Addendum to the SEE

Further Information on the Effluent System Upgrade (ESU)

Cargill Beef Australia

Bomen Beef Processing Facility
Wagga Wagga

April 2010

1. Project Description

1.1 Please provide a copy of Figure 5 as A3.

This Figure is attached to this document in Appendix A.

1.2 For comparison purposes, please provide a site layout of the wastewater system as approved and as modified in 2009.

This document is attached in Appendix B (sourced from the SEE lodged for the proposed pond 2B project).

1.3 Please confirm that irrigation of wastewater is proposed and the existing approval and monitoring regime for irrigation.

Irrigation of waste water is proposed with this section 96 (1A) modification. The existing approval was granted by Wagga City Council in 1997 and is attached as Appendix C.

The monitoring regime includes the following requirements:

- Monitoring of the soils in, and ground water beneath the irrigation area in accordance with the requirements of EPL 2262 as included in Table 1 below;
- Composite sampling of effluent applied to the Effluent Utilisation Area on a monthly basis in accordance with the requirements of EPL 2262 (100^{th} percentile concentration limit = 200 mg/L);
- Daily monitoring in accordance with the requirements detailed in the approved Operational Environmental Management Plan for the facility, specifically, Visual Monitoring of climatic and soil moisture conditions, effluent and freshwater sources and effluent and freshwater application rates will be undertaken daily.

Table 1 - Table 6 from DA 220-07-2002 modified to include DECCW requirements outlined in EPL 2262

Point of Discharge	Pollutant	Monitoring Type	Frequency
Groundwater under the irrigation area	• Nitrogen • Electrical Conductivity • Standing Water Level • pH	Groundwater sample	Annually
Soils within the effluent irrigation area	• Conductivity • Exchangeable Calcium • Exchangeable magnesium • Exchangeable potassium • Exchangeable sodium • Exchangeable sodium percentage • Extractable Phosphorus • Nitrate	Soil Monitoring	Annually

	• Nitrogen (Total) • Phosphorus (total) • Phosphorus sorption capacity • Total Organic Carbon • pH		

2. Hazards

2.1 The SEE indicates that there will be some chemicals stored on site. A screening analysis should be undertaken in accordance with *Applying SEPP 33* to establish whether further assessment is required.

Three chemicals are proposed to be stored and used on site as part of the Effluent System Upgrade. The chemicals are:

1. A polymer for use in the belt filter press;
2. Alum (aluminium sulphate), to precipitate phosphorus in the activated sludge basin(s); and,
3. Magnesium hydroxide for pH control for the phosphorus precipitation.

The maximum volumes of the above chemicals to be stored on site are outlined in Table 2 below.

Table 2 – Maximum volumes of chemicals to be stored as part of the ESU

Chemical Name	Use	Units	Maximum Volume Stored
Polymer (powder form)	Dewatering sludge in the belt filter press	Kg	500
Aluminium Sulphate	Precipitate phosphorus in the activated sludge basin	Litres	20 000
Magnesium Hydroxide	pH control from Phosphorus precipitation	Litres	10 000

Based on the risk screening procedure undertaken during assessment against SEPP 33; none of the proposed chemicals are a dangerous good according to the Australian Dangerous Goods Code. Thus, hazardous materials thresholds are not exceeded and the proposal can be described as not potentially hazardous. Further assessment is therefore not required. All chemical storage however, will be executed in accordance with Cargill internal requirements and relevant regulatory standards/guidelines.

3. Soil and Water

3.1 The proposal includes the construction of additional ponds and the installation of new equipment. Please provide details of any sediment and erosion controls that would be required.

During the construction phase, erosion and sediment controls will be employed in accordance with:

- DLWC's *Urban Erosion and Sedimentation Handbook*
- EPA's *Pollution Control Manual for Urban Stormwater*

Specific erosion and sediment control measures to be implemented during the construction phase of the development will be detailed in the Erosion and Sedimentation management Plan required within the Construction Environmental Management Plan (CEMP) to be submitted for approval prior to commencement of construction of the development. The CEMP is anticipated to be submitted following ESU approval in May/June 2010.

3.2 It is outlined in the SEE that stormwater would be diverted away from the new ponds. Please clarify how stormwater would be managed as a result of the proposal and whether any changes to the existing stormwater system is required.

The existing stormwater infrastructure on the site will not be altered by the proposal. Stormwater will be diverted from disturbed and construction areas via diversion structures which will be outlined in the Construction Environmental Management Plan for the ESU. Stormwater discharge from site will remain through the existing infrastructure.

3.3 It is understood that Cargill are considering irrigating wastewater from the ESU. Could you please detail any differences between irrigation that has been approved and the irrigation proposed. This should include an assessment of any impacts associated with any changes proposed to the approved irrigation works (e.g., quality and quantity of wastewater to be irrigated) and detail any additional measures required to manage/mitigate potential impacts.

The proposed areas of irrigation are consistent with that approved in the 1997 approval. Following completion of the ESU, the water quality will be significantly improved beyond that which was approved for irrigation in 1997. This will reduce the potential for odour and other impacts associated with the irrigation of the water.

In the interim until the ESU is completed (May 2011), the water quality includes higher concentrations of some parameters compared with that described in the 1997 EIS. This basically relates to the increase in current production levels (1200 head/day) compared with the production levels in 1997 (800 head/day) and changes in water consumption over time. Table 3 below compares the quality outlined in the 1997 EIS with the current water quality.

Table 3 – 1997 Water quality compared with interim quality until ESU completion

Analyte	**1997 Concentration (mg/L)**	**2010 Concentration (mg/L) (average values)**
Total Suspended Solids	40 – 80	455
pH	7.5	7.8

BOD_5	35 – 80	91.5
Nitrogen (Total)	110- 170	256 (TKN)
Phosphorus (Total)	23 – 30	38.9
Total Dissolved Solids	1000 – 1300	904.8
Conductivity (µS/cm)	1500 – 2200	2755
Sulphate	9.8	29.4
Sulphide	<5	9.7

In order to address the potential impacts associated with the higher levels of contaminants in some instances, the following measures will be employed:

1. Nutrient and water balances for the all areas to be irrigated will be prepared by an appropriately qualified and experienced person in accordance with the EPA guidelines (*Use of Effluent by Irrigation* 2004), and approved by DECCW, prior to irrigation occurring. This will ensure that irrigation only occurs sustainably to the level permitted by the most limiting constraint and where contaminant loadings are higher than the 1997 levels, the volume of water to be irrigated will be adjusted accordingly. Following completion of the ESU (and consequent improvement in water quality), the nutrient and water balances will be reviewed as they apply to irrigation of effluent.
2. In consultation with DECCW, the Environmental Protection Licence for the facility (2262) will be varied to permit the irrigation of effluent as proposed.
3. The approved Operational Environmental Management Plan (OEMP) for the facility, specifically, the section relevant to irrigation will be followed for irrigation of effluent.
4. Limits included within the site Environmental Protection Licence (2262) will be followed, such that irrigation of effluent will not occur should the BOD_5 level increase beyond 200 mg/L. This is aimed at addressing potential odour issues.
5. Community liaison will occur prior to irrigation occurring, such that the community is appropriately informed and involved with the process.

4. Odour

4.1 No assessment is provided on current odour levels and the expected decrease in odour emissions as a result of the proposal. It is considered that an assessment of odour impacts should be undertaken in accordance with *Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW (DEC)* and *Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (DEC)* to demonstrate that the proposal would not result in offensive odours. This assessment should include all existing and proposed odour sources (including but not limited to the proposed wastewater management system, the flaring of gases from the anaerobic ponds, sludge removal, irrigation etc).

Odour modelling based on the proposal has been prepared by *The Odour Unit*. The modelling report is attached to this document in Appendix D.

5. Waste

5.1 The SEE outlines that 1-2ML of treated wastewater is recycled from pond 4 to the stockyard tank. Please confirm how this recycled water is reused on site.

The recycled water is used for preliminary cattle washing, prior to the final wash which is completed with potable water. This is the same process which occurs under the current site water management system; there will be no changes to this process within the ESU. The recycled water is treated through the waste water treatment system following use in the cattle wash.

5.2 Could you please confirm the quantity of wastewater that would be directed to the Bomen Industrial Sewage Treatment Facility (BISTF).

Treated wastewater produced by the facility will be discharged to sewer as currently occurs. In accordance with the 1998 approval to irrigate on site (attached), up to 560 ML of water will potentially be irrigated (pending revised nutrient/water balances) therefore the approximate volume discharged to sewer may potentially be as low as 40ML/year. These numbers are however, subject to confirmation by the nutrient and water balances to be prepared for irrigation. Daily discharge volumes will not exceed the limits specified in the Trade Waste Agreement. Following completion of the ESU, the discharge quality is designed to meet the acceptance limits outlined in the Wagga Wagga City Council Liquid Trade Waste Policy.

6. Solid Waste

6.1 The SEE identifies additional waste that would be generated as a result of the proposal. It would be appreciated if you could provide details of the existing quantities of waste that are generated for comparison purposes.

Table 4 below outlines quantities of waste for the period March 2009 to February 2010. The table includes waste generated from both general plant operations and the existing waste water treatment system.

Table 4 Existing quantities of waste generated, March 2009 – February 2010

	Medical Waste	General Waste	Paunch Waste
Units	**t (metric)**	**t (metric)**	**t(metric)**
Mar-09	0.26	131	604.8
Apr-09	0.36	94	374.4
May-09	0.01	160	537.6
Jun-09	0.11	143	470.4
Jul-09	0.06	111	422.4
Aug-09	0.06	119	614.4
Sep-09	0.16	162	518.4
Oct-09	0.26	169	576
Nov-09	0.27	121	576
Dec-09	0.26	73	432
Jan-10	0.26	71	547.2
Feb-10	0.21	82	566.4
Totals	**2.28**	**1436**	**6240**

6.2 Could you also please identify whether waste would be disposed of on-site or off-site. If waste is to be disposed of on-site, please identify the disposal location and any additional monitoring that may be required.

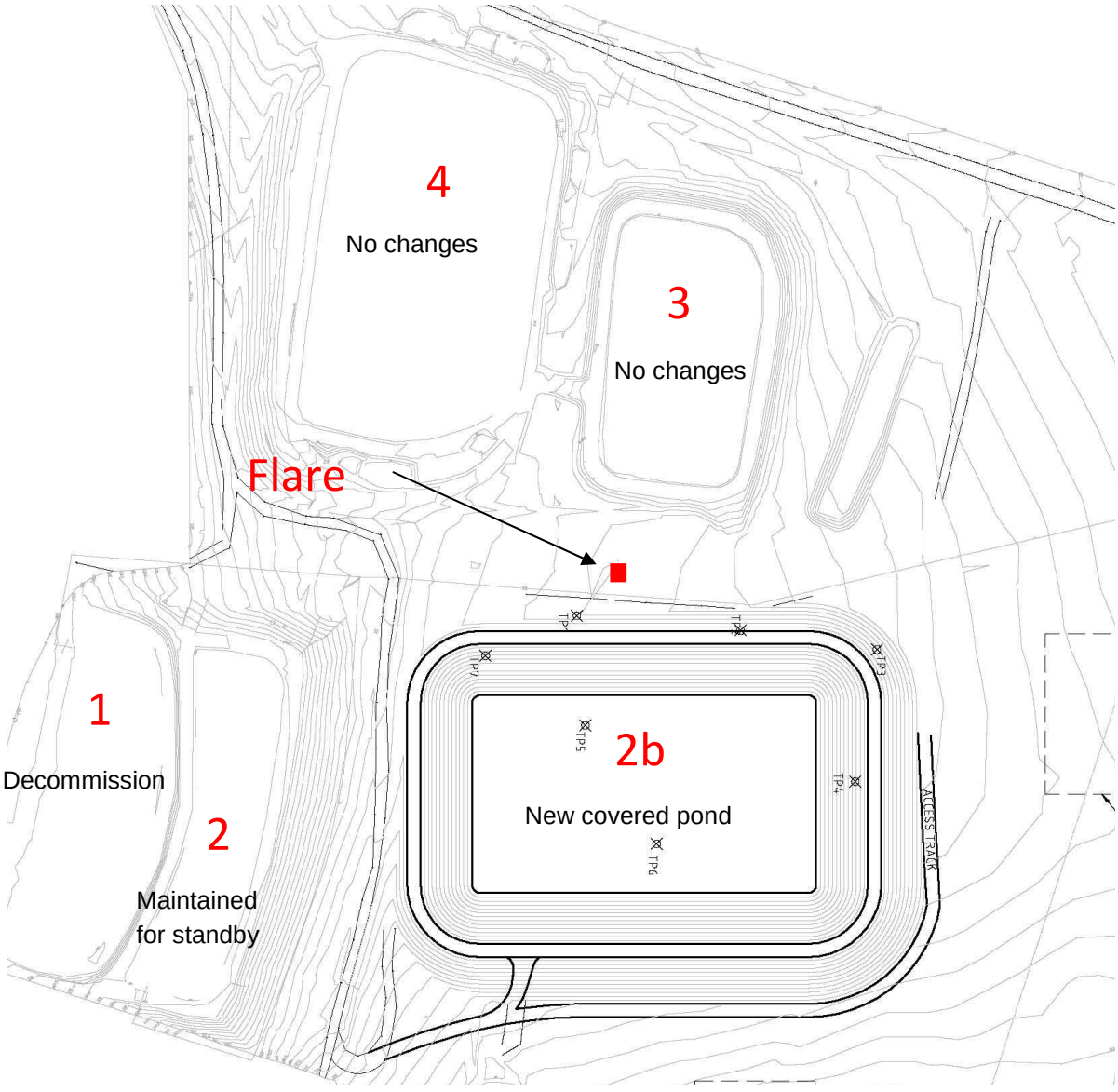
Waste is not currently disposed of on-site. This will not change with the ESU.

7. Appendix A

Attached in “Appendix A. Proposed site layout of treatment upgrades.pdf”

8. Appendix B

This figure was sourced from the previously submitted SEE for the proposed pond 2B project.



9. Appendix C

Determination of a Development Consent from WWCC (DA 215/97).

10. Appendix D

Odour modelling report prepared by *The Odour Unit* for post ESU scenario.