Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L8561/2011/1
Licence Holder	GMA Garnet Pty Ltd
ACN	009 344 227
Registered business address	Floor 18, Exchange Plaza 2 The Esplanade PERTH WA 6000
DWER file number	DER2015/001679
Duration	28/07/2011 to 27/07/2029
Date of issue	28/07/2011
Date of amendment	7/01/2025
Premises details	Port Gregory Garnet Mine 1420 George Grey Drive YALLABATHARRA WA 6535 Legal description – Mining tenements M70/856, M70/204, M70/259, M70/926, M70/927, M70/968, G70/171, M70/1330 and M70/1331 (excluding Lot 58 on Plan 65334).

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed.	4,500,000 tonnes per year

This amended licence is granted to the licence holder, subject to the attached conditions, on 7 January 2025, by:

Lauren Edmands
Digitally signed by Lauren Edmands
Date: 2025.01.07 13:48:17 +08'00'

A/SENIOR MANAGER, RESOURCE INDUSTRIES
STATEWIDE DELIVERY - ENVIRONMENT

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

Licence history

Date	Instrument	Summary of changes
03/04/2001	L7273/4	Licence renewed.
03/04/2002	L7273/5	Licence renewed.
03/06/2003	L7273/6	Licence renewed.
09/02/2004	L7273/7	Licence renewed.
22/11/2004	L7273/7	Licence amendment.
05/10/2007	L7273/7	Licence amendment.
27/06/2008	L7273/1998/7	Licence amendment.
06/03/2009	L7273/1998/8	Licence renewed for 5 years.
28/07/2011	L8561/2011/1	Replacement licence following previous licence ceasing in May 2011.
08/05/2014	L8561/2011/1	Licence amendment to REFIRE format.
29/04/2016	L8561/2011/1	Licence amendment by notice, to extend duration to 2029.
01/09/2020	L8561/2011/1	Licence amendment to expand prescribed premises boundary.
15/02/2024	L8561/2011/1	Amendment to include the operation of the bioremediation facility, and the inclusion of a reverse osmosis plant.
07/01/2025	L8561/2011/1	Amendment to increase production capacity from 3,000,000 tonnes per year to 4,500,000 tonnes per year.

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 lates 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:

General

1. The licence holder must operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

2. The licence holder must:

(a) implement all practical measures to prevent stormwater runoff becoming contaminated by the activities on the Premises; and

(b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises.

Premises operation

3. The licence holder must ensure that process water, tailings, waste material and contaminated water are only discharged into the containment infrastructure listed in Table 1.

Table 1: Containment infrastructure table

Containment cell or dam	Material	Infrastructure requirements	Infrastructure location
Evaporation ponds	Clay fines slurry	Unlined ponds	As depicted in Figure 2, Schedule 1.
Holding tanks (workshop area)	Process water, contaminated stormwater and liquid waste material	Impervious tanks	As depicted in Figure 3, Schedule 1.
Bioremediation facility	Hydrocarbon-contaminated soils consisting of >13% solid fraction.	HDPE lined, bunded Bioremediation facility.	As depicted in Figure 2, Schedule 1.

4. The licence holder must immediately remove and dispose off-site any liquid resulting from spills or leaks of chemicals including fuel, oil, or other hydrocarbons, or other collected waste material whether inside or outside the low permeability compounds, by a licensed carrier to a licensed landfill.

5. The licence holder must ensure that any water used for dust suppression on the Premises is used in a manner that does not cause loss of health and condition of native vegetation.

6. The licence holder must ensure that vehicle wash-down areas are equipped with fuel and oil traps and provision to ensure hydrocarbon-contaminated waters are not discharged into the environment.

The licence holder must ensure that the site infrastructure and equipment listed in

Table 2 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in

7. Table 2.

Table 2: infrastructure operational requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
Bioremediation facility	a) Only hydrocarbon contaminated material generated from within the premises to be treated within the bioremediation facility. b) Volume of waste deposited within the facility to be recorded. c) Mechanical mixing and turning of material shall occur at a minimum of once per month. d) Internal earthen bunds to be maintained to a minimum height of 1 m around the bioremediation pads. e) Stormwater catchment sumps to be maintained to ensure sufficient capacity to contain a 1 in 100-year over 72 hours rainfall event.	As depicted in Figure 2, Schedule 1.
Processing plant	Process water contained within the plant or directed towards the drainage area down gradient of the process plant.	As depicted in Figure 4, Schedule 1.
Evaporation ponds	a) minimum top of embankment freeboard of 300 mm is maintained. b) methods of operation minimise the likelihood of erosion of the embankments	As depicted in Figure 2, Schedule 1.

Emissions

Emissions to land

8. The licence holder must ensure that where waste is emitted to land from the emission points specified in Table 3, it is done so in accordance with the requirements of that table.

Table 3: Emissions to land table

Emission point reference	Description	Source, including treatment
L1	Discharge to soakage pits/ evaporation ponds.	None specified.
L2	Discharge to hand sink and washdown bay holding tank.	Water from washdown bays and hand wash sinks to go through filtration system.

9. The licence holder must ensure that material treated by the bioremediation facility meets the Uncontaminated Fill Criteria of the *Landfill Waste Classification and Waste Definitions 2019* for the relevant chemical substances specified in Schedule 2 prior to disposal within mine voids within the premises.

10. The licence holder must undertake testing of the material treated by the bioremediation facility in accordance with the minimum sampling and testing requirements for Uncontaminated Fill in the *Landfill Waste Classification and Waste Definitions 2019* specified in Schedule 3.

11. The licence holder must not cause or allow emissions to land that exceed the limits specified in Table 4.

Table 4: Emissions to land limits table

Emission point reference	Parameter	Limit	Averaging period
L1	pH	6.0 (lower) 9.0 (upper)	Quarterly
L2	Total recoverable hydrocarbons	30 mg/L (upper)	

Noise controls

12. Whilst undertaking mining operations on M70/1331, the licence holder must implement the controls specified in Table 5 in accordance with the requirements listed in that table.

Table 5: Noise controls

Control	Requirements
No grader operation	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays.
Where one excavator is in operation, the dozer while in operation must maintain a minimum separation distance of 350 m from the south-east pit boundary	
Where two excavators are in operation, the dozer while in operation must maintain a minimum separation distance of 700 m from the south-east pit boundary	

Fugitive dust controls

13. The licence holder must implement the controls specified in Table 6 in accordance with the requirements listed in that table.

Table 6: Fugitive dust controls table

Control	Requirements
Topsoil stripping	• Must schedule to avoid periods of high winds from unfavourable directions relative to receptors (including George Grey Drive and Utcha Well Nature Reserve); • Where there is a risk of dust affecting sensitive receptors, must conduct when soil conditions are moist but not saturated; • Must cease/suspend topsoil stripping operations during high wind conditions where there is a risk of dust affecting sensitive receptors.
Water carts/sprays	• Must operate when visible dust is generated from exposed surfaces on the Premises; • Must operate proactively subject to weather forecasting over a 24 hour period.
Dust suppressant (other than water)	• Must apply proactively to overburden/topsoil stockpiles; • Must reapply proactively subject to visual inspection and weather forecasting.
Cessation of activities	• Must cease an activity causing visible dust lift-off where dust management measures have not prevented dust lift-off and there is a risk of dust affecting sensitive receptors.

Monitoring (general)

14. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10; and
(c) all laboratory samples are submitted to and tested by a laboratory with current National Association of Testing Authorities, Australia (NATA) accreditation for the parameters being measured, unless indicated otherwise in the relevant table.

15. The licence holder must ensure that:

(a) monitoring is undertaken in each monthly period such that there are at least 15 days in between the days on which samples are taken in successive months; and

(b) monitoring is undertaken in each quarterly period such that there are at least 45 days in between the days on which samples are taken in successive quarters.

16. The licence holder must conduct visual inspections of the infrastructure specified in Table 7.

Table 7: Inspections of infrastructure

Item	Site infrastructure and equipment	Operational requirement	Infrastructure location
1	Bioremediation facility	Facility to be inspected on a minimum monthly basis or after every large rainfall event (greater than 20 mm) to ensure waste and stormwater is adequality contained.	As depicted in Figure 2, Schedule 1

Emissions monitoring

17. The licence holder must undertake monitoring of emissions to land at the locations and for the parameters listed in Table 8, in the corresponding units and at the frequency specified in that table.

Table 8: Emissions to land monitoring table

Monitoring point reference	Parameter	Units	Frequency
L1 – evaporation ponds	pH	-	Quarterly
	Total dissolved solids	mg/L	
L2 – hand sinks and washdown bay tank water	Total recoverable hydrocarbons		

Dust monitoring

18. Whilst undertaking mining operations on M70/926, the licence holder must undertake dust monitoring at the locations and for the parameters listed in Table 9, in the corresponding units and at the frequency specified in that table.

Table 9: Dust monitoring requirements table

Monitoring point reference[1]	Parameter	Units	Monitoring frequency	Sampling duration	Method
AQ1, AQ2, AQ3.	Total insoluble matter	g/m^2/month	Monthly, between 1 October and 31 May, inclusive	Continuous	AS 2992-1987 AS 3580.10.1

Note 1: AQ2 and AQ3 monitoring locations on western boundary of M70/926 and positioned relative to mining activity to monitor worst case conditions, and AQ1 monitoring location positioned to monitor background levels.

Noise monitoring and reporting

19. Within 30 days from the date when mining operations commence on M70/1331, the licence holder must retain the services of a person qualified and experienced in the area of environmental noise assessment and who by their qualifications and experience is eligible to hold membership of the Australian Acoustical Society or the Australian Association of Acoustical Consultants to:

(a) investigate the nature and extent of noise emissions from the mining operations occurring on M70/1331;

(b) assess in accordance with the methodology required in the *Environmental Protection (Noise) Regulations 1997*, the compliance of the noise emissions from the mining operations occurring on M70/1331, against the relevant assigned levels specified in those Regulations; and

(c) compile and submit to the licence holder within 90 days from the date when mining operations commence on M70/1331, a report in accordance with condition 20.

20. A report prepared pursuant to condition 19(c) must include:

(a) a description of the methods used for monitoring of noise emissions from the mining operations occurring on M70/1331;

(b) details and the results of the investigation undertaken pursuant to condition 19(a);

(c) details and results of the assessment of the noise emissions from the mining operations occurring on M70/1331, against the relevant assigned levels in the *Environmental Protection (Noise) Regulations 1997* undertaken pursuant to condition 19(b); and

(d) an assessment of the noise emissions from the mining operations occurring on M70/1331, against the predicted noise levels presented in the document titled 'GHD Pty Ltd, *GMA Garnet Dust and Noise Modelling Noise Assessment,* dated 17 April 2020'.

21. The licence holder must submit to the CEO the report prepared pursuant to condition 19(c) within 14 days of receival.

22. Where an assessment pursuant to condition 19(b) indicates that noise emissions do not comply with the relevant assigned levels in the *Environmental Protection (Noise) Regulations 1997*, the licence holder must:

(a) within 30 days of receiving the report pursuant to condition 19(c) prepare a plan which must include a set timeframe for action, detailing all measures to ensure there is no further contravention of the *Environmental Protection (Noise) Regulations 1997;* and

(b) immediately action and provide to the CEO a copy of the plan prepared pursuant to condition 22(a).

Records and reporting

23. 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) monitoring undertaken in accordance with condition 17 of this licence; and
(c) complaints received under condition 25 of this licence.

24. The books specified under condition 23 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.

25. 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.

26. 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 30 September in each year, an Annual Audit Compliance Report in the approved form.

27. The licence holder must submit to the CEO, no later than 30 September every second year starting from 2023, a biennial environmental report which includes, but is not limited to:

(a) details of the calculation of fees payable in respect of this licence;
(b) a summary of the amount of ore processed, product produced and tailings returned to mine voids;
(c) tabulated and graphical results of monitoring required by condition 17 and condition 18 for the preceding biennial period;
(d) data or information demonstrating compliance with conditions 8, 10;
(e) a summary of any complaints received and management actions taken for each complaint; and
(f) a summary of any environmental incidents and any action(s) taken.

28. The licence holder must ensure the report required by condition 27 includes an appraisal and trend analysis of the results against any baseline data and previous monitoring results.

Improvement Program

29. The Licence Holder shall submit to the CEO by 31 March 2025, a vegetation monitoring plan, to undertake ongoing monitoring of vegetation health at the Utcha Well Nature Reserve and Hutt Lagoon Wetland System.

30. The vegetation monitoring plan outlined in Condition 30 must include:

(a) Proposed monitoring methodology;

(b) Proposed monitoring frequency;

(c) Proposed monitoring locations including a background monitoring location where vegetation is unlikely to be affected by site operation; and

(d) A timeframe for commencing the ongoing vegetation monitoring.

Definitions

In this licence, the terms in Table 10 have the meanings defined.

Table 10: Definitions

Term	Definition
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	means a 12 month period commencing from 1 August the previous year until 31 July in that year
AS 1141	Means Australian Standard 1141 *Methods for sampling and testing aggregates*
AS 2922-1987	means the most recent version and the relevant parts of the Australian Standard AS 2922-1987 *Ambient air – Guide for the siting of sampling units*
AS 3580.10.1	means the most recent version and the relevant parts of the Australian Standard AS 3580.10.1 *Methods for sampling and analysis of ambient air – Determination of particulate matter – deposited matter – gravimetric method*
AS 4439	Means the most recent version and the relevant parts of the Australian Standard AS 4439.3:2019 *Wastes, sediments and contaminated soils Preparation of leachates - Preliminary assessment*
ASC NEPM	Means the most recent version and the relevant parts of the National Environmental Protection Council's document *National Environment Protection (Assessment of Site Contamination) Measure*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*
averaging period	means the time over which a target or limit is measured or a monitoring result is obtained
books	has the same meaning given to that term under the EP Act

CEO	means Chief Executive Officer of the Department. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
condition	means a condition to which this licence is subject under s.62 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act
discharge	has the same meaning given to that term under the EP Act
emission	has the same meaning given to that term under the EP Act
EP Act	means the *Environmental Protection Act 1986* (WA)
EP Regulations	means the *Environmental Protection Regulations 1987* (WA)
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
HDPE	means high-density polyethylene
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
Lot 56	Lot 56 on Plan 58867, Port Gregory Rd, Yallabatharra
NATA	National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
normal day time hours	means from 7:00 AM Monday to Saturday and from 9:00 AM on Sundays and public holidays to 7:00 PM on any day
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
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year
spot sample	means a discrete sample representative of the time and place at which the sample is taken

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below. The red line depicts the premises boundary.

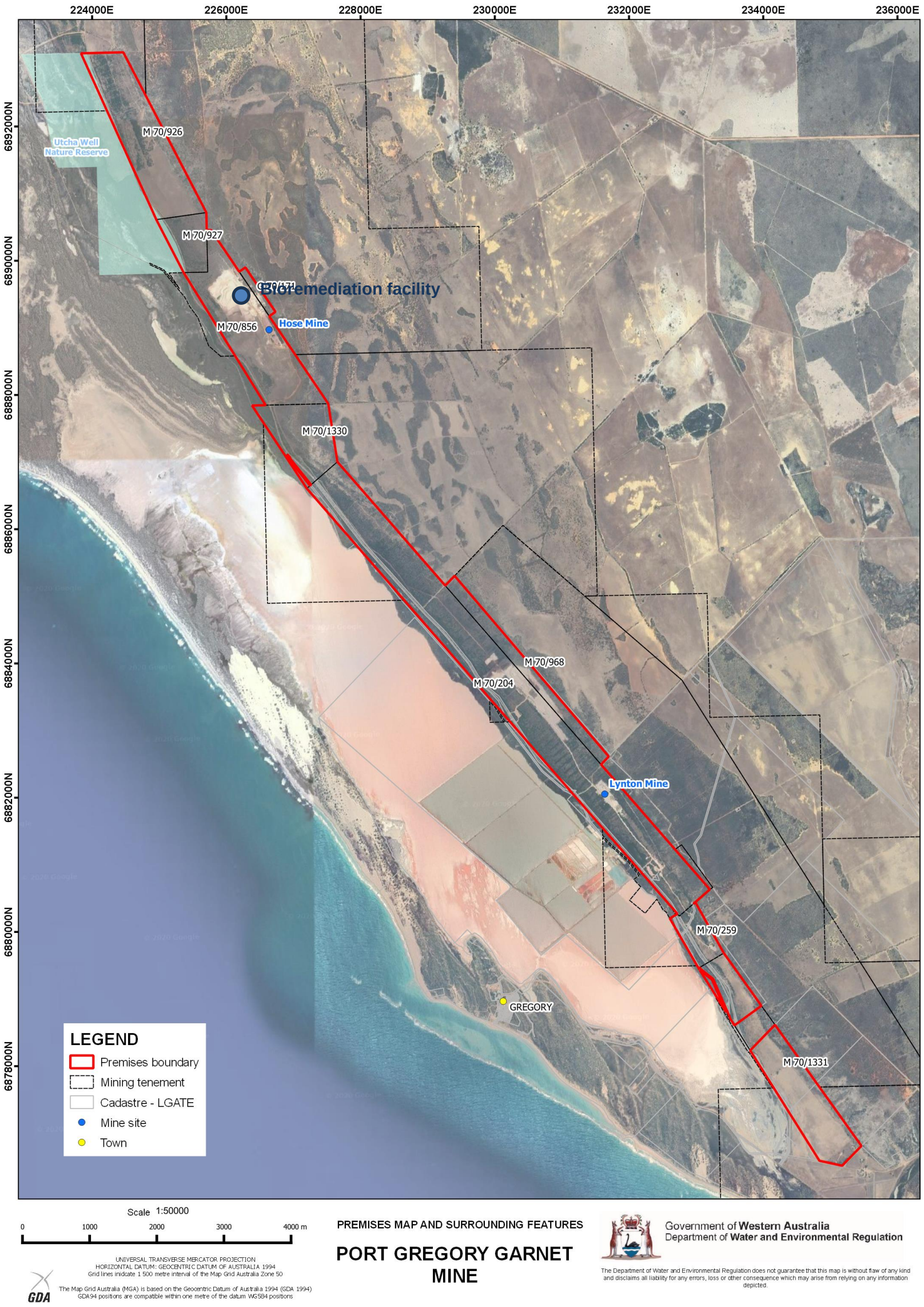

Figure 1: Premises boundary

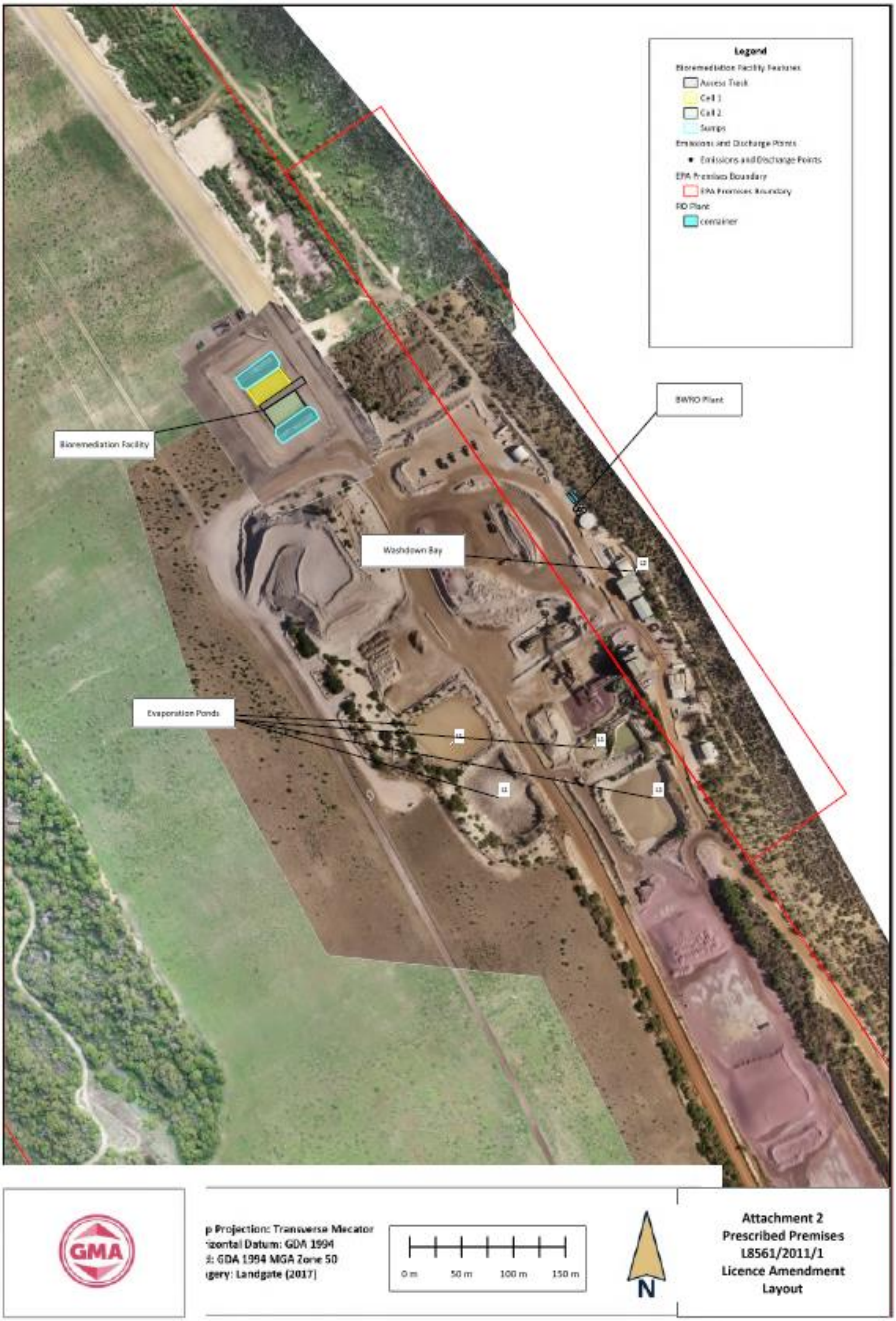

Figure 2: Site layout

Figure 3: Holding tanks and emission and discharge points

Figure 4: Processing plant

Schedule 2 – Uncontaminated fill threshold

Table 11: Maximum concentrations (thresholds) of relevant chemical substances and limits of relevant physical attributes for uncontaminated fill.

Parameter	Maximum Concentration[5] mg/kg, dry weight	Leaching test[5] ASLP, µg/L
Lead	300	3
Benzene	0.5	1
Toluene	85	25
Ethyl benzene	55	5
Xylene (total)	40	20 (sum)
Total recoverable hydrocarbons (C6-C10) [1, 2]	45	-
Total recoverable hydrocarbons (>C10-C16) [1]	110	-
Total recoverable hydrocarbons (>C16-C34) [1]	300	-
Total recoverable hydrocarbons (>C34-C40) [1]	2800	-
Total PAHs[3] (16 species)	300	-
pH (pH units)[4]	5.5-8.5	-

Notes: General – all thresholds consider ecological and human toxicity

1. Thresholds for total recoverable hydrocarbons are applicable to petrogenic hydrocarbons (such as from petrol, diesel, crude oil, etc.). Additional analytical Landfill waste classification and waste definitions (December 2019) Department of Water and Environmental Regulation 21 methods, such as silica gel clean-up and chromatographic interpretation, may be applied to differentiate between petrogenic and biogenic hydrocarbon sources. Refer to Schedule B3 of National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM).
2. Threshold applies to 'F1' fraction, comprising total recoverable hydrocarbons (C6-C10) not including the sum of BTEX (benzene, toluene, ethylbenzene, xylenes). Refer to Schedule B1 of the ASC NEPM.
3. Carcinogenic PAHs (as B(a)P TEQ): is based on the eight carcinogenic polycyclic aromatic hydrocarbons (PAHs) listed below and their potency relative to benzo(a)pyrene. The B(a)P toxicity equivalence quotient (TEQ) is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P Total Equivalent Factor (TEF), given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracene	0.1	Benzo(g,h,i)perylene	0.1
Benzo(a)pyrene	1	Chrysene	0.1
Benzo(b+j)fluoranthene	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthene	0.1	Indeno(1,2,3-c,d)pyrene	0.1

4. Waste acid sulfate soils can be treated/neutralised before comparison against the thresholds.
5. Refer AS 4439 using reagent water. Both total concentration and leaching analyses are required to assess the quality of the fill material unless no value is included.

Schedule 3 – Sampling and testing standards

Table 12: minimum sampling and testing standards for uncontaminated fill

Activity	Minimum Requirement
Sampling	Method 3.1 or Method 3.2 in the Australian Standard 1141 Methods for sampling and testing aggregates. Sampling of soil stockpiles should be consistent with the methodology described in Section 7.5 of Schedule B2 (Guideline on Site Characterisation) of the National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM). Depending on the source of the material being characterised, it may be possible to use relevant site characterisation data for in situ soils (such as in a detailed site investigation report) provided that this was carried out in accordance with the ASC NEPM and that, since sampling, the characterised material has not been subject to any potentially contaminating land uses including industrial, commercial, mining or intensive agricultural activities. Further information on characterisation of soils based on the 95% Upper Confidence Limit (average) [95%UCLavg] for the soil (including worked examples) is provided in “Industrial Waste Resource Guidelines (7), Sampling and Analysis; Soil Sampling”, EPA Victoria, 2010.
Testing	The laboratory should hold NATA accreditation for the testing undertaken. Analytical methods adopted should be consistent with those specified in Schedule B3 of the ASC NEPM. Substances to be tested should be determined based on land use history of the site of origin. Refer to Appendix B (Potentially contaminating industries, activities and land uses) in the *Assessment and management of contaminated sites (DER 2014, and as updated from time to time)*. If no value for a potential contaminant is included in Table 6, and the substance is indicated for testing on consideration of the site history, then it is not appropriate to consider material from the site for classification as uncontaminated fill.