



Licence number	L9304/2021/1
Licence holder	Shire of Ashburton
Registered business address	Lot 198 Pannawonica Drive PANNAWONICA WA 6716
DWER file number	DER2021/000287
Duration	22/12/2021 to 21/12/2041
Date of issue	22/12/2021
Premises details	Pilbara Regional Waste Management Facility Lot 550 and Lot 551 on Plan 414367, being Reserve 53324 Onslow Road TALANDJI WA 6710 Certificate of Title: Volume LR3169, Folio 963

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production / design capacity
Category 13 - Crushing of building material: premises on which waste building or demolition material (for example, bricks, stones or concrete) is crushed or cleaned.	50,000 tonnes per annual period
Category 61 - Liquid waste facility: premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	1,000 tonnes per annual period
Category 61A - Solid waste facility: premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land.	20,000 tonnes per annual period

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production / design capacity
<p>Category 62 – Solid waste depot: premises on which waste is stored or sorted, pending final disposal or re-use, other than in the course of operating –</p> <p>(a) A refund point (as defined in the Waste Avoidance and Resource Recovery Act 2007 section 47C(1)) (a refund point); or</p> <p>(b) A facility or other place (an aggregation point) for the aggregation of containers that have been returned to refund points until those containers are accepted for processing or disposal.</p>	<p>100,000 tonnes per annual period</p>
<p>Category 63 - Class I inert landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the Landfill Waste Classification and Waste Definitions 1996 , is accepted for burial.</p>	<p>20,000 tonnes per annual period</p>
<p>Category 65 - Class IV secure landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the Landfill Waste Classification and Waste Definitions 1996 , is accepted for burial.</p>	<p>50,000 tonnes per annual period</p>

This licence is granted to the Licence Holder, subject to the attached conditions, on 22 December 2021, by:

TRACEY HASSELL
A/SENIOR 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;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a condition, each row in a table constitutes a separate condition;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
 - (i) if dated, refers to that particular version; and
 - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This 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.

Licence conditions

The Licence Holder must ensure that the following conditions are complied with:

Waste acceptance and processing

1. The Licence Holder must only accept waste on to the Premises if:
 - (a) it is of a waste type listed in Table 1; and
 - (b) the quantity of the waste type accepted is below any quantity limit listed in Table 1; and
 - (c) the waste type meets any specification listed in Table 1; and
 - (d) in the case of Contaminated Solid Waste, is supported by documentation that demonstrates compliance with the Acceptance Criteria for Class IV landfills.

Table 1: Waste acceptance		
Waste type	Quantity limit	Acceptance specification ¹
Inert Waste Type 1	50,000 tonnes per annual period (tpa) for Category 13 activities	Waste containing visible asbestos or Asbestos containing material (ACM) shall not be accepted. All construction and demolition (C&D) waste must have the waste source confirmed, be inspected at the gatehouse prior to acceptance, and be rated for potential undeclared asbestos.
Putrescible waste	20,000 tpa for Category 61A activities	Green waste only.
Scrap Metal	100,000 tpa for Category 62 activities	Limited to electrical transmission cables, non-reactive exotic and specialist alloys, drill rods and general solid metal waste. Excludes car bodies, e-waste, whitegoods and any hazardous or reactive metals.
Special Waste Type 1 (asbestos)	Up to 20,000 tpa for Category 63 activities	ACM is to be wrapped in heavy duty plastic, or otherwise contained in a manner to prevent asbestos fibres entering the atmosphere during handling and disposal. >24 hours prior notification to the gatehouse is required before the arrival of declared asbestos loads for disposal.

Table 1: Waste acceptance		
Waste type	Quantity limit	Acceptance specification¹
Clean Fill	No limit	<p>Must meet the acceptance criteria for Class IV landfills as specified in the Landfill Definitions.</p> <p>Must be visually inspected at the gatehouse prior to acceptance onsite.</p> <p>All contaminated solid wastes will require provision of laboratory testing on acceptance to verify that contaminant levels meet waste classification acceptance criteria for Class IV landfills.</p> <p>Any contaminated solid wastes containing, or suspected to contain ACM must be contained in a manner to prevent asbestos fibres entering the atmosphere.</p> <p>>24 hours prior notification to the gatehouse is required before the arrival of declared contaminated solid wastes loads containing, or suspected to contain ACM for disposal.</p> <p>No sludges or non-spadable materials to be accepted.</p> <p>All Special Waste Type 2 will be contained in accordance with AS/NZS 4261</p>
Uncontaminated Fill	Combined total of 50,000 tpa for Category 65 activities	
Neutralised Acid Sulfate Soil		
Inert Waste Type 1		
Contaminated Solid Waste (including Contaminated Solid Waste containing ACM)		
Special Waste Type 2		
Car and truck wash waters (controlled waste tracking code L100)	1,000 tpa for Category 61 activities	Accepted onto the Premises via liquid waste tankers.
Waste from grease traps (controlled waste tracking code K110)		
Sewage waste from the reticulated sewerage system (controlled waste tracking code K130)		

Table 1: Waste acceptance		
Waste type	Quantity limit	Acceptance specification ¹
Food and Beverage Processing Wastes (controlled waste tracking code K200)		
Septage wastes (controlled waste tracking code K210)		

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

2. The Licence Holder must 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.
3. The Licence Holder must ensure that wastes accepted onto the Premises are only subjected to the processes set out in Table 2 and in accordance with any process limits described in that Table.

Table 2: Waste processing		
Waste type(s)	Process	Process limits ¹
All	Acceptance and processing	(a) Receiving of waste cease during periods of strong winds (>40 km/h) or in the event of a yellow level, or higher than yellow level, cyclone alert
Inert Waste Type 1 accepted for Category 13 activities	Stockpiling of C&D material, crushing and screening and storage of processed material.	(a) Crushing, screening and storage shall only take place on the C&D processing and scrap metal area as shown in Schedule 1 (b) Dust suppression sprinkler systems must be active on the crushing and screening equipment during operation. (c) Stockpiles must be maintained in a damp state (d) Handling of waste storage and processing must be managed in accordance with asbestos management conditions 4 to 13

Table 2: Waste processing		
Waste type(s)	Process	Process limits ¹
Putrescible waste - Green waste	Acceptance, storage and processing prior to re-use within the premises	<ul style="list-style-type: none"> (a) Following acceptance onto the Premises, all green waste is to be covered until being unloaded onto the designated green waste processing hardstand (b) Green waste is to be stored in accordance with Department of Fire and Emergency Services, Information Note: Bulk Green waste storage Fires, 2014 (c) A 100 m buffer around the green waste stockpile area is to be maintained (d) Green waste and mulch stockpiles will be stored in maximum volumes of 3 m high, 10 m wide and 40 m long and stockpiles will be separated by a minimum 10 m (e) No green waste may be disposed of via landfilling at the premises
Scrap Metal	Acceptance and storage prior to removal off-site	<ul style="list-style-type: none"> (a) All scrap metal is to be directed to the designated C&D processing and scrap metal area
Special Waste Type 1 (asbestos)	Acceptance and disposal by landfilling	<ul style="list-style-type: none"> (a) All asbestos waste will be disposed of to the designated asbestos monocell immediately upon acceptance (b) Any waste identified as containing asbestos or potentially containing asbestos after being accepted on site is to be disposed of to the asbestos monocell (c) Cover material is to be graded to allow for surface water drainage away from buried material

Table 2: Waste processing		
Waste type(s)	Process	Process limits ¹
Clean Fill, Uncontaminated Fill, Neutralised Acid Sulfate Soils, Inert Waste Type 1 accepted for landfilling, Contaminated Solid Waste, Special Waste Type 2	Acceptance and disposal by landfilling to Cell 1	<ul style="list-style-type: none"> (a) The tipping face will not exceed an area of 30 m x 30 m and 2 m in height (b) The first layer (0.5 - 1 m) of waste in each cell is not to be compacted, compromise the cell liner system, or contain waste that could damage the liner (c) Waste is to be spread in 500 mm layers to form 2 m deep platforms across the entire cell floor or the lower waste platform, with all waste layers being compacted except the first layer (d) All Special Waste Type 2 (clinical waste) is to be deposited to the base of the tipping face and immediately covered in accordance with condition 15 (e) No putrescible wastes including green wastes or sludges from the liquid waste ponds may be disposed of via landfilling at the premises (f) Contaminated solid waste containing, or suspected of containing ACM must be disposed of immediately upon acceptance via burial.
Liquid wastes	Acceptance and treatment via evaporation	<ul style="list-style-type: none"> (a) Sludges and solids removed from the treatment ponds must be removed offsite to an appropriate licenced facility (b) Prior to entering any treatment process the Licence Holder must ensure that liquid wastes are adequately characterised to prevent incompatible waste types being mixed in the treatment process

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

Asbestos management (Category 13)

4. The Licence Holder must ensure that water is routinely applied to each load of Inert Waste Type 1 accepted for Category 13 activities entering the premises, ensure all loads are wetted prior to unloading, and maintained in a damp state throughout the inspection process.
5. The Licence Holder must:
 - (a) Visually inspect all loads of Inert Waste Type 1 accepted for Category 13 activities on arrival at the premises prior to acceptance, to determine the risk of a load containing asbestos and/or ACM; and
 - (b) Classify each load as either a 'low risk load' or a 'high risk load' in accordance with the risk classification procedure provided in Schedule 2.

6. Upon acceptance of the waste, the Licence Holder must direct each classified load to an unloading area designed and constructed to ensure the classified load will not mix with other waste prior to further inspection
7. The Licence Holder must:
 - (a) Visually inspect each 'low risk load' while the material is being unloaded, and continue to do so at all stages of the storage, sorting, and screening process, to determine whether any asbestos and/or ACM can be identified;
 - (b) Where asbestos and/or ACM is suspected or identified in a 'low risk load', reclassify that load as a 'high risk load'; and
 - (c) Visually inspect and handle each 'high risk load' in accordance with the procedure provided in Schedule 3.
8. The Licence Holder must maintain accurate and auditable records of all loads that have been inspected and suspected or found to contain asbestos and/or ACM showing the source (person) and originating site (location), and actions taken to address the issue with the source of the load.
9. The Licence Holder must ensure that for materials subject to conditions 4 to 8:
 - (a) Materials on the premises are maintained in at least three separate stockpiles for unprocessed waste, products tested for asbestos or ACM, and products awaiting testing for asbestos or ACM;
 - (b) All stockpiles are maintained in a damp state to prevent dust lift off;
 - (c) Unprocessed waste and product stockpiles are kept clearly separated at a minimum three (3) metre distance from the base of the stockpile;
 - (d) Products tested for asbestos or ACM and products awaiting testing for asbestos or ACM are clearly separated by a minimum three (3) metre distance from the base of the stockpile; and
 - (e) Clearly visible and legible signage is erected on individual stockpiles to clearly identify and delineate tested products, untested products, and unprocessed waste.
10. The Licence Holder must ensure that testing of all products is undertaken in accordance with the product testing procedures specified in Schedule 4.
11. The Licence Holder must ensure that products are only supplied to customers or used in the construction of infrastructure on the premises if they have been tested in accordance with Condition 10 and must not exceed the product specification of 0.001% asbestos weight for weight (w/w) for asbestos content (in any form) within any recycled products.
12. The Licence Holder must maintain accurate and auditable records of all asbestos product testing undertaken in accordance with Condition 10 including:
 - (a) Details of the sample size;
 - (b) A statement of limit of detection of the analysis;
 - (c) Results in relation to asbestos detected (positive result exceeding the 0.001% w/w limit) or not;
 - (d) A description of any asbestos detected; and
 - (e) An estimate of the concentration of asbestos detected.
13. The Licence Holder is not authorised to implement a reduced product testing rate as per the "Reduced sampling criteria" section of Schedule 4.

Premises operations

- 14.** The Licence Holder must implement the Operational Environmental Management Plan (OEMP) and manage the landfilling activities to ensure:
- (a) waste is levelled and compacted as soon as practicable after it is discharged;
 - (b) waste is placed and compacted to ensure all faces are stable and capable of retaining rehabilitation material;
 - (c) there is only one active landfill face not larger than 30 metres in width and two (2) metres in height; and
 - (d) contaminated stormwater run-off generated within the active tipping area and active Cell must be kept separate from clean stormwater run-off.
- 15.** The Licence Holder must ensure that cover is applied and maintained on landfilled wastes in accordance with Table 3 and that sufficient stockpiles of cover are maintained on site at all times.

Table 3: Cover requirements			
Waste Type	Material	Minimum Depth	Timescales
Special Waste Type 1 and 2	Clean fill, Uncontaminated Fill, Type 1 Inert waste or soil	300 mm	Immediate cover of material.
Neutralised Acid Sulfate Soils, Contaminated Solid Waste, and Inert Waste Type 1 accepted for landfilling		300 mm	Intermediate cover material to be applied at the end of each day. This material may be partially removed at the beginning of the operations the next day prior to landfilling.
Contaminated Solid Waste containing or suspected of containing ACM		300 mm	Immediately following disposal in Class IV cell.

- 16.** The Licence Holder must implement the following security measures at the site:
- (a) erect and maintain suitable fencing to prevent unauthorised access to the site and to prevent animal access to the site; and
 - (b) ensure that any entrance gates to the premises are securely locked when the premises are unattended; and
 - (c) undertake regular inspections of all security measures and repair damage as soon as practicable.
- 17.** The Licence Holder must install and maintain a sign at the entrance to the Premises which clearly displays the following information:
- (a) hours of operation;
 - (b) contact telephone number;
 - (c) warning indicating penalties for people lighting fires; and
 - (d) list of materials accepted for recycling and the location of where they can be deposited on the premises.

18. The Licence Holder must display signage at the premises limiting vehicle speeds on unsealed roads to 10 km per hour.
19. The Licence Holder must only operate the premises between the hours of 0600 hrs to 1700 hrs Monday to Sunday, unless prior notification has been given to the gatehouse and the premises is attended for the duration of any out-of-ordinary operational scenarios.
20. The Licence Holder must implement control measures to prevent infestations of pests, flies and vermin and weeds at the Premises and implement the following measures:
 - (a) Implement feral animal, vermin and weed monitoring in accordance with the OEMP;
 - (b) If feral animals and vermin are detected in monitoring, eradication measures shall be undertaken including: baiting and trapping; and
 - (c) Undertake visual inspections for the presence of weeds at least quarterly and undertaken eradication measures if weeds have established on the Premises.
21. The Licence Holder must take all reasonable and practical measures to ensure that no windblown waste escapes from the Premises and that windblown waste is collected on at least a weekly basis and appropriately contained.
22. The Licence Holder must ensure that no waste is burnt on the Premises.

Infrastructure and equipment

23. The Licence Holder must ensure that the site infrastructure and equipment listed in Table 4 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 4.

Table 4: Infrastructure and equipment requirements		
Site infrastructure and equipment	Operational requirement	Infrastructure location
All plant and machinery	a) All equipment, plant and machinery is to be maintained in good working order and serviced as per the manufacturers specifications b) Where noise emissions from equipment and machinery do not comply with the assigned levels within the noise regulations, the licence holder must install and maintain additional devices to control minimise noise emissions for that piece of equipment or machinery.	N/A

Table 4: Infrastructure and equipment requirements		
Site infrastructure and equipment	Operational requirement	Infrastructure location
Class IV landfill – Cell 1	<p>A dual basal landfill lining system</p> <p>Secondary Lining System:</p> <ul style="list-style-type: none"> • Layer 1 – Engineered Attenuation Layer (minimum 500 mm thick) • Layer 2 – Geosynthetic Clay Liner (GCL) • Layer 3 – 2.0mm High Density Polyethylene (HDPE) • Layer 4 – Drainage Geocomposite which will act as a Leak Detection Layer. <p>Primary Lining System</p> <ul style="list-style-type: none"> • Layer 5 – Upper GCL • Layer 6 – 2.0 mm HDPE • Layer 7 – Cushion/Protection geotextile • Layer 8 – Leachate Collection System (300 mm thick gravel) covered with a separation geotextile. <p>A separation distance of 2.7m is to be maintained between the base of the secondary sump (lowest surface of the concrete pad) and the maximum recorded groundwater levels.</p>	Cell 1 as depicted in Schedule 1 Infrastructure Map
Leachate collection system	<ol style="list-style-type: none"> a) Must comprise of flexible HDPE pipes strong enough to maintain performance under the maximum loads likely to be imposed in service, complying with the requirements of AS 2566.1 b) All leachate arising within a landfill cell must be directed to the leachate collection sump c) Must maintain between 300 mm to 1 m leachate head above the landfill cell floor liner post pumping d) Probes must be operational to identify variations in leachate head levels. 	Cell 1 as depicted in Schedule 1 Infrastructure Map

Table 4: Infrastructure and equipment requirements		
Site infrastructure and equipment	Operational requirement	Infrastructure location
Leachate detection controls	<ul style="list-style-type: none"> a) The leachate leakage detection system must be capable of directing leachate leakage from the entire area of the Cell 1 footprint, to the monitoring point where it can be monitored and extracted b) probes must be operational to identify liquid levels c) maintained free of leaks and defects 	Cell 1 as depicted in Schedule 1 Infrastructure Map
Landfill leachate pond	<ul style="list-style-type: none"> a) A 500 mm freeboard must be maintained at all times b) The pond must not overtop c) Probes must be operational to identify high leachate levels d) The pond must be emptied prior to the onset of the wet season, and the pond liner integrity visually assessed with any necessary repairs made prior to the onset of wet season 	Phase 1 Leachate evaporation pond as depicted in Schedule 1 Infrastructure Map
Groundwater monitoring bores	<ul style="list-style-type: none"> a) Constructed in accordance with ASTM D5092/D5092M-16 Standard practice for design and installation of groundwater monitoring wells 	Bores as depicted in as depicted in Schedule 1 Bore Location Map
Surface water management system	<ul style="list-style-type: none"> a) One surface water/evaporation pond capable of enabling controlled discharge of water from a 72 hour, 1 in 100 ARI rainfall event b) 3 drainage swales capable of directing surface water offsite c) One swale to direct surface water through the evaporation pond d) A levee embankment designed to withstand a 72 hour, 1 in 500 year ARI event 	N/A
Turkey's Nest – bore water storage pond	<ul style="list-style-type: none"> a) One pond lined with 2 mm HDPE constructed to the dimensions of 52 m x 32 m with a total pond volume of 2,416 m³ b) To be maintained with a 500 mm freeboard 	

Table 4: Infrastructure and equipment requirements		
Site infrastructure and equipment	Operational requirement	Infrastructure location
Liquid waste (sullage) pond	a) Two receival ponds constructed of concrete to the dimensions of 5 m x 5 m b) One 2 mm HDPE lined evaporation pond with a maximum operating capacity of 409 m ³ c) To be maintained with a freeboard of 500 mm d) The pond must not overtop	Sullage pond as depicted in Schedule 1 Infrastructure Map
Fire suppression infrastructure	To consist of: a) 100,000 L water tank or two 50,000 L tanks, b) fire extinguishers; and c) 10,000 L water cart.	N/A
Bulk waste area	a) Three hardstands, one designated for separation of green waste, one for the separation of construction and demolition and one for the separation of scrap metal wastes b) Each hardstand to meet a permeability of not less than 1×10^{-7} m/s c) All stormwater or run-off from the green waste processing hardstand must be captured within the green waste leachate pond within the green waste processing area.	Green waste processing, C&D processing and scrap metal area as depicted in Schedule 1 Infrastructure Map
Green waste leachate pond	a) To be maintained with a 500 mm freeboard b) The pond must not overtop d) In the event of a freeboard exceedance, pond contents are to be pumped into the leachate evaporation pond	green waste area as depicted in Schedule 1 Infrastructure Map
Security fencing	a) Consisting of a minimum 1.8 m high security fence with 600 mm overhand and skirt around the entire site boundary; and b) Site access gates at the site entrance.	N/A

Table 4: Infrastructure and equipment requirements		
Site infrastructure and equipment	Operational requirement	Infrastructure location
Vehicle and tyre wash down areas	a) Vehicle wash down and tyre wash facilities, each with a separate wash down pad sump, a separate refueling pad, all impermeable concrete hardstands, with perimeter bunds.	Tyre washing facility and washdown pad as depicted in Schedule 1 Infrastructure Map
Wash down pad sumps	a) Wash down pad sumps constructed to collect run-off from vehicle and tyre wash down areas and direct this through oily water separators.	N/A

Monitoring

- 24.** The Licence Holder must ensure that:
- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - (b) all surface water sampling is conducted in accordance with AS/NZS 5667.4;
 - (c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
 - (d) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.
- 25.** The Licence Holder must ensure that:
- (a) monthly monitoring is undertaken at least 15 days apart;
 - (b) quarterly monitoring is undertaken at least 45 days apart; and
 - (c) annual monitoring is undertaken at least 9 months apart.
- 26.** The Licence Holder must ensure that all monitoring equipment used on the Premises is to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.
- 27.** The Licence Holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.
- 28.** The Licence Holder must undertake the monitoring of inputs and outputs in Table 5 according to the specifications in that table.

Table 5: Monitoring of inputs and outputs				
Input/Output	Parameter	Units	Averaging period	Frequency
Waste Inputs	Waste types as defined in Table 1	tonnes	N/A	Each load arriving at the Premises
Waste Outputs	All waste types as defined in the Landfill Definitions			Each load leaving or rejected from the Premises

29. The Licence Holder must undertake the surface water monitoring in Table 6 according to the specifications in that table.

Table 6: Surface water monitoring				
Location	Parameter	Units	Averaging period	Frequency
Surface water attenuation pond – SW1	pH ¹	pH units	Spot sample	Monthly
	Electrical Conductivity ¹	µS/cm		
	Metals: Arsenic (total), cadmium, chromium, copper, iron (total), lead, manganese, mercury, molybdenum, nickel, selenium, zinc	mg/l		
	Nutrients: Ammoniacal nitrogen, nitrate-nitrogen, total nitrogen, total phosphorus			
	Cations and anions: Total potassium, chloride and sulfate			
	Total soluble solids, total organic carbon and chemical oxygen demand			

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

30. The Licence Holder must undertake the ambient groundwater monitoring in Table 7 according to the specifications in that table.

Table 7: Ambient groundwater monitoring requirements					
Location	Parameter	Units	Averaging period	Frequency	
Monitoring bore location BH03, BH05 and BH11 to 28 shown in the Groundwater Monitoring Bore Map in Schedule 1	Standing water level (SWL) ¹	m(AHD)	Spot sample	Once prior to commencement of waste placement, then Monthly	
			Instantaneous	Continuous from one month after the issue of this licence for a period of 24 months.	
	Field Parameters				
	pH ¹	pH units	Spot sample	Once prior to waste placement, then Quarterly	
	Electrical conductivity ¹	µS/cm			
	Dissolved oxygen ¹	%			
	Oxidation/ Reduction Potential ¹	mV			
	Temperature ¹	°C			
	Laboratory Parameters				
	pH Electrical conductivity Total dissolved solids Total suspended solids	pH units µS/cm mg/L mg/L	Spot sample	Once prior to commencement of waste placement, then Quarterly	
	Major ions: alkalinity (bicarbonate, carbonate, total alkalinity), calcium, chloride, hardness, hydroxide, magnesium, potassium, sodium, sulphate	mg/L			
	Nutrients: ammonia, ammoniacal nitrogen, biological oxygen demand (BOD), chemical oxygen demand (COD), nitrate-nitrogen, reactive phosphorus, total kjeldahl nitrogen, total nitrogen	mg/L			
	Total and dissolved metals and metalloids: arsenic, cadmium, chromium (III and VI), copper, iron, lead, manganese, molybdenum, nickel and zinc	mg/L			

Table 7: Ambient groundwater monitoring requirements				
Location	Parameter	Units	Averaging period	Frequency
	Organics: Total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, and xylenes (BTEX)	mg/L		
	Pesticides: Organochlorine pesticides (OCP), Organophosphate pesticides (OPP)	mg/L		
	Organics: Chlorinated hydrocarbons (CHC), methyl tert-butyl ether (MTBE), organic acid, phenols, polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH).	mg/L	Spot sample	Once prior to commencement of waste placement, then Annual
	Microbial pathogens: E. Coli, enterococci	mg/L		
	Polyfluoroalkyl substances: Perfluorooctane sulfonate (PFOS), Perfluorohexane sulfonate (PFHxS), Perfluorooctanoic acid (PFOA)	µg/L		

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

31. The Licence Holder must undertake the monitoring of leachates in Table 8 according to the specifications in that table.

Table 8: Leachate monitoring requirements				
Location	Parameter	Units	Averaging period	Frequency
Leachate sump of Cell 1-L1	pH ¹	pH units	Spot Sample	Quarterly
	Electrical conductivity ¹	µS/cm		
	Dissolved oxygen ¹	%		
	Oxidation/ Reduction Potential ¹	mV		
	Temperature ¹	°C		
	Total and dissolved metals and metalloids: arsenic, cadmium, chromium (III and VI), copper, iron, lead, manganese, molybdenum, nickel and zinc	mg/L		

Table 8: Leachate monitoring requirements				
Location	Parameter	Units	Averaging period	Frequency
Leachate Sump of Cell 1-L1	Total recoverable hydrocarbons (TRH)	mg/L		
	xylenes (BTEX)	mg/L		
	Nutrients: ammonia, ammoniacal nitrogen, biological oxygen demand (BOD), chemical oxygen demand (COD), nitrate-nitrogen, reactive phosphorus, total kjeldahl nitrogen, total nitrogen	mg/L		
	Total suspended solids	mg/L		
	Major ions: alkalinity (bicarbonate, carbonate, total alkalinity), calcium, chloride, hardness, hydroxide, magnesium, potassium, sodium, sulphate	mg/L	Spot Sample	Quarterly
	Organics: Chlorinated hydrocarbons (CHC), methyl tert-butyl ether (MTBE), organic acid, phenols, polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH).	mg/L	Spot sample	Annual
	Polyfluoroalkyl substances: Perfluorooctane sulfonate (PFOS), Perfluorohexane sulfonate (PFHxS), Perfluorooctanoic acid (PFOA)	µg/L		
	Pesticides: Organochlorine pesticides (OCP), Organophosphate pesticides (OPP)	mg/L		
	Microbial pathogens: E. Coli, enterococci	mg/L		

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

- 32.** The Licence Holder must undertake the leak detection monitoring in Table 9 according to the specifications in that table.

Table 9: Leak detection monitoring				
Location	Parameter	Units	Averaging period	Frequency
Primary and secondary sump	Damage or defects to the primary or secondary lining system within the sump.	N/A - visual inspection.	N/A	Quarterly
Secondary Leachate sump of Cell 1 – L1	Depth of leachate in sump and/or volume of leachate collected or removed (where applicable)	mm and/or mL	Spot sample	Monthly

33. The Licence Holder must maintain the leachate operational levels in Table 10 according to the specifications in that table.

Table 10: Leachate management			
Location	Parameter	Operational level	Averaging period
Primary leachate sump	Leachate head in Cell 1	pre-pumping level between 300 mm to 1000 mm	Instantaneous.
Secondary leachate collection sump	leachate head	100 mm	
Leachate pond	Freeboard	minimum 500 mm	
Green waste pond	Freeboard	minimum 500 mm	

34. In case of the occurrence of an Event as specified in Table 11, the Licence Holder must take the relevant management action specified in that table.

Table 11: Management actions		
Location	Event	Management Action
Leachate collection layer in Cell 1	Any time the leachate head exceeds the maximum operational level in Table 10	<p>a) The Licence Holder must investigate the cause of the exceedance within 24 hours</p> <p>b) Where the investigation identifies failure or blockage of the leachate management system, the Licence Holder must remove leachate from the system via liquid waste transport to a licenced liquid waste facility within 48 hours of observing the exceedance.</p> <p>c) The Licence Holder must report the exceedance and results of the investigation including proposed resolution to the CEO within 7 days.</p>
Primary and secondary sump	Any damage or defects to the liner identified	<p>a) The Licence Holder must notify the CEO within 48 hours of any damage or defects identified in the primary sump.</p> <p>b) The Licence Holder must investigate the cause of the damage or defects and report these findings, including proposed mitigation measures to the CEO within 7 days.</p>
Secondary leachate collection sump	Any time the leachate head exceeds the operational level in Table 10	<p>a) The Licence Holder must investigate the cause of the exceedance within 24 hours</p> <p>b) The Licence Holder must continue to monitor the volume of liquid accumulating within the leak detection layer</p> <p>b) Once sufficient volume has accumulated the Licence Holder must test the liquid for the same parameters and units specified in Table 8.</p> <p>c) Where the investigation or monitoring identifies failure or blockage of the system, the Licence Holder must remove leachate from the system via liquid waste transport to a licenced liquid waste facility within 48 hours of observing the exceedance.</p> <p>d) The Licence Holder must report the exceedance and results of the investigation including monitoring results and a proposed resolution to the CEO within 7 days.</p>

Table 11: Management actions		
Location	Event	Management Action
Leachate leak detection layer	Where a cumulative total of 5 litres of liquid is accumulated over a period of 6 months	<p>a) The Licence Holder must cease the acceptance of waste for disposal to landfill until directed to re-commence by the CEO.</p> <p>b) The Licence Holder must report the exceedance to the CEO within 7 days.</p>
Leachate pond	Any time the freeboard exceeds the operational level in Table 10 for a duration of longer than 24 hours.	<p>a) The Licence Holder must investigate the cause of the exceedance within 24 hours</p> <p>b) Where the investigation identifies failure or blockage of the system, the Licence Holder must remove leachate from the system via liquid waste transport to a licenced liquid waste facility within 48 hours of observing the exceedance.</p> <p>c) The Licence Holder must report the exceedance and results of the investigation including proposed resolution to the CEO within 7 days.</p>

Specified actions

- 35.** Where the Licence Holder is requested, by any third party or government agency, to provide advice comment or information in relation to any actual or potential disturbance of the Pindan Sand Ridge, the Licence Holder must:
- (a) Give advice, comment and information directed to ensuring, so far as possible, the prevention of any disturbance that would compromise the stability of the facility, and maintain any records and evidence of providing such advice, comment and information; and
 - (b) Notify the CEO, within 48 hours of the receipt of the request, providing name and contact details of the party requesting the comment and a description of the nature of the request.
- 36.** If requested by the CEO, the Licence Holder must provide, with 14 days for the date of the request, information and data delineating the areas of the Pindan Sand Ridge in plan and cross-section that are necessary to remain undisturbed for the purposes of maintenance of long-term stability of the Pilbara Waste Management Facility infrastructure.
- 37.** The Licence Holder must provide to the CEO, within 12 months of commencement of this licence, or at another time as agreed with the CEO, a detailed landfill closure plan which shall cover scenarios of planned and unplanned closure, including but not limited to:
- (a) Details on future intended land use;
 - (b) Details on progressive closure, capping and rehabilitation works required to close used cells on the premises;

- (c) Details on the process for closing any partially used cells on the premises, including timeframes for development of capping design details and for providing revised final contour surfaces and infrastructure designs;
 - (d) Final landform and surface contours (pre- and post-settlement) for each landfill cell(s) and discussion on the final landform in the context of the surrounding topography;
 - (e) Landfill cap design detail and drawings (specifications and materials to be used in the final cap). Where geomembranes are proposed to be used in a capping system design detail must be provided;
 - (f) Design detail for connections in the cap to landfill gas and/or leachate collection and monitoring points (where relevant);
 - (g) Stormwater management measures for water shedding from the cap and final landform and details of stormwater management infrastructure;
 - (h) Construction quality assurance measures to be employed in cap construction/installation and other earthworks required to implement the closure plan;
 - (i) Details on post-closure monitoring and aftercare management;
 - (j) A final contour map depicting proposed final contours, top and side slopes, and surface drainage features;
 - (k) Typical cross-sections of the proposed landfill cap and design;
 - (l) Location of gas and leachate management infrastructure intended to remain on the premises throughout closure; and
 - (m) Information to demonstrate that planned or unplanned closure can be implemented in a timely manner should it be required. This may include evidence of contractual and/or available financial provisions that are set aside to ensure all proposed closure actions under the Closure Plan can be completed.
- 38.** The closure report required by Condition 37 must include contingency actions to be taken in the event of an unplanned closure in the event of instability in the Pindan Sand Ridge, failure of the liner system, or any other unplanned closure event for one or all cells, including options or contingencies for continuity of waste disposal services (where relevant).

Records and reporting

- 39.** The Licence Holder must record the following information in relation to complaints received by the Licence Holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:
- (a) the name and contact details of the complainant, (if provided);
 - (b) the time and date of the complaint;
 - (c) the complete details of the complaint and any other concerns or other issues raised; and
 - (d) the complete details and dates of any action taken by the Licence Holder to investigate or respond to any complaint.

- 40.** The Licence Holder must:
- (a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
 - (b) prepare and submit to the CEO by no later than 90 days after the end of that annual period an Annual Audit Compliance Report in the approved form.
- 41.** The Licence Holder must submit to the CEO by no later than 90 days after the end of each annual period, an Annual Environmental Report for that annual period for the conditions listed in Table 12, and which provides information in accordance with the corresponding requirement set out in Table 12.

Table 12: Annual Environmental Report	
Condition	Requirement
Condition 20	<p>The results of all feral animal, vermin and weed monitoring and inspections carried out in accordance with Condition 20.</p> <p>A summary of any eradication measures taking during the annual period</p>
Table 5	<p>Volume of waste accepted/rejected for each waste type which must include:</p> <ul style="list-style-type: none"> (a) data in a table format for the annual period; (b) comment on annual input and output volumetric trends; and (c) the volumetric tonnage conversion rates used for each waste type.
Table 6	<p>Monitoring of surface water which must include:</p> <ul style="list-style-type: none"> (a) a clear statement of the scope of work carried out; (b) a description of the field methodologies employed; (c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program; (d) copies of the field monitoring records and field QA/QC documentation; (e) an assessment of reliability of field procedures and laboratory results; (f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis; (g) an interpretive summary and assessment of results against previous monitoring results; and (h) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Table 12: Annual Environmental Report	
Condition	Requirement
Table 7	<p>Monitoring of ambient groundwater quality which must include:</p> <ul style="list-style-type: none"> (a) a clear statement of the scope of work carried out; (b) a description of the field methodologies employed; (c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program; (d) copies of the field monitoring records and field QA/QC documentation; (e) an assessment of reliability of field procedures and laboratory results; (f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis; (g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown); (h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites; (i) an interpretive summary and assessment of results against previous monitoring results; (j) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites; and (k) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Table 12: Annual Environmental Report	
Condition	Requirement
Table 8	<p>Monitoring of leachate quality which must include:</p> <ul style="list-style-type: none"> (a) a clear statement of the scope of work carried out; (b) a description of the field methodologies employed; (c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program; (d) copies of the field monitoring records and field QA/QC documentation; (e) an assessment of reliability of field procedures and laboratory results; (f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis; (g) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites; (h) an interpretive summary and assessment of results against previous monitoring results; (i) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites; and (j) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.
Table 9	Monitoring of leak detection parameters
Table 10	Monitoring of leachate management parameters
Table 11	Summary of leak detection actions
39	Complaints summary
N/A	<p>Provide map or visual representation of an annual survey of surface elevation (based on survey data) of the landfill and the Pindan Sand Ridge.</p> <p>Provide a map or visual representation and an interpretive summary of the survey data that identified and variations to the natural surface that have occurred and an interprets variations against previous years data.</p>

- 42.** The Licence Holder must submit to the CEO within 30 days after the first 6 months, and then within 30 days after the first 24 months, of completing the instantaneous standing water level sampling collected in accordance with Condition 30 including:
- (a) minimum, maximum, and averaged data over monthly periods;
 - (b) tabulated data as well as raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file);
 - (c) an interpretation of the data collected including groundwater contours and charts;
 - (d) trend graphs to provide a graphical representation of historical results and to support the interpretive summary; and
 - (e) groundwater bore survey details (vertical top of casing, casing height and ground level and geospatial position of each well) within the first report.
- 43.** 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) any maintenance of infrastructure that is performed in the course of complying with condition 23 of this licence;
 - (c) times, waste accepted and supervising personnel present for any waste accepted duration any out-of-ordinary operational scenarios in the course of complying with Condition 19.
 - (d) monitoring programmes undertaken in accordance with condition 28 of this licence; and
 - (e) complaints received under condition 39 of this licence.
- 44.** The books specified under condition 43 must:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;
 - (c) be retained by the Licence Holder for the duration of the licence; and
 - (d) be available to be produced to an inspector or the CEO as required.

Definitions

In this licence, the terms in Table 13 have the meanings defined.

Table 13: Definitions	
Term	Definition
Acceptance Criteria	has the meaning defined in the LWCWD
ACN	Australian Company Number
AHD	Australian Height Datum
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12 month period commencing from 1 January until 31 December of the same year.
asbestos	has the meaning defined in the <i>Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia</i> (DOH, 2009)
Asbestos Containing Material (ACM)	has the meaning defined in the <i>Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia</i> (DOH, 2009)
Asbestos Guidelines	<i>Guidelines for managing asbestos at construction and demolition waste recycling facilities</i> (DEC, 2012)
asbestos fines and fibres (AF)	<i>has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia</i> (DOH, 2009)
AS/NZS 4251	means the Australian Standard AS/NZS 4251.1 Electromagnetic compatibility (EMC) – Generic emission standard – Residential, commercial and light industry.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples.
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made.
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters.
averaging period	The time over which a limit or trigger level is measured or a monitoring result is obtained

Table 13: Definitions	
Term	Definition
books	has the same meaning given to that term under the EP Act.
C&D waste	Construction and demolition waste
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer of the Department. “submit to / notify the CEO” (or similar), means either: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Clean Fill	has the meaning defined in the LWCWD
cyclone alert	alert level as determined by the Department of Fire and Emergency Services covering the Prescribed Premises boundary.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)
freeboard	The distance between the maximum surface elevation and the top of the retaining banks or structures at their lowest point
fibrous asbestos (FA)	has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia (DOH, 2009)
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.
HDPE	high density polyethylene
Inert Waste Type 1	has the meaning defined in the LWCWD

Table 13: Definitions	
Term	Definition
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 section 57 of the EP Act, subject to the specified conditions contained within.
Licence Holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
Landfill Definitions (LWCWD)	means the document titled <i>Landfill Waste Classification and Waste Definitions 1996</i> published by the CEO as amended from time to time
NATA	National Association of Testing Authorities
NATA accredited	An analytical technique or procedure for which a laboratory holds a relevant accreditation to undertaken, provided by NATA
Operational Environmental Management Plan (OEMP)	means the document titled Operational Environmental Management Plan (OEMP), Talis Consultants Pty Ltd May 2021 as amended from time to time
Pindan Sand Ridge	means the topographic feature within the Prescribed Premises boundary defined by an elevation greater than 20 mAHD as depicted in the Premises map in Schedule 1 of the Works Approval.
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
Putrescible Waste	has the meaning defined in the LWCWD
Solid	has the meaning defined in the LWCWD
Special Waste Type 1	has the meaning defined in the LWCWD
Special Waste Type 2	has the meaning defined in the LWCWD

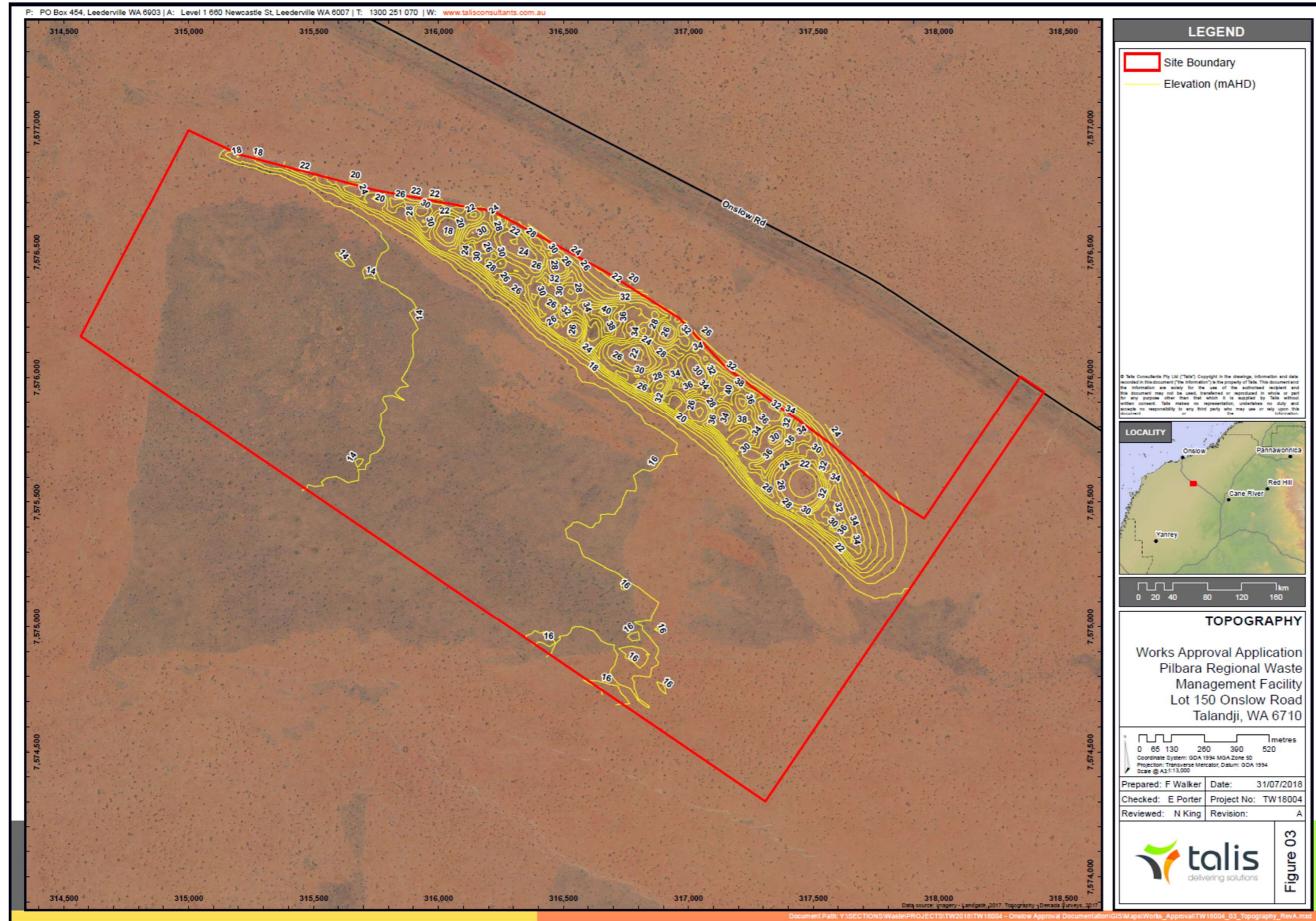
Table 13: Definitions	
Term	Definition
Quarantined storage area or container	means a hardstand storage area or sealed-bottom container that is separate and isolated from authorised waste disposal areas and is capable of containing all non-conforming waste and its constituents, these areas must be clearly marked, and their access restricted to authorised personnel.
Uncontaminated fill	has the meaning defined in the LWCWD
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The Prescribed Premises boundary is depicted as the red line shown in the image below. The Pindan Sand Ridge is depicted by the elevations in the image below.



Note that former Lot 150 was reclassified as Lots 550 and 551 upon granting of the Management Order.

Figure 1: Map of the boundary of the prescribed premises

L9304/2021/1

IR-T06 Licence template (v7.0) (February 2020)

Infrastructure map

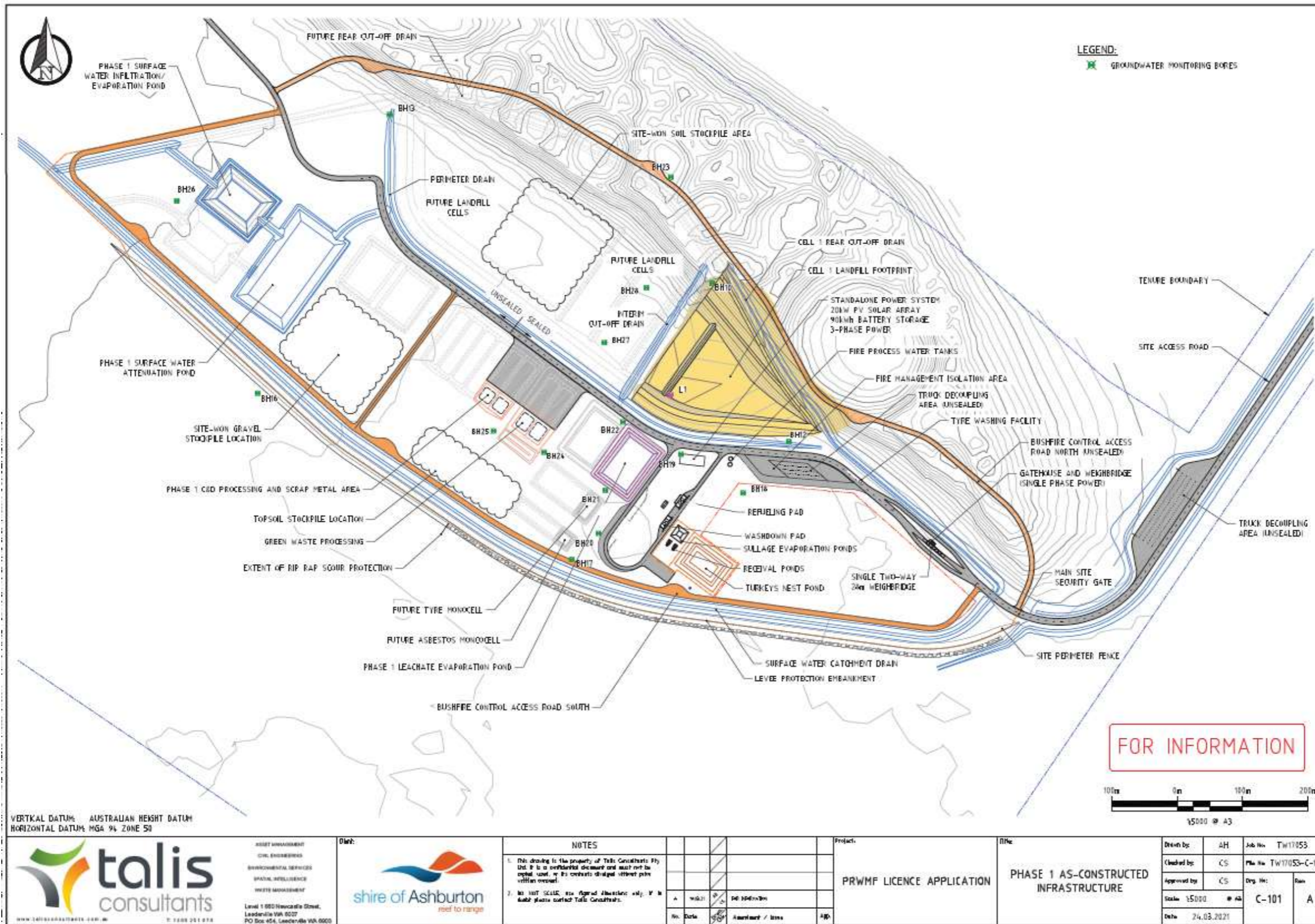


Figure 2: Infrastructure locations

Monitoring bore map

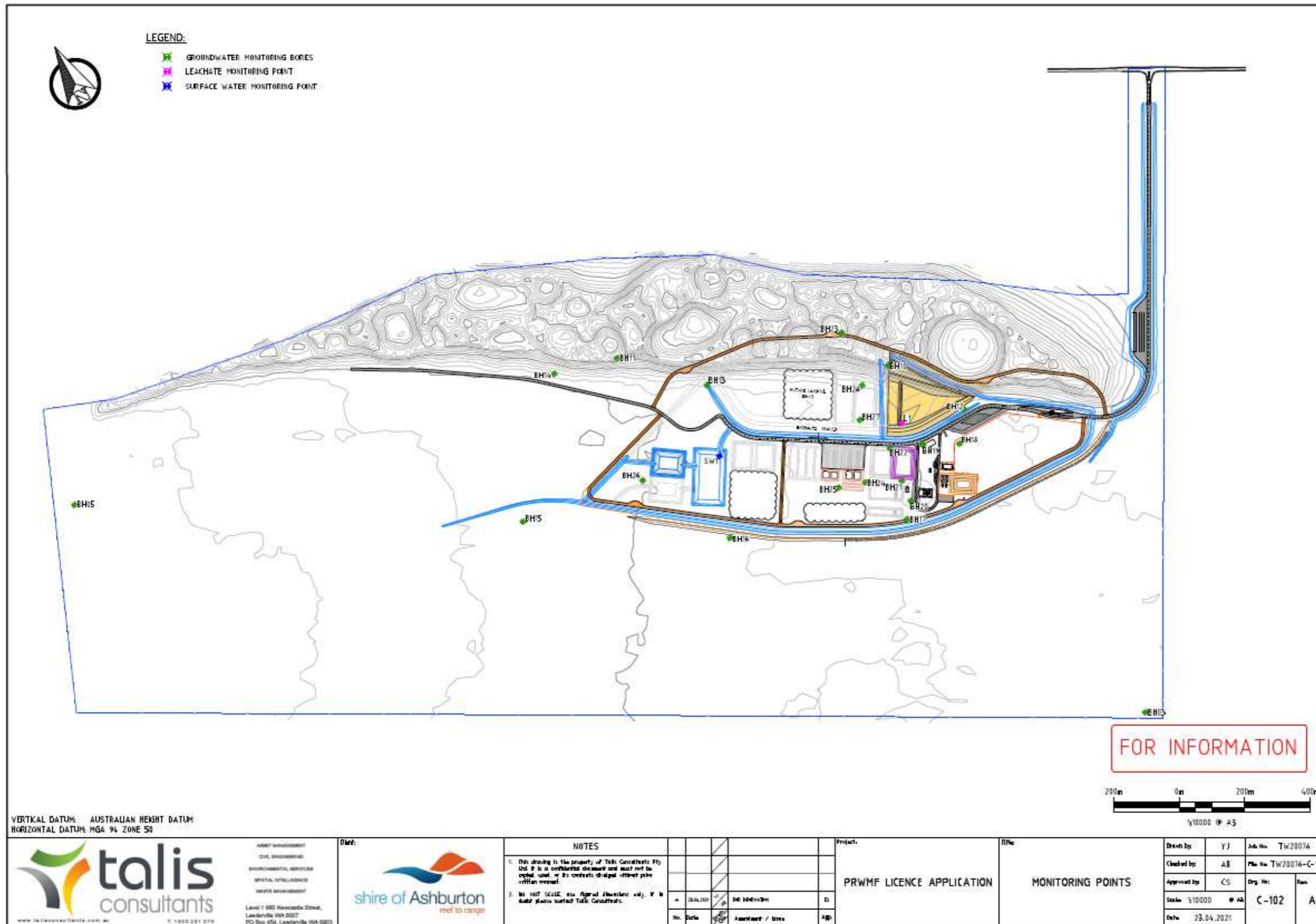


Figure 3: Monitoring Bore locations

Schedule 2: Asbestos risk classification procedure

To determine the risk of an incoming load containing asbestos or ACM, the gatehouse operator at the premises must establish:

- the source of the load including the site location and if possible, the age of any building or structure from which the waste originated;
- the content / waste types within the load; and
- the type of load.

Where the source of the load can clearly be determined to be a building or structure constructed after 1990 then the load can be considered to represent a low risk of asbestos contamination.

Where the waste originates from a building constructed before 1990 or there is uncertainty over this issue, the risks associated with asbestos in the load must be established in line with the risk classification matrix in Table 1 below.

Table 1: Risk classification matrix

MATERIAL TYPE	TYPE OF LOAD		
	Commercial	Public – utes, cars, and trailers *	Skip bins
Clean concrete (without formwork)	Low	High	High
Clean brick	Low	High	High
Clean bitumen / asphalt	Low	High	High
Mixed construction waste	High	High	High
Mixed demolition waste	High	High	High

* If it is possible to view the entire load of incoming construction and demolition material (such as in the case of a small trailer with a shallow load), then consideration may be given to classifying those loads as 'low risk'.

Schedule 3: High risk load procedure

- 'High risk loads' must be unloaded and spread over a sufficiently large area to enable a comprehensive visual inspection of all sides and components of the material to be undertaken.
- If asbestos fines and fibres (AF) or fibrous asbestos (FA) is suspected or identified, the load must be isolated, kept wet and once appropriately contained and redirected to an appropriately authorised disposal facility.
- Where Asbestos containing material (ACM) is suspected or identified within a load and is not capable of being easily removed by hand, the load must be rejected in full and isolated, kept wet and once appropriately contained and redirected to an appropriately authorised disposal facility.
- Where suspected ACM fragments capable of being easily removed by hand are identified in a load, the suspect ACM must be removed from the load and either:
 - (a) appropriately isolated and covered for asbestos testing. If testing of representative samples confirms the material is ACM it must be redirected to an appropriately authorised disposal facility. If testing confirms the material is not ACM the waste can be returned to the stockpile to await further processing; or
 - (b) assumed to be ACM and redirected to an appropriately authorised disposal facility.
- All suspected or assumed ACM must be segregated. Material must be clearly labelled, kept secure and sufficiently contained to prevent the release of asbestos including wind-blown fibres.
- Once all suspected or assumed ACM has been removed from a load in line with the above procedure, the residual waste can be added to the stockpile waiting further processing.

Records must be kept to ensure that the process from receipt of Inert Waste Type 1 accepted for category 13 activities to the completion of the unloading procedure is auditable and that any loads found to contain suspect asbestos will be traced back to the customer and originating site.

Schedule 4: Asbestos monitoring and testing

Product testing and supply

The testing procedures detailed in this Schedule have application to the three main recycled products:

1. Recycled drainage rock 20-27 mm;
2. Recycled sand, screened to <10 mm; and
3. Recycled road-base, <19 mm.

Asbestos containing material (ACM) and fibrous asbestos (FA) are subject to visual inspection and sampling procedures since they are larger in size (>7 mm) and asbestos fines and fibres (AF) (<7 mm) is assessed by submitting samples for laboratory analysis.

Recycled products may be sampled from conveyors or stockpiles. Whichever approach is adopted, the operator will need to ensure that they have appropriate systems in place to allow them to identify where in the product stockpiles each sample is from to allow further testing or separation to occur if required.

Stockpile inspection and sampling

- In the case of recycled drainage rock and recycled road-base a visual inspection should be undertaken in a systematic grid fashion over any new stockpile material to identify any suspect asbestos material.
- No sampling is required for recycled drainage rock, other than to determine by laboratory analysis whether a suspect fragment is asbestos.
- For recycled road-base and screened sand, sampling is necessary and must be spread evenly over the whole stockpile surface or samples may be taken at regular intervals (as per conveyor sampling) during construction of the stockpile. Suspect ACM or areas must be targeted for sampling.
- Sampling of road base and screened sand products must occur at a minimum rate of 40 locations per 4000 tonnes or 14 samples per 1000 m³ of product.

Conveyor sampling

- Sampling of road base and screened sand products must occur at a minimum rate of 1 sample per 70 m³ of a product output. Suspect ACM or areas must be targeted for sampling.

Reduced sampling criteria

Once premises have demonstrated that their procedures are able to consistently produce recycled product that meets the product specification and undertake their activities to a high standard, DWER may authorise a reduced product testing rate including down to 5 locations per 4000 tonnes (1 sample per 600 m³) of product.

Sample treatment

- Each sample collected must be at least 10 litres in volume and then be divided into 2 size fractions (>7 mm and <7 mm) in the field by sieving through a 7 mm screen or spread out for inspection on a contrasting colour fabric. The >7 mm fraction should be examined for any suspect ACM and this be retained to calculate the level of contamination.
- The <7 mm fraction will need to be a minimum 500 mL, be wetted, and submitted for laboratory analysis. This sample size is considered necessary to improve the limit of

detection for asbestos in the analysis procedure.

Sample analysis method

- **>7 mm sample fractions –**
 - Asbestos concentrations (ACM and FA) should be calculated in accordance with the methods detailed in section 4.1.7 of Department of Health (DoH), 2009, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. Averaging asbestos levels across the stockpile is not appropriate and asbestos levels within each sample should be reported.
- **<7 mm sample fractions**
 - Each <7 mm sample fraction must be analysed for fibrous FA and AF.
 - Asbestos analysis must be undertaken by an independent NATA certified laboratory and comply with *Australian Standard Method for the Qualitative Identification of asbestos in bulk samples (AS 4964)* or be demonstrated to be able to achieve the equivalent level of results to this Australian Standard.

AS 4964 is currently the only method in Australia that has NATA certification; however, the practicable level of detection for this standard polarized light microscopy method (PLM) and dispersion staining is 0.01% w/w. It is possible however, to measure asbestos contamination at or lower than 0.001% w/w where an increased sample size is used, however DWER recognises that any reporting of concentrations below 0.01% w/w will be outside the conditions set by NATA.

Therefore, to determine whether recycled products meet the product specifications for asbestos content, samples must be a minimum of 500 mL in size. Proponents must adopt one of the following analytical approaches:

1. Detected/non-detected – where any quantity of asbestos is detected by the PLM method it must be assumed, without further analysis, to be in concentrations above the product specification limit of 0.001% w/w. A weight of evidence approach may be adopted i.e., the frequency and occurrence of other positive results in the stockpile can be taken into account to determine whether the stockpile being assessed is considered to meet the product specification or not; or
2. Where any quantity of asbestos is detected by the PLM method, the sample is subject to further testing in the form of a semi-quantitative method with a lower level of detection for asbestos. Either of the following methods are considered acceptable by DWER:
 - The extraction and weighing of fibre bundles or fibre cement material from the total sample; and
 - Measuring the width and length (i.e., volume) of individual fibre by Phase Contrast Microscopy and calculating the weight of fibres in the extracted sub-sample.

Interpreting inspection and sampling results

- If the visual inspection, sieve sample or analytical results identify asbestos above or possibly above the 0.001% w/w criterion, then that stockpile or product process should be deemed potentially contaminated and considered for off-site disposal as Special Waste Type 1, or subject to further actions to remediate it or to demonstrate its acceptability by further assessment. A record should be made of the decision-making and action taken (e.g., off-site disposal, further assessment undertaken etc.) in relation

to that stockpile.

- In addition to the above, where asbestos is identified above or possibly above the 0.001% w/w criterion, an investigation into the likely cause for the presence of asbestos in the product should be undertaken and measures implemented to prevent a reoccurrence. A record of the investigation and its findings together with the details of any preventative measures implemented at the site should be made.
- As a guide, in the case of recycled drainage rock identification of a piece of ACM or FA per 10 m² of surface would be deemed to exceed the specification for that area, and for the whole stockpile if repeated in 2 or more other separate areas. A single fragment exceedance can be considered an isolated occurrence in the absence of other contamination evidence and the stockpile allowed for beneficial use. If there is multiple contamination only of a localised area then that area can be excavated to the extent of any visible asbestos and then the remainder of the stockpile considered to be suitable for use.
- For laboratory analysis it is important that each result be considered on its own merits in regard to the asbestos control specification and that there is no averaging across samples. In the case of a single exceedance at a level less than 0.01% w/w, the stockpile (nominally 4000 tonnes) may not be deemed contaminated if repeat samples of immediately adjacent areas do not demonstrate specification exceedances.
- The same approach as indicated in the preceding paragraph can be applied to the results of the >7 mm sieve sampling in regard to the recycled sand material and roadbase. In this case a 1 cm³ fragment of ACM or FA would be deemed to exceed the specification for a 10 L sample.
- It should be noted that specification exceedances in regard to different assessment methods for the same type of stockpile should not be viewed in isolation from each other.