Decision Report

Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number	W6239/2019/1
Applicant	Winsek Pty Ltd
ACN	627147380
File Number	DER2019/000202
Premises	Gemec Environmental Consultants 353 Pye Road, Mt Adams Part of Lot 4 on Deposited Plan 13178 Certificate of Title Volume 1560 Folio 863
Date of Report	29/11/2019
Status of Report	Final

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1. Definitions of terms and acronyms

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

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
AS4482.1	Means the Australian Standard AS4482.1-2005 *Guide to the sampling and investigation of potentially contaminated soil – Non-volatile and semi-volatile substances*
AS4482.2	Means the Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil – Volatile substances*
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CS Act	*Contaminated Sites Act 2003* (WA)
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 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.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the *Public Sector Management Act 1994* and is responsible for the administration of the *Environmental Protection Act 1986* along with other legislation.
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Works Approval Holder	Winsek Pty Ltd
m^3	cubic metres

Minister	the Minister responsible for the EP Act and associated regulations
NEPM	National Environmental Protection Measure
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Occupier	has the same meaning given to that term under the EP Act.
PM	Particulate Matter
PM_{10}	used to describe particulate matter that is smaller than 10 microns (µm) in diameter
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Primary Activities	as defined in Schedule 2 of the Revised Licence
Risk Event	As described in *Guidance Statement: Risk Assessment*
UDR	*Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA)
$\mu g/m^3$	micrograms per cubic metre
µg/L	micrograms per litre

2. Purpose and scope of assessment

An application for Works Approval (***Application***) was received from Winsek Pty Ltd (***Applicant***) to establish a bioremediation pad and inert landfill located within Lot 4 (353) Pye Road, Mt Adams (***Premises***).

This ***Decision Report*** presents an assessment of potential environmental and public health risks from emissions and discharges from the construction and operation of the Premises.

2.1 Application details

Table 2 lists the documents submitted during the assessment process.

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received
DWER Application Form including following supporting information: 1. Attachment 1A – Certificate of Title and memorandum of understanding; 2. Shire of Irwin – Application for development approval; 3. Attachment 1B – ASICS Company Extract; 4. Attachment 2 – Premises maps, Access & boundary map; site layout map 5. Attachment 3A – Proposed Bioremediation Facility & Waste Drilling Mud Internment activities 6. Attachments - Stabilised Waste Drilling Mud analytical results; 7. Proposed fee calculation - cost breakdown information	13 March 2019
Email from Nicolo Jelovsek: Further information received. Physical business address provided.	13 June 2019
Email from Nicolo Jelovsek: Further information received. Pond dimensions and calculations provided.	19 June 2019
Email from Nicolo Jelovsek: Further information received. Revised boundary map provided	27 June 2019
Email from Nicolo Jelovsek: Further information received. Historical Environmental Investigation summary provided	1 July 2019
Email from Nicolo Jelovsek: Further information received. Historical Environmental Investigation summary provided	3 July 2019
Email from Nicolo Jelovsek: Further information received. Monitoring well specifications provided	4 July 2019
Email from Nicolo Jelovsek: Revised boundary map received.	6 November 2019

3. Background

On 13 March 2019, Winsek Pty Ltd submitted an application for a works approval under the EP Act for a bioremediation pad to remediate Class II and Class III hydrocarbon contaminated soil for re-use as an infill material and an inert landfill for the internment of waste drilling mud (Inert waste type 1) into cells within an existing depression resulting from historical sand extraction activities at the site. The delegated Officer considered that all the information provided as part of the Application was sufficient to validate and commence with the risk assessment. Further information was subsequently requested by DWER and provided on 13 June 2019, 19 June 2019, 27 June 2019, 1 July 2019, 3 July 2019 and 4 July 2019 by the Applicant

The proposed location for the bioremediation pad is an existing gravel hardstand area in the nearby vicinity of the proposed internment area. Prior to sand extraction activities and establishment of gravel hardstand, the rea was used as pasture for dryland cropping. Both operations will be will be carried out within the north-western portion of lot 4.

Table 3 lists the prescribed premises categories that have been applied for.

Table 3: Prescribed Premises Categories in the Existing Licence

Classification of Premises	Description	*Approved Premises production or design capacity or throughput*
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	4000 tonnes per year
Category 63	Class I inert landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled “Landfill Waste Classification and Waste Definitions 1996” published by the Chief Executive Officer and as amended from time to time) is accepted for burial.	8000 tonnes per year

4. Overview of Premises

4.1 Operational aspects

The following information in relation to the premises has been summarised from the application.

Bioremediation

- The proposed bioremediation process is via land farming, a biological process which uses naturally occurring micro-organisms, such as bacteria and fungi to eliminate, attenuate or transform polluting or contaminating substances in soils;
- The process involves the spreading of excavated contaminated soils in a thin layer, followed by the stimulation of aerobic microbial activity within the soils via aeration and/or the addition of minerals, nutrients and moisture;
- The aeration of petroleum hydrocarbon impacted soils will be attained predominantly via periodic tilling, with the material irrigated predominantly via rainfall;
- The requirement for supplementary irrigation will be determined by the nature of the impacted soil, frequency or rainfall and time constraints for the completion of the

bioremediation process; and

- Any further chemical or microbial requirements will be based on the nature and extent of contamination.

Landfill

- The source of material intended for internment is waste drilling mud and drill cuttings material recovered during conventional gas well installation in the Shire of Irwin;
- The waste material is stored on-site in plastic lined retention ponds following the drilling process and pending disposal;
- To ensure the drilling mud and cuttings material is spadeable for transportation and internment, the material will be dried (muds have undergone a drying process of between one and four years) and subsequently mixed with insitu soil prior to transportation;
- Each volume of inert waste received at the facility (estimated to be 2,000m^3) will be interned within an existing depression resulting from historical sand extraction activities;
- Sufficient existing soil will be cut-back from the burial area for subsequent capping;
- Following internment, apply and compact 0.2 m of gravel capping to the upper surface of the buried material at a minimum gradient of 5% and extending laterally to at least one metre beyond the outer extents of the waste cell;
- Reinstate approximately one metre of cut-back soil as the final cap over the compacted gravel layer appropriate for the future pasture use; and
- Level cell with surrounding landscape as required maintaining at least approximately one metre of cover over each cell.

4.2 Infrastructure

The Applicants infrastructure, as it relates to Category 61A and 63 activities, is detailed in Table 4 and with reference to the Site Plan (attached in the Works Approval).

Table 4 lists infrastructure associated with each prescribed premises category.

Table 4: Gemec facility Category 61A and 63 infrastructure

	Infrastructure	**Site Plan Reference**
	Prescribed Activity Category 61A	
Bioremediation to treat petroleum hydrocarbon impacted soils		
1	Compacted gravel hardstand base (minimum 300 mm) with a permeability of no greater than $1x10^{-9}$ m/s and minimum 2% drainage gradient to ensure the free drainage of all leachate to leachate collection infrastructure	Site plan
2	impervious ($1x10^{-9}$ m/s) 500mm kerb bunding around the perimeter of the bioremediation pad and leachate pond	Site plan
3	Infrastructure for the collection of leachate	Site plan
4	Leachate pond	Site plan
	Prescribed Activity Category 63	

	Infrastructure	Site Plan Reference
internment of waste drilling mud and drill cuttings material recovered during conventional gas well installation within an existing depression resulting from historical sand extraction activities		
1	5 inert landfill cells approximately 25m x 25m x 3m in dimension	Site plan
2	5 m gap between each cell	Site plan
3	A monitoring bore	
4	Sufficient soil and gravel cover	Site plan
5	Trucks to transport capping material	NA
6	Machinery used for capping and excavation	NA
7	Front End Loader	NA

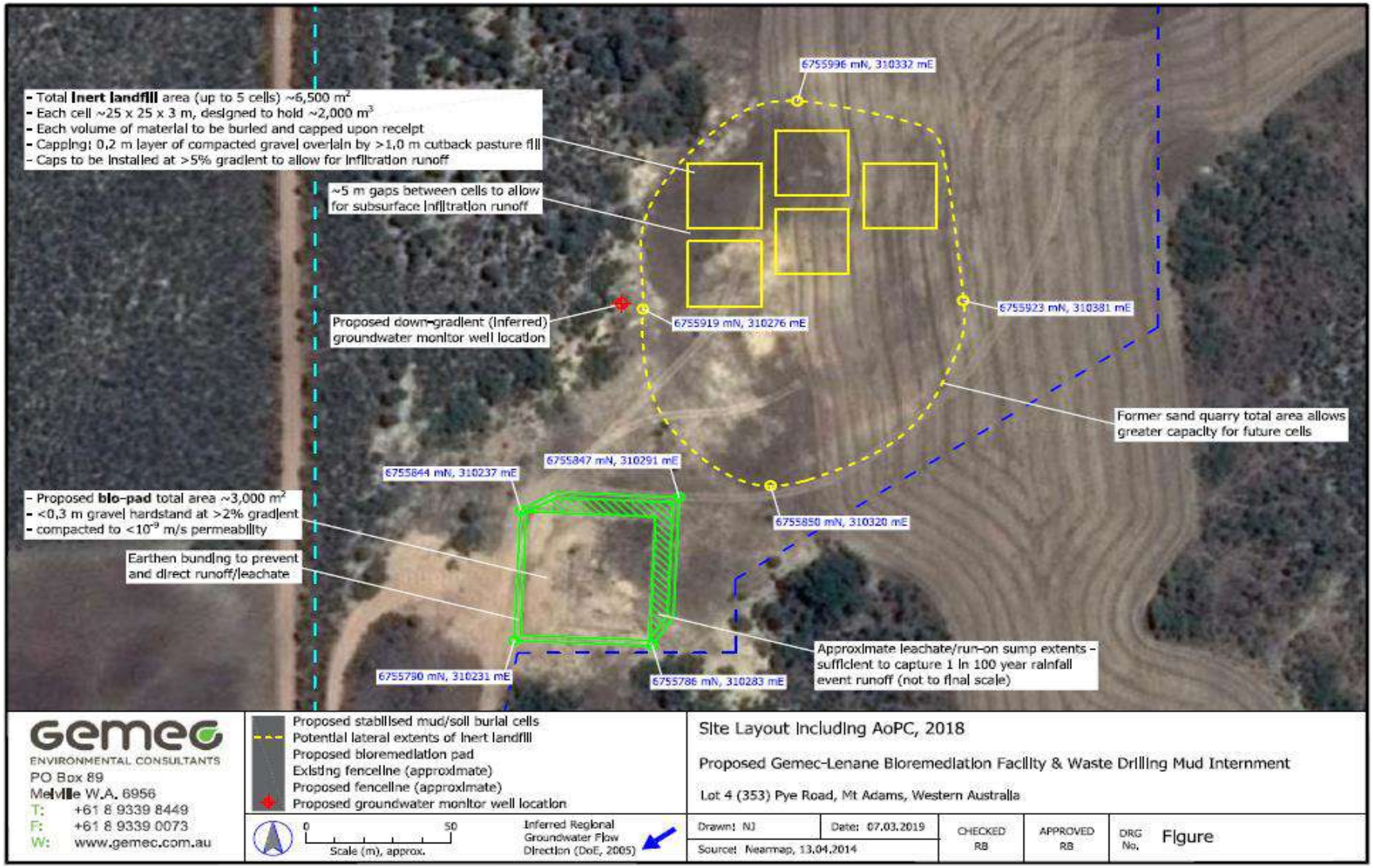


Figure 1: Proposed site layout

4.3 Exclusions to the Premises

The Hovea Oil and Gas Production Facility and Xris Gas Production Facility (Environmental Licence: L7847/2003/7) which are also located on Lot 4 (refer to map below) is not within the scope of this assessment.

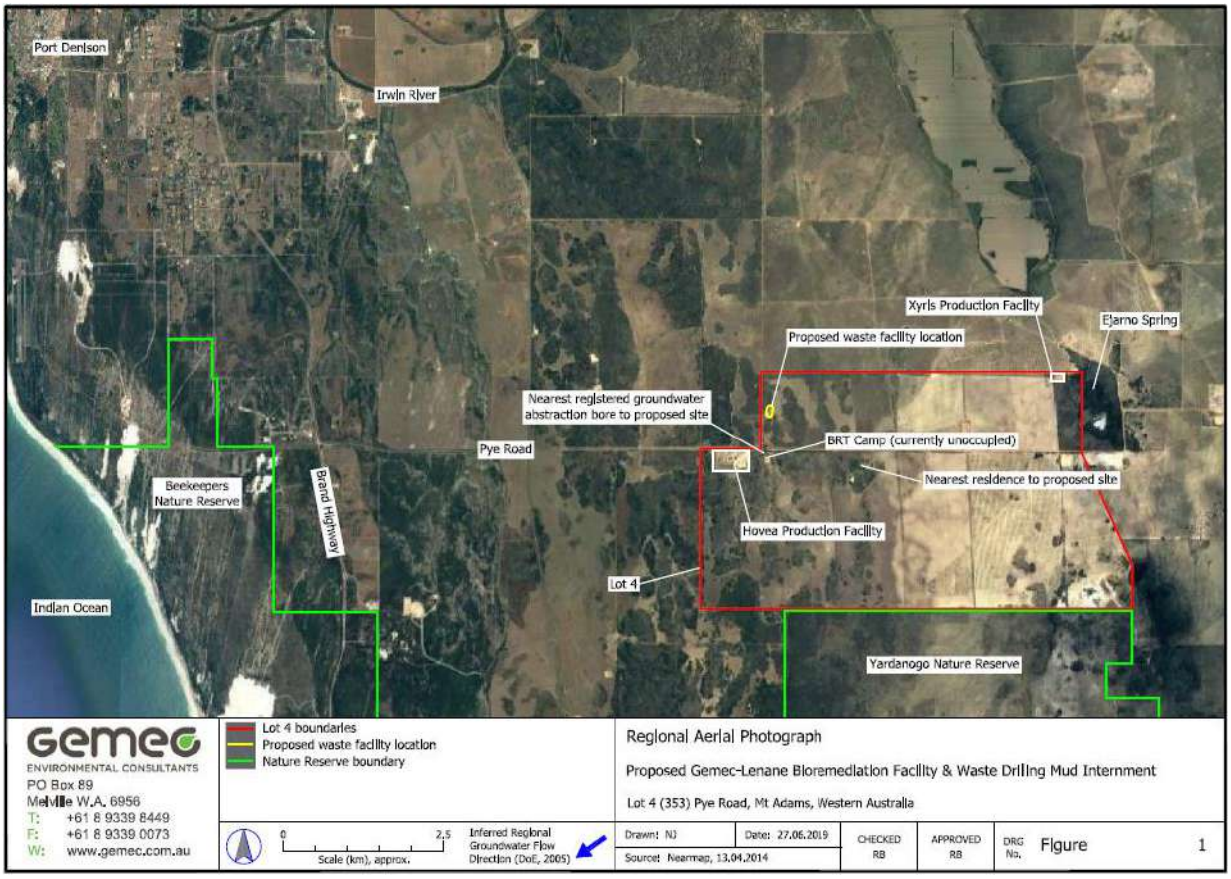


Figure 2: Showing oil and gas production site on lot 4

4.4 Contaminated sites

This site was reported to the Department of Environment Regulation (DER) as per reporting obligations under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006. The site has been classified under section 13 of the Act based on information submitted to DWER by November 2014.

The site was reported because oil exploration drilling operations were carried out at these locations over the period 2001-2007. The general practice at the time was to dispose of the drilling mud materials on site in adjacent mud sumps. Drilling mud sumps were dug into the soil (approximate size 5 metres x 7 metres x 2 metres), and utilised to evaporate liquids from drilling muds and drill cuttings removed from the well bore.

Drilling muds and cuttings have previously been contained and buried at the proposed landfill site known as Hovea-02 (H-02). The H-02 soil sample results had exceeded Environmental Investigation Level (EIL) guidelines but they were within the Landfill Waste Classification and Waste Definitions (1996) levels. The drilling sump was constructed in a manner of a class 1 landfill, with muds buried to a depth of greater than two metres.

One of the sumps on lot 4, known as 'Hovea 11', was ranked as the highest-risk sump amongst those present at this site. This sump is understood to have received the drill muds and cutting from multiple well sites, including oil production wells. In 2014, an investigation

was carried out to characterise the soils and drilling mud residues within the Hovea 11 sump. No potential contaminants were detected within the soils of the sump above the relevant assessment criteria. On the basis of these investigations it was concluded that this site posed no unacceptable risk to the environment, human health or any environmental value. Investigation found that no contamination is present and there are no restrictions on use applicable to the site. The mud pits shown in pink below was classified by the contaminated sites regulation team as *not contaminated – unrestricted use.*

As such, the former mud sumps and associated sandpit on lot 4 are considered suitable for "General Farming", as per the Shire of Irwin's Local Planning Scheme No. 5, as the drill muds are not considered to pose a risk to either human health or the environment.

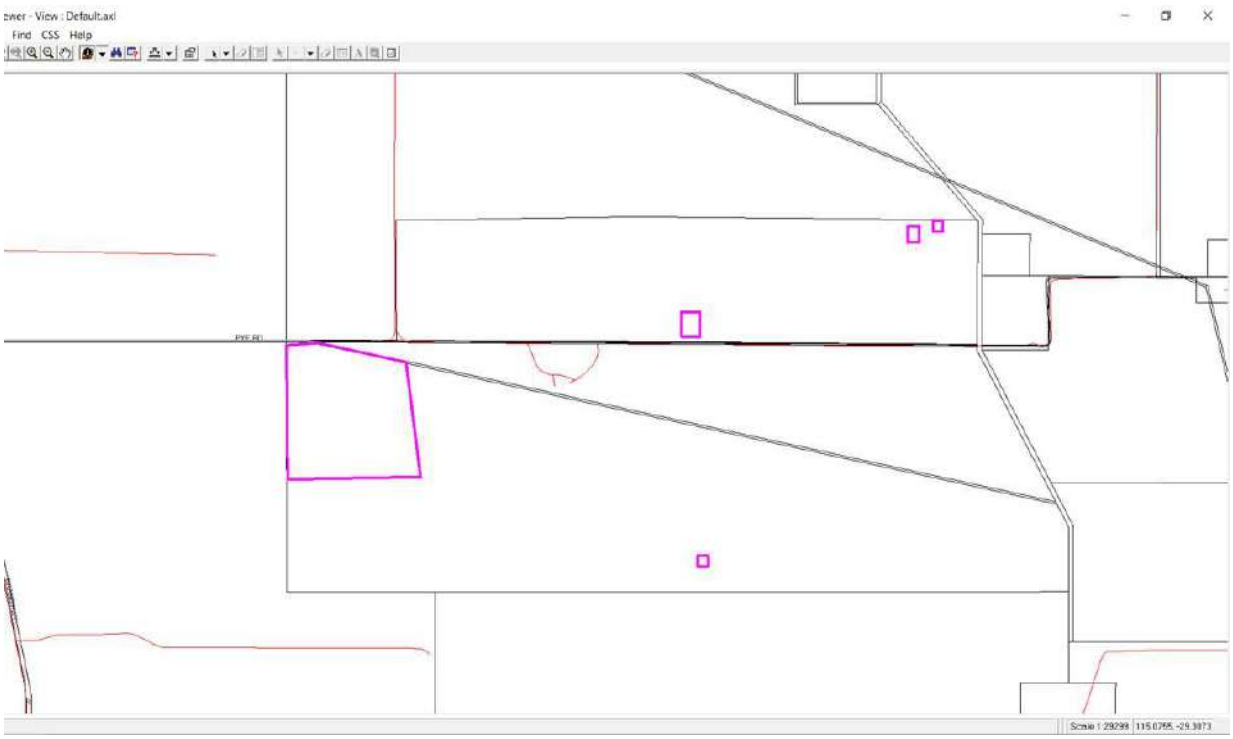


Figure 3: Showing mud pits on lot 4

4.5 Other relevant approvals

4.5.1 Planning approvals

The Shire of Irwin granted an approval to commence development for the works on 1 May 2019.

4.6 Part V of the EP Act

4.6.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Land Use Planning (February 2017)*

- *Guidance Statement: Licence Duration (August 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

4.6.2 Works approval and licence history

Table 5 summarises the works approval and licence history for the premises.

Table 5: Works approval and licence history

Instrument	Issued	Nature and extent of works approval, licence or amendment
W6239/2019/1	TBA	New works approval for category 61A (solid waste facility) and category 63 (Class I inert landfill)

5. Consultation

The application for a Works Approval was referred to the Shire of Irwin on 16 July 2019. The Application was also advertised for public comment in The West Australian newspaper on 17 June 2019.

Comments received from the Shire of Irwin are summarised below.

5.1.1 Shire of Irwin

Provisions relevant to DWER's assessment include:

"The Shire would also like further assurances that, due to the nature of chemicals/substances found in drilling mud, conditions are applied to the licence which require;

1. *the potential future environmental impacts of the contaminated muds deposited into the landfill and remediation measures if any which would be implemented if required (e.g. from leaching of the chemicals);*
2. *the Landfill management plan to describe to the satisfaction of the Agency how any potential future environmental impact will be managed in perpetuity, with whom that responsibility will lie and what legal instrument will be used to confirm that responsibility.*
3. *Proponent states that they will be conducting one final groundwater monitoring assessment prior to decommissioning around two years after cessation of onsite operations, to assess whether the groundwater has been contaminated by the buried material. This is considered to be inadequate and there should be regular ongoing assessments over a suitable (say up to 10 year) period to confirm that no contamination has or is occurring".*

6. Location and siting

6.1 Siting context

The facility is located approximately 360 kilometres (km) north of Perth and 12km southeast of the Dongara, Western Australia.

The following information in relation to site location has been summarised from the application:

- The proposed location for the waste drilling mud internment cells is a topographical depression within lot 4 (353 Pye Rd);

- The depression is a result of historical sand quarrying between 2002 and 2012;
- The proposed location for the bio-pad is an existing gravel hardstand area in the nearby vicinity of the proposed internment area;
- Both proposed facility locations are within the north-western portion of Lot 4; and
- The total combined area to be fenced off containing both proposed facilities is approximately 96,200m^2.

6.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 6.

Table 6: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
BRT Camp- currently not in use	Nearest accommodation is approximately 700m south from the proposed facilities within the same lot
Residential premises	Approximately 1.6 km from the facilities
Residential premises	Approximately 2.8 km from the facilities

6.3 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at or Emissions and Discharges from the Premises. The distances to specified ecosystems are shown in Table 7. Table 7 also identifies the distances to other relevant ecosystem values which do not fit the definition of a specified ecosystem.

The table has also been modified to align with the *Guidance Statement: Environmental Siting.*

Table 7: Environmental values

Specified ecosystems	Distance from the Premises
Ejarno Spring	Approximately 5.1 k m to the east
Yardanogo Nature Reserve	Approximately 3 km to the south

6.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 8.

Table 8: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental value
Public drinking water source areas	11 km to the north	Allanooka-Dongara Water Reserve
Groundwater	Depth to groundwater encountered at approximately 60m below ground level (based on SWL information from the Hovea Production Facility). Three registered groundwater	Groundwater recharge at the site is likely to be mainly direct infiltration from rainfall and upward groundwater flow from the underlying Yarragadee

	abstraction bores are located south –southwest of the proposed facilities. Two are known water supply bores for onshore oil and gas operations. The next nearest registered bore is approximately 6 km down gradient from the proposed facility.	aquifer (DoW 2017) The assumed groundwater flow direction for the site is west-southwest based on groundwater hydrological data for the area, site topography and the proximity of the nearest surface water bodies to the site (DoW 2017)

6.5 Soil type

Table 9 details soil types and characteristics relevant to the assessment.

Table 9: Soil and sub-soil characteristics

Groundwater and water sources	Distance from Premises	Environmental Value
Soil type classification	The site is underlain by the shallow Superficial aquifer of the Swan Coastal Plain, consisting predominantly of Tamala Limestone within the vicinity of the site, with potential surficial lenses of Bassendean Sand.	The site currently consists of pasture land and has been used for broad scale dryland cereal cropping.

6.6 Meteorology

6.6.1 Wind direction and strength

Wind speed and wind direction are important factors influencing the pathway of emissions. It effects noise propagation and transport of fugitive dust. The closest available wind data for the area can be sourced from the Mingenew weather station (number 008088). The Bureau of Meteorology (BoM) provides the 9am and 3pm wind speed and direction for Mingenew weather station. Prevailing winds are to the east, north and south easterly in the mornings, and to the west, south easterly and south westerly in the afternoons.

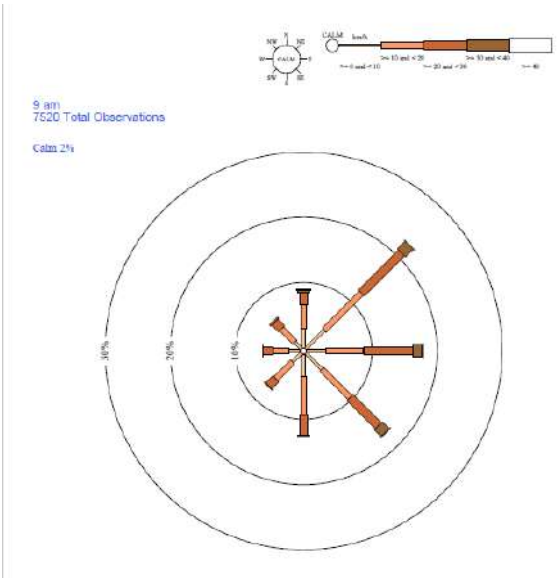


Figure 3: Mingenew weather station 9 am average wind speed and direction showing bias to easterly and south easterly winds

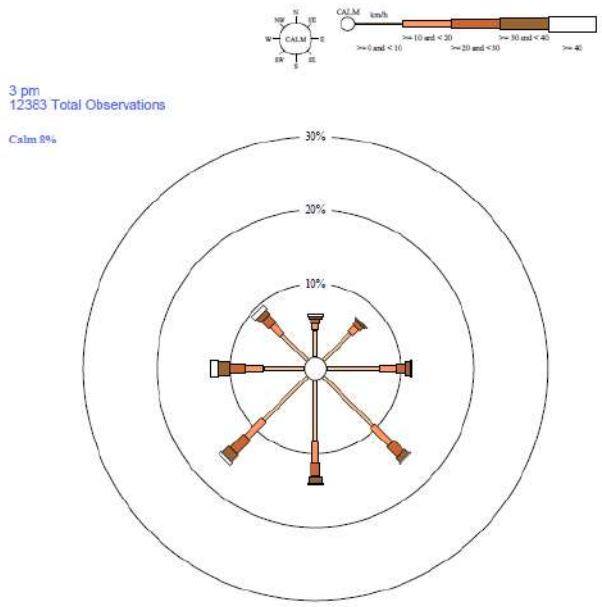
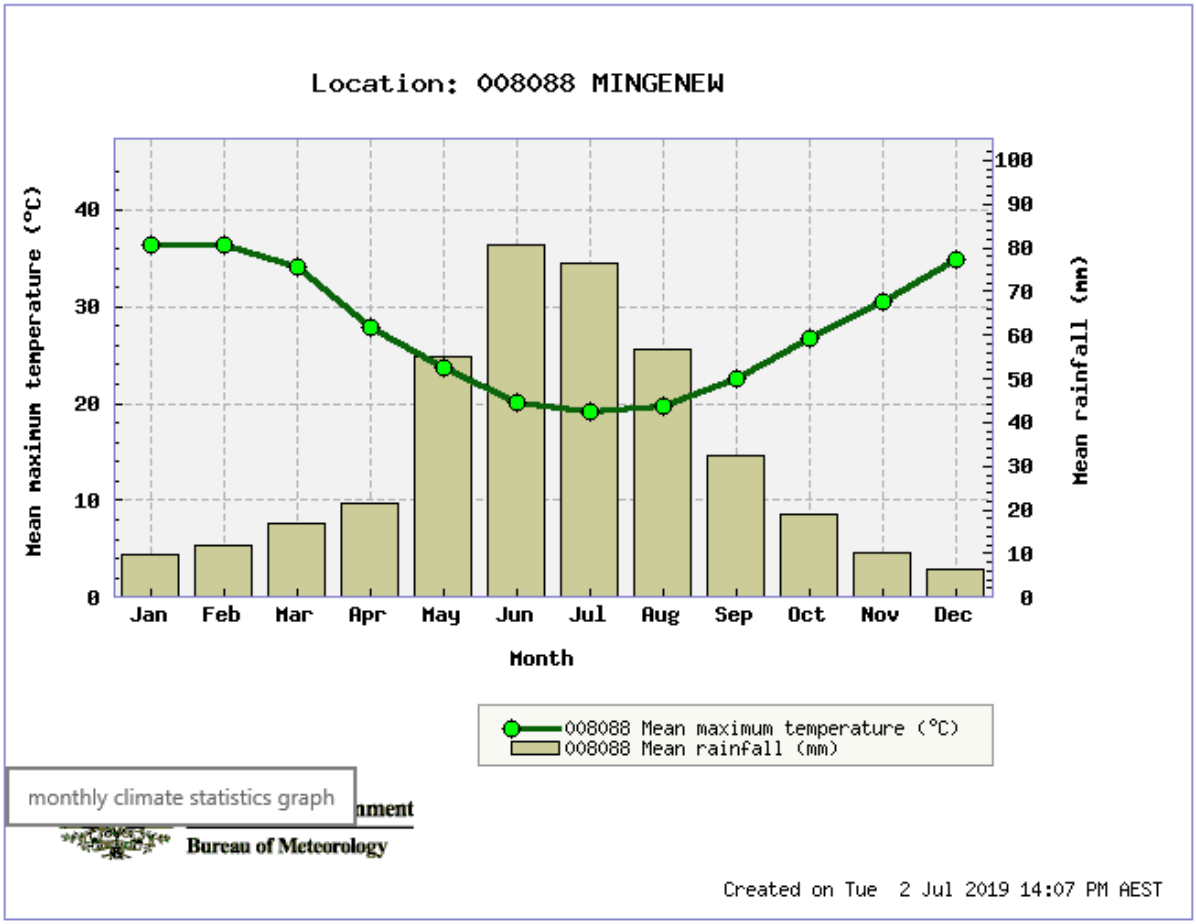


Figure 4: Mingenew weather station 3 pm average wind speed and direction showing

6.6.2 Rainfall and temperature



7. Risk assessment

7.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 11.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Tables 10 and 11 below.

Table 10. Identification of emissions, pathway and receptors *during construction*

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
Construction, mobilisation and positioning of infrastructure	*Vehicle movements on unsealed access roads*	*Noise*	*No residences in close proximity. BRT Camp located approximately 700m from the facility, currently not in use.*	*Air / wind dispersion*	*Amenity and health impacts*	*No*	*Noise regulations apply* *The Delegated Officer considers that any noise impacts that may arise can be regulated under the provisions of the Noise Regulations.*
		Dust			*Amenity and health impacts*	*No*	*The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
	Construction of five inert landfill cells and a bioremediation pad	*Noise*	*No residences in close proximity. BRT Camp located approximately 700m from the facility, currently not in use.*	*Air / wind dispersion*	*Amenity and health impacts*	*No*	*Noise regulations apply* *The Delegated Officer considers that any noise impacts that may arise can be regulated under the provisions of the Noise Regulations.*

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
		Dust	*No residences in close proximity. BRT Camp located approximately 700m from the facility, currently not in use.*		*Amenity and health impacts*	*No*	*The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*

Table 11: Identification of emissions, pathway and receptors *during operation*

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
Bioremediation activity	*Waste acceptance and Vehicle movement*	*Dust*	*No residences in close proximity. BRT Camp located approximately 700m from the facility, currently not in use.*	*Air / wind dispersion*	*Amenity and health impacts*	*No*	*The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
		Noise			*Amenity and health impacts*	*No*	*Noise regulations apply* *The Delegated Officer considers that any noise impacts that may arise can be regulated under the provisions of the Noise Regulations.*
	Bioremediation	*Odour: associated with solid waste storage and treatment*			*Amenity and health impacts*	*No*	*The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
		Dust: associated with solid waste storage and treatment				*No*	*The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
		Leachate: Seepage to groundwater or overland flow of leachate	*Surrounding land, Groundwater – depth approximately 60m and surface water drainage system*	*Overland flow, soil, surface water drainage and seepage into groundwater*	*Surrounding land and groundwater contamination impacting upon dependent vegetation*	*Yes refer to section 7.4*	*Potential for soil and groundwater contamination inhibiting vegetation growth and temporary loss of habitat*

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
		High contaminants- Disposal/ reuse post remediation	*Contamination of disposal area*	*Direct Discharge- Contaminant present in remediated soil*	*Health Impacts, surrounding land and groundwater contamination impacting upon dependent vegetation*	*Yes refer to section 7.5*	*Unauthorised discharges*
Landfilling activity	*Waste disposal and Vehicle movement*	*Dust*	*No residences in close proximity. BRT Camp located approximately 700m from the facility, currently not in use.*	*Air / wind dispersion*	*Amenity and health impacts*	*No*	*The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
	Waste disposal and Vehicle movement	*Noise*		*Air / wind dispersion*	*Amenity and health impacts*	*No*	*Noise regulations apply* *The Delegated Officer considers that any noise impacts that may arise can be regulated under the provisions of the Noise Regulations.*
Landfilling activity	*Covering and compacting cells when full*	*Noise*			*Amenity and health impacts*	*No*	*Noise regulations apply* *The Delegated Officer considers that any noise impacts that may arise can be regulated under the provisions of the Environmental Protection (Noise) Regulations 1997.*
	Disposal of Inert waste	*Leachate*	*Groundwater*	*Direct discharge to land and potential seepage to groundwater*	*Reduction in groundwater quality impacting upon dependent vegetation*	*Yes refer to section 7.4*	*Potential for soil and groundwater contamination inhibiting vegetation growth and temporary loss of habitat*

7.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 12 below.

Table 12: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 13 below.

Table 13: Risk criteria table

Likelihood		**Consequence**		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		**The following criteria has been used to determine the consequences of a Risk Event occurring:**		
			Environment	**Public health* and amenity (such as air and water quality, noise, and odour)**
Almost Certain	The risk event is expected to occur in most circumstances	Severe	• **onsite impacts**: catastrophic • **offsite impacts local scale**: high level or above • **offsite impacts wider scale:** mid-level or above • Mid to long-term or permanent impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are significantly exceeded	• Loss of life • **Adverse health effects:** high level or ongoing medical treatment • Specific Consequence Criteria (for public health) are significantly exceeded • **Local scale impacts:** permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	• **onsite impacts**: high level • **offsite impacts local scale**: mid-level • **offsite impacts wider scale**: low level • Short-term impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are exceeded	• **Adverse health effects:** mid-level or frequent medical treatment • Specific Consequence Criteria (for public health) are exceeded • **Local scale impacts**: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	• **onsite impacts**: mid-level • **offsite impacts local scale**: low level • **offsite impacts wider scale**: minimal • Specific Consequence Criteria (for environment) are at risk of not being met	• **Adverse health effects:** low level or occasional medical treatment • Specific Consequence Criteria (for public health) are at risk of not being met • **Local scale impacts:** mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	• **onsite impacts**: low level • **offsite impacts local scale**: minimal • **offsite impacts wider scale**: not detectable • Specific Consequence Criteria (for environment) likely to be met	• Specific Consequence Criteria (for public health) are likely to be met • **Local scale impacts:** low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	• **onsite impact**: minimal • Specific Consequence Criteria (for environment) met	• **Local scale**: minimal to amenity • Specific Consequence Criteria (for public health) met

^ Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting.*

* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines.*
"onsite" means within the Prescribed Premises boundary.

7.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 14 below:

Table 14: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

7.4 Risk Assessment – Leachate and contaminated runoff (Operations)

7.4.1 Description of Risk Event

Waste deposited at the Premises has the potential to generate leachate. Leachate may result in contamination of soil, surface water and the groundwater. Rainfall may come into contact with waste, causing run-off and overland flow of contaminated stormwater to neighbouring properties and surface water. The proposed activities represents a significant potential for leachate and contaminated stormwater runoff generation if managed incorrectly.

7.4.2 Identification and general characterisation of emission

Stormwater may become contaminated if it comes into contact with waste material at the Premises. Leachate is formed from the infiltration of water (e.g. from rainfall) into the landfill and also from the moisture content of the waste itself. The proposed bioremediation process will involve the addition of water via rainfall. The requirement for supplementary irrigation will be determined by the nature of the impacted soil and the frequency of rainfall.

Leachates can be acidic, especially when they are generated under anaerobic conditions. They can cause the dissolution of metals and therefore metallic compounds may be present.

The sources of leachate and contaminated stormwater runoff at the Premises include:

- Landfill cells
- Leachate collection system
- Leachate pond; and

- Bioremediation pad

7.4.3 Description of potential adverse impact from the emission

Contaminated storm water and leachates from the proposed operation have the potential to pollute groundwater, surface water bodies and may cause contamination of the surrounding land. They may contain elevated metals other hazardous chemicals and can be high in nutrients; which makes it a favourable host media for harmful microorganisms. Stockpiles of raw materials and processed materials have the potential to pollute because leachate may be generated when the stockpiled materials contain excessive moisture.

7.4.4 Criteria for assessment

ANZECC and ARMCANZ, 2000 provide recommended trigger values for environmental water quality and the *Assessment and management of contaminated sites* provides ecological and human health assessment levels for soil.

Impacts to groundwater can also be assessed against the Non-Portable Use Guidelines (DoH, 2014).

Investigation levels for soil and ground water can be assessed against National Environment Protection (Assessment of Site Contamination) Measure (as amended 2013).

7.4.5 Applicant controls

This assessment has reviewed the controls set out in Table 15 below.

Table 15: Applicant's proposed controls for Leachate and contaminated stormwater runoff

Site infrastructure	Description	Operation details	Reference to issued licence plan (Schedule 1)
Controls for leachate and contaminated runoff			
Inert Landfill cells	*1) Prior to internment, the applicant will test the materials to ensure contaminants are within the Class 1 inert landfill levels.* *2) The application details that the waste material is predominantly composed of bentonite clay, plant cellulose and various salts with a very low leachability and mobility, and its alkalinity limits dissolution of metals from the material.* *3) The application states that sufficient existing soil will be cut back from the burial area for capping.* *4) The application states that 0.2m of gravel capping will applied and compact to the upper*	*Infrastructure on site will be maintained in good condition.* *Freeboard level for leachate pond will be monitored.* *Leachate pond to be maintained without leaks and water held for evaporation or recycling through the bioremediation process.* *Sludge and sediment removed from the pond annually or re-treated.* *A groundwater monitoring program will be established during the operation*	*Site Plan*

Site infrastructure	Description	Operation details	Reference to issued licence plan (Schedule 1)
	surface of the buried material at a minimum gradient of 5% and extending to at least one metre beyond the outer extents of the waste cell. *5) Approximately one metre of cut-back soil will be used as the final cap over the compacted gravel layer, appropriate for future pasture use.* *6) The cap will be used to reduce the amount of water ingress into the landfill during winter periods when rainfall frequency is much higher.*	*of the landfill and the bioremediation pad to assess whether the internment of stabilised drilling mud and cuttings have resulted in impacts to the underlying groundwater quality.* *The groundwater monitoring will be conducted biennially during the operation of the landfill.*	
Bioremediation pad	*1) To prevent infiltration of leachate from the bioremediation process into the underlying soil profile, the bioremediation activities will be conducted on an existing compacted gravel hardstand pad at the site.* *2) The pad will be penetration tested to ensure a maximum vertical seepage velocity of $1x10^{-9}$ and the final surface gradient of 2%.* *3) 500mm kerb bunding will be installed around the perimeter of the bioremediation pad*		
Leachate pond and leachate collection infrastructure	*1) Will be constructed of gravel hardstand >0.2 m in depth, compacted to achieve a vertical seepage velocity $1x10^{-9}$ m/s.* *2) 500mm kerb bunding will be installed to ensure leachate/run-on is directed toward the retention pond and to prevent off-site runoff from entering.* *3) Capacity to store a 72-hour duration, 1 in 20 year ARI critical rainfall*		

Site infrastructure	Description	Operation details	Reference to issued licence plan (Schedule 1)
	event without overflow. *4) The water level in the leachate pond will be maintained at 0.5m deep at all times. 500mm freeboard level at all time.*		

7.4.6 Key findings

The Delegated Officer has reviewed the information regarding leachate and contaminated stormwater runoff and has found:

1. *Detailed plans or specifications of the proposed works were not provided in the application therefore design and performance specifications have been set as a requirement in the works approval- condition 1.*
2. *That all leachate collection infrastructure and leachate dams on the premises will be designed to contain a 1 in 20 year 72 hour ARI rainfall event, which provides a suitable level of containment for the risk of leachate/runoff impacts.*
3. *Depth to groundwater is approximately 60m below ground level.*
4. *The landfill cells will have approximately 5 metre gap to allow for subsurface infiltration runoff.*
5. *That the cells will be capped and therefore infiltration of rain water will not be possible.*
6. *That leaching through the underlying soil profile and erosion of overlying soil are prevented by the capping of the material*
7. *The bioremediation pad will be bunded to retain any run off from the hardstand prior to discharge into the leachate pond.*
8. *A bioremediation management plan and an Environmental management plan should be prepared for all bioremediation processes.*
9. *All waste subjected to bioremediation process must be covered in the event of extreme wind events to prevent or limit emissions of vapours or particle matter and to prevent the escape of leachate or other substances.*

7.4.7 Consequence

If Leachate and contaminated runoff risk event occurs, then the Delegated Officer has determined that the impact of leachate and contaminated runoff will be most likely limited to on-site impacts at a low level. Therefore, the Delegated Officer considers the consequence to be **minor**.

7.4.8 Likelihood of Risk Event

The Delegated Officer has determined that based upon the proposed infrastructure and management actions the likelihood of Leachate and contaminated runoff risk event occurring will be unlikely. Therefore, the Delegated Officer considers the likelihood to be **unlikely**.

7.4.9 Overall rating of leachate and contaminated stormwater runoff

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 13) and determined that the overall rating for the risk of Leachate and contaminated runoff risk event is **medium**.

7.5 Risk Assessment – Elevated contaminant level post-remediation

7.5.1 Description of Risk Event

Proper remediation of hydrocarbon contaminated soil is a necessity in order to have a safe and healthy environment. The bioremediation activities can also impact the surrounding soil matrix.

7.5.2 Identification and general characterisation of emission

Petroleum is composed of hundreds or thousands of aliphatic, branched and aromatic hydrocarbons and other organic compounds. Many of them are toxic to humans, animals and vegetation. The timeframe for bioremediation is often case-specific. Treatment is only complete when targets have been achieved, or it can be demonstrated that the chemicals of concern do not pose a risk to human health or the environment.

7.5.3 Description of potential adverse impact from the emission

Soil contaminated with petroleum can represent a hazard to human and ecological health and causes environmental problems as well. Some petroleum hydrocarbon components have been known to belong to the family of carcinogens and neurotoxic organic pollutants

7.5.4 Criteria for assessment

The suitability of bioremediated soils for re-use as a resource can be assessed in accordance with appropriate criteria eg. the requirements of *the National Environmental Protection (Assessment of site Contamination) Measure 1999.*

7.5.5 Applicant controls

This assessment has reviewed the controls set out in Table 16 below.

Table 16: Applicant's proposed controls for elevated contaminant levels post-remediation

Site infrastructure	Description	Operation details	Reference to issued licence plan (Schedule 1)
Elevated contaminant levels			
Bioremediation of Class 2 and 3 petroleum hydrocarbon impacted soils	1) *As the facility is to receive petroleum hydrocarbon impacted soils for treatment, the soil assessments will predominantly target associated CoPC such as:* • *Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);*	*Infrastructure on site will be maintained in good condition.* *The bio-pad will be established and operated in conformance with DWER licencing requirements and the NSW EPA Landfarming Best*	*Site Plan*

Site infrastructure	Description	Operation details	Reference to issued licence plan (Schedule 1)
	• *Total recoverable hydrocarbon (TRH) fractions in the C6-C40 range;* • *Polynuclear aromatic hydrocarbons (PAHs); and* • *Phenolic compounds (phenols).* 2) *Prior to commencement and following final decommissioning, soil assessments will be conducted to obtain baseline and validation soil chemical data to determine whether bioremediation activities have impacted the surrounding soil matrix.*	*Practice Note (2014),*	

7.5.6 Key findings

The Delegated Officer has reviewed the information regarding leachate and contaminated stormwater runoff and has found:

1) *That bioremediated soils are to be sampled and tested to determine their suitability for reuse or landfill.*
2) *If the treated materials are only suitable for disposal to landfill, the classification of the materials for disposal is to be made.*
3) *The suitability of bioremediated soils for use as a resource needs to be assessed and the results are to be compared with suitable criteria.*
4) *The number of samples to be collected and analysed for the validation of bioremediated and stockpiled soil should be adequate to provide a statistically reliable result, taking into account the intended use of the soil.*
5) *A licence for the operation of the premises will include conditions relating to product testing to ensure that the final products contaminant levels are in compliance with the intended use.*

7.5.7 Consequence

The Delegated Officer has determined that if residual concentrations of chemical substance are above the target criteria, potential impacts to human will include those requiring occasional medical treatment and most likely limited to on-site impacts at a mid-level. Therefore, the Delegated Officer considers the consequence to be **moderate**.

7.5.8 Likelihood of Risk Event

The Delegated Officer has determined that the likelihood of activities affecting human health and the environment will probably not occur in most circumstances. Therefore, the Delegated

Officer considers the likelihood to be **unlikely**.

7.5.9 Overall rating of leachate and contaminated stormwater runoff

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 13) and determined that the overall rating for the risk of elevated contaminant levels post-remediation is **medium**.

7.6 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 17 below. Controls are described further in section 8.

Table 17: Risk assessment summary

	Description of Risk Event			**Applicant controls**	**Risk rating**	**Acceptability with controls (conditions on instrument)**
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
1.	Leachate and contaminated runoff	Landfill cells, leachate collection system, leachate pond and bioremediation pad	Overland flow, soil, surface water drainage, direct discharge and seepage into groundwater	Infrastructure and management controls. As detailed in table 15	Minor consequence Unlikely likelihood **Medium Risk**	Acceptable subject to regulatory controls
2.	Elevated contaminant levels post-remediation	Materials used as backfill for the former sand pit depression or used as capping material for the buried drilling mud waste.	Direct Discharge- Contaminant present in remediated soil posing a risk to human health and or environment, including leaching to groundwater.	Infrastructure and management controls. As detailed in table 16	Moderate consequence Unlikely likelihood **Medium risk**	Acceptable subject to proponent controls conditioned / outcomes based controls

8. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 18. The risks are set out in the assessment in section 7 and the controls are detailed in this section. DWER will determine controls having regard to the adequacy of controls proposed by the Applicant. The conditions of the Licence will be set to give effect to the determined regulatory controls.

Table 18: Summary of regulatory controls to be applied

		Controls **(references are to sections below, setting out details of controls)**				
		8.1.1 Throughput and waste acceptance	**8.1.2 Infrastructure and equipment**	**8.1.3 Specified action**	**8.1.4 Monitoring**	**8.1.5 Reports**
Risk Items (see risk analysis in	**1. Leachate and contaminated run-off**	●	●	●	●	●
	2. Contaminants	●			●	●

8.1 Licence controls

The following controls will be imposed as conditions on the Licence to manage the risk of emissions from operating the landfill and bioremediation facility. It should be noted that these controls are not final and will be subject to compliance with conditions of the Works Approval and may change if additional information becomes available to further inform the risk assessment (as per *Guidance Statement: Risk Assessments*).

8.1.1 Throughput and waste acceptance

The licence holder shall be subject to total annual limits on throughput of raw materials and the contaminating material shall only consist of petroleum type hydrocarbons with defined concentration limits as shown in table 19 below.

Table 19: Bioremediation facility inputs

<table>
<tr><td colspan="3">Waste acceptance</td></tr>
<tr><td>Waste type</td><td>Quantity limit</td><td>Specification[1]</td></tr>
<tr><td>Contaminated soil</td><td>4,000 tonnes per annual period</td><td>Contaminating substance shall only consist of petroleum type hydrocarbons with the following concentration limits (in mg/kg):
<table>
<tr><td>C_6-C_9 petroleum hydrocarbons</td><td>28,000</td></tr>
<tr><td>C_{16}-C_{35} petroleum hydrocarbons (aromatics)</td><td>4,500</td></tr>
</table></td></tr>
</table>

		C_{10}->C_{35} petroleum hydrocarbons (aliphatics)	280,000
		PAHs (total)	1,000
		Benzo(a)pyrene	50
		Toluene	5,180
		Xylenes (total)	18,000

8.1.2 Spill infrastructure and equipment to control contaminated run-on and runoff

The following environmental controls, infrastructure and equipment should be maintained and operated onsite for control of contaminated runoff:

- impervious ($1x10^{-9}$ m/s) 500mm kerb bunding around the perimeter of the bioremediation pad and leachate pond
- lined impervious ($1x10^{-9}$ m/s) leachate collection infrastructure for directing potentially contaminated water to the settling pond;
- lined impervious ($1x10^{-9}$ m/s) leachate pond with minimum freeboard level of 500mm;

8.1.3 Specified actions

The following management actions will be included in the licence to prevent leachate/contaminated runoff:

- Maintaining leachate collection infrastructure free of debris and accumulation of sediment;
- Removing vegetation growing inside leachate ponds; and
- Ensure the operational guidelines and management plan are adhered to at all times

8.1.4 Monitoring requirements

The licence will include the post remediation monitoring conditions to ensure that the re-use of the treated contaminated soil does not cause health or environment damage:

8.1.5 Monitoring reports

An Annual Audit Compliance Report will be required to be submitted as a condition of the proposed Licence.

9. Determination of Works Approval conditions

The conditions in the issued Works Approval in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

Table 20 provides a summary of the conditions to be applied to this works approval.

Table 20: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure and Equipment 1, 2, 3, and 4	These conditions are valid, risk-based and contain appropriate controls.
Emissions 5	This condition is valid, risk-based and consistent with the EP Act.
Information 6, and 7	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the *works approvals* under the EP Act.

10. Applicant's comments

The Applicant was provided with the draft Decision Report and draft Works Approval on 7 November 2019. Comments received from the Applicant have been considered by the Delegated Officer as shown in Appendix 2.

11. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Issued Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

STEPHEN CHECKER
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES
Delegated Officer under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	DWER Application Form including following supporting information: 1. Attachment 1A – Certificate of Title and memorandum of understanding; 2. Shire of Irwin – Application for development approval; 3. Attachment 1B – ASICS Company Extract; 4. Attachment 2 – Premises maps, Access & boundary map; site layout map 5. Attachment 3A – Proposed Bioremediation Facility & Waste Drilling Mud Internment activities 6. Attachments - Stabilised Waste Drilling Mud analytical results; 7. Proposed fee calculation - cost breakdown information	W6239/2019/1	DWER records (A1804546)
2.	Email from Nicolo Jelovsek: Further information received 13/06/19. Physical business address provided.	W6239/2019/1	DWER records (A1804547)
3.	Email from Nicolo Jelovsek: Further information received 19/06/19. Pond dimensions and calculations provided.	W6239/2019/1	
4.	Email from Nicolo Jelovsek: Further information received 27/06/19 Revised boundary map provided	W6239/2019/1	
5.	Email from Nicolo Jelovsek: Further information received 1/07/19. Historical Environmental Investigation summary provided	W6239/2019/1	
6.	Email from Nicolo Jelovsek: Further information received 3/07/2019. Historical Environmental Investigation summary provided	W6239/2019/1	
7.	Email from Nicolo Jelovsek: Further information received 6/11/19 Revised boundary map provided	W6239/2019/1	DWER records (A1846244)

8.	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
9.	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	DER 2015b	
10.	DER, August 2016. *Guidance Statement: Licence duration.* Department of Environment Regulation, Perth.	DER 2016a	
11.	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DER 2016b	
12.	DWER, June 2019. *Guideline: Decision Making.* Department of Water and Environmental Regulation, Perth.	DWER 2019a	
13.	DWER, June 2019. *Guideline: Industry Regulation Guide to Licensing.* Department of Water and Environmental Regulation, Perth.	DWER 2019b	

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder comment	DWER response
Works Approval		
Table 2, row 3, dot point 5:	Typographical changes requested	Typographical changes adopted
Table 2, row 5, last dot point	Typographical changes requested	Typographical changes adopted
Decision Document		
Section 4.1, under heading Bioremediation, second dot point	Typo noted	Corrected
Section 4.1, under heading Landfill, fourth dot point	Typographical changes requested	Typographical changes adopted
Section 7.4.1	Typographical changes requested	Typographical changes adopted
Section 7.4.2	Typographical changes requested	Typographical changes adopted
Table 15	Typographical changes requested	Typographical changes adopted
Section 7.4.6, dot point 9	Typographical changes requested	Typographical changes adopted
Section 7.5.2	Typographical changes requested	Typographical changes adopted

Condition	Summary of Licence Holder comment	DWER response
Section 7.5.3	Typographical changes requested	Typographical changes adopted
Table 18, 2nd row	We don't consider pathogens to apply to the facility	Removed
Section 8.1	Typo noted	Corrected
Table 19	Typo noted	Corrected

Attachment 1: Issued Works Approval W6239/2019/1

Attachment 2: Development approval

SHIRE OF IRWIN
DONGARA-PORT DENISON
A BRILLIANT BLEND

Enquiries: Monica Sullivan
Our Reference: A4646/P926
Date: 1 May 2019

GEMEC ENVIRONMENTAL CONSULTANTS
UNIT 1/25 FOSS STREET
PALMYRA WA 6157

Attn: Nicolo Jelovsek

Dear Nicolo

RE: DEVELOPMENT APPROVAL FOR CHANGE OF USE (BIOREMEDIATION FACILITY & INERT LANDFILL (WASTE DRILLING MUD INTERNMENT)) AT LOT 4 (NO. 353) PYE ROAD MOUNT ADAMS 6525

I refer to the above matter and advise that under delegated authority the Shire of Irwin has granted approval as per the attached Determination on Application for Development Approval. Please read all of the Conditions and Advice Notes. The conditions must be complied with.

Planning Approval DOES NOT constitute Building Approval which is subject to the Shire's Building Department. Additionally, other separate approvals to undertake certain activities may be required from other Government Agencies under separate legislation. This is your responsibility.

Should you have any queries or require any further information please do not hesitate to contact me on 9927 0000 or msullivan@irwin.wa.gov.au.

Yours faithfully

Monica Sullivan
Senior Planning Officer

Development Application No: P926

DETERMINATION ON APPLICATION FOR DEVELOPMENT APPROVAL
Planning & Development Act 2005
Shire of Irwin
LOCAL PLANNING SCHEME NO. 5

Applicant:	GEMEC ENVIRONMENTAL CONSULTANTS
Property Address:	LOT 4 (NO. 353) PYE ROAD MOUNT ADAMS 6525
Received on:	15/01/2019
Description of proposed development:	CHANGE OF USE (BIOREMEDIATION FACILITY & INERT LANDFILL (WASTE DRILLING MUD INTERNMENT))

The application for development approval is **Granted** subject to the following conditions and advice notes:

Conditions

1. The development plans as date marked and stamped 'Approved' with any requirements and annotations detailed thereon by the Shire of Irwin, together with the Development Application Report dated 12 March 2019, are the plans approved as part of this application and shall form part of the development approval issued, except where amended by other condition of this approval.
2. No site work is to be undertaken until the Applicant has obtained the relevant Works Approval(s) from the Department of Water and Environmental Regulation.
3. The land use is not to commence until the Applicant has obtained the relevant Environmental Licence(s) from the Department of Water and Environmental Regulation.
4. Prior to the commencement of the land use, baseline groundwater monitoring must be undertaken with the results provided to the Shire of Irwin.
5. Groundwater monitoring shall be undertaken biennially throughout the duration of the land use, and for a period of five (5) years following the decommissioning of the use, with the results provided to the Shire of Irwin.
6. Appropriate dust suppression measures are required to be undertaken at all times during operations to ensure that dust from the development does not affect adjoining properties or any public road.
7. Appropriate odour control measures are required to be undertaken at all times during operations to ensure that odour from the development does not affect adjoining properties.
8. Vehicles associated with the development must travel to and from the site using the constructed public portion of Pye Road only, being the 3.7 kilometre road located between the western boundary of the development site and the Brand Highway. No vehicles are to access the development from the eastern boundary of the site.
9. Prior to the commencement of the use, satisfactory arrangements shall be made with the Shire of Irwin for the payment of an annual financial contribution for the ongoing maintenance and renewal of Pye Road, Mount Adams which is required as a result of the traffic generated by the development.
10. Any waste accepted at the bioremediation facility that cannot be bio-remediated to a suitable standard for on or off site use must be removed from the site and disposed of at an alternative licenced waste facility as established in the Department of Water and Environmental Regulation's *Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)*.
11. Prior to commencement of the use, the internal vehicle access track must be upgraded to allow for two-way movement.

Advice Notes

1. If the development the subject of this approval is not substantially commenced within a period of 2 years, or another period specified in the approval after the date of the determination, the approval will lapse and be of no further effect.
2. Where an approval has so lapsed, no development must be carried out without the further approval of the local government having first been sought and obtained.

3. If an applicant or owner is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the *Planning and Development Act 2005* Part 14. An application must be made within 28 days of the determination.
4. This is a Development Approval of the Shire under its Local Planning Scheme No. 5. It is not a Building Permit or an approval to commence or carry out development under any other law. It is the responsibility of the applicant to obtain any other necessary approvals, consents and licenses required under any other law, and to commence and carry out development in accordance with all relevant laws.
5. Compliance with the *Environmental Protection (Noise) Regulations 1997* is required at all times.
6. It is noted that the subject site is classified as a 'Bushfire Prone Area' under the State Map of Bushfire Prone Areas. The Applicant is advised that Harvesters, Vehicles and Internal Combustion Engines Bans imposed by the Shire of Irwin and Total Fire Bans imposed by the Department of Fire and Emergency Services are applicable to the operations.
7. With respect to Conditions 4 and 5, groundwater monitoring bores are to be constructed and decommissioned in accordance with the *Minimum Construction Requirements for Water Bores in Australia* 3rd Edition (2012).

Signed: Dated:

Monica Sullivan 1.5.19

Monica Sullivan
Senior Planning Officer
for and on behalf of the Shire of Irwin