to the relevant laboratory to determine the precision of the field sampling and laboratory analytical program;
- (d) Completed field monitoring sheets/sampling logs for each sample collected, time, location, initials of sampler, sampling method, field analysis results, duplicate type/location (if relevant) and site observations and weather conditions; and
- (e) Chain-of-custody documentation must be completed which details the following information: site identification; the sampler; nature of the sample; collection time and date; analyses to be performed; sample preservation method; departure time from site; dispatch courier(s); and arrival time at laboratory.

Record-keeping

34. The Licence Holder must maintain accurate and auditable Books including the following records, information, reports and data required by this Licence:

- (a) The calculation of fees payable in respect of this Licence;
- (b) The works conducted in accordance with Condition 6 of this Licence;
- (c) The maintenance of infrastructure required to ensure that it is kept in good working order in accordance with Conditions 19 and 20 of this Licence;
- (d) Monitoring undertaken in accordance with Conditions 24 - 33 of this Licence;
- (e) Reportable Events reported in accordance with Condition 39 of this Licence;
- (f) Complaints received under Condition 35 of this Licence; and
- (g) Any Material Change.

In addition, the Books must:

- (h) Be legible;
- (i) If amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;
- (j) Except for records listed in Condition 34 (k) be retained for at least 6 years from the date the Books were made or until the expiry of the Licence or any subsequent Licence;
- (k) For the following Books, be retained until the expiry of the Licence or any subsequent Licence:
 - (i) Off-site environmental effects; or
 - (ii) Matters which affect the condition of the land or waters; and
- (l) Be available to be produced to an Inspector or the CEO.

35. The Licence Holder must record the number and details of any complaints received by the Licence Holder relating to its obligations under this Licence and its compliance with Part V of the EP Act at the Premises, and any action taken by the Licence Holder in response to the complaint. Details of complaints must include:

- (a) an accurate record of the concerns or issues raised, for example a copy of any written complaint or a written note of any verbal complaints made;
- (b) the name and contact details of the complainant, if provided by the complainant;
- (c) the date of the complaint; and
- (d) the details and dates of the actions taken by the Licence Holder in response to the complaints.

- 36.** The Licence Holder must submit to the CEO, no later than 90 days after the annual period, an Annual Audit Compliance Report indicating the extent to which the Licence Holder has complied with the Conditions in this Licence, and any previous licence issued under Part V of the EP Act for the Premises for the preceding Annual Period. The Annual Audit Compliance Report shall be submitted using the Form available at the DWER website: www.dwer.wa.gov.au under the publications section
- 37.** The Licence Holder must comply with a Department Request, within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.
- 38.** The Licence Holder shall submit to the CEO and Annual Environmental Report within 90 calendar days after the end of the annual period. The report shall contain the information listed in Table 16 in the format or form specified in that table. The Annual Environmental Report shall also contain:
- (a) An assessment of the information contained within the report against previous drawings, monitoring results and licence limits and/or trigger levels;

Table 16: Annual environmental report

Condition or Table (if relevant)	Information required	Format or form
N/A	A surveyed topographic contour map depicting the area of planned landfilling footprint including cross sections for cut slopes, filled areas and un-excavated areas.	Map at least A3 size. All maps and plans in hardcopy and electronic format
N/A	A summary of leachate collection infrastructure performance including inputs, outputs, calculations and explanation of any changes that may indicate an issue with the leachate collection or management system or a breach of the landfill or leachate pond liner.	None specified
N/A	Geotechnical Inspection Report prepared on behalf of the Licence Holder by a GITA certified engineer, including assessment of the stability of all constructed landfill embankments and cut slopes	None specified
Including Condition 17	Summary of any failure or malfunction of any pollution control equipment, and any environmental incidents that have occurred during the annual period, and any action taken in response to the incident	None specified
Table 12	Waste input and output data (including rejected loads)	None specified
Table 13	Process monitoring data	Including the information required by Conditions 29, 30 and 31 and specified in Schedule 3
Table 14	Ambient surface water quality monitoring data	
Table 15	Ambient groundwater quality monitoring data	

Condition or Table (if relevant)	Information required	Format or form
Condition 35	Complaint summary	None specified

- 39.** The Licence Holder shall submit the information in Table 17 to the CEO according to the specifications in that table.

Table 17: Notification requirements

Condition or Table (if relevant)	Information required	Notification requirement ¹	Format or form ²
Including Table 7 and Table 8.	Failure or malfunction of the leachate collection and management system	Part A: As soon as practicable, but no later than 1700 hrs of the next usual working day Part B: As soon as practicable	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

- 40.** The License Holder shall:
- (a) Implement and maintain a system which ensures that a record is made of:
 - (i) the waste type, quantity and date of arrival or each load accepted at the Premises;
 - (ii) the waste type, quantity, date of removal and destination of each load removed from the site in accordance with the requirements of the *Notice of Information Required for an Annual Return of Non-metropolitan Landfills* and *Notice of Information Required for an Annual Return of Liable Recyclers*, issued 25 June 2019.; and
 - (iii) rejected loads including details of the waste producer, waste carrier, registration number of the vehicle and the date and reason for rejection; and
 - (b) Implement and maintain a system which ensures that a record is made of:
 - (i) the compost quality product testing results for all compost products required by Condition 26 and
 - (ii) the resulting product classification determination made, in accordance with Condition 27 for each load or batch of compost product sold or distributed from the premises.
 - (c) Ensure that records required by 40 (b) are made available to the CEO or customers on request.

Definitions

In this Licence, the terms in Table 1 have the meanings defined.

Table 18: Definitions

Term	Definition
AACR	Annual Audit Compliance Report means a report in a format approved by the CEO as presented by the Licence Holder or as specified by the CEO from time to time and published on the Department's website
Acceptance criteria	Has the meaning defined in the Landfill Definitions
ACN	Australian Company Number
AHD	Australian height datum
Amendment Notice	means an amendment granted under s.59 of the EP Act in accordance with the procedure set out in s.59B of the EP Act.
Annual Period	means a 12 month period commencing from 9 March until 8 March in the following year.
Assessment of Site Contamination NEPM	means the <i>National Environment Protection (Assessment of Site Contamination) Measure 1999</i> , as amended from time to time;
AS 2200.2006	Australian Standard AS 2200.2006 <i>Design charts for water supply and sewerage</i> .
AS 4454	Australian Standard AS 4454-2012 <i>Composts, soil conditioners and mulches</i>
AS/NZS 5667.1	Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
AS/NZS 5667.4	Australian Standard AS/NZS 5667.11 <i>Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made</i> .
AS/NZS 5667.10	Australian Standard AS/NZS 5667.11 <i>Water Quality – Sampling – Guidance on sampling of waste waters</i> .
AS/NZS 5667.11	Australian Standard AS/NZS 5667.11 <i>Water Quality – Sampling – Guidance on sampling of groundwaters</i> .
ASTM D792	ASTM International Standard ASTM D792 <i>Standard Test Methods for Density and Specific Gravity (relative Density) of Plastics by Displacement</i> .
ASTM D1004	ASTM International Standard ASTM D1004 <i>Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting</i> .
ASTM D1505	ASTM International Standard ASTM D1505 <i>Standard Test Method for Density of Plastics by the Density-Gradient Technique</i> .
ASTM D1603	ASTM International Standard ASTM D1603 <i>Standard Test Method for Carbon Black Content in Olefin Plastics</i> .
ASTM D3895	ASTM International Standard ASTM D3895 <i>Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry</i> .
ASTM D4833	ASTM International Standard ASTM D4833 <i>Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products</i> .
ASTM D5092/D5092M-16	means the ASTM International Standard ASTM D5092 <i>Standard Practice for Design and Installation of Groundwater Monitoring Wells (Designation: ASTM D5092/D5092M-16)</i> , as amended from time to time.
ASTM D5199	means the ASTM International Standard ASTM D5199 <i>Standard Test Method for Measuring the Nominal Thickness of Geosynthetics</i> .
ASTM D5397	means the ASTM International Standard ASTM D5397 <i>Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test</i> .
ASTM D5641	means the ASTM International Standard ASTM D5641 <i>Standard Practice for Geomembrane Seam Evaluation by Vacuum Chamber</i> .
ASTM D5721	means the ASTM International Standard ASTM D5721 <i>Standard Practice for Air-Oven Aging of Polyolefin Geomembranes</i> .
ASTM D5820	means the ASTM International Standard ASTM D5820 <i>Standard Practice for Pressurized Air Channel Evaluation of Dual-Seamed Geomembranes</i> .

Term	Definition
ASTM D5885	means the ASTM International Standard ASTM D5885 <i>Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High-Pressure Differential Scanning Calorimetry</i> .
ASTM D6392	means the ASTM International Standard ASTM D6392 <i>Standard Method for Determining the Integrity of Non-reinforced Geomembrane Seams Produced Using thermos-Fusion Methods</i>
Averaging period	The time over which a limit of trigger level is measured or a monitoring result is obtained
Biosecurity Waste	Such waste as defined in the <i>Biosecurity Act 2015</i>
Biosolids	Sludge from a wastewater treatment plant that has undergone further treatment to reduce disease causing pathogens and volatile organic matter significantly, resulting in a stabilized material suitable for beneficial use. Does not include industrial or food processing wastes.
Books	Has the same meaning given to that term under the EP Act.
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP DC WA 6027 info@dwer.wa.gov.au
Clean fill	Has the meaning defined in the Landfill Definitions
Compliance Report	A report in a format approved by the CEO as presented by the Licence Holder or as specified by the CEO (guidelines and templates may be available on the Department's website).
Compost	An organic product that has undergone controlled aerobic and thermophilic biological transformation through the composting process to achieve the pasteurization processes and parameters as stated in AS 4454:2012.
Composting process	The process by whereby organic materials are microbiologically transformed under controlled aerobic conditions.
Condition	A condition to which this Licence is subject under s.62 of the EP Act.
Contaminated solid waste	Contaminated solid waste meeting the Acceptance Criteria for Class III landfills. 'solid' has the meaning defined in the Landfill Definitions
Controlled Waste	Has the meaning defined in <i>Environmental Protection (Controlled Waste) Regulations 2004</i> .
DAWR	Department of Agriculture and Water Resources
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
Department Request	means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Licence Holder in writing and sent to the Licence Holder's address for notifications, as described at the front of this Licence, in relation to: (a) compliance with the EP Act or this Licence; (b) the Books or other sources of information maintained in accordance with this Licence; or (c) the Books or other sources of information relating to Emissions from the Premises.
DDT	dichlorodiphenyltrichloroethane
Discharge	has the same meaning given to that term under the EP Act.
DoH	Department of Health
DWER	Department of Water and Environmental Regulation.
Emission	Has the same meaning given to that term under the EP Act.

Term	Definition
EMP – Leachate Management	Environmental Management Plan for leachate management, which is a live document authored and maintained by SUEZ and containing specifications for operation and management of the Leachate Management System for the premises.
Environmental Harm	Has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986 (WA)</i> .
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i> .
Food processing waste	Organic waste derived from food and food preparation, but excludes abattoir waste or animal carcasses
freeboard	The distance between the maximum water surface elevation and the top of the retaining banks or structures at their lowest point
GITA	Geotechnical Inspection and Testing Authority
Grease Trap Waste	Waste from grease traps as defined in the <i>Environment Protection (Controlled Waste) Regulations 2004</i>
Green waste	A solid waste that originated from flora and which does not contain or has not been treated or coated with preserving agents, biocides, fire retardants, paint, adhesives or binders.
hardstand	A surface with a permeability of 1×10^{-9} metres/second or less
HCB	hexachlorobenzene
Implementation Agreement or Decision	has the same meaning given to that term under the EP Act.
Inert Waste Type 1	Has the meaning defined in the Landfill Definitions
Inert Waste Type 2	Has the meaning defined in the Landfill Definitions
Inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
Landfill Definitions	The document titled “ <i>Landfill Waste Classification and waste Definitions 1996</i> ” published by the CEO as amended from time to time.
Leachate	Liquid released by, or water that has percolated through, waste and which contains some of the constituents of the waste.
Licence	Refers to this document, which evidences the grant of a Licence by the CEO under s.57 of the EP Act, subject to the Conditions.
Licence Holder	Refers to the occupier of the premises being the person to whom this Licence has been granted, as specified at the front of this Licence.
m	metres
Material Change	means a change to the activities carried out on the Premises as described by the Primary Activities set out in Schedule 2 and: (a) that may result in an increased risk to public health, amenity or the environment; and (b) includes the types of changes specified in Schedule 2; and (c) does not include the excluded changes specified in Schedule 2.
Material Environmental Harm	Has the same meaning given to that term under the EP Act.
NATA	National Association of Testing Authorities
NATA accredited	An analytical technique or procedure for which a laboratory holds a relevant accreditation to undertake, provided by NATA
PCE	perchloroethylene
Pollution	Has the same meaning given to that term under the EP Act.
Premises	Refers to the premises to which this Licence applies, as specified at the front of this Licence and as shown on the map in Schedule 1 to this Licence.
Prescribed Premises	Has the same meaning given to that term under the EP Act.
Primary Activities	Refers to the Prescribed Premises activities listed on the front of this Licence as described in Schedule 2, at the locations shown in Schedule 1.
Putrescible waste	Has the meaning defined in the Landfill Definitions

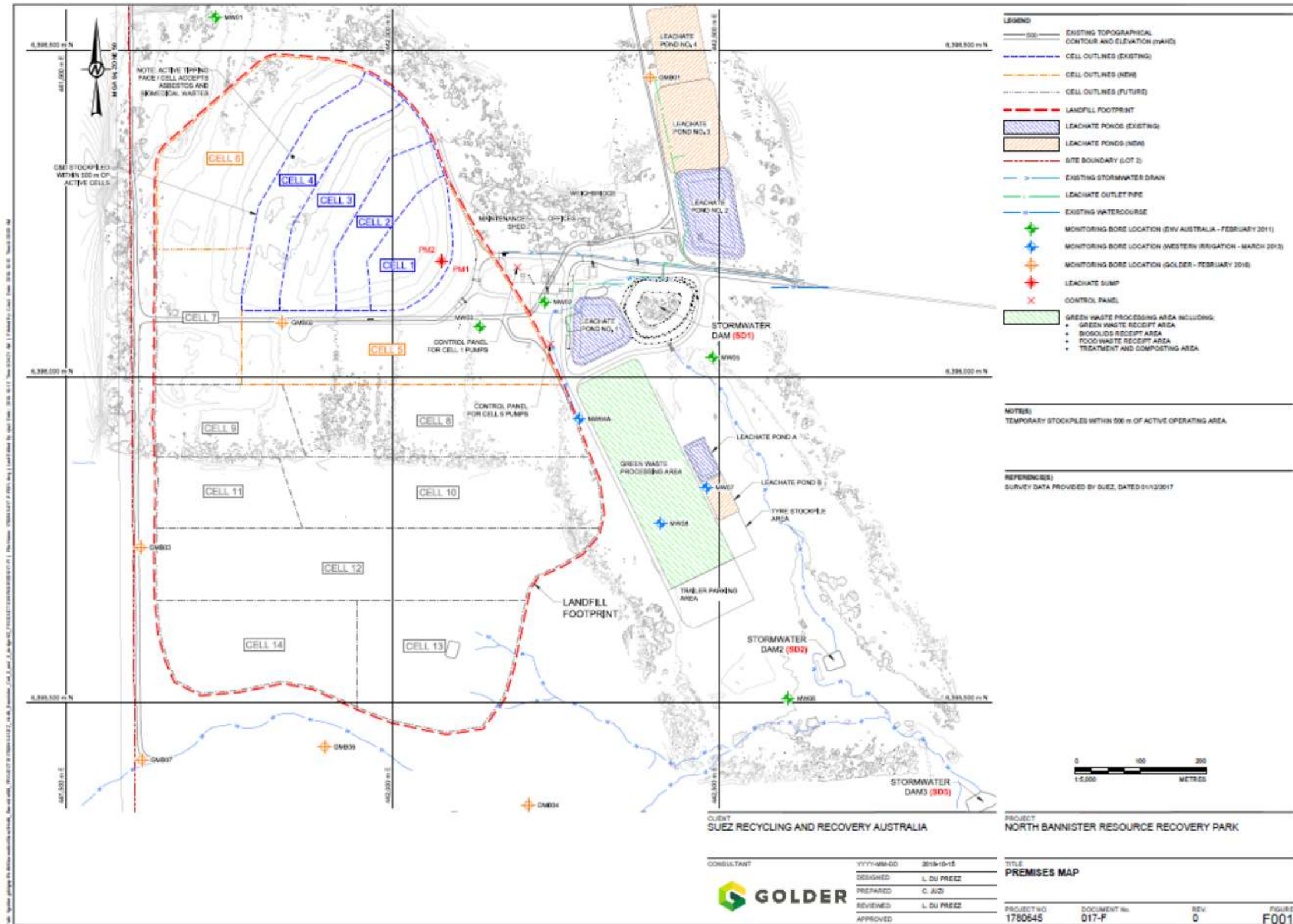
Term	Definition
Rehabilitation	The completion of the engineering of a landfill cell and includes capping and/or final cover
Reportable Event	means an exceedance of and Operational level specified in a Condition within this Licence
Serious Environmental Harm	Has the same meaning given to that term under the EP Act.
Solid	Has the meaning defined in the Landfill Definitions
Special Waste Type 1	Has the meaning defined in the Landfill Definitions
Special Waste Type 2	Has the meaning defined in the Landfill Definitions
Spot sample	A discrete sample representative at the time and place at which the sample was taken
Stabilised biosolids	Biosolids that have been dewatered by mechanical or solar means to usually greater than 15% total solids
TCE	trichloroethylene
Unreasonable Emission	Has the same meaning given to that term under the EP Act.
Usual working day	0800 – 1700 hours Monday to Friday excluding public holidays in Western Australia
Waste	Has the same meaning given to that term under the EP Act.
Waste code	Waste Codes assigned to a waste type for the purposes of waste tracking and reporting as specified in the Department of Water and Environmental Regulation <i>Controlled Waste Category List</i> as amended from time to time.
Waste type	Waste types assigned to a wastes for the purposes of waste tracking and reporting as specified in the Department of Water and Environmental Regulation <i>Controlled Waste Category List</i> as amended from time to time.

Schedule 1: Maps

Premises map

The Premises are shown in the map below.

Figure S1-1: NBRRP premises infrastructure and storage area layout



Premises boundary

The Premises boundary is defined by the orange outline on Figure S1-2 below.

Figure S1-2: Prescribed Premises boundary



Schedule 2: Prescribed Premises Categories

The Premises prescribed categories under schedule 1 of *Environmental Protection Regulation 1987*

Prescribed Premises categories

Category number	Category Description	Category production or design capacity	Approved Premises production or design capacity
57	Used tyre storage (general): premises (other than premises within category 56) on which used tyres are stored	100 tyres or more	1,000 tyres
61	Liquid waste facility: premises on which liquid waste produced on other (other than sewerage waste) is stored, reprocessed, treated or irrigated.	100 tonnes or more per year	16,000 tonnes per annual period
61A	Solid waste facility: premises (other than premises within 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land.	1,000 tonnes or more per year	90,000 tonnes per annual period
62	Solid waste depot: premises on which waste is stored, or sorted, pending final disposal or re-use.	500 tonnes or more per year	14,000 tonnes per annual period
64	Class II or III putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial	20 tonnes or more per year	400,000 tonnes per annual period
67A	Compost manufacturing and soil blending: premises on which organic material (excluding silage) or waste is stored pending processing, mixing, drying or composting to produce commercial quantities of compost or blended soils.	1,000 tonnes or more per year	100,000 tonnes per annual period

Infrastructure and equipment

The Primary Activity infrastructure and equipment situated on the Premises is listed in Table 6.

Table 19: Infrastructure and equipment

Infrastructure and equipment	Plan reference
Class II and Class III Putrescible Landfill Cells 1 to 4 (existing) and Cells 5 and 6 (new) including:	Premises Map: Schedule 1

Infrastructure and equipment	Plan reference
• Inert Waste Type 1 stockpile area; and • Special Waste Type 1 and Type 2 disposal areas.	
Leachate Ponds A and B	Premises Map: Schedule 1
Leachate Ponds 1 and 2 (existing) Leachate Ponds 3 and 4 (new)	Premises Map: Schedule 1
Stormwater Dams 1, 2 and 3.	Premises Map: Schedule 1
Green Waste Processing Area	Premises Map: Schedule 1
Tyre Stockpile Area	Premises Map: Schedule 1
Weighbridge and Office	Premises Map: Schedule 1

Site layout

The Primary Activity infrastructure and equipment is set out on the Premises in accordance with the site layout specified on the Premises map Figure S1-1 in Schedule 1.

Schedule 3: Monitoring

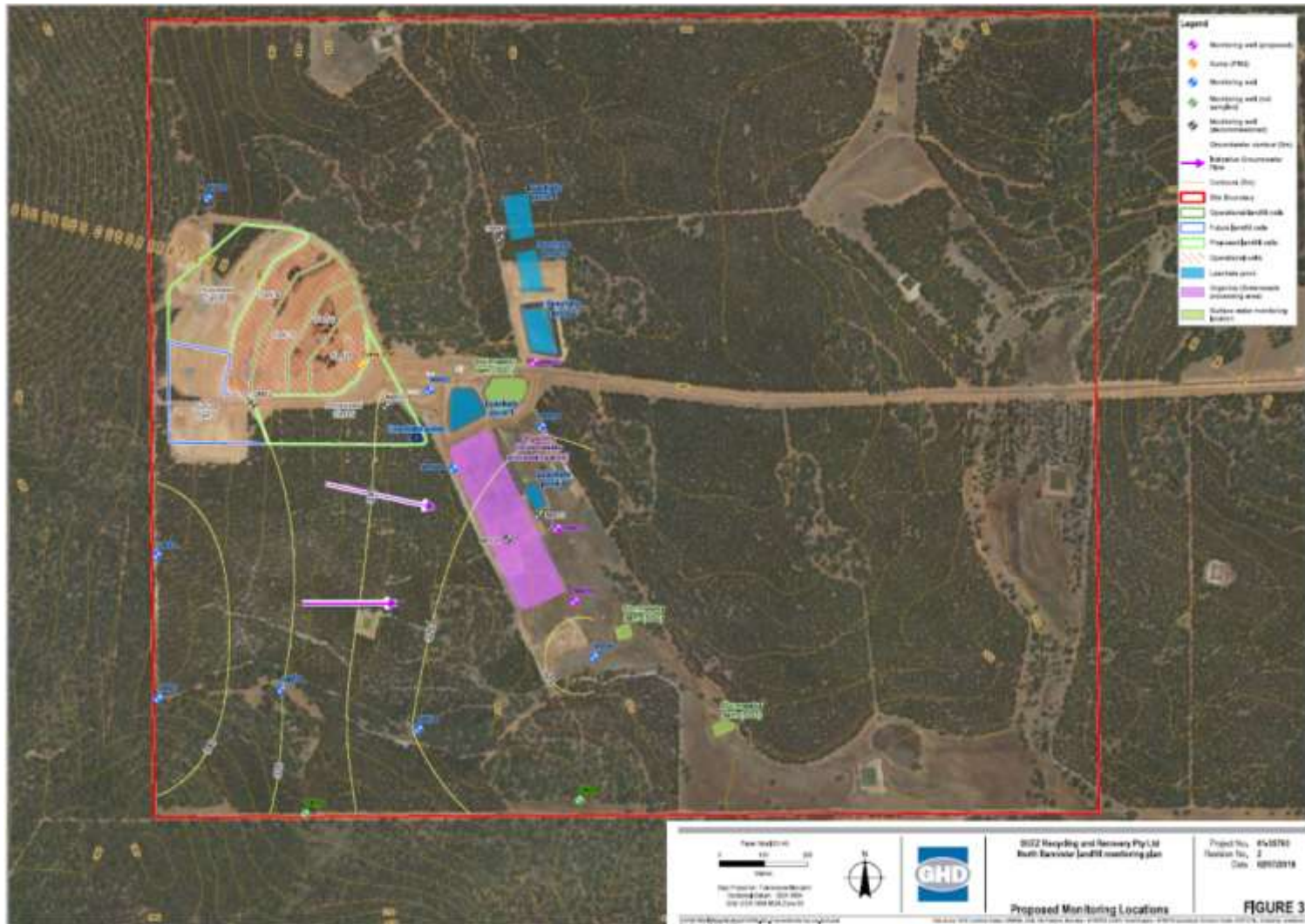
Monitoring reports

The monitoring reports must contain in relation to a Reportable Event:

- a) The Reportable Event date(s);
- b) The sampling or measurement date;
- c) The raw monitoring data for the Reportable Event in tabulated form;
- d) Time series graphical plots for the day on which the Reportable Event occurred;
- e) Where there is an exceedance to Reportable Event criteria, details of investigation and mitigation measures must be provided and include the following:
 - o Confirmation that data received is correct (no instrument fault);
 - o Determination of the source of the exceedance to establish whether exceedance is attributed to the Licence Holder's activities.
 - o Where a Reportable Event may be attributed to the Licence Holder's activities through the investigation steps above, a review of the events and procedures related to the activity that led to the exceedance; and
 - o Where a Reportable Event is determined to be attributed to the Licence Holder's activities, corrective and mitigation measures undertaken.

Monitoring locations

Figure S3-3: NBRRP monitoring locations



Schedule 4: Works specifications – Landfill gas extraction infrastructure

Detailed design specifications for Landfill gas extraction and management infrastructure is yet to be provided, and shall be provided in accordance with Condition 21 of this licence.

	Infrastructure /Equipment	Requirements (design and construction)	Site plan reference
1.	Landfill gas extraction well hole	Wells are to be constructed as follows: Diameter – at least 600 mm Depth – at least 75% of the waste depth Annulus fill surrounding pipe perforations – aggregate: - Sized between 20 mm and 75 mm in diameter - Filled to a level on 300 mm above the uppermost perforation. Overlying annulus fill specifications: - At least 1.2 m backfill over aggregate; - At least 1.0 m bentonite; and - For the remainder, cover soil or material of permeability equal to the specified cover soil.	Detailed site plan to be provided ¹
2.	Landfill gas extraction pipeworks	Pipework is to be PVC, HDPE or fiberglass material. Diameter – at least 75 mm Depth – at least 75% of the waste depth Perforations along pipe length: - Diameter of 12 mm; - At least four evenly spaced perforations in a horizontal row around pipe; - Spaced 100 to 200 mm apart; and - Distributed over at least 75% of the lower portion of the pipe. The longitudinal axis of the pipe should be located in the centre of the well hole.	Detailed site plan to be provided ¹
3.	Timing of connection of landfill gas extraction infrastructure	Landfill gas collection infrastructure must be connected to active landfill gas management systems capable of capture and combustion of landfill gas no later than 90 days following the completion of the construction of the landfill gas extraction wells	Detailed site plan to be provided ¹

¹ A detailed design plan for landfill gas extraction infrastructure and operation is yet to be provided

Schedule 5: Works specifications – Leachate Pond 2

The Leachate Pond 2 construction works and requirements are described in the following table.

	Infrastructure/Equipment	Requirements (design and construction)
1.	All	1. Install a security fence around the perimeter of the leachate pond; and 2. The posts for the fencing must be anchored in concrete footing and shall not be less than 150 mm in diameter and 350 mm in depth.
2.	Infrastructure for the collection of leachate	The infrastructure for the collection of leachate must be designed and constructed so as to meet the following specification: 1. Must direct all leachate and contaminated runoff to the leachate pond on the premises; 2. Must incorporate berms, bunding, kerbing or swales to prevent liquid run-on and run-off including runoff from a 24 hour duration, 1 in 20 year ARI critical rainfall event without overflow; and 3. The final subgrade surface must be free draining to the south.
3.	Leachate Pond 2	1. The liquid waste evaporation pond must conform to the following specifications: 2. Construction of pond embankments to include storm-water diversion drains along the eastern and northern toe lines; 3. Construct the 0.5mm thick engineered fill layer within the Leachate Pond area; 4. Lined with at least welded HDPE plastic liner or equivalent and must be constructed in accordance with the following specifications: i. achieving a permeability of 1×10^{-9} m/s or less over the working life of the pond; ii. a minimum thickness of 2mm with heat welded joints; iii. all seams and joins made on site should be continuous; iv. panels of the liner should be overlapped by a minimum of 100mm, prior to heat welding or mechanical jointing; and v. where GCL is used, shall comprise a woven and non-woven geotextile layer, and shall be needle punched across the bentonite layer and be thermally locked; 5. The external batter shall have an average batter slope of 2.5H:1V and at no point shall the batter be steeper than 2.2H:1V over any length more than 2m. 6. Must be constructed to maintain a minimum two metres separation distance between the base of the pond and the highest groundwater level; 7. Must incorporate bunding, kerbing or have a minimum crest height above ground level to prevent liquid run-on and run-off including runoff from a 24 hour duration, 1 in 20 year ARI critical rainfall event

	Infrastructure/Equipment	Requirements (design and construction)
		without overflow; 8. Designed so that a minimum top of embankment freeboard of 500 mm is able to be maintained during operation; 9. The surface shall be shaped to result in a uniform grade to the south-west corner across the floor of the pond with no significant depressions holding runoff after rainfall events; and 10. The top of concrete shall have a tolerance of -0 to +50 mm.

Schedule 6: Works specifications – Compost area expansion

The Compost area expansion works and requirements are described in the following table.

	Infrastructure/Equipment	Requirements (design and construction)
1	Subgrade (all works) – composting pad and Leachate	The Licence Holder must design, excavate and construct the extended composting works area subgrade to achieve the following: • Surface level at least 2m above the highest seasonal groundwater level; • Grades as depicted Figures S6-2 and S6-3; • Proof rolled with minimum 12 tonne roller using a minimum of six passes over the entire prepared surface; • Removal of unsuitable material; and • Free from any sharp objects, stones, debris, water and desiccation cracks; and • Excavations and low points filled to design levels with material meeting the following parameters on placement: • Moisture content on placement between 3% dry and 2% wet of optimum moisture content under standard compaction • A minimum standard compaction of 9%
2	HDPE (Leachate Pond B as depicted in Figure S6-1)	The leachate pond must conform to the following specifications: • Lined with at least welded HDPE plastic liner or equivalent and must be constructed in accordance with the following specifications: • Achieving a permeability of 1×10^{-9} m/s or less over the working life of the pond; • A minimum thickness of 2mm with heat welded joints; • All seams and joins made on site should be continuous; and • Panels of the liner should be overlapped by a minimum of 100mm, prior to heat welding or mechanical jointing. • Must be constructed to maintain a minimum two metres separation distance between the lowest elevation of the pond and the highest groundwater level; • Must incorporate bunding, kerbing or have a minimum crest height above ground level to prevent liquid run-on and run-off including runoff from a 24 hour duration, 1 in 20 year ARI critical rainfall event without overflow; and • Designed so that a minimum top of embankment freeboard of 500mm is able to be maintained during operation.
3	Leachate Pond B sump, pump and underdrainage	Materials and layout as depicted Figures S6-1, S6-2 and S6-3
4	Decommissioning of groundwater monitoring wells MW07 and MW08	In accordance with Section 18, Mandatory Requirements in the Guideline: Minimum Construction Requirements for Water Bores in Australia, National Uniform Drillers Licensing Committee 2012 3rd Ed.; as referenced by the Department at:

	Infrastructure/Equipment	Requirements (design and construction)
5	Installation of replacement groundwater monitoring wells MW9 and MW10	https://www.water.wa.gov.au/data/assets/pdf_file/0005/1796/Minimum-construction-guidelines-for-water-bores-in-Australia-V3.pdf

Construction Quality Assurance Testing

The Construction Quality Assurance Requirements for the installation of the HDPE membrane in Leachate Pond B are described in the following table.

Item	Property	Standards	Frequency	Minimum Value
Conformance testing upon shipment to site	Thickness	ASTM D5199	One sample per 10,000m ²	1.9mm
	Density	ASTM D1505 ASTM D792		0.94g/cm ³
	Tensile properties: Break Strength Break elongation	ASTM D6693		21 kN/m 100%
	Puncture resistance	ASTM D4833		534 N
	Tear resistance	ASTM D1004		249 N
	Carbon black content	ASTM D1603		2-3%
	Stress crack resistance	ASTM D5397	As per GRI Guide GM10	500hr
	Oxidative induction time	ASTM D3895 or ASTM D5885	90,000 kg 90,000 kg	100 min 400 min
	Oven ageing and oxidative induction Time	ASTM D5721, ASTM D3895 or ASTM D5885	Per formulation	55% at 85°C 80% at 85°C
Start-up test weld	Welding equipment		Start of works daily and: • whenever the welding equipment is shut-off for more than 3 hours. • after significant changes in weather conditions.	

Item	Property	Standards	Frequency	Minimum Value
	Weld conditions		Test weld strips will be required: • whenever personnel or equipment • are changed and/or wide • temperature fluctuations are experienced. Minimum 1.5m continuous seam	
Destructive weld testing	Onsite, hand tensiometer in peel and shear	ASTM D6392	1 test per 150m of weld (minimum)	Peel: 450N/25mm Shear: 690N/25mm
Non-destructive weld testing	Air pressure test	ASTM D5820	All seams over full length	Observed, validated and recorded by the consultant
	Vacuum box test	ASTM D5641		Presence/absence of bubbles
Visual inspection	Tears, punctures, abrasions, cracks, indentations and thin spots		Every roll	N/A

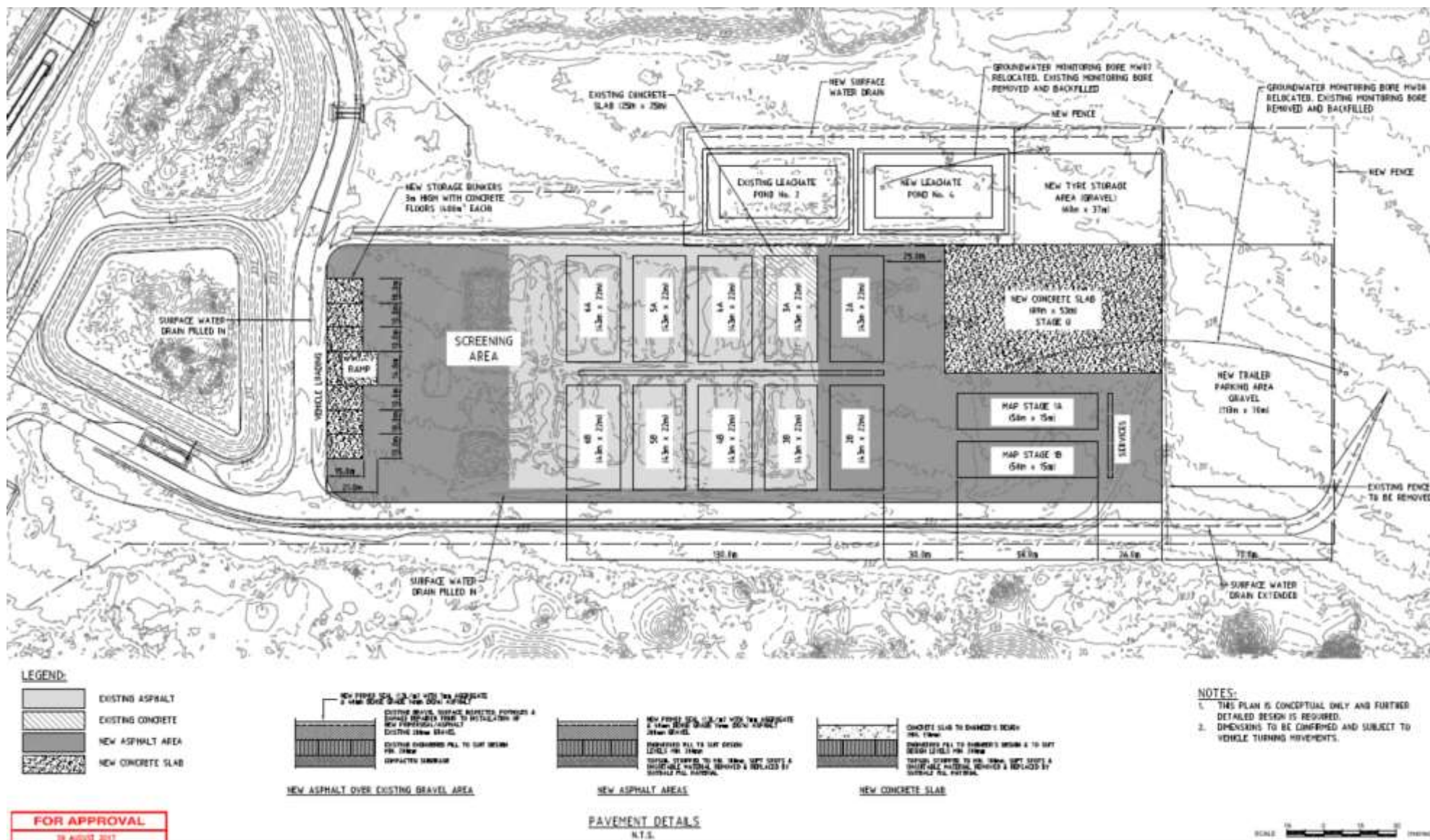


Figure S6-1: Composting expansion works

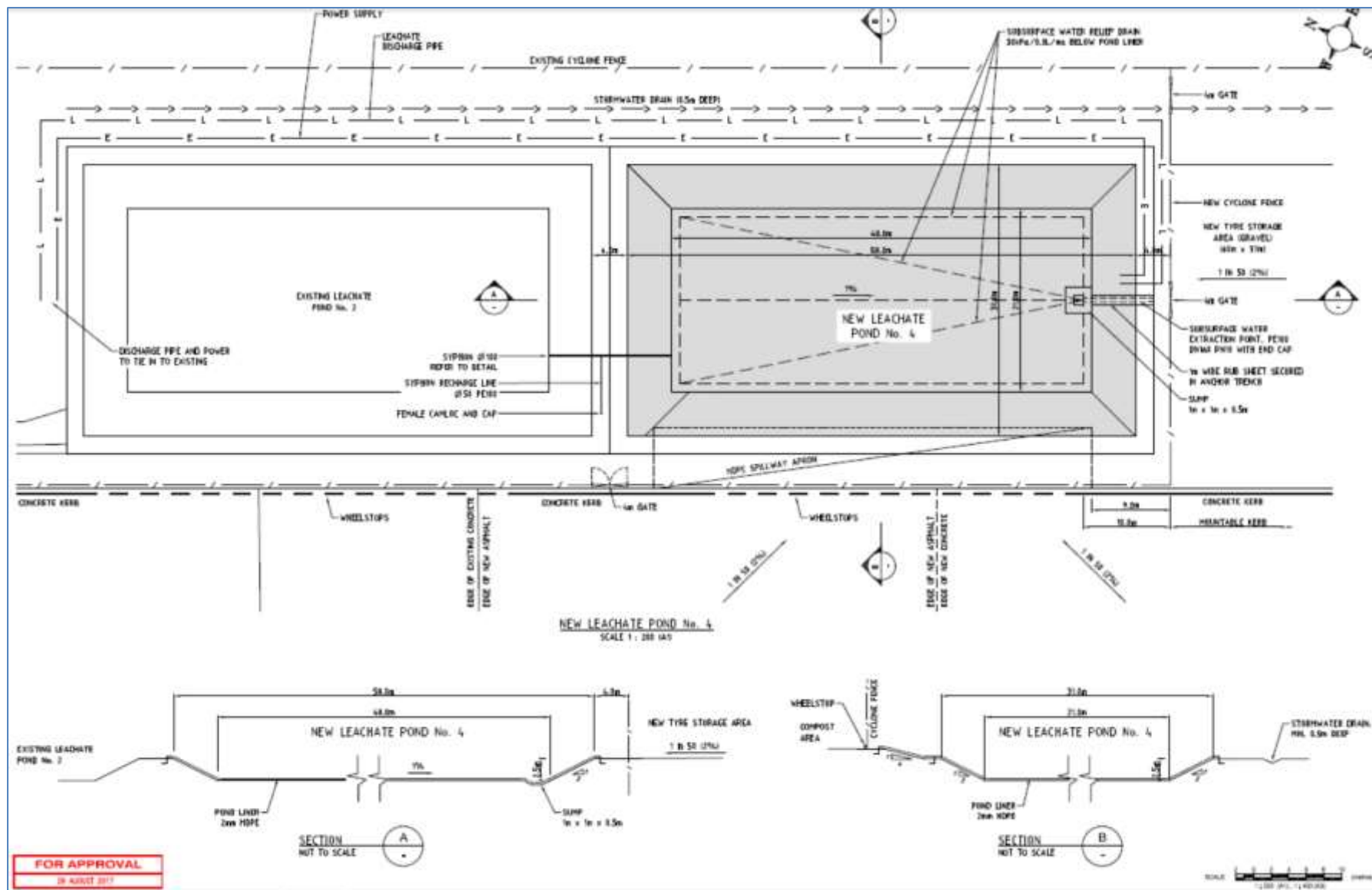


Figure S6-2: Leachate pond 4 design

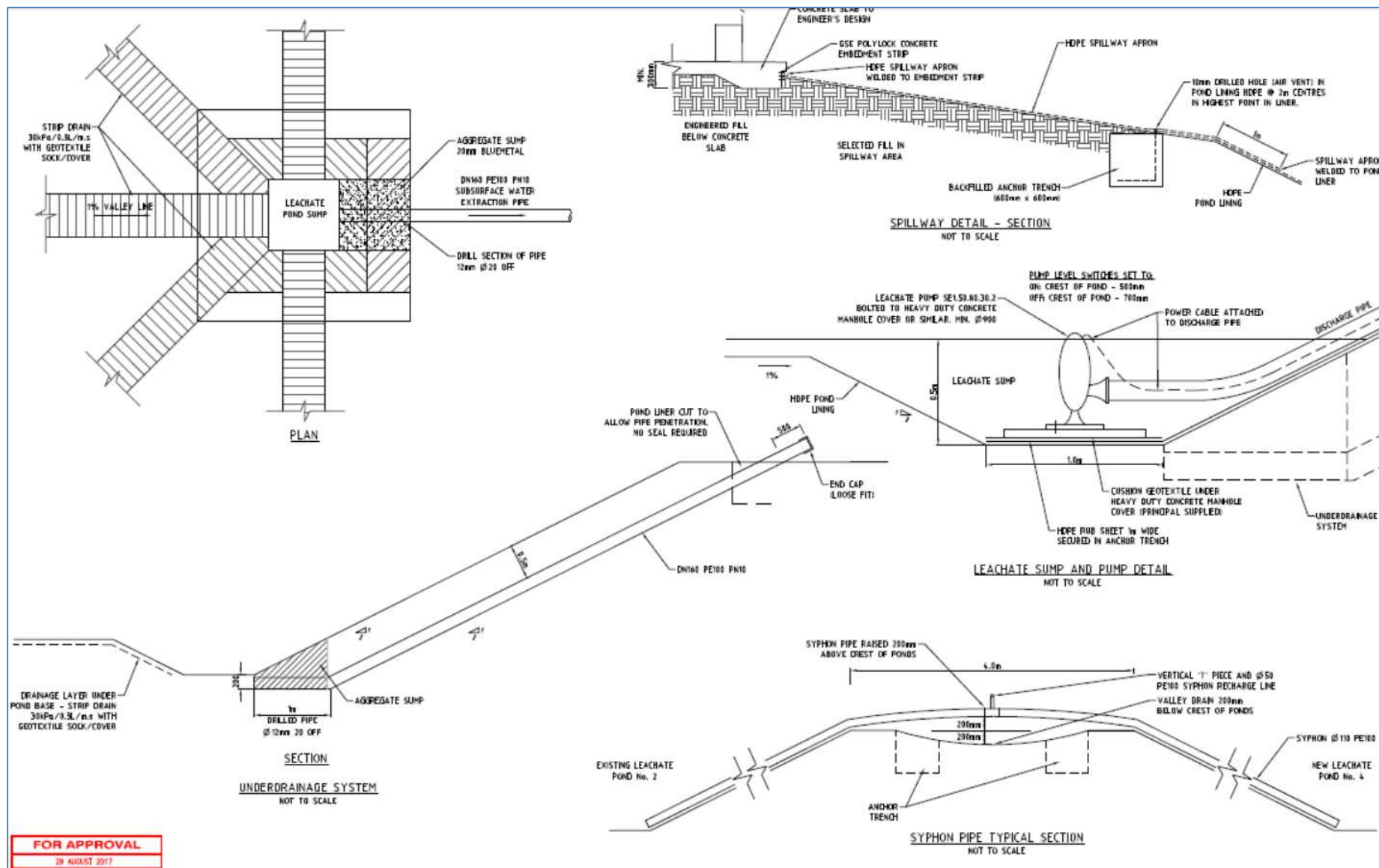


Figure S6-3: Leachate pond 4 detail

Schedule 7: Works Specifications – Construction of Cells 5 and 6

The Cell 5 and 6 construction works and requirements are described in the following table. All materials and construction specifications must also meet the requirements and specifications set out in *North Bannister Resources Recovery Park – Technical Specifications for Calls 5 & 6, Leachate Ponds 3 & 4, and Associated Works*. Report 1780645-002-S Revision 0. Golder Report Prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Technical Specifications Document); and Drawing D003, D004 and D006 to D013 of *Design Report for Cell5, Cell6, Leachate Pond 5, Leachate Pond 6 and Ancillary Structures at North Bannister Resources Recovery Park*. Report 1780645-005-R. Revision 0. Golder Report prepared for SUEZ Recycling and Recovery Australia. March 2018 (the Design Report).

	Infrastructure/Equipment	Requirements (design and construction)
1.	Site Preparation (Cells 5 and 6)	The following site preparation works must be undertaken: • Clearing and grubbing of entire cell footprints including embankments, bunds and cell base. • Removal of topsoil to nominal depth of 300mm from the entire cell footprints including embankments, bunds and cell base. • Excavation of all unsuitable materials to a minimum depth of -500mm 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 -2% to +2% in 250mm layers to FSL. • If suitable material (meeting requirements for engineered fill material) exists in the cell footprint, the material shall be excavated to -250mm of FSL, ripped and treated as per engineered fill material for moisture conditions and compaction requirements. • Cut internal batters to be 1:3 (V:H) – Type 1 cut • Proof roll entire footprint including cell floor and embankments.
2	Subgrade Construction	The engineered fill subgrade shall be formed in accordance with the following specifications: • Shall be cut to achieve a general grade of nominally 2% to the southeast of Cell 5 and 2% to the east of Cell 6. • Shall be moisture conditioned prior to near or wet of OMC sufficient to keep the GCL hydrated under the expected loading conditions. • The separation distance between the top of the subgrade and maximum groundwater table elevation shall be greater than 2m.
3	Liner System	The installed liner system is to be placed over the entire cell base and extended up side slopes of Cell Perimeter Embankments and Bund Type 2 and shall be anchored into place prior to installation of the leachate collection system. Installation of the liner shall be undertaken in accordance with the following specifications: • The Geosynthetic Clay Liner (GCL) shall be supplied with

	Infrastructure/Equipment	Requirements (design and construction)
		additional bentonite applied to the overlaps. • The GCL shall be supplied, tested and inspected in accordance with the Technical Specifications Document. • The HDPE geomembrane shall be 2mm thick overlaying the GCL. • The HDPE geomembrane shall be supplied, tested and inspected in accordance with the Technical Specifications Document including aspects: ○ Resin source and manufacturer ○ Thickness ○ Standard Oxidative Induction Time (Std-OIT) ○ High Pressure Oxidative Induction Time (HP-OIT) ○ Environmental Stress Crack Resistance. • The HDPE geomembrane installed in Cell 5 shall be of two types, double-sided textured geomembrane installed on the east and southeast sections of internal embankments; and single-sided textured to be installed textured side down on the base and remaining internal batters • The HDPE geomembrane installed in Cell 6 shall be single-sided textured to be installed textured side down over the base and all internal embankments. • The cushion geotextile shall be supplied, tested and inspected in accordance with the Technical Specifications Document • The cushion geotextile shall be compression tested in accordance with a Modified Hydrostatic Puncture Test (ASTM D5512) prior to use.
4	Anchor Trenches	The anchor trenches shall be set back 1.5m from the crest of the perimeter embankment, cell edge bunds and interim cell edge bunds. The trenches shall be backfilled with engineered fill while liner materials are in the relaxed state, in full contact with subgrade and without wrinkles or folds.
5	Leachate Collection System	The leachate collection system components shall be installed in accordance with the following specifications: • Leachate collection pipes ○ Perforated and spaced 20m apart and connected to perforated leachate header piper. ○ Leachate header pipes to be on a grade of at least 1% towards the leachate sump. ○ Leachate header pipes for Cell 6 to connect to the existing leachate header pipe for Cell 4. • Leachate drainage aggregate ○ A minimum 300mm thick layer of aggregate placed over the collection pipes and the cushion geotextile across the base and sides of each cell. • Separation geotextile ○ Shall be supplied, tested and inspected in accordance with the Technical Specifications Document

	Infrastructure/Equipment	Requirements (design and construction)
		○ Shall be placed over the leachate drainage layer and held in place with sandbags until waste is placed. • Leachate collection sumps ○ Located at the lowest elevation point within Cell 1 (existing and operational) and Cell 5 ○ The separation distance between the sump invert and maximum groundwater table elevations shall be greater than 2m. ○ To be constructed to enable maintenance of leachate head over the basal cell liner at a maximum of 300mm.
6	Embankments and Bunds	The following design characteristics shall apply to each embankment and bund type shown in Figure S8-4. • Perimeter embankment (fill) ○ Side slopes of 1:3 (H:V) ○ Nominal crest width of 5 m ○ Slopes from RL 346.8 m at the north end to RL 341.5m on the south end ○ Constructed with general fill covered with 500mm layer of compacted engineered fill on the upstream embankment slope. • Perimeter embankment (cut) ○ Cut with upstream embankment slopes of 1:3 (H:V) ○ Nominal height varies (as per design drawings) ○ Compacted natural surface or general fill covered with 500mm layer of compacted engineered fill on the upstream embankment slope. • Bund Type 1 ○ Side slopes of 1:3 (H:V) ○ Nominal crest width of 3m ○ Nominal height varies (as per design drawings) ○ Bund is mostly compacted natural surface of general fill covered with 500mm layer of compacted engineered fill on the upstream embankment slope. • Bund Type 2 ○ Side slopes of 1:2 (H:V) ○ Nominal crest width of 2m ○ Nominal height varies from 1 m to 1.5m (maximum) (as per design drawings) ○ Constructed with general fill.
7	Stormwater management	Stormwater management infrastructure shall be constructed to divert uncontaminated stormwater around Cells 5 and 6, and shall be constructed to the following specifications: • All drains, pipes, culverts and other stormwater drainage infrastructure shall be designed to convey peak flow rate corresponding to a 1 in 20 year storm event, with available freeboard to convey discharge corresponding to a 1 in 100 year storm event.

	Infrastructure/Equipment	Requirements (design and construction)
		- Erosion and scour protection measures shall be installed where flow velocities are estimated to exceed 2m/s including diversion drains for: - Northern sections 1 – 4; - Western sections 1 and 2; and - Eastern section 4.
8	Decommissioning of groundwater monitoring wells GMB2 and MW03.	In accordance with ASTM D5092/D5092M-16 and Section 18, Mandatory Requirements in the Guideline: Minimum Construction Requirements for Water Bores in Australia, National Uniform Drillers Licensing Committee 2012 3rd Ed.; as referenced by the Department at: https://www.water.wa.gov.au/_data/assets/pdf_file/0005/1796/Minimum-construction-guidelines-for-water-bores-in-Australia-V3.pdf

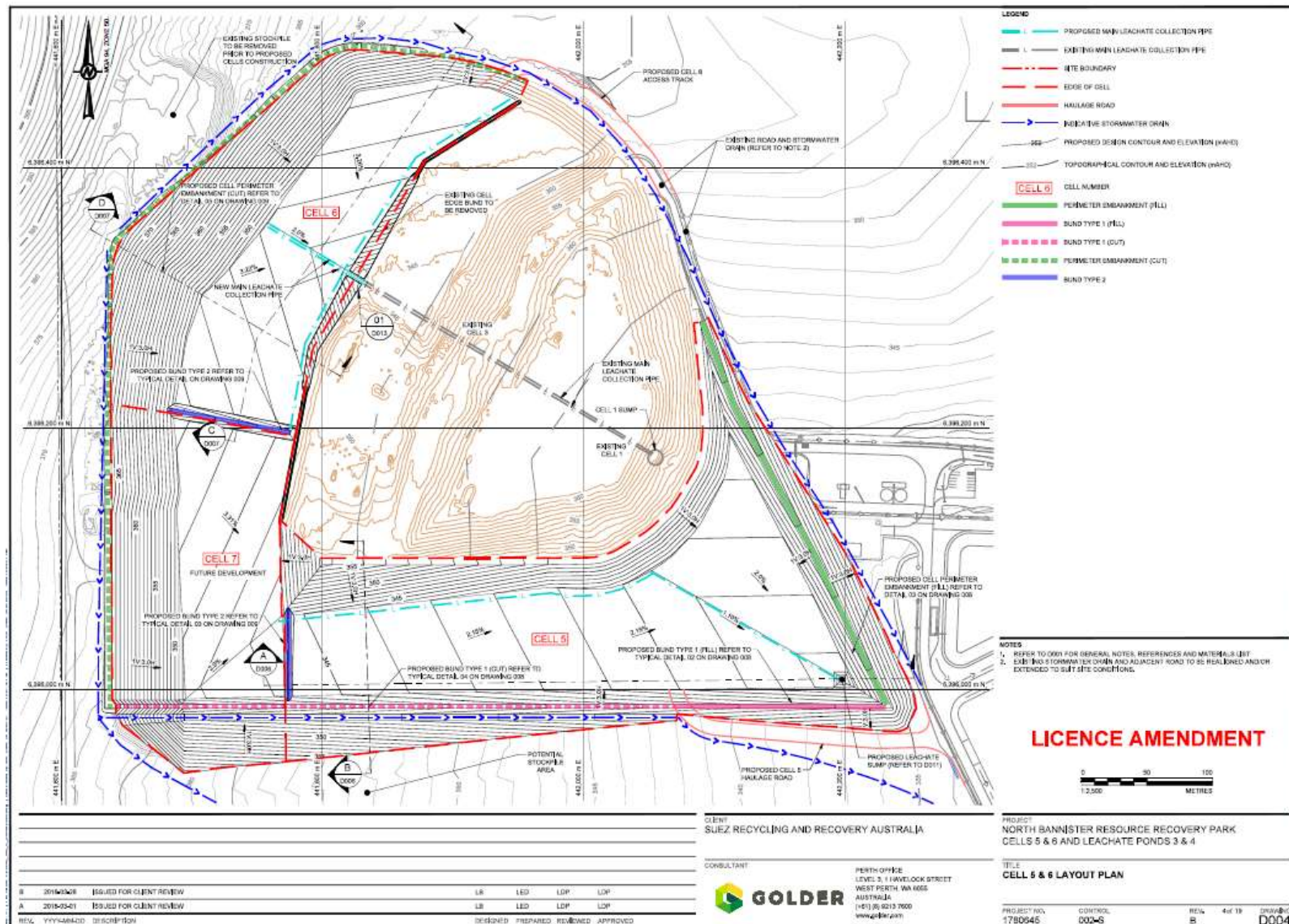


Figure S7-4: Cells 5 and 6 construction layout

Construction Compliance and Quality Assurance Requirements

The Cell 5 and 6 construction works and requirements are described in the following table. All materials and construction specifications must also meet the requirements set out in *Construction Quality Assurance Plan Cells 5&6 and Leachate Ponds 3&4 – North Bannister Resource Recovery Park*. Report 1780645-004-R. Revision 0. Golder Report Prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Construction Quality Assurance Document) and *North Bannister Resources Recovery Park – Technical Specifications for Calls 5 & 6, Leachate Ponds 3 & 4, and Associated Works*. Report 1780645-002-S Revision 0. Golder Report Prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Technical Specifications Document).

The Construction Compliance and Construction Quality Assurance components and specifications that must be completed as part of the works detailed in the schedule are listed in the following table, compliance and quality assurance must be measured in accordance with the referenced document.

Component	Reference document
Codes and Standards	Section 1.4 of the Technical Specifications Document
Material Quality Assurance and Quality Control - General	Section 1.8 of the Technical Specifications Document
Drawings	Table 2 of the Technical Specifications Document
Material Property Specifications	Section 2 of the Technical Specifications Document
Quality Assurance and Quality Control	Section 3 of the Technical Specifications Document, including: • Pre-construction requirements • Construction requirements • General requirements • Manufacturer requirements • Conformance testing • Quality Control Procedures • Reports and Certificates • Reporting requirements; and • Testing requirements; and The specifications set out in the Construction Quality Assurance Document, including: • Construction Quality Assurance (CQA) procedures; • Inspection and Monitoring requirements • Hold point requirements • Geosynthetics Inspection and Monitoring requirements; and • Performance Indicators
Site Preparation	Section 5 of the Technical Specifications Document
Earthworks	Section 6 of the Technical Specifications Document
Installation of Geosynthetics	Section 7 of the Technical Specifications Document
Installation of Leachate Collection System	Section 8 of the Technical Specifications Document
Placement of Protection Layer	Section 12 of the Technical Specifications Document

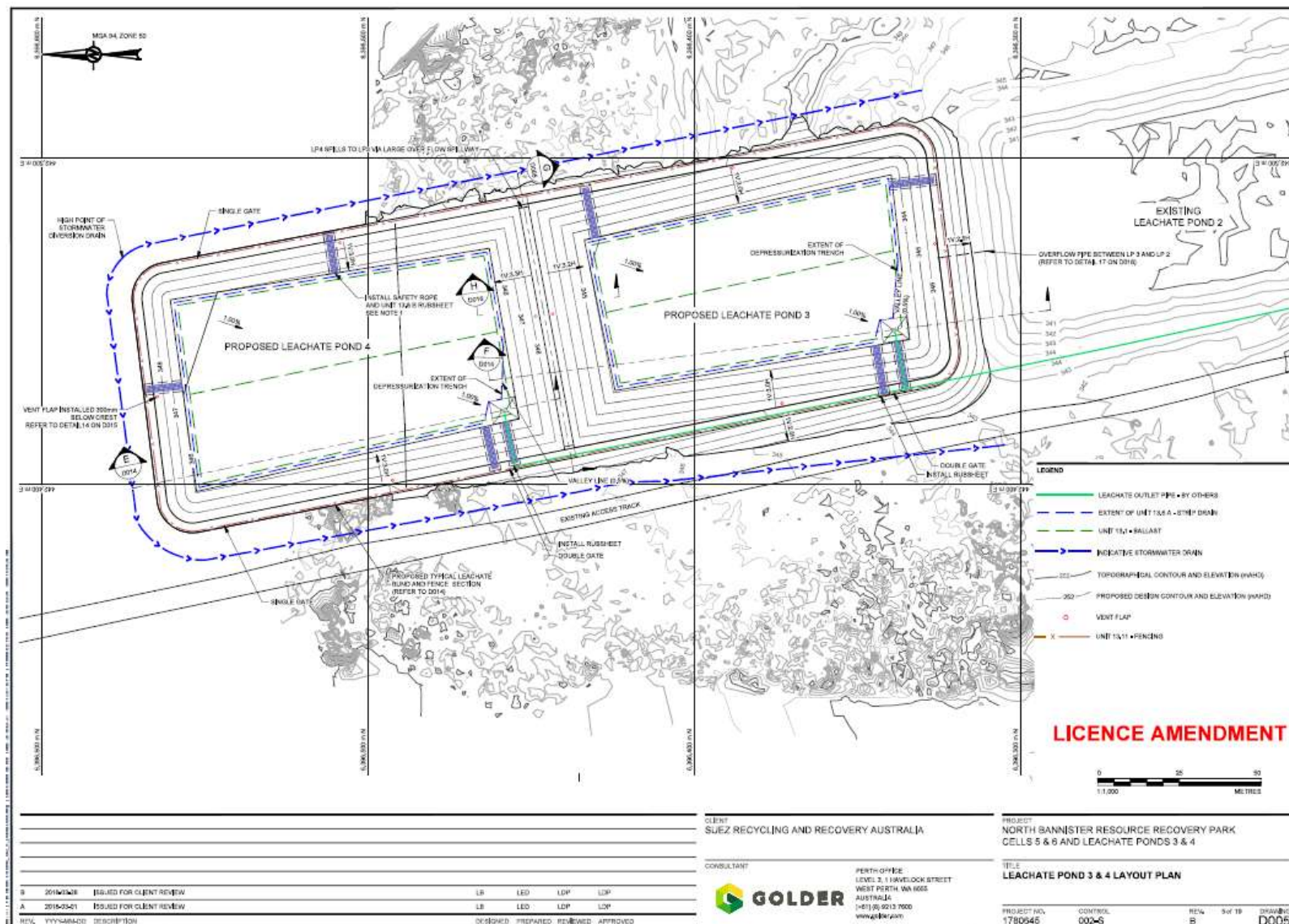
Schedule 8: Works Specifications – Construction of Leachate Ponds 3 and 4

The Leachate Ponds 3 and 4 construction works and requirements are described in the following table. All materials and construction specifications must also meet the requirements set out in *North Bannister Resources Recovery Park – Technical Specifications for Calls 5 & 6, Leachate Ponds 3 & 4, and Associated Works*. Report 1780645-002-S Revision 0. Golder Report Prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Technical Specifications Document); and Drawings D005 and D014 to D017 of *Design Report for Cell5, Cell6, Leachate Pond 5, Leachate Pond 6 and Ancillary Structures at North Bannister Resources Recovery Park*. Report 1780645-005-R. Revision 0. Golder Report prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Design Report).

	Infrastructure/Equipment	Requirements (design and construction)
1	Site Preparation (Leachate Ponds 3 and 4)	The following site preparation works must be undertaken: • Clearing and grubbing of entire cell footprints including embankments, bunds and cell base. • Removal of topsoil to nominal depth of 300mm from the entire cell footprints including embankments, bunds and cell base. • Excavation of all unsuitable materials to a minimum depth of -500mm 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 -2% to +2% in 250mm layers to FSL. • If suitable material (meeting requirements for engineered fill material) exists in the cell footprint, the material shall be excavated to -250mm of FSL, ripped and treated as per engineered fill material for moisture conditions and compaction requirements. • Cut internal batters to be 3:1 (H:V) – Type 1 cut • Proof roll entire footprint including cell floor and embankments.
2	Subgrade construction	The engineered fill subgrade shall be formed in accordance with the following specifications: • Shall be cut and fill to achieve a general grade of nominally 1% to the south. • Shall be moisture conditioned prior to near or wet of OMC sufficient to keep the GCL hydrated under the expected loading conditions. • The separation distance between the top of the subgrade and maximum groundwater table elevation shall be greater than 2m.

	Infrastructure/Equipment	Requirements (design and construction)
3	Liner system	The installed liner system is to be placed over the entire leachate pond base and extended up side embankments. Installation of the liner shall be undertaken in accordance with the following specifications: • The Geosynthetic Clay Liner (GCL) shall be supplied with additional bentonite applied to the overlaps. • The GCL shall be supplied, tested and inspected in accordance with the Technical Specifications Document. • Geocomposite strip drains will be installed above the GCL and beneath the HDPE geomembrane across the floor of the ponds, in a herringbone pattern to direct seepage to the south west corner of each pond. • The geocomposite strips will be at least 7mm thick and 600mm wide and shall be supplied, tested and inspected in accordance with the Technical Specifications Document. • The HDPE geomembrane shall be 2mm thick single-sided textured overlaying the geocomposite strip drains and installed textured side down. • The HDPE geomembrane shall be supplied, tested and inspected in accordance with the Technical Specifications Document including aspects: ○ Resin source and manufacturer ○ Thickness ○ Standard Oxidative Induction Time (Std-OIT) ○ High Pressure Oxidative Induction Time (HP-OIT) ○ Environmental Stress Crack Resistance. • Permanent internal ballast shall be installed at the toe of the internal embankment and across the centre of each pond floor.
4	Anchor trenches	The anchor trenches shall be set back 1.0m from the crest of the perimeter embankment, cell edge bunds and interim cell edge bunds. The trenches shall be backfilled with engineered fill while liner materials are in the relaxed state, in full contact with subgrade and without wrinkles or folds.
5	Safety Ropes	Safety egress ropes shall be installed on each embankment slope, including one located adjacent to the inlet and outlets points of each pond. The rope ladders will be anchored at the embankment crest and weighted at the base.

	Infrastructure/Equipment	Requirements (design and construction)
6	Overflow spillway	Installation of the overflow spillways shall be undertaken in accordance with the following specifications: • Designed to allow unimpeded discharge of leachate to the receiving pond during a 1 in 100, 72 hour storm event without the pond overtopping. • The top of each spillway shall be set at 300mm below the top of the bund crest level. • The edges of each spillway weir shall be constructed with a slope of 1:3 and shall be installed with a liner system with equivalent permeability to the pond liner. • The spillway pipes shall be sized for a 1:100 AEP storm event of 2 hours duration, according to the Colebrook White method described in AS 2200.2006.
7	Inlet and Outlet pipes	Ponds shall be installed with pipes that are placed over a protection rub sheet. Inlet pipes will be installed within a pond sump. The pond sumps shall be constructed in accordance with the following specifications: • 0.5m deep below the pond base to provide a low point • Lined with a double layer of GCL, and a rub sheet • Shall achieve a permeability of $<1 \times 10^{-9}$ m/s and equivalent to that of the pond liner system. • The separation distance between the base of the pond sumps and maximum groundwater table elevation shall be greater than 2m.
8	Leachate management system	An electronic leachate management system, comprising pipework (inlet and outlet), pumps, flow metres and telemetry sensors shall be installed in each pond post liner construction. Protective rub sheets shall be placed between infrastructure and pond liner where appropriate to the satisfaction of a GITA. The installation of the system shall be undertaken in a manner that ensures the liner system permeability is equivalent to $<1 \times 10^{-9}$ m/s. including all inlet, outlet and monitoring areas joined to the constructed pond liner.
9	Stormwater management	Stormwater management infrastructure shall be constructed to divert uncontaminated stormwater around Leachate ponds 3 and 4, and shall be constructed to the following specifications: • All drains, pipes, culverts and other stormwater drainage infrastructure shall be designed to convey peak flow rate corresponding to a 1 in 20 year storm event, with available freeboard to convey discharge corresponding to a 1 in 100 year storm event.
	Decommissioning of groundwater monitoring wells GMB1.	In accordance with ASTM D5092/D5092M-16 and Section 18, Mandatory Requirements in the Guideline: Minimum Construction Requirements for Water Bores in Australia, National Uniform Drillers Licensing Committee 2012 3rd Ed.; as referenced by the Department at: https://www.water.wa.gov.au/_data/assets/pdf_file/0005/1796/Minimum-construction-guidelines-for-water-bores-in-Australia-V3.pdf
	Installation of replacement groundwater monitoring wells MW11	



FigureS8-5: Leachate Ponds 3 and 4 construction layout

Construction Compliance and Quality Assurance

The Leachate Ponds 3 and 4 construction works and requirements are described in the following table. All materials and construction specifications must also meet the requirements set out in *Construction Quality Assurance Plan Cells 5&6 and Leachate Ponds 3&4 – North Bannister Resource Recovery Park*. Report 1780645-004-R. Revision 0. Golder Report Prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Construction Quality Assurance Document) and *North Bannister Resources Recovery Park – Technical Specifications for Calls 5 & 6, Leachate Ponds 3 & 4, and Associated Works*. Report 1780645-002-S Revision 0. Golder Report Prepared for SUEZ Recycling and Recovery Australia, dated March 2018 (the Technical Specifications Document).

The Construction Compliance and Construction Quality Assurance components and specifications that must be completed as part of the works detailed in the schedule are listed in the following table, compliance and quality assurance must be measured in accordance with the referenced document.

Component	Reference document
Codes and Standards	Section 1.4 of the Technical Specifications Document
Material Quality Assurance and Quality Control - General	Section 1.8 of the Technical Specifications Document
Drawings	Table 2 of the Technical Specifications Document
Material Property Specifications	Section 2 of the Technical Specifications Document
Quality Assurance and Quality Control	Section 3 of the Technical Specifications Document, including: • Pre-construction requirements • Construction requirements • General requirements • Manufacturer requirements • Conformance testing • Quality Control Procedures • Reports and Certificates • Reporting requirements; and • Testing requirements; and The specifications set out in the Construction Quality Assurance Document, including: • Construction Quality Assurance (CQA) procedures; • Inspection and Monitoring requirements • Hold point requirements • Geosynthetics Inspection and Monitoring requirements; and • Performance Indicators
Site Preparation	Section 5 of the Technical Specifications Document
Earthworks	Section 6 of the Technical Specifications Document
Installation of Geosynthetics	Section 7 of the Technical Specifications Document
Installation of Leachate Pond Sump	Section 9 of the Technical Specifications Document
Fencing	Section 10 of the Technical Specifications Document
Placement of Permanent Ballast	Section 11 of the Technical Specifications Document
Installation of leachate management system infrastructure	Must meet or exceed the requirements and specifications referenced for relevant components of this table including but not limited to: • Material Quality Assurance and Quality Control -

Component	Reference document
	General • Material Property Specifications • Quality Assurance and Quality Control; and • Installation of Geosynthetics