Decision Report

Application for Licence

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L9179/2018/1
Applicant	Jaden Cocking Trading as Annadale Farm
ACN	N/A
File Number	DER2018/001165-1
Premises	Jindabyne Farm Cocking Road, Mogumber Legal description – Jindabyne Farm comprises Lot 1806 on Deposited Plan 008582 Certificate of Title Volume 2213 Folio 504 Lot 7 on Deposited Plan 019255 Certificate of Title Volume 2213 Folio 503 Lot 6 on Deposited Plan 019255 Certificate of Title Volume 2213 Folio 500
Date of Report	18 March 2019
Status of Report	Final

Table of Contents

1. Definitions of terms and acronyms

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

Table 1: Definitions

Term	Definition
Applicant	Jaden Cocking
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Biosolids	means sludge from a wastewater treatment plant that has undergone further treatment to reduce disease causing pathogens and volatile organic matter significantly, resulting in a stabilised material suitable for beneficial use. Does not include industrial and food processing sludges
Biosolids cake	means stabilised biosolids that have been dewatered by mechanical or solar means to usually greater than 15% total solids
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CS Act	*Contaminated Sites Act 2003* (WA)
CLBAR	Contaminant Limited Biosolids Application Rate
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.
DoH	Department of Health
DPIRD	Department of Primary Industries and Regional Development
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)
Lime Amended Biosolids (LAB)	means biosolids that have had sufficient lime added to destroy or inhibit regrowth of microorganisms (including pathogens)
Minister	the Minister responsible for the EP Act and associated regulations
MASSC	Maximum allowable soil contaminant concentration
MPSCC	Maximum permissible soil contaminant concentrations
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
N	Nitrogen
NATA	National Association of Testing Authorities
NLBAR	Nitrogen Limited Biosolids Application Rate
Occupier	has the same meaning given to that term under the EP Act.
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
P	Phosphorus
PLBAR	Phosphorus Limited Biosolids Application Rate
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act following the finalisation of this Review.
Risk Event	As described in *Guidance Statement: Risk Assessment*
REF	Review of Environmental Factors
UDR	*Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA)
WABM	Western Australian guidelines for biosolids management, Department of Environment and Conservation, December 2012

WWTP	Wastewater Treatment Plant

2. Purpose and scope of assessment

The Applicant is proposing to apply Biosolids to pasture at the Premises by direct application to land as a fertilizer replacement for grain crops including Canola and Wheat. The Premises will receive Biosolids (Cake) from Beenyup and Woodman Point WWTPs and LAB from Subiaco WWTP. The Premises is 1640ha in total with 1273 arable hectares. A requirement of the WABM is to employ buffers for biosolids application to land to protect sensitive water resources from contamination so accounting for respective buffers this leaves approximately 1057 treatable hectares for biosolids application at the Premises. The Premises can therefore receive 57,078 wet tonnes of biosolids or 73,990 wet tonnes of LAB per annual period. This is a new Prescribed Premises and accordingly a new Licence.

Figure 1 provides an overview 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
Application form	10 July 2018
Review of Environmental Factors Jindabyne farm, Water Corporation *PM-#19600185-v2*	10 July 2018

3. Background

The Applicant has applied for a Category 61A Solid waste facility Licence to operate the Premises at Lot 1806, Lot 6 and Lot 7 Cocking Road Mogumber.

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	73,990 tonnes per annual period

4. Overview of Premises

4.1 Operational aspects

The Applicant is proposing to apply Biosolids to pasture at the Premises by direct application to land as a fertilizer replacement for grain crops including Canola and Wheat. The Premises consists of 26 paddocks in total and is 1640ha in total with 1273 arable hectares; three of the 26 paddocks are not suitable for Biosolids application. Table 4 provides the Hectares for each of the three Lots at the Premises.

Table 4 Lot Hectares – Jindabyne Farm

Lot	Diagram	Volume	Folio	Hectares
1806	008582	2213	504	499
7	019255	2213	503	534
6	019255	2213	500	607

A requirement of the WABM is to employ buffers for biosolids application to land to protect sensitive water resources from contamination - so accounting for respective buffers leaves approximately 1057 treatable hectares for biosolids application at the Premises. The Premises can therefore receive 57,078 wet tonnes of biosolids or 73,990 wet tonnes of LAB per annual period. For the purposes of this Application three (3) paddocks, outlined below, of the 23 suitable paddocks at the Premises, were sampled and analysed as indicative for biosolids suitability for the Premises and thus represent the Premises:

- J4 (Riches Corner) has 119ha of treatable area;
- J9 (Bush Paddock) has 141ha of treatable area; and
- J10 (House Windmill) has 101ha of treatable area.

Figure 1 provides an overview of the Premises and the three (3) paddocks J4, J9 and J10 as sampled. Biosolids application and storage at the Premises will be consistent with the WABM and DoH requirements and will only be applied at a rate to satisfy the nitrogen requirements of each crop. Biosolids will only be delivered to, and stored at the Premises and stored for up to a maximum of 30 days (see below) prior to application to land. Storage will include:

- A flat stockpile area (slope gradient ≤3%) and will incorporate suitable buffers distances to sensitive receptors and restricted stormwater ingress.
- Protected from unauthorised access.
- Signage posted at entrance to Premises.
- Storage restricted for seven (7) days during October – May and a maximum of 30 days outside this timeframe.

The Application of biosolids will include:

- Evenly spreading and incorporation into the soil at approximately 75mm depth into land within 36 hours of application.
- Stock exclusion and withholding periods commencing from the first delivery of biosolids though to final incorporation including throughout the spreading process.

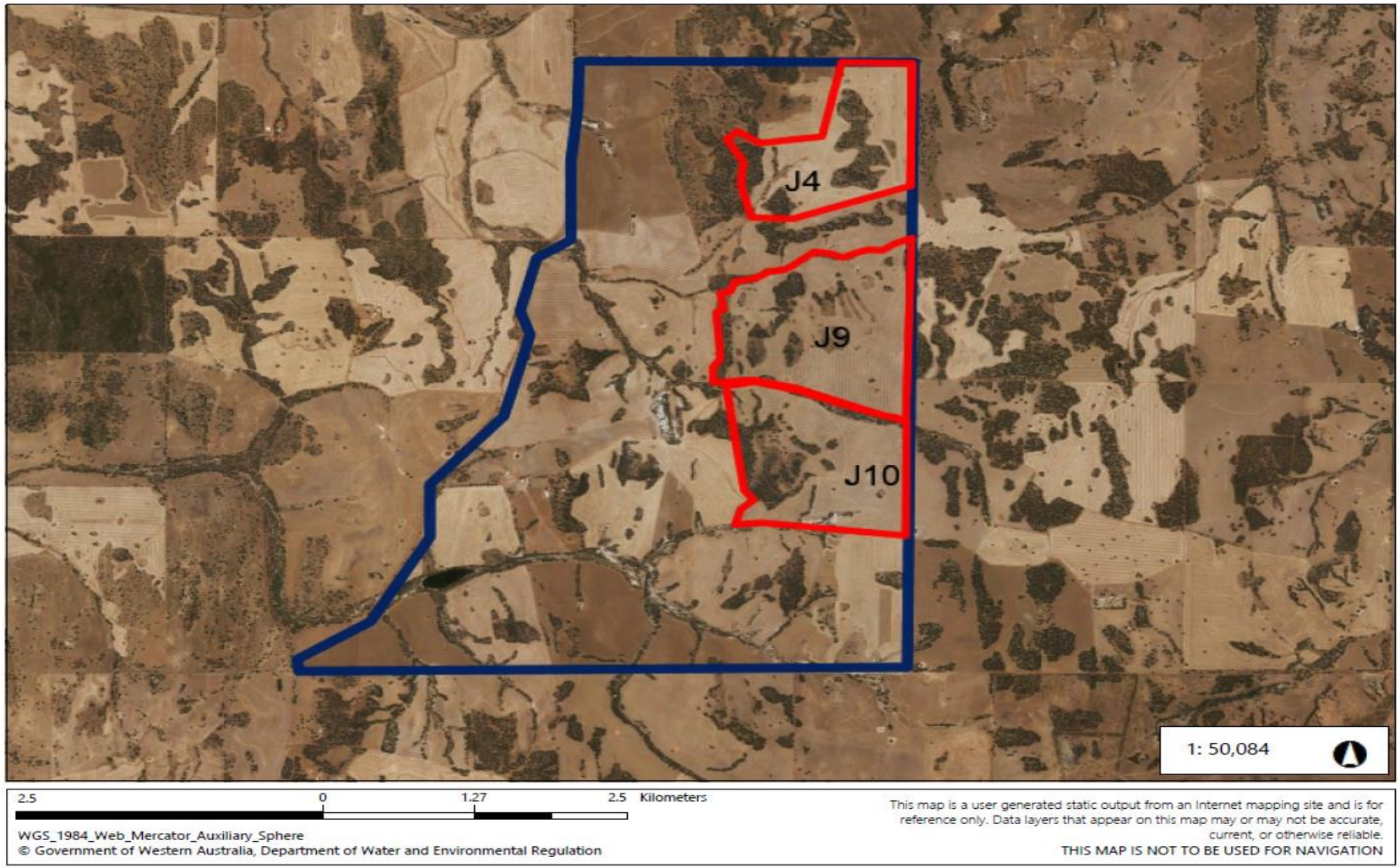


Figure 1 Premises overview. Blue line demarcates Premises boundary and the three paddocks sampled as representative of the Premises.

4.2 Infrastructure

No dedicated Infrastructure is required. The WABM require biosolids to be stored on a slope ≤3% and each paddock storage area complies with this requirement. The indicative storage area for biosolids at the Premises paddock (red X mark) J4 is provided below in Figure 2 as an example.

5. Legislative context

5.1 Contaminated sites

The Premises appears to have no current classification status under the CS Act.

5.2 Other relevant approvals

5.2.1 Planning approvals

Shire of Victoria Plains submitted an email to DWER dated 17 December 2018 advising that the Applicant does not require approval for the proposal to apply Biosolids to land and that the Shire has no objections.

5.2.2 Department of Health

Department of Health approval has been provided to the Applicant in a letter dated 18 January 2019; refer to Attachment 2 for a copy. It is noted that the DoH approval is only for paddocks J4, J9 and J10 and each subsequent paddock requires subsequent approval from DoH.

5.3 Part V of the EP Act

5.3.1 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: Publication of Annual Audit Compliance Reports (May 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

5.3.2 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
L9179/2018/1	14/03/2019	New Licence

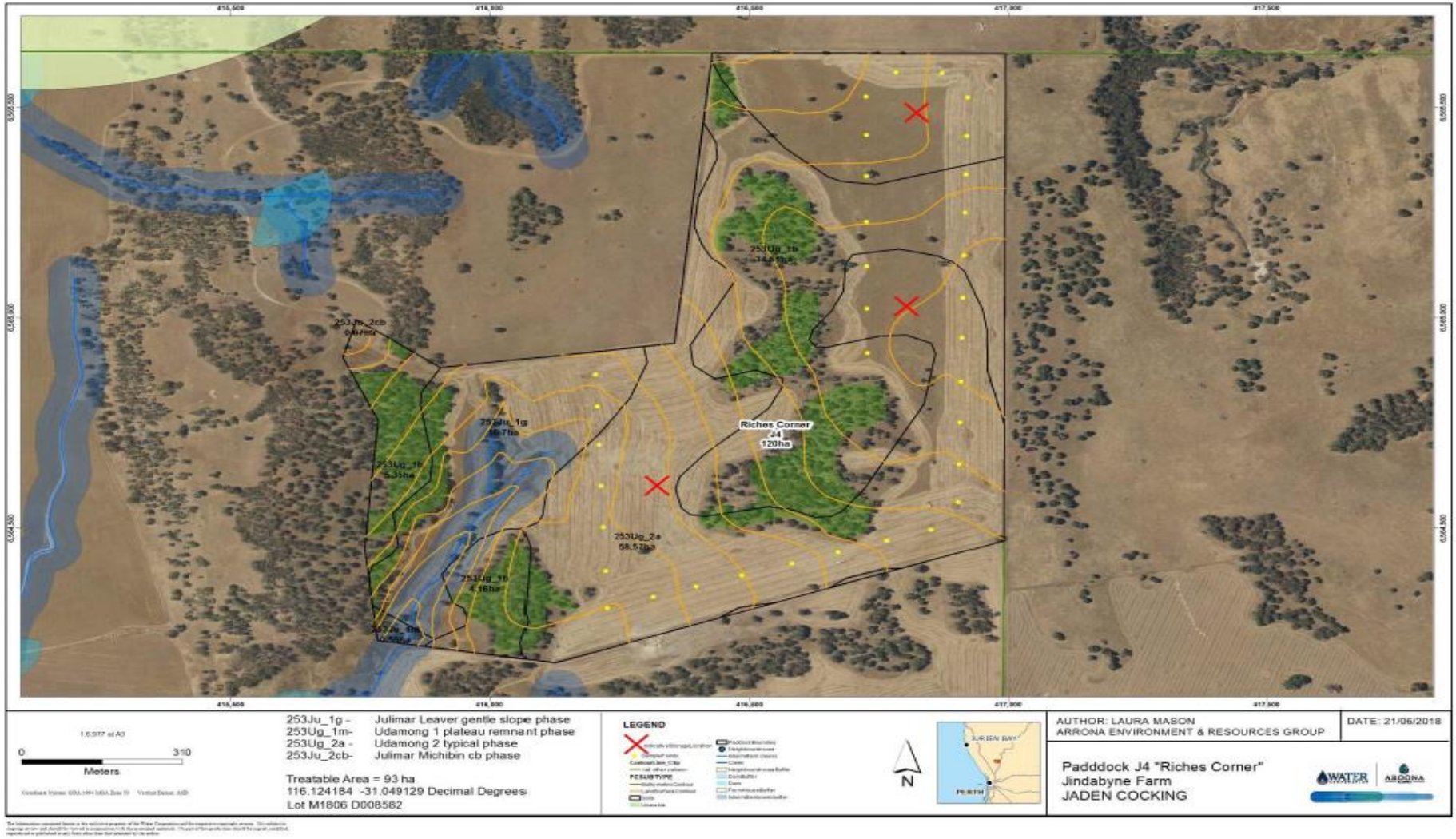


Figure 2 Paddock J4 Biosolids indicative storage area (X mark)

6. Modelling and monitoring data

6.1 Monitoring of soils

Section 5.1.1 of the WABM requires an assessment of existing metal concentrations in soil prior to the application of all grades of biosolids, except for unrestricted biosolids, is required to enable and biosolids application will not exceed acceptable contaminant levels in the soil. The total contaminants from the combined soil and applied biosolids should not exceed the MASSAC as listed in Table 6.

Table 6 MASSAC

Contaminant	**MASSC (mg/kg)[1]**
Cadmium	1
Chromium (VI)	1
Copper	100
Zinc	200

[1] MASSC are measured in mg/kg dry weight of soil and are mean concentration values

The three paddocks J4, J9 and J10 were sampled to provide a Premises representative analysis of the soils for all 26 paddocks at the Premises. Samples analysis was undertaken by SGS which is a NATA accredited laboratory. The results are provided in Table 7 below.

Table 7 Soil analysis

Analyte	**Units**	**Reporting limit**	**Paddock**		
			J4	J9	J10
% moisture	%w/w	0	5.7	8.2	6.1
pH (CaCl2)	pH units	0	5.7	5.2	5.4
Phosphorus	mg/kg	10	110	180	190
Arsenic	mg/kg	1	<1	<1	<1
Cadmium	mg/kg	0.3	<0.3	<0.3	<0.3
Copper	mg/kg	0.5	1.1	1.7	1.7
Lead	mg/kg	1	7	10	5
Nickel	mg/kg	0.5	2.5	3.3	1.8
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05
Hexavalent Chromium	mg/kg	0.5	0.6	0.5	<0.5

PRI (1:20)	mL/g	1	24	16	19
Phosphorus (Colwell)	mg/kg	1	21	26	44
Cation Exchange Capacity	Meq/100g	0.01	6.8	4.5	5.8
Reactive Iron	mg/kg	1	500	460	680
Clay (0.002mm)	%w/w	0.1	1	1	2
Organic Matter	%w/w	0.1	4.2	4.1	4.6
Bulk density	Kg/L	0.1	1.7	1.7	1.5

6.2 Monitoring of Biosolids

Biosolids chemical data is provided in Table 8 below.

Table 8 Biosolids chemical data

Analyte	**Biosolids type (WWTP)**		
	Woodman Point	**Beenyup**	**Subiaco**
pH	8.13	7.9	12.35
pH (3 hour)	N/A	N/A	12.4
Lime equivalence (%)	N/A	N/A	16.25
e. coli (cfu)	1,666,307	1,145,714	0.5
Total Solids (%)	14.92	18.54	27.5
Total Kjeldahl Nitrogen (mg/kg)	68500	68917	48667
Ammonia N (mg/kg)	8375	6592	1730
Oxidized Nitrogen (mg/kg)	2.98	1.8	7.15
Total Phosphorus (mg/kg)	25250	27083	12083
Arsenic (mg/kg)	5	7	4
Cadmium (mg/kg)	1.65	1.16	0.72
Chromium (mg/kg)	<0.5	<0.5	<0.5
Lead (mg/kg)	25	21	8
Mercury (mg/kg)	1.7	1.3	0.65

Nickel (mg/kg)	40	22	8
Copper (mg/kg)	362	610	422
Zinc (mg/kg)	954	840	342
Chlordane (mg/kg)	<0.02	<0.02	<0.02
Dieldrin (mg/kg)	0.25	<0.02	<0.02

7. Consultation

The Application was advertised on 12 December 2018 seeking any public comment. No comments were received.

The Shire of Victoria Plains was notified of the Application by DWER on 11 December 2018 and requested to make comment. Comments were received 17 December 2018. Refer to Attachment 1 for Shire comments. Specific matters of concern are outlined below:

- *The Shire would appreciate prior notification of all deliveries to the land and the location of any stockpiling so it can monitor the suitably and effectiveness of the management regimes to be put in place. A copy of any annual reporting of the proposed activity on the land would also be appreciated.*

The Department of Health was notified of the Application by DWER on 11 December 2018 and was requested to make comment. Comments were received on 16 January; refer to Attachment 3 for the full letter. Specific matters of concern are outlined below:

- *A map of Jindabyne Farm with the delineation of the 26 paddocks should be included in the Review of Environmental Factors (REF).*
- *Paddock where the stock bore is located should also be included in the REF.*
- *Only three (J4, J9 and J10) paddocks were sampled for the submitted REF. The DoH is of the view that the sample conducted is insufficient to represent the suitability of the Jindabyne Farm for biosolids land application. However, the applicant will submit simplified REF for each paddock biosolids application to the DoH for separate assessment and approval.*
- *A 1km minimum buffer is recommended for the north western corner of the farm to minimise any potential impacts to the Moore River.*

The Department of Primary Industries and Regional Development was notified of the Application by DWER on 11 December 2018 and requested to make comment. DPIRD provided comments on the Application as requested by DWER in a letter dated 17 December 2018. The letter is provided as Attachment 4 but the matters of concern are raised below:

- *Page 10 of the PER incorrectly identifies slope erosion potential. The Biosolids guidelines actually refers to slopes of* ***>6-12%****, not 12% as being "****suitable*** *if soil conservation practices are used". Slopes of >12-15% are typically unsuitable and slopes of >15% are unsuitable. The risks of soil erosion increase when slopes of 3% are cultivated and greatly increases when slopes exceed 6%. There are no conservation*

earthworks in place on Jindabyne Farm, and the statement that "in area with higher risk of erosion contouring will ensure erosion does not occur" does not adequately:

- *Define the location of the higher risk areas (slopes >6%); and*
- *Describe the conservation and/or management practices that will be used to mitigate the erosion risk.*

- *DPIRD requests that arable land with slopes >6% are identified on the three paddock maps for Jindabyne Farm and these areas are **excluded** from biosolids application. In addition, the application and incorporation of biosolids on slopes of 6% or less, should be on contour and not up and down slope.*
- *Another concern is the lack of information about the risk of summer storm events. The environmental plan requires more detail about the timing of biosolids applications, particularly to avoid applying biosolids before summer storm events.*
- *DPIRD requests dam buffers are revised to ensure the 100m buffer for each dam is upslope of the dam and contained within the catchment of each dam.*

8. Location and siting

8.1 Siting context

The Premises is located at Lot 1806, Lot 6 and Lot 7 Cocking Road Mogumber.

8.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 9.

Table 9: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Residential Premises	500m south 1100m south 1350 east 1000m east 1700m south east 850m west 2100m west

8.3 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 10. Table 10 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 10: Environmental values

Specified ecosystems	**Distance from the Premises**
Biological component	**Distance from the Premises**
Threatened/Priority Flora	Within Premises at top of northern (central) boundary – *Darwinia carnea*

8.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 11.

Table 11: Groundwater and water sources

Groundwater and water sources	**Distance from Premises**	**Environmental value**
Minor watercourses / Dams	The Premises has several intermittent creeks, one perennial creek and multiple dams throughout the Premises.	Stock/freshwater ecosystem/aesthetic
Groundwater	Depth to groundwater unknown. No bores located within 1km of the Premises (based on available GIS dataset –WIN Groundwater Sites).	N/A.

8.5 Soil type

DWER's GIS identifies the soil class as Tf3 - Low hilly to hilly terrain that occupies a zone flanking unit JZ2. It comprises valleys that are frequently narrow and have short fairly steep pediments, along with breakaways, mesas, and occasional granite tors. Included also are undulating areas representing elements of unit JZ2: chief soils are hard acidic yellow mottled soils (Dy3.81) along with sandy acidic yellow mottled soils (Dy5.41) and (Dy5.81), all of which contain moderate to large amounts of ironstone gravels in their surface horizons. Ironstone gravels (KS-Uc4.2) occur on the ridge crests and on the fine gravel deposits of the gently undulating parts of the unit, along with leached sands (Uc2.21). Occurs on sheet(s): 5.

Soil analyses as required under the WABM are provided in Table 6 above.

8.6 Meteorology

The respective annual 9am and 3pm wind roses for Gingin, located approximately 40km south from the Premises is represented in Figure 5 and 6 below.

8.6.1 Wind direction and strength

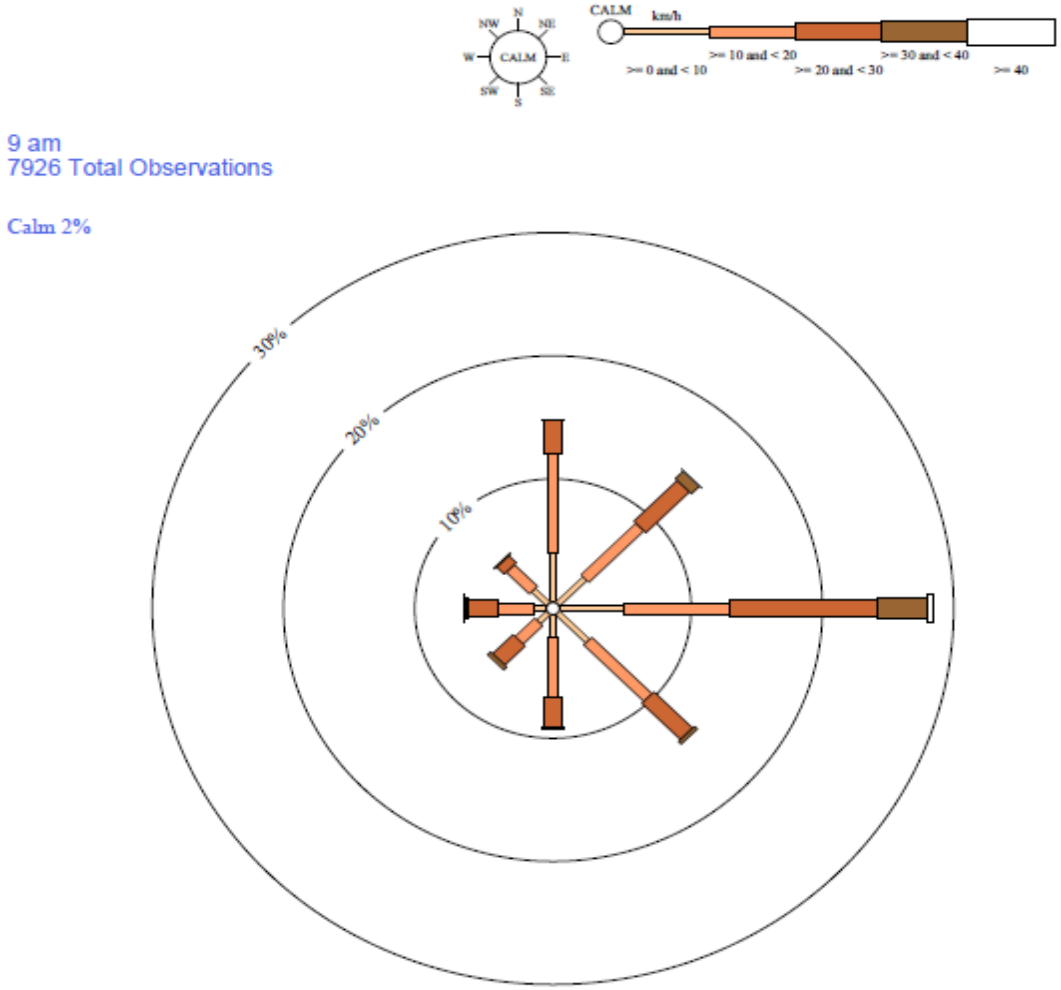
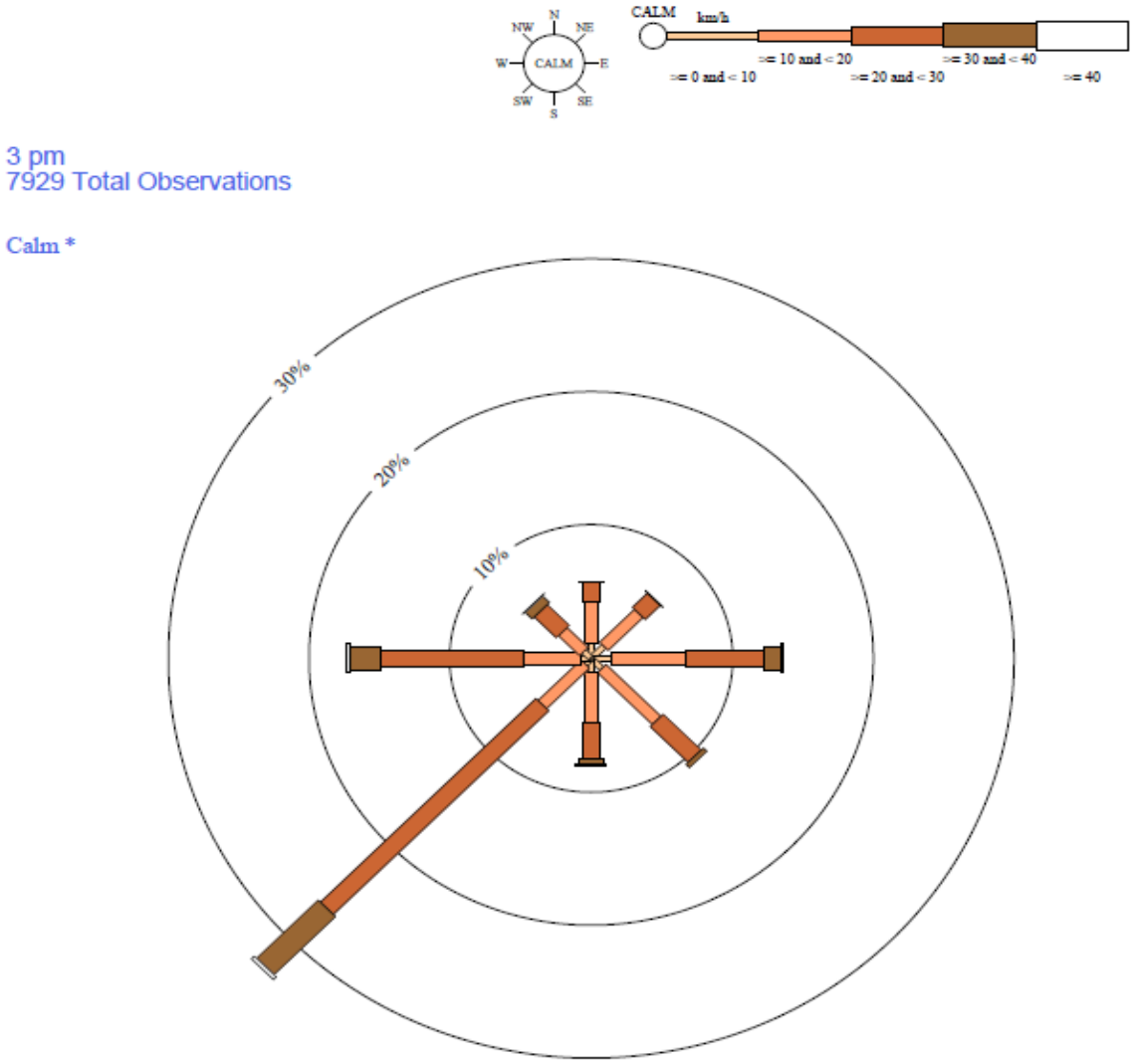


Figure 5 9am Wind rose



"It is important to note that these wind roses show historical wind speed and wind direction data for Gingin weather station and should not be used to predict future data"

Figure 6 3pm Wind rose

9. Risk assessment

9.1 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 12.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Tables 12 below.

Table 12: 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		
Biosolids	Storage and handling of Biosolids; Application of Biosolids to pasture	Dust from movement of heavy vehicles and Farm machinery	Residential premises: 500m south	Air / wind dispersion	Health and amenity impacts - Potential suppression of photosynthetic and respiratory functions	No	The use of the Tractor and harrow is a normal agricultural activity and proposed usage is not significantly above normal farming practice as fertilizer application is a standard farm practice. The increased biosolids Tanker movements will not generate significant dust as speed will be restricted within the Premises. A 1000m odour buffer to sensitive receptors employed at the Premises will also mitigate dust. The Delegated Officer has considered the separation distance between the source and receptors as a guide to

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
							inform the risk of dust emissions as not foreseeable. Dust can be adequately regulated by section 49 of the EP Act.
		Noise from movement of heavy vehicles and Farm machinery	Residential premises: 500 south	Air / wind dispersion	Amenity impacts causing nuisance	No	The use of the Tractor and harrow is a normal agricultural activity and proposed usage is not significantly above normal farming practice as fertilizer application is a standard farm practice. The increased biosolids Tanker movements will not generate significant noise as speed will be heavily restricted within the Premises. A 1000m odour buffer to sensitive receptors employed at the Premises will also mitigate noise. The Delegated Officer has considered the separation distance between the source and receptors as a guide to inform the risk of noise emissions as not foreseeable. Noise can be adequately regulated by the EP Noise Regs.
		Odour	Residential premises: 500m south	Air / wind dispersion	Amenity impacts causing nuisance	No	Biosolids will be applied directly to land evenly and up to a depth of 75mm within 36 hours of application. The annual 9am wind rose is east and the closest receptor west of the Premises is 850m west from the Premises boundary. The annual 3pm wind rose is south west and there is no receptor

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
							directly north east of the Premises; the closest receptor is 1000m east from the Premises boundary and not in direct prevailing wind direction. The Applicant will maintain a 1000m buffer for odour at all times when applying biosolids at the Premises. Biosolids will not be applied all year; they will only be applied during one three month quarter only. LAB will only be transported in sealed metal silos and Biosolids Cake will be transported with trailers with hydraulic lids which will reduce odour potential. The Delegated Officer considers the separation distance between the source and receptors as adequate to inform the risk of odour emissions as not foreseeable. Odour can be adequately regulated by section 49 of the EP Act.
		Leachate	Groundwater; Surrounding vegetation	Direct discharge of leachate to land – migration into groundwater	Impacts to groundwater agricultural uses; impacts to groundwater dependent vegetationl	Yes	See section 9.4

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
		Contaminated runoff to surface water	Minor water courses, drainage lines and dames throughout the premises	Direct discharge to surface water	Surface water contamination; disruption of ecosystems and riparian vegetation	Yes	See section 9.5

9.2 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 13 below.

Table 13: 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 14 below.

Table 14: 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.

9.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 15 below:

Table 15: 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.

9.4 Risk Assessment – Leachate

9.4.1 Description of Leachate

Biosolids Cake and LAB will be stored at the Premises for up to 30 days prior to application to land at 75mm depth within 36 hours of application. The Premises has a total biosolids treatable area of 1057 hectares. As the biosolids break down they will release contaminants and chemicals into the soil. These contaminants, chemicals and nutrients, namely N and P, may leach and move through the soil, contaminating the environment or entering the food chain.

9.4.2 Identification and general characterisation of emission

Biosolids Cake and LAB will be stored at the Premises for up to 30 days prior to application to land at 75mm depth within 36 hours of application. The Premises has a total biosolids treatable area of 1057 hectares allowing for all buffers consistent with the requirements of the WABM. Therefore the Applicant has the potential to apply biosolids to this total area. Based on the Application data the Applicant is proposing to discharge approximately 57,078 wet tonnes total of Cake or 73,990 wet tonnes total of LAB per annual period. Table 8 provides the chemical analysis of the biosolids. These contaminants, chemicals and nutrients, namely N and P may leach and move through the soil, contaminating the environment or entering the food chain. The Applicant has advised in the Application that application of biosolids to land will not occur all year but instead once a year over a three month duration. Biosolids will not be applied in wet weather or when heavy rain is forecast.

9.4.3 Description of potential adverse impact from the emission

Due to the diverse sources of wastewater, biosolids may contain chemical contaminates, nutrients, pharmaceuticals (human and veterinary) and metals and pesticides from domestic and industrial sources.

Biosolids will be applied to land up to a depth of 75mm within the soil. As the biosolids decompose leachate containing contaminants and chemicals as listed in Table 8 and nutrients such as N and P will be discharged into the soil and may penetrate into the soil at depths greater than 75mm if not consumed by Crop. Contamination of the soil can lead to adverse effects on public health, animal health and the environment. Biosolids will be applied to pasture that is Wheat and Canola, and thus will enter the food chain, as these foods are widely used in human consumption and the greater food industry. Biosolids contain pathogens and if released into the environment may adversely affect human health and amenity. Application of biosolids to pasture (Wheat and Canola) should not exceed crop nutrient requirements.

9.4.4 Criteria for assessment

Relevant land quality criteria include:

- Western Australian guidelines for biosolids management, December 2012.

9.4.5 Applicant controls

The Applicant has drafted a REF consistent with the requirements of the WABM.

Biosolids application rates are calculated to meet the nutrient demand for the proposed crop without providing excess nutrients or other contaminants that may otherwise be leached into the soil. The quantity of biosolids applied per hectare that can be applied to land is restricted by the NLBAR, CLBAR and PLBAR. The maximum biosolids application rate will be determined by the lower of the CLBAR and the NLBAR. The NLBAR and PLBAR are the rates at which biosolids can be applied without exceeding the annual nutrient requirements of the crop on the land. The CLBAR is the rate at which biosolids can be applied without exceeding the maximum allowable concentration of contaminants in the soil.

All data calculations within this section must comply with requirements of Appendix 3 of the WABM and all biosolids at the Premises are classed as P3 Pathogen grade, C2 Contaminant Grade. The Application is for biosolids to Wheat and Canola crops. Table A16 in Appendix 8 of the WABM provides (indicative guide only) N and P requirements for Wheat crops as 80 (kg/ha) and 9 (kg/ha) respectively, and Canola crops as 125 (kg/ha) and 12 (kg/ha) respectively. All data is only submitted for the three paddocks J4, J9 and J10 which represents data for the Premises under this Licence Application. Calculations are required for each subsequent paddock that biosolids are applied to.

The data provided for the CLBAR calculations are based on the REF submitted with the Application. Appendix 3 of the REF outlines these calculations.

The respective CLBAR for Cake and LAB are provided in Table 16 and 17 respectively.

Table 16 CLBAR for Cake (dry Tonne/ha)

Contaminant	J4 Paddock	J9 Paddock	J9 Paddock
Cadmium	281	242	243
Chromium VI	1234	2313	2381

Coper	319	214	250
Zinc	66	37	44

Table 17 CLBAR for LAB (dry Tonne/ha)

Contaminant	J4 Paddock	J9 Paddock	J9 Paddock
Cadmium	326	281	282
Chromium VI	742	1391	1432
Coper	201	135	157
Zinc	105	59	70

Zinc is the limiting contaminant for Cake and LAB. As N is the limiting factor for both Cake and LAB the contaminant limit cannot be exceeded; refer to Table 20 below.

An analysis of soil contaminants from Paddocks J4, J9 and J10 (Table 7 above) against MPSCC (derived from Table A2 in Appendix 3 of the WABM) is provided in Table 18.

Table 18 Soil MPSCC (mg/kg)

Contaminant	MPSCC	J4 Paddock	J9 Paddock	J10 Paddock
Arsenic	20	<1	<1	<1
Lead	200	7	10	5
Mercury	1	<0.05	<0.05	<0.05
Nickel	60	2.5	3.3	1.8

Table 19 provides the Phosphorus ranking for the three paddocks.

Table 19 Phosphorus ranking

	J4 Paddock	J9 Paddock	J10 Paddock
Phosphorus Retention Index	24	16	19
Colwell P (mg/kg)	21	26	44
Agronomic demand for P	Moderate	Low	Low
Reactive Iron	500	460	680
Category	2	3	3
Risk of P leaching	Low	Low	Low

As the risk of P leaching is Low, the PLBAR is not applicable under the WABM; so it is not calculated. The NLBAR values for the intended crop is provided in Table 20.

Table 20 NLBAR

Type	Canola	Wheat[#]
Cake	9	9
LAB	19	22

assuming a yield aim of 5 tonne/ha

As the NLBAR is lower than the CLBAR and the PLBAR is not applicable, Cake biosolids will be applied to the paddocks at the NLBAR rate of 9 dry tonne/ha and LAB will be applied at 19 dry tonne/ha. Biosolids application may vary slightly due to expected changes in WWTP performance however this is not expected to be significant with historical rates ranging between 8-9 dry tonne/ha for Cake and 19-21 dry tonne/ha LAB. The areas to be covered with Cake biosolids or LAB and approximate wet weights to be applied are shown in Table 21 for paddocks J4, J9 and J10 noting these paddocks are representative of applications for all paddocks at the Premises.

Table 21 Paddock applications

	Paddock J4		Paddock J9		Paddock J10	
	Cake	**LAB**	**Cake**	**LAB**	**Cake**	**LAB**
Dry tonne/ha	9	19	9	19	9	19
Approx wet tonne/ha	54	70	54	70	54	70
Application area (ha)	119		141		101	
Approx wet tonne total	6462	8298	7656	9832	5484	7043

Table 22 provides the maximum application rate for the Premises noting the Premises has a total potential treatable area of 1057 hectares.

Table 22 Premises maximum application rate.

	Jindabyne Farm Premises	
	Cake biosolids	**LAB**
Dry tonne/ha	9	19
Approx wet tonne/ha	54	70
Application area (ha)	1057 (total for Premises)	
Approx wet tonne total	57, 078	73,990

The Applicant has advised additional control measures:

- The Applicant advises in the Application that presently Water Corporation produces approximately 111,800 tonnes of biosolids annually. There are five existing farms that receive biosolids in the Biosolids application program with biosolids application rotated every three months between farms. Therefore the maximum application rate at the Premises as shown in Table 22 is not expected to be reached in an annual period but

will be a contingency in the event biosolids cannot be delivered to the alternate farms during an allocation period.

- The Applicant is also proposing to conduct reapplication checks which are to be conducted prior to reapplication of biosolids for each paddock to ensure soil contamination has not occurred as a result of previous biosolids application. This will prevent unacceptable build-up of contaminants in the soil profile.
- The Phosphorus retention index of the soil is calculated for each paddock prior to application.

9.4.6 Key findings

The Delegated Officer has reviewed the information regarding Leachate into soil and has found:

1. *The Application only provides data for three of the 23 paddocks suitable for biosolids application; paddocks J4, J9 and J10. No other paddock specific data has been submitted for the remaining 20 paddocks.*
2. *Based on a Premises application area of 1057ha it is anticipated that 57,078 wet tonnes of Cake biosolids and 73,990 wet tonnes of LAB can be applied to land. This is based on data from sample and analysis from paddocks J4, J9 and J10 only.*
3. *Application rates have been calculated from representative soil and biosolids samples and analysis. The calculations show Zinc to be the limiting contaminant however the application rate is N limited, thus leaching of contaminants and nutrients are not expected to occur.*
4. *Reapplication checks are to be conducted prior to reapplication of biosolids for each paddock to ensure soil contamination has not occurred as a result of previous biosolids application. This will prevent unacceptable build-up of contaminants in the soil profile.*
5. *The Phosphorus retention index of the soil is calculated for each paddock prior to application and based on the calculations the Premises has a low risk of phosphorus leaching due to the high Iron content in the soil.*
6. *The maximum application rate at the Premises, as shown in Table 22, is not expected to be reached in an annual period but will be a contingency in the event biosolids cannot be delivered to the alternate farms during an allocation period.*
7. *Biosolids storage will be restricted for seven (7) days during October – May and a maximum of 30 days outside this timeframe prior to application to land.*
8. *Biosolids will be stored on a flat stockpile area with a slope gradient ≤3%.*
9. *All buffer distances as required in the WABM will be adhered to at the Premises.*
10. *Biosolids will be spread evenly and incorporated into the soil at approximately 75mm depth to land and within 36 hours of application to land.*
11. *Approval is required from DoH prior to application of biosolids to land at the Premises. DoH have currently approved application of biosolids only to paddocks J4, J9 and J10; subsequent application to additional paddocks at the Premises require additional DoH approval. Approval will require the Applicant to submit a REF to ensure application is suitable.*

12. *DPIRD advice is that soil conservation earthworks suitable to allow the application of biosolids to slopes >6% - <12% have not been undertaken.*
13. *Biosolids will not be applied to land pending or during inclement weather.*
14. *Data will be collected for all Biosolids application programs (log books to record quantity/quality, application rates, locations and depth of incorporation into soil) and subsequent REF will be required for each additional paddock application.*

9.4.7 Consequence

If impacts from leachate occurs, then the Delegated Officer has determined that the impact will be low level on-site impacts, minimal off-site impacts local scale and not detectable off-site wider scale impacts. Therefore, the Delegated Officer considers the consequence of leaching to be **Minor**.

9.4.8 Likelihood of Risk Event

The Delegated Officer has determined that impacts from leaching could occur at some time. Therefore, the Delegated Officer considers the likelihood of leaching to be **Possible**.

9.4.9 Overall rating of Leachate

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 impacts from leaching is **Medium.**

9.5 Risk Assessment – Contaminated runoff

9.5.1 Description of Contaminated runoff

The Applicant is proposing to apply Biosolids to pasture at the Premises by direct application to land as a fertilizer replacement for grain crops including Canola and Wheat. Biosolids application will incorporate the biosolids being evenly spread and incorporated into the soil at approximately 75mm depth into land within 36 hours of application. Section 5.5 and Table 12 of the WABM stipulates slope grade requirements and suitability of applying biosolids when tilling biosolids into the soil. Table 12 of the WABM is provided below. As indicated in this Table if biosolids is applied to land at slopes >3% there is a risk of surface runoff which increases as the slope increase.

As per the Application and DPIRD advice (refer to Attachment 4) the Applicant may wish to apply to slopes >6 -12% without the 'soil conservation measures' required by the WABM. Given the Premises has many ephemeral drainage lines if biosolids are applied on slopes >6% then contaminated runoff could discharge into surface waters. The Applicant has confirmed in their comments on the draft decision report and licence that biosolids will not be applied to land with a slope >6%.

Table 12: **Slope limitations**

Slope gradient (%)	Slope gradient (ratio)	Comments
0–3%	<1:33	Ideal – no concern for run-off or erosion
>3–6%	1:33–1:16	Suitable – slight risk of erosion
>6–12%	1:16–1:8	Suitable if soil conservation practices are used to minimise erosion (for example, contour banking)
>12–15%	1:8–1:7	Typically unsuitable unless the site is maintained with at least 80% vegetative ground cover or engineered drainage controls
>15%	>1:7	Unsuitable

9.5.2 Identification and general characterisation of emission

Biosolids Cake and LAB will be applied to land at 75mm depth within 36 hours of application. Therefore the Applicant has the potential to apply biosolids to this total area. Based on the Application data the Applicant is proposing to discharge approximately 57,078 wet tonnes total of Cake or 73,990 wet tonnes total of LAB per annual period. Table 8 provides the chemical analysis of the biosolids. These contaminants, chemicals and nutrients, namely N and P may move via surface runoff and contaminate the surface water environment. The Applicant has advised in the Application that application of biosolids to land will occur once a year over a three month duration.

9.5.3 Description of potential adverse impact from the emission

Due to the diverse sources of wastewater, biosolids may contain chemical contaminates, nutrients, pharmaceuticals (human and veterinary) and metals and pesticides from domestic and industrial sources.

These contaminants and chemicals as listed in Table 8 and nutrients such as N and P will be discharged into surface waters. Contamination of surface waters can lead to adverse effects on public health, animal health and the environment. Biosolids contain pathogens and if released into the environment may adversely affect human health and amenity.

9.5.4 Criteria for assessment

Relevant land and surface water quality criteria include:

- National Environment Protection (Assessment of Site Contamination) Measure 1999;
- ANZECC & ARMCANZ (2000) – freshwater and marine waters criteria; and
- DoH 2011 – non-potable groundwater use.

9.5.5 Applicant controls

The Applicant has provided the following statement in regards to controls to mitigate contaminated runoff on slopes "*in the areas with higher risk of erosion contouring will ensure erosion does not occur*'. It is noted there are no further details provided in the Application including maps of each paddock and identification of applicable slopes >6% nor any soil conservation earthworks (the Application Appendix 1 Maps paddock contour lines do not identify slope angles >6%).

DPIRD advice (Attachment 4) indicates this statement is not adequate as it does not define the location of the higher risk areas (slopes >6%) and describe the conservation and/or management practices that will be used to mitigate the erosion risk. DPIRDs desk top assessment of the premises indicates there are areas within paddocks that have slopes >6% and these are located close to drainage lines and were not included in the field assessment and soil sampling sites. DPIRD have advised that there are no conservation earthworks in place at Jindabyne Farm and that arable land areas >6% slope should be excluded from biosolids application. In addition, DPIRD have advised application and incorporation of biosolids on slopes <6% should be on the contour and not up and down the slope.

9.5.6 Key findings

The Delegated Officer has reviewed the information regarding Contaminated runoff and has found:

1. *Only limited information on contaminated runoff has been submitted in the Application with no identification of slopes >6% nor proposed erosion control infrastructure. Controls for stormwater runoff and surface flow only include a discussion about maintaining buffer distances.*
2. *DPIRD have advised there is no conservation earthworks at the Premises.*
3. *The application of biosolids is not suitable for slopes >6% without appropriate soil conservation earthworks.*

9.5.7 Consequence

If impacts from contaminated runoff occur, then the Delegated Officer has determined that the impact of contaminated runoff will be mid-level on site impacts and minimal off-site impacts local scale. Therefore, the Delegated Officer considers the consequence of contaminated runoff to be **Moderate.**

9.5.8 Likelihood of Risk Event

The Delegated Officer has determined that impacts from contaminated runoff will occur at some time. Therefore, the Delegated Officer considers impacts from contaminated runoff to be **Possible.**

9.5.9 Overall rating of contaminated 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 impacts from contaminated runoff is **Medium**.

9.6 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 23 below. Controls are described further in section 11.

Table 4: Risk assessment summary

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
1.	Leachate	Biosolids storage and application to land	Direct soil contamination, contamination and migration via groundwater, impacts to vegetation and agricultural uses of groundwater	Infrastructure and management controls.	Minor consequence Unlikely **Medium risk**	Acceptable subject to proponent controls conditioned / outcomes based controls
2.	Contaminated runoff	Biosolids application to land	Direct discharge to surface water; eutrophication disruption to aquatic ecosystems	Infrastructure and management controls.	Moderate consequence Possible **Medium risk**	Acceptable subject to proponent controls conditioned / outcomes based controls

10. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 24. The risks are set out in the assessment in section 10 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 24: Summary of regulatory controls to be applied

		Controls (references are to sections below, setting out details of controls)		
		10.1.1 Premises operation	10.1.2 Monitoring	10.1.3 Reports
Risk Items (see risk analysis in section 9)	1. seepage of leachate	●	●	●
	2. Contaminated runoff	●	●	●

10.1 Licence controls

Licence controls have taken into account Stakeholder comments. These are outlined below.

10.1.1 Premises operation

Condition 2 of the issued Licence allows biosolids cake and LAB to be accepted at the Premises with a maximum limit of 73.990 tonnes per annual period. Only biosolids from Water Corporation wastewater treatment plants can be accepted. Biosolids can only be used within the Premises.

Condition 3 of the issued Licence provides the biosolids process requirements for both

storage and application to land.

Condition 4 of the issued Licence requires the Licence Holder to maintain a log book and record various details about quality/quantity, application rates and locations of biosolids application at the Premises.

Condition 5 of the issued Licence requires a REF for all other applications of biosolids to land to the additional paddocks 20 paddocks at the Premises (only data for paddocks J4, J9 and J10 has been submitted as part of the Application).

10.1.2 Monitoring

Condition 6 of the issued Licence requires the Licence Holder to undertake monitoring of waste inputs and outputs (if any waste is rejected).

10.1.3 Reports

Condition 10 of the issued Licence requires the Licence Holder to provide an annual complaints summary and verify details on the applied biosolids application rates in accordance with the submitted REF.

11. Determination of Licence conditions

The conditions in the issued Licence have been determined in accordance with the *Guidance Statement: Setting Conditions*.

The *Guidance Statement: Licence Duration* has been applied and the issued licence expires in 20 years from date of issue.

Table 25 provides a summary of the conditions to be applied to this Licence.

Table 25: Summary of conditions to be applied

Condition Ref	Grounds
Premises Operation 2, 3, 4 and 5	These conditions are valid, risk-based and contain appropriate controls.
Monitoring 6	These conditions are valid, risk-based and consistent with the EP Act.
Information 7, 8, 9, 10 and 11	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 Licence under the EP Act.

12. Applicant's comments

The Applicant was provided with the draft Decision Report and draft issued Licence on 22 February 2019. The Applicant provided comment on 15 March 2019 as detailed below.

Item	Aspect	Summary of Licence Holder comment	DWER response
Licence comments			
Table 1 Definitions	Annual period	Annual period to align with reporting period for other biosolids licenses (1 July to 1 June)	Agreed and updated
Table 2: Authorised Emissions table	Discharge to Land – application of biosolids to 'pasture'	Biosolids are also applied to grow crops, not only pasture. Applied to soil prior to growing anything. Amend text to read 'Discharge to Land – application of biosolids as a soil ameliorant'	Agreed and updated
	Process – Land Application – (i) biosolids are not to be applied in the north western corner of the Premises within 1km of the Moore River;	DPIRD request to exclude land with slope >6% will manage any runoff risks associated with stormwater runoff or erosion. 1km buffer on Moore River is considered highly conservative, unnecessary and does not align with the Biosolids Guidelines. Water Corporation are liaising with DoH regarding this recommendation from DoH. Align with Table 11 of Biosolids Guidelines (100m) and remove the condition altogether.	Agreed – requirement removed
Table 4: Waste processing	Process – Land Application – (ii) biosolids are not to be applied within 1km of any occupied residences offsite of the Premises	Biosolids Guidelines allow for a reduced buffer by agreement in writing between Premise owner and neighbour (Table 11, Footnote 21). Confirm that the intention of Table 4 Footnote 1 in the Draft Licence will enable this option in the condition. Agreements may be reached between Premise Owner and neighbour in coming years.	The Delegated Officer considers that a requirement to obtain future approval/agreement from a third party within a condition would constitute a 'secondary approval' which is not able to be included as per DWER's Regulatory Framework. Should such an agreement be obtained, a reduced buffer can be approved via Licence amendment.
Table 5: Monitoring inputs and outputs Contaminant/ Pathogen grade classification	Sampling monthly or 12 times per year	Contaminant grading sampling frequency is variable per wastewater treatment plant as per Appendix 5 of the Biosolids Guidelines. Remove this condition or refer to frequency as per Appendix 5 of the Guidelines.	Agreed – requirement removed
Conditions 9 and 10	Report submission dates	31 day submission period following end of annual period requested consistent with other biosolids licenses.	Agreed and updated
General	Spelling, grammar and minor factual errors	Errors noted within the document.	Noted and updated.

Item	Aspect	Summary of Licence Holder comment	DWER response
Decision Report	Various comments	'No outstanding issues to delay publication of licence.'	Comments noted

13. 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 Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Digitally signed by
Steve Checker
Date: 2019.03.18
16:46:00 +08'00'

Stephen Checker
MANAGER WASTE INDUSTRIES
Delegated Officer
under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Review of Environmental Factors Jindabyne farm, Water Corporation *PM-#19600185-v2*	Application	accessed at www.der.wa.gov.au
2.	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
3.	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	DER 2015b	
4.	DER, August 2016. *Guidance Statement: Licence duration.* Department of Environment Regulation, Perth.	DER 2016a	
5.	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DER 2016b	
6.	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.	DER 2016c	

Attachment 1: Shire of Victoria Downs Comment

ATTENTION: MR STEPHEN CHECKER – MANAGER WASTE INDUSTRIES

Dear Mr Checker,

I act on behalf of the Shire of Victoria Plain in my capacity as the Shire's newly appointed town planning consultant and refer to your correspondence to the Shire dated 10 December 2018 inviting feedback / comment regarding the issuance of a licence under Division 3, Part V of the *Environmental Protection Act 1986* for a Category 61A solid waste facility on Lots 6, 7 & 1806 Cocking Road, Mogumber (i.e. Jindabyne Farm).

I write to advise the Shire of Victoria Plains has no objections to the proposal and that it **does not require** Council's development approval under the Shire of Victoria Plains Local Planning Scheme No.5 as it will form part of the current 'extensive agricultural' use of the land and does not involve any building construction works. As such it is classed as forming part of a permitted use under the land's current 'Rural' zoning classification without the need to seek and obtain Council's development approval.

Notwithstanding the permissibility of the proposed activity, the Shire expects it will be undertaken in accordance with all regulatory requirements to minimise the potential for any negative impacts on the amenity of the locality and land's environmental features and values with suitable buffers maintained to any nearby sensitive land uses, permanent and intermittent surface watercourses, dams and stock enclosures. In addition it is expected all heavy vehicles attending the site will be suitably covered to avoid any loss of biosolids or any potential dust emissions and that all delivery vehicles are suitably cleaned before leaving the subject land to ensure no biosolids are transferred onto the Shire's local road network given the potential health risks.

The Shire would appreciate prior notification of all deliveries to the land and the location of any stockpiling so it can monitor the suitably and effectiveness of the management regimes to be put in place. A copy of any annual reporting of the proposed activity on the land would also be appreciated.

If you have any queries or require any additional information please do not hesitate to contact me.

Kind regards,

Joe Douglas

Director / Principal Town Planner

Attachment 2: DoH Approval to Applicant

Government of **Western Australia**
Department of **Health**

Your Ref: PM#19543323
Our Ref: F-AA-02949
Job No 18604
Enquiries: Natalia Shishkina (9388 4938)

Mr Jaden Cocking
Jindabyne Farm Pty Ltd
PO Box 30
MOGUMBER 6506

Dear Mr Cocking,

BIOSOLIDS USE AT JINDABYNE FARM – J4, J9 AND J10 PADDOCKS

I refer to the Aroona Alliance/Water Corporation application on your behalf to use 'P3C2' grade compliant lime amended biosolids (LAB) from either the Subiaco Wastewater Treatment Plant and/or Woodman Point or Beenyup WWTP biosolids 'cake' to the above mentioned paddocks located in the Jindabyne farm, Lot 1806, 7 and 6, Cocking Road, Mogumber as detailed below.

Paddock	Ha	Cake (dry tonnes/ha)	LAB (dry tonnes/ha)	Nitrogen Limited Application (tonnes/ha)	CLBAR (tonnes/ha)
J4 "Riches Corner"	119	9	19	9	66 (Zinc)
J9 "Bush Paddock"	141	9	19	9	37 (Zinc)
J10 "House Windmill"	101	9	19	9	44 (Zinc)

It is noted that the above paddocks have not received biosolids applications previously.

Proposed time for application is April to June 2019. However, actual date may vary due to farm operational requirements.

The *Review of the simplified Environmental Factors* report (Ref: PM# 19495980-V1-JINDABYNE_REVIEW_OF_ENVIRONMENTAL_FACTORS.DOCX) has been considered with regards to the Western Australian Guidelines for Biosolids Management, December 2012 (the *Guidelines*).

Further to this, the Department of Health (DOH) has no objection to this proposal subject to:

- Compliance by Jindabyne Farm and the Aroona Alliance/Water Corporation with the *Guidelines*, the J4, J9 & J10 paddocks submission dated 17 December 2018 and undertakings given by the Aroona Alliance/Water Corporation, other than where they may vary from the conditions established below.

- Compliance by Jindabyne Farm as the recipient of biosolids with the storage, application, signage, record keeping, monitoring, and occupational health and safety procedures as per the *Western Australian Guidelines for Biosolids Management 2012*.

- Compliance with minimum buffers distance as per Table 11 of the *Guidelines*.

Environmental Health
All correspondence PO Box 8172 Perth Business Centre Western Australia
Grace Vaughan House 227 Stubbs Terrace SHENTON PARK WA 6008
Telephone (08) 9388 4999 Fax (08) 9388 4955
28 684 750 332

- Biosolids not being stored after the date of delivery for more than seven days during warmer months (October to May) and for more than 30 days for the remainder months of the year.

- Biosolids at the time of delivery complying with the Pathogen grade 3 and Contaminant grade 2 product requirements.

- Biosolids being incorporated to soil within ten days of delivery.

- Paddocks that received biosolids applications in the past shall comply with a total cadmium loading not exceeding 0.15Kg/ha over five years.

- No fly infested material to be transferred from the Jindabyne Farm to another property without prior consultation with and approval by the DoH.

- Any breaches, runoff or seepage from stockpiles being reported to the DOH.

- Any fly breeding incidents immediately being brought to the attention of the DOH.

- Biosolids not being diverted from this property to another unless the receiving site is approved by the DOH.

- No stock being kept in the paddocks while biosolids are being delivered, spread or incorporated. It should be noted that the animal withholding periods (30 – 45 days depending on age of animals) are not to be taken from final deliver/application, but from the time of final biosolids incorporation.

- A communication plan for the application being implemented with the consultation/participation of the Local Government Authority

- Jindabyne Farm staff being aware of the *Guidelines* and their obligations regarding the spreading and incorporation of biosolids, and the restrictions placed on the use of biosolids in this approval.

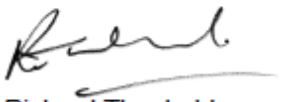
- An annual report being submitted to the DOH. The report shall include:

    - Approved application rate (dry tonnes/ha/ paddock) vs. total applied biosolids (dry tonnes/ha/ paddock).
    - Emergency and incident management: (A summary of events and issues that affected biosolids quality and/or caused a non-compliance with the guideline values. Include details of corrective actions/response procedures).
    - Community complaints and corrective actions implemented

Please note that this advice is valid for two years from the date of this letter and neither affects any requirements to obtain approvals from other agencies, nor prejudices any decisions by these agencies.

I trust that this information is of assistance to you. If you have any questions, please do not hesitate to contact the Environmental Health Directorate on 9388 4999.

Yours sincerely,



Richard Theobald
MANAGING SCIENTIST WATER
PUBLIC AND ABORIGINAL HEALTH DIVISION
DEPARTMENT OF HEALTH WA

18 January 2019

cc – Water Corporation
DWER Midwest Region
Shire of Victoria Plains

W:\Public Health\EHD\Water Unit\WASTEWATER MANAGEMENT\BIOSOLIDS\Land applications\Jindabyne farm\2019\Typing\Jindabyne farm J4, J9 and J10 Paddockes.docx

Attachment 3: DoH Comment

Government of **Western Australia**
Department of **Health**

Your Ref: DER2018/001165 L9179/2018/1
Our Ref: F-AA-51247 D-AA-18/95517
Enquiries: Vic Andrich 9388 4999

Mr Stephen Checker
Manager Waste Industries
Regulatory Services (Environment)
Department of Water and Environmental Regulation
Locked Bag 33 Cloisters Square
PERTH WA 6850

Dear Mr Checker

REFERRAL OF A LICENCE – CATEGORY 61A – SOLID WASTE FACILITY (BIOSOLIDS APPLICATION TO LAND) - JINDABYNE FARM – LOTS 1806, 6 AND 7 COCKRING ROAD, MOGUMBER

Thank you for your letter of 10 December 2018 requesting comment from the Department of Health (DOH) on the above proposal.

The DOH provides the following comment:

1. A map of Jindabyne Farm with the delimitation of the 26 paddocks should be included in the Review of Environmental Factors (REF).
2. Paddock where the stock bore is located should be also included in the REF.
3. Only three (J4, J9 and J10) paddocks were sampled for the submitted REF. The DOH is of the view that the sample conducted is insufficient to represent the suitability of the Jindabyne Farm for biosolids land application. However, the applicant will submit simplified REF for each paddock biosolids application to the DOH for separate assessment and approval.
4. A 1km minimum buffer is recommended for the north western corner of the farm to minimise any potential environmental impacts to Moore River.

Should you have queries or require further information please contact Vic Andrich on 9388 4999 or ehinfo@health.wa.gov.au

Yours sincerely

Jim Dodds
EXECUTIVE DIRECTOR
ENVIRONMENTAL HEALTH DIRECTORATE

16 January 2019

Environmental Health Directorate | Public and Aboriginal Health Division
All correspondence to: PO Box 8172 Perth Business Centre Western Australia 6849
Grace Vaughan House 227 Stubbs Terrace Shenton Park WA 6008
Telephone (08) 9388 4999 Fax (08) 9388 4955
ABN 28 684 750 332
www.health.wa.gov.au

Attachment 4: DPIRD Comment

Department of
Primary Industries and Regional Development

GOVERNMENT OF WESTERN AUSTRALIA

Date 17 December 2018

Attention: Damian Thomas
Your reference: L9179/2018/1
Our reference: LUP 514
Enquiries: Heather Percy

Steve Checker
Manager Waste Industries
Department of Water and Environment Regulation
Locked Bag 33 Cloisters Square Perth WA 6850
info@dwer.wa.gov.au

Dear Steve

REFERRAL OF A LICENCE UNDER THE ENVIRONMENTAL PROTECTION ACT 1986 – REQUEST FOR ADVICE /COMMENT

Thank you for the opportunity to comment on the application from Jindabyne Farm, Shire of Victoria Plains, for a licence under Division 3, Part V of the Environmental Protection Act 1986 (EP Act) at Lot 1806, 6 and 7 Cocking Road Mogumber, in relation to:

- Category 61A – Solid waste facility (biosolids application to land).

The Department of Primary Industries and Regional Development provides these comments in the context of the *Soil and Land Conservation Act 1945*. This is an Act relating to the conservation of soil and land resources, and to the mitigation of the effects of erosion, eutrophication, salinity and flooding.

The Review of Environmental Factors Jindabyne Farm provided with the licence application includes the following section on slope (page 10):

> *The average slope across the arable farm area is 5% ranging from 2% to 12%. According to the Biosolids Guidelines it is recommended that a slope less than 3% is ideal with no concern for run off or erosion, >3-6% is suitable with slight risk of erosion and **12% is suitable** if soil conservation practices are used to minimise erosion, including contour banking. In the areas with higher risk of erosion contouring will ensure erosion does not occur.*

The Biosolids Guidelines actually refers to slopes **>6-12%,** not 12% as being "***suitable** if soil conservation practices are used.*" Slopes of >12-15% are typically unsuitable and slopes of >15% are unsuitable.

75 York Road (PO Box 483) NORTHAM WA 6401
Telephone: +61 (0)8 9690 2200 enquiries@dpird.wa.gov.au
dpird.wa.gov.au
ABN: 18 951 343 745

Standard practice for application of Biosolids is that it needs to be incorporated into the soil by cultivation and therefore minimum tillage is not an option in this case to mitigate soil erosion. Water erosion dislodges and transports valuable topsoil and deposits this down slope. Erosion of soils with applied biosolids would also transport contaminants and nutrients including phosphorus downslope, increasing eutrophication risk of nearby waterways and dams. The risk of soil erosion increases when slopes of >3% are cultivated, and greatly increases when slopes exceed 6%.

There are no conservation earthworks in place on Jindabyne Farm, and the statement that "in the areas with higher risk of erosion contouring will ensure erosion does not occur" does not adequately:

- Define the location of the higher risk areas (slopes >6%)
- Describe the conservation and/or management practices that will be used to mitigate the erosion risk.

Desk top assessment shows that small areas in Bush and House Windmill paddocks have slopes >6% within the Julimar Leaver Moderate Slope phase. These areas are located close to drainage lines and were not included in the field assessment and soil sampling sites (red circles in Attachment 1).

DPIRD requests that arable land with slopes >6% are identified on the three paddock maps for Jindabyne Farm and these areas are **excluded** from biosolids application. In addition, the application and incorporation of biosolids on slopes of 6% or less, should be on the contour and not up and down the slope.

Another concern is the lack of information about the risk of summer storm events. The environmental plan requires more detail about the timing of biosolids applications, particularly to avoid applying biosolids before summer storm events.

DPIRD asks that the dam buffers are revised to ensure the 100 m buffer for each dam is upslope of the dam and contained within the catchment of each dam (blue circles in Attachment 1). For example, the dam buffers depicted for Paddock J9, "Bush" lies below the dam.

For more information, please contact Heather Percy on 9780 6262 or heather.percy@dpird.wa.gov.au.

Yours sincerely

Pamela l'Anson
DIRECTOR CENTRAL REGION