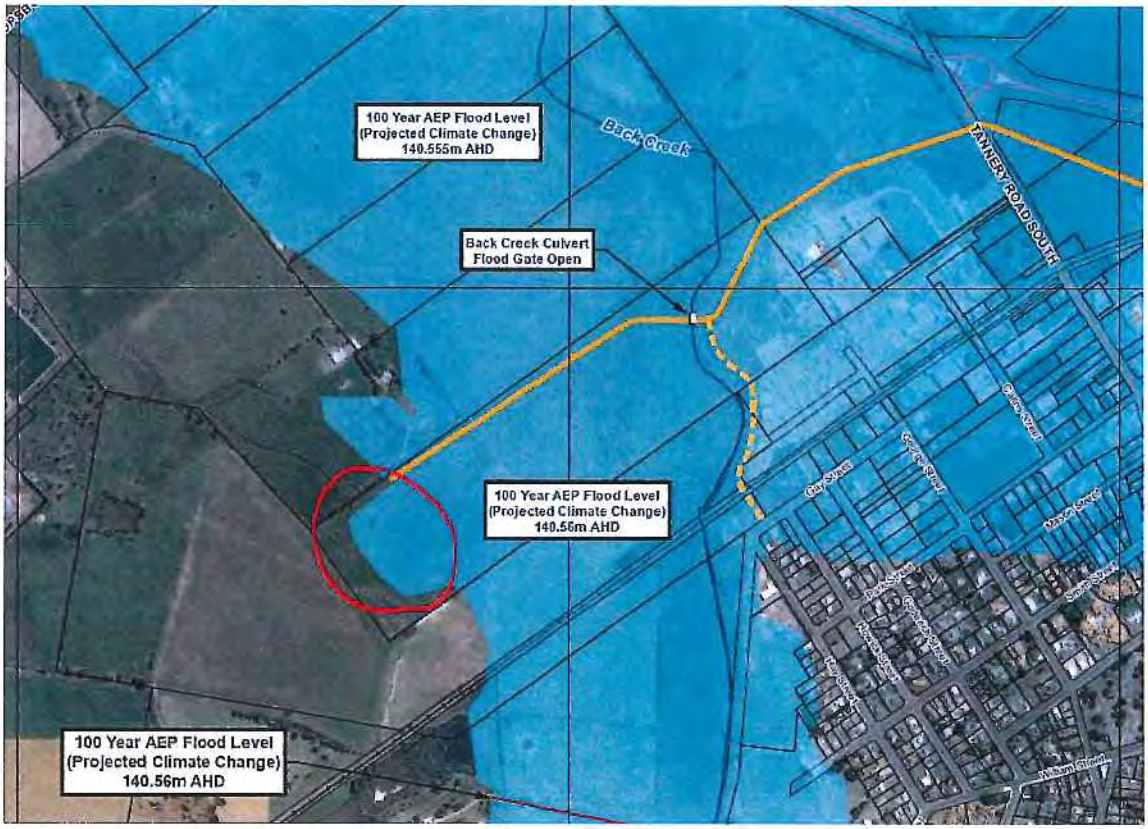
HYDRODYNAMICA

44 Penquite Road
LAUNCESTON TAS 7250
M: 0431 208 450
E: cameron.oakley@h-dna.com.au
ABN: 169 442 993 50



Yours sincerely,

Steve Ratcliffe

CONSULTING ENGINEER

HYDRODYNAMICA

REFERRAL OF DEVELOPMENT APPLICATION P16-215
TO WORKS & INFRASTRUCTURE DEPARTMENT

Property No: 113000.03
Date: 17-Oct-2016
Applicant: Pitt & Sherry (obo JBS Australia)
Proposal: Installation of covered anaerobic lagoon - part of existing resource processing facility (ancillary to level 2 activity under EMPCA) (Environmental Impacts and Attenuation Code; Flood Prone Areas Code)
Location: 22 Tannery Road, Longford

Please inspect the property and advise regarding stormwater/drainage, access, traffic, and any other engineering concerns.

Engineer's comment:

WORKS & INFRASTRUCTURE DEPARTMENT CONDITIONS

No W&I comment.

Noted that the proposed wall height around the CAL is 141.2. The 100 year climate change level with Back Creek gates open is 140.56

Jonathan Galbraith (Works & Infrastructure Officer)
Discussed with Arend Baog (Works & Infrastructure Manager)
Date: 19/10/16

Level 6, 134 Macquarie Street, Hobart TAS
GPO Box 1550, Hobart, TAS 7001 Australia

Enquiries: John Eyres
Ph: +61 6165 4614
Fax: +61 6173 0254
Email: john.eyres@environment.tas.gov.au
Web: www.epa.tas.gov.au
Our Ref: EN-EM-EV-DE-249831/H590248 /Council_6ABC_Ancillary

ENVIRONMENT PROTECTION AUTHORITY

23 September 2016

Mr Des Jennings
General Manager
Northern Midlands Council
PO Box 156
LONGFORD TAS 7301

For the attention of: Planning@nmc.tas.gov.au

Dear Mr Jennings,

COVERED ANAEROBIC LAGOON (CAL) - JBS AUSTRALIA PTY LTD, LONGFORD (PERMIT APPLICATION P16-215)

I refer to correspondence between the EPA Tasmania and Northern Midlands Council (NMC) between the periods 12 - 19 September 2016, relating to the above permit application. NMC and EPA Tasmanian have been discussing the supporting documentation and how the proposal relates to the provisions of the *Environmental Management and Pollution Control Act 1994* (the EMPC Act).

In summary, and based on the information provided, the proposed use or development is not considered a Wastewater Treatment Works under Clause 3(a) of Schedule 2 of the EMPC Act, as effluent will be discharged only to the TasWater Longford wastewater treatment plant (and not to land or water). NMC and the EPA agree that the proposed use or development can be considered ancillary to the existing level 2 activity (abattoir at 22 Tannery Road, Longford), for the following reasons:

- it does not constitute works within the definition of the existing level 2 activity, being the abattoir;
- it does not constitute an intensification of the existing level 2 activity;
- it is not likely to cause serious or material environmental harm; and
- it does not constitute conduct of works within the meaning of any other 'level 2' activity.

The Director EPA, Wes Ford attended the site on 20 September 2016. He asked me to advise you that he is unlikely to require NMC to refer the Level 1 permit application to the EPA Board for Assessment.

Given the circumstances, EPA Tasmania will work with Council to ensure that environmental conditions that already relate to abattoir site are varied to such an extent necessary to regulate any associated environmental impacts.

If you have any queries regarding the above, please contact the officer nominated at the head of this correspondence.

Yours sincerely

Malcolm Budd
Section Head (Assessments)
ENVIRONMENT PROTECTION AUTHORITY

Cc: Mr Troy White, Group Environment Manager, JBS Australia Pty Ltd - email: troy.white@jbssa.com.au

Cc: Tonia Robinson, Senior Environmental Scientist, Pitt & Sherry Group (consultants) - email: trobinson@pittsh.com.au

Department of Primary Industries, Parks, Water & Environment
WATER AND MARINE RESOURCES DIVISION
GPO Box 44, Hobart TAS 7001
Web www.dpipwe.tas.gov.au

Tasmanian Government

Date: 9 November 2016

Jan Cunningham
Planning Administration Officer
Northern Midlands Council
Planning@nmc.tas.gov.au

Inquiries: Bill Shackcloth
Phone: (03) 6165 3001
E-mail: billshackcloth@dpipwe.tas.gov.au
Our Ref: H520858
Your ref: P16-215

Dear Ms Cunningham

RE: S.165F REFERRAL – JBS AUSTRALIA
UPGRADE OF A WASTE WATER TREATMENT FACILITY

In accordance with section 165F of the *Water Management Act 1999 (the Act)*, as approval authority for the project, your referral of the above proposal has been considered by me, as the Minister's delegate, on 9th November 2016.

The assessment was restricted to the dam engineering and safety aspects of the project pursuant to the Act. It included a review by assessment staff of relevant investigation, design, and construction reports submitted by JBS Australia. It also involved assessing the consistency of the proposal with the *Water Management (Safety of Dams) Regulations* 2015 *and* the relevant guidelines for dam safety published by the Australian National Committee on Large Dams Inc. (ANCOLD).

Section 165F of the *Water Management Act* 1999 stipulates that where a person who proposes to undertake dam works is required under any other enactment to apply for any approval or a permit before those works are undertaken, the relevant authority must refer the application to the Minister before granting approval or issuing a permit. The Minister may require such terms and conditions necessary or desirable to ensure safety of the dam works to be imposed, and the relevant approval authority must include them on the permit or approval if granted.

Having considered the information submitted for the proposed works, I as the Minister's delegate have determined that the consequence category of the dam is *"Low"* and the conditions for such a dam (attached below) should be included on your permit or approval if granted.

If you have any questions in relation to any matters in regards to the above, please do not hesitate to contact myself in the first instance.

Yours faithfully

Bill Shackcloth
Section Head (Water Licence and Dam Administration)

Section 165F Water Management Act 1999

Dam works consisting of the construction of two anaerobic (low oxygen) treatment ponds with a combined capacity of around 35 ML at the JBS abattoir at Longford.

Required Conditions and related notes

1. The permit holder must submit a Notice of Intent (Attachment 1) to commence dam works (see Note 2) to the Department (see Note 1) before dam works commence. Dam works must not commence prior to the nominated start date on this notice, unless otherwise authorised by the Department.
2. The Notice of Intent to commence dam works must be signed by the permit holder, the person constructing the dam (the contractor) and the site supervising engineer, confirming that these persons have read and understand the permit and conditions.
3. Dam works must be carried out in accordance with the *Water Management (Safety of Dams) Regulations* 2015 and the *Water Management Act 1999*.
4. The works must be carried out in accordance with the following: *Geotechnical Investigations Proposed Effluent Ponds 22 Tannery Road Longford* Tasman Geotechnics Dated 22 August 2016; *JBS Longford Plant Wastewater Treatment Plant – Covered Anaerobic Lagoon (CAL) Civil notes* and other drawings supplied by Pitt and Sherry (Dept. Doc ref: H599077).
5. A person with a minimum of Class 2 competence (the "site engineer") (see Note 3) must be in charge of all earth works and be responsible for:
    - *Supervision of the installation of the HDPE liner and quality control;*
    - Conducting quality control tests and sampling in the field;
    - Verification of all quality control testing; *and*
    - Completion of documentation of all relevant activities including engineering design, construction and quality assurance activities.
6. Within 14 days of the completion of dam works the permit holder must submit to the Department a "Work-as-Executed" report, prepared by the site engineer, setting out as-constructed details of compliance with conditions including all items required to be supervised by the site engineer at Condition 5.

Notes to Conditions:

Note 1 References to the "Department" mean the Department of Primary Industries, Parks, Water and Environment or its successor responsible for administration of the Water Management Act 1999. Where a permit condition requires a submission to, or authorisation from, the Department, the relevant contact officer is the Coordinator (Dam Safety) unless otherwise specified.

Note 2 "dam works" includes clearing, scraping and excavations at the dam site, other than test pits.

Note 3 Site Engineer means a person with a minimum of Class 2 competence, as prescribed under the *Water Management (Safety of Dams) Regulations 2015*.

valid from 1 July 2016 to 30 June 2017

Notice of Intention to Commence Dam Works under a Referral under 165f of the Water Management Act 1999

1. **Dam works permit number** N/A
2. **Name of the permit holder giving notice** JBS Australia
3. **What is the date Dam Works will commence?**

4. **What is the date Dam Works are expected to be completed[1]?**

5. **Who is the Contractor who will undertake these works?**

Company Name

Contractor Name

Contact phone number

Email Address

6. **I, the Permit Holder, declare that:**

- I acknowledge that as soon as practicable after the dam works have been completed, I must give to the Minister a notice (the notice of completion), in writing, of the completion of the dam works.
- I have provided any person involved in undertaking the dam works (e.g. the contractor) with a copy of the permit and access to documents referred to in the permit.
- I have provided the person, who is required to complete the 'Works-as-Executed Report' on the notice of completion, with a copy of the permit and access to documents referred to in the permit.
- I have, or will, satisfy all pre-construction requirements of the permit, before commencing any dam works.
- the information submitted in this Notice is true and correct.

Full name of permit holder making this declaration

Signature

Date

Personal Information and Privacy Statement

Personal information will be collected from you for the purpose of managing Tasmania's water resource and will be used by DPIPWE for purposes permitted by the *Water Management Act 1999* and regulations made under this Act. Under the *Water Management Act 1999*, a person must not furnish information to the Minister, a water entity or an authorised officer that is false or misleading in a material particular. Your personal information will be used for the primary purpose for which it is collected, and may be disclosed to contractors and agents of the Water & Marine Resources Division, law enforcement agencies, courts and other organisations authorised to collect it. Your basic personal information may be disclosed to other public sector bodies where necessary, for the efficient storage and use of the information .Personal information will be managed in accordance with the *Personal Information Protection Act 2004* and may be accessed by the individual to whom it relates on request to DPIPWE.

[1] dam works are **completed** when all dam woks construction activities have ceased.

Submission to Planning Authority Notice

Council Planning Permit No.	P16-215	Council notice date	17/10/2016
TasWater details			
TasWater Reference No.	TWDA 2016/01540-NMC	Date of response	27/10/2016
TasWater Contact	Anthony Cengia	Phone No.	(03) 6237 8243
Response issued to			
Council name	NORTHERN MIDLANDS COUNCIL		
Contact details	Planning@nmc.tas.gov.au		
Development details			
Address	22 TANNERY RD, LONGFORD	Property ID (PID)	6740456
Description of development	Installation of covered anaerobic lagoon		

Schedule of drawings/documents

Prepared by	Drawing/document No.	Revision No.	Date of Issue
Pitt & Sherry	LN15117-G1, LN15117-C3, LN15117-C4	A	6-11-15
Pitt & Sherry	LN15117-C1	A	11-9-15

Conditions

SUBMISSION TO PLANNING AUTHORITY NOTICE OF PLANNING APPLICATION REFERRAL

Pursuant to the *Water and Sewerage Industry Act* 2008 (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application:

CONNECTIONS, METERING & BACKFLOW

1. The applicant must engage a suitably qualified professional to assess the suitability of the existing property water & sewer connections to service the proposal. The property service connections must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit.
   NOTE: TasWater deems that the boundary backflow hazard rating of the site is considered as being 'High'.
2. The location of the property water connection / water meter assembly must be within two meters of the title boundary that abuts the water main and provide for unfettered access to enable reading, testing, inspection, maintenance and exchange without impediment and must be kept clear of obstructions at all times.
3. Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost.
4. Prior to commencing construction / use of the development, a boundary backflow prevention device and water meter must be installed, to the satisfaction of TasWater.

TRADE WASTE

1. The Developer must ensure the covered anaerobic lagoon and ancillary pre-treatment equipment is designed and constructed to adequately treat waste discharged to TasWater as required by the Trade Waste Agreement.

2. The Developer must comply with all TasWater requirements prescribed in the Trade Waste Agreement.

DEVELOPMENT ASSESSMENT FEES

5. The applicant or landowner as the case may be, must pay a development assessment fee to TasWater, as approved by the Economic Regulator and the fees will be indexed, until the date they are paid to TasWater, as follows:

    a. $335.15 for development assessment.

    The payment is required within 30 days of the issue of an invoice by TasWater.

Advice

For information on TasWater development standards, please visit http://www.taswater.com.au/Development/Development-Standards
For application forms please visit http://www.taswater.com.au/Development/Forms
The developer is responsible for arranging to locate existing TasWater infrastructure and clearly showing it on any drawings. Existing TasWater infrastructure may be located by TasWater (call 136 992) on site at the developer's cost, alternatively a surveyor and/or a private contractor may be engaged at the developers cost to locate the infrastructure.
Prior to any Building and/or Plumbing work being undertaken, the applicant will need to make an application to TasWater for a Certificate of Certifiable Work (Building and/or Plumbing). The Certificate of Certifiable Work (Building and/or Plumbing) must accompany all documentation submitted to Council. Documentation must include a site plan with adequate detail to assess the impact of the development on TasWater's infrastructure.
Further information regarding Trade Waste can be found at www.taswater.com.au

Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

Authorised by

Jason Taylor
Development Assessment Manager

TasWater Contact Details

Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au

C.

Technical Assessment Report

JBS Longford Plant
Waste Water
Treatment Facility

For: Northern Midlands Council

Project No: 5692

Environmental Service & Design

14 Cattley Street
Burnie TAS 7320
Ph: (03) 6431 2999
Fax: (03) 6431 2933

PO Box 651
Burnie TAS 7320

Document Control

Prepared & Published by:	ES&D
Version:	Final
File:	5692
Contact:	Ted Kulinski
Phone No:	(03) 6431 2999
Prepared For:	Northern Midlands Council

			Date:
DRAFT 1	Ted Kulinski	ES&D	30/11/2016
DRAFT 2	Bruce Harpley	ES&D	1/12/2016
REVIEW	Rod Cooper	ES&D	5/12/2016
FINAL	Rod Cooper	ES&D	5/12/2016

Contents

List of Figures

Introduction

Municipality	Northern Midlands
Location	Longford
Client	Northern Midlands Council
Date of Assessment	5 December 2016
Desktop Study	30 November 2016

Figure 1 – Location Plan

1. Background

Environmental Services and Design Pty Ltd have been engaged by Northern Midlands Council to conduct a technical review of the proposed waste water treatment facility in relation to potential environmental impacts of the covered anaerobic lagoon.

2. Proposal Review

A desktop review of the proposal was conducted on 30 November and 1 December 2016 to assess mitigation measures proposed for potential environmental impacts identified in the Pitt & Sherry report.

It is noted that the proposal is specifically designed to reduce contaminants (BOD) being directed to the TasWater water treatment plant. The report directly addresses this issue but does not adequately consider or address other potential environmental impacts including odour, noise, dust, surface water and groundwater.

Section 26.3.1 P4 (a) of the Interim Planning Scheme requires that the proposal demonstrates that *'emissions are not likely to cause on environmental nuisance'*. The information provided in Table 1 of the proposal does not adequately address the environmental impacts, mitigation measures, monitoring and management of the impacts identified.

Code E11.6.1 P2 and associated Use Standards requires the proposal to demonstrate by means of a 'Site specific study' that there will not be an environmental nuisance or environmental harm. The proposal report does not contain a site specific study in accordance with the Interim Planning Scheme requirements.

The report and details of potential environmental impacts in the relevant tables rely upon the impacts having been assessed by a senior environmental scientist from Pitt & Sherry but the assessment, conclusions and recommendations of the site specific study are not included for compliance assessment.

There is no detailed environmental impact assessment (site specific study) and the report appears to reply upon the EPA assessing the environmental impacts and imposing appropriate limitations and conditions via the EPN process

There is no indication or discussion relating to whether production will remain at the current levels or whether production will increase causing increases in potential environmental nuisance or impacts.

The report states that meatworks waste in the existing CAL is beneficial and causes no issues over a long period of time. This infers that there have been no issues with the existing CAL since it began operation.

ES&D have no background on current environmental issues or concerns, nor the current monitoring program, as such we approach the project as an environmental assessment and highlight all issues.

Council may take up or bypass any issues they consider covered by the current permit or is not currently an issue.

What is evident is the amount of energy used to argue the project is a level 1 project, EPA should be consulted by council as the potential environmental impacts may cause the project to be pulled and considered a level 2 project based on environmental issues elsewhere in the state. The engineering appear sound there is an absence of environmental assessment and commitment to such.

3. Discussion

3.1. Existing System

The report states that site discharges waste to Back Creek. As this is stated in the proposal it must be considered from an environmental impacts perspective as part of the proposal.

Back Creek drains to Macquarie and Esk Rivers but there is no mention of the current monitoring of the creek such as analytes tested, frequency of discharge, frequency of monitoring or remedial action plan. There is no commitment in the proposal that these will continue or be expanded to include the proposed CAL.

Discharge to Back Creek would normally be regulated through an EPN from the EPA setting emission limits and monitoring requirements or through conditions issued by Council. Section 1.1 of the report does not discuss any current EPN's for the existing system limits or monitoring, therefore it is assumed that there are no limits or monitoring required.

The report also states that there are no current environmental issues, It would be reasonable to expect that there has been some odour complaints with time, the issue may be that the abattoir has not had complaints, but the proposal is to bring this issue back from TasWater to the abattoir some 300 meters closer to the residential receptors.

3.2. Proposed Additional Waste Water Treatment Infrastructure

3.2.1. Flaring of Methane Gas

Section 2 of the report states that methane gas from the CAL will be dried and flared to remove greenhouse gas effects. Flaring of the dried methane is effective in reducing odour issues for nearby sensitive premises. However, it is admitted in the report that flaring the methane will produce CO_2 and nitrous oxides emissions which are both major contributor to greenhouse gas effects. Even so this stack is an environmental discharge that under normal conditions would need monitoring from analysis , modelling and some commitment to assure odour / and gas does not impact on residential receptors, some 300 meters closer and within a 500 meter buffer zone. Visual impacts should also be discussed.

3.2.2. Operating Temperature of CAL

Section 2 paragraph 3 states that the CAL is designed to operate in the mesophyllic range of between 20^0C to 45^0C range. As winter temperatures will typically drop below 14^0C mesophyllic conditions may not be maintained with potential for odour release. The design is outside the local conditions that suggest efficiencies could be not as design criteria may suggest.

3.2.3. CAL Cover

Section 2 paragraph 5 mentions 'weighting' the cover to protect from wind.However, there is no discussion relating to expected wind velocities and weight required to reduce potential for failure of the cover and mass escape of gases.

4. Site Context

4.1. Sensitive Premises

The location of the proposed CAL results in a sensitive premises approximately 200m from the site that was originally approximately 800m from the existing treatment facility. The proximity of the proposed facility significantly increases the potential for environmental nuisance due to odour, dust and noise and has not been adequately addressed. There is no commitment to work through this issue.

4.2. Aboriginal Heritage

Section 4 paragraph 6 indicates that the site is not on the Aboriginal Heritage Register. It is unclear from the Interim Planning Scheme provision whether Council requires formal review or notification from Aboriginal Heritage. Normally if an EER is conducted Aboriginal Heritage make a ruling on this.

4.3. Codes

The only code relevant to this technical review is code E11.0 – Environmental Impacts and Attenuation Code. Table 1 of the proposal addresses the requirements of the code.

Table 1 of the report does not adequately address the requirements of the code. Although impacts are identified and mitigation measures are proposed there is no 'site specific study' to justify the impacts or measures proposed.

5. Conclusion

Council should consider whether the proposal meets their requirements for the environmental performance of the site or whether the proposal and permit is limited to addressing the waste flow quality from the site to improve TasWater treatment plant performance only.

The report stated that there is an existing discharge to Back Creek but does not detail the monitoring or environmental performance. The new CAL infrastructure is at the 'end' of the existing process, however as the existing discharge has been mentioned in the report there is no reference or discussion for opportunities to improve performance of the existing infrastructure. This may be acceptable for council.

The site specific study or environmental effects report should have been included in the proposal to enable Council and the EPA to review the document and define any issues, verify the scope, any modelling and recommendations for mitigation. Then permit conditions can be set.

As a minimum the site specific study or environmental effects report submitted to Council and the EPA should have included but not have been specifically limited to the following:

- Dust and fumes;
  - Sources and impact zones;
  - Potential risk and impacts of CAL cover rupture or wind damage;

- Biogas generation;
  - Stack modelling of gases produced;
  - Plume direction;
  - Flare by-products producing greenhouse effects such as carbon dioxide and nitrous oxides;
  - Monitoring and mitigation where necessary;

- Surface water Quality;
  - Back Creek water quality based on the statement that there is discharge to the creek;
  - Effect on the small dam identified in the report;
  - Current water quality and discharge flows;
  - Water quality limits for discharge;
  - Mitigation, monitoring and management.

- Groundwater Quality;
  - Monitoring bores may be required to monitor impacts of the small dam on the adjacent property and Back Creek which drains to Macquarie and Esk Rivers;
  - Monitoring of groundwater via the bores removed reliance on design of the liner and inspections to mitigate an identified potential risk;
  - Potential and impacts of liner failure;
  - Protect everyone from future litigation and insurance claims.

- Noise;
  - Construction noise;
  - Pump, flare and blower noise at sensitive premises;
  - Initial modelling;
  - Commissioning noise survey;
  - Ongoing monitoring if required.
- Waste;
  - Types to be generated;
  - Disposal methods.
- Complaint Handling;
  - Commitments and procedure for complaints during construction phase and operational phase.
- Public Consultation;
  - If any.

Council should discuss the proposal with the EPA particularly if there are currently environmental nuisance issues with the existing sites (ie TasWater or Abattoir) .The proposed.

Yours faithfully

B. Harpley

Bruce Harpley
Technical Consultant

Paul Godier

From: Leigh Knight <lknight@pittsh.com.au>
Sent: Tuesday, 13 December 2016 2:55 PM
To: NMC Planning; Paul Godier
Cc: John Wylie
Subject: RE: P16-215 Extension of time letter.pdf
Attachments: signed extension of time.pdf; LN15117L004 let 31P Rev 00.pdf; LN15117H002 EMP 31P Rev 01.pdf

Hi Rosemary/Paul

Attached is the signed extension of time request.

Also attached is our response to the assessment by Environmental Solutions and Design and a copy of the EMP submitted to the EPA.

Any questions please contact me – I will be out of the office for the next three days but available on my mobile and checking emails.

Thanks

Leigh

From: NMC Planning [mailto:planning@nmc.tas.gov.au]
Sent: Tuesday, 13 December 2016 11:05 AM
To: Leigh Knight <lknight@pittsh.com.au>
Subject: P16-215 Extension of time letter.pdf

Dear Ms Knight,

Please find attached a request for an extension of time for application P16-215, 22 Tannery Road Longford.

Kind regards,

Rosemary Jones

NORTHERN MIDLANDS COUNCIL

Administration Officer – Development Services | Northern Midlands Council
Council Office, 13 Smith Street (PO Box 156), Longford Tasmania 7301
T: (03) 6397 7303 | F: (03) 6397 7331
E: rosemary.jones@nmc.tas.gov.au | W: www.northernmidlands.tas.gov.au

Tasmania's Historic Heart

12 December 2016

Paul Godier
Senior Planner
Northern Midlands Council
PO Box 156
LONGFORD TAS 7301

Dear Paul

Planning Application P16-215 – Response to third party assessment

I refer to your email dated 5 December 2016 providing a copy of the comments received from Environmental Services and Design Pty Ltd (ES&D) who were engaged by Council to review the above application.

By way of background, the development application relates to a Level 1 activity as defined by the *Environmental Management and Pollution Control Act 1994*. The Environment Protection Authority confirmed that the application does not require referral to the EPA Board for environmental assessment. The report supporting the application outlined however that the proposed covered anaerobic lagoon (CAL) is nevertheless an environmentally relevant activity which warrants advisory notification to the EPA. As outlined, the EPA was provided with a documentation relating to the CAL in parallel with the DA process. If the EPA considers it appropriate to do so, any environmental requirements will be issued by the EPA Director through an environment protection notice (EPN) or as conditions on any permit issued by Council.

Given the involvement of the EPA in this process, and its role in the management of environmentally relevant activities, it was not considered necessary to provide Council with a copy of all documentation submitted to the EPA. If Council required a copy of the assessment referred to in the planning report, particularly if it intended to refer the application to a third party for assessment, it could have been provided and possibly avoided yet another unnecessary delay in the processing of this application.

With regards to issues raised we provide the following comments (in bold).

1. Background

The report:

- does not adequately consider or address other potential environmental impacts including odour, noise, dust, surface water and groundwater
- does not adequately address the environmental impacts, mitigation measures, monitoring and management of the impacts identified.

Potential impacts and proposed avoidance / mitigation measures are considered in Table 1 of the planning report. The assessment against the performance criteria is based on that information and the environmental management plan (EMP) submitted to the EPA.

pitt&sherry

transport
community
mining
industrial
food & beverage
carbon & energy

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www.pittsh.com.au
1300 pittsh

Incorporated as
Pitt & Sherry
(Operations) Pty Ltd
ABN 67 140 184 309

The objective of the proposed CAL is to reduce emissions and to reduce the biological load entering the existing TasWater treatment facility (which incidentally also includes a CAL and flare facility of similar design to the CAL proposed by JBS). JBS would not proceed with the proposal if there was no certainty that this objective would be achieved or that the potential for environmental nuisance would be increased.

The report:

- does not contain a site-specific study in accordance with the Interim Planning Scheme requirements
- relies upon the impacts having been assessed by a senior environmental scientist from Pitt & Sherry but the assessment, conclusions and recommendations of the site-specific study are not included for compliance assessment.

A copy of the EMP is attached – if requested this would have been provided but due to the technical nature of the information it was not included in the planning report for exhibition. It is considered that the performance criteria within Clause 11.6.1 P2 have been complied with.

The report appears to reply upon the EPA assessing the environmental impacts and imposing appropriate limitations and conditions via the EPN process.

The current approvals pathway was pursued at the request of the EPA. EPA advised pitt&sherry that it was expecting to receive a copy of the draft permit to include any conditions. Given Council's now acknowledged limitations in this field this was assumed to be the most appropriate process.

There is no indication or discussion relating to whether production will remain at the current levels or whether production will increase.

The report states that the application seeks to "to improve the resource processing operations at the JBS Australia Pty Ltd (JBS) abattoir at Longford through the installation of a waste water treatment facility". The description of the proposal refers to "Proposed Additional Wastewater Treatment Infrastructure". No alterations to the abattoir are mentioned anywhere in the planning report as none are proposed. Whether or not JBS intends to alter capacity at some point in the future is irrelevant to this application and would be the subject of a separate approval process.

2. Existing System

The report states that the site discharges waste to Back Creek.

This is not correct. The plant currently discharges to the existing TasWater wastewater treatment plant. TasWater discharges to the creek. This, and any associated issues, is not relevant to this application other than to state that the proposed CAL will reduce the load to the TasWater treatment plant and ultimately reduces discharges to watercourses.

3. Proposed Additional Waste Water Treatment Infrastructure

3.1 Flaring of Methane Gas

Flaring of the dried methane is effective in reducing odour issues for nearby sensitive premises. However, it is admitted in the report that flaring the methane will produce CO2 and nitrous oxides emissions which are both major contributor to greenhouse gas effects.

The stack is an environmental discharge that under normal conditions would need monitoring from analysis, modelling and some commitment to assure odour / and gas does not impact on residential receptors, some 300 meters closer and within a 500 meter buffer zone. Visual impacts should also be discussed.

This statement confirms the intention of the flare – to reduce odours at the closest sensitive uses. The report outlines commitments to maintenance to reduce the potential for leaks to minimise the potential for escape of gases and associated impacts. Volumes of gases are clearly outlined and discussed in the context of industrial boilers. Monitoring and future options for re-use are outlined in the EMP. No buffers for flares are specified in the attenuation distances table in the code and it is not clear where the reference to a 500m buffer comes from.

Visual impacts are addressed in the table of comments relating to Clause 26.3.1 A5 / P5.

3.2 Operating Temperature of CAL

The design is outside the local conditions that suggest efficiencies could be not as design criteria may suggest.

The CAL has been designed by suitably qualified professionals with extensive experience in this field. It is unknown what experience ES&D have in this regard. As outlined in the report and the attached EMP, emissions will be flared off to reduce odours. Gases will be contained by the liner. Reduced efficiency due to lower operating temperatures will not alter this. Gases are not more likely to escape when produced in lower volumes.

3.3 CAL Cover

Section 2 paragraph 5 mentions 'weighting' the cover to protect from wind. However, there is no discussion relating to expected wind velocities and weight required to reduce potential for failure of the cover and mass escape of gases.

The CAL has been designed by experienced professionals who have designed these systems previously and who are fully aware of local conditions. The level of technical detail required to determine these issues is not necessary for inclusion in a document for public exhibition.

4. Site Context

4.1 Sensitive Premises

The location of the proposed CAL results in a sensitive premises approximately 200m from the site that was originally approximately 800m from the existing treatment facility. This significantly increases the potential for environmental nuisance and there is no commitment to work through this issue.

The CAL and flare have been designed to minimise impacts on sensitive premises and it was determined that the separation proposed is sufficient. It is noted that there were no objections to the proposal and no concerns raised relating to potential odour. Issues relating to odour were comprehensively addressed in our advice to Council dated 29 November.

4.2 Aboriginal Heritage

It is unclear from the Interim Planning Scheme provision whether Council requires formal review or notification from Aboriginal Heritage

There is no requirement under the planning scheme to formally notify Aboriginal Heritage Tasmania (AHT) however they were consulted and AHT advised they had no concerns.

4.3 Codes

Although impacts are identified and mitigation measures are proposed there is no 'site specific study' to justify the impacts or measures proposed.

A copy of the EMP is attached – if requested this would have been provided but due to the technical nature of the information it was not included in the planning report for exhibition. It is considered that the performance criteria within Clause 11.6.1 P2 have been complied with.

5. Conclusion

Council should determine whether the development proposed meets overall environmental performance requirements or whether it only addresses the quality of waste flowing to the TasWater plant.

It is the intention of the proposal to improve the quality of effluent to the TasWater plant. This is not proposed at the expense of "overall environmental performance requirements" as suggested and it is considered that all relevant environmental considerations have been addressed.

The new CAL infrastructure is at the 'end' of the existing process, however as the existing discharge has been mentioned in the report there is no reference or discussion for opportunities to improve performance of the existing infrastructure.

The CAL is not at the end of the process. It is an additional step in the waste management process which will "improve the performance of existing infrastructure" by reducing biological loads and improve end point discharge from the existing Tas Water treatment plant.

The site specific study or environmental effects report should have been included in the proposal to enable Council and the EPA.

The EMP was submitted to the EPA – in line with the agreed process. A copy is attached for Council's information. The EPA has not required any additional information at this stage.

I trust the above and the EMP have addressed your concerns. If you require any further information, please don't hesitate to contact me. Any more technical issues can be passed onto our Senior Scientist who undertook the assessment and prepared the EMP if required. Please note that our offices will be closed from 23 December until 9 January so if you require further information it would be best to request this as soon as possible.

Yours sincerely

Leigh Knight
Land Use Planner

JBS Longford Waste Waterwater Treatment Plant Environmental Management Plan

transport | community | mining | industrial | food & beverage | carbon & energy

Prepared for:	**JBS Australia Pty Ltd**
Client representative:	**Troy White**
Date:	**17 November 2016** **Rev 01**

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Appendices

Prepared by: Tonia Robinson Date: 17 November 2016

Reviewed by: Dr Ian Woodward Date: 17 November 2016

Authorised by: Dr Ian Woodward Date: 17 November 2016

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Draft to client	TR	IW	IW	26.10.2016
00	Issue to client	TR	IW	IW	09.11.2016
01	Issue to EPA	TR	IW	IW	17.11.2016

1. Introduction

1.1 Title of the proposal

This project is known as JBS Longford Wastewater Treatment Plant.

1.2 Proponent details

JBS Australia Pty Limited

Registered Address:
62 McRoyle Street,
Wacol QLD 4076

Postal Address:
PO Box 139
Booval QLD 4304

ABN: 14 011 062 338
ACN: 011 062 338

1.3 Contact person's details

JBS Australia's contact person for this project is:

Mr Troy White
Group Environment Manager
JBS Australia Pty Limited
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http://www.jbssa.com.au

1.4 Proponent background

JBS Australia Pty Limited (JBS) is Australia's largest meat packer, marketer and exporter, supplying fine grain fed and pasture fed meats to export and domestic customers for more than 20 years. With approximately 13,500 employees spread across their offices, processing plants and feedlots, JBS exports to more than 50 countries around the world.

JBS Australia's Southern Division, headquartered in Melbourne, has the most diverse and complex processing facility capabilities within the JBS family of companies, processing sheep, goats, pigs and cattle at six processing facilities spread throughout the southern states of Australia. The Southern Division comprises facilities in South Australia, Victoria, New South Wales and Tasmania with a combined processing capacity of 110,000 small stock and 9,500 head of cattle per week, employing 2,500 employees.

JBS purchased the Longford plant in May 2008 from the Tasman Group Services Pty Ltd. This operation was included in a larger acquisition of plants which included 4 other abattoirs and 1 feedlot operation.

1.5 Proposal background

JBS operates a multi species abattoir at Longford. The operations were initially approved in 1977 under the (now rescinded) *Environment Protection Act 1973*, as a Licence to Operate Scheduled Premises (Licence No. 1567). Under the transitional provisions of the *Environmental Management and Pollutions Control Act 1994* (EMPCA) the Licence to Operate becomes a permit taken to be issued under the *Land Use Planning and Approvals Act 1993* (LUPAA).

Two subsequent Land Use Planning Permits were issued in accordance with LUPAA by the Northern Midlands Council. Both permits incorporated environmental conditions required by the Environment Protection Authority (EPA), formerly the Board of Environmental Management and Pollution Control:

- The first in December 2003, incorporating environmental conditions (ELMS No. 6282) for the installation and operation of a sterilisation system for the purpose of rendering works; and
- The second in September 2009, incorporating environmental conditions (No. 7870) for the installation and operation of a wood-fired boiler.

JBS is initiating a waste water treatment upgrade to improve the quality and reduce the quantity of tradewaste sent to the TasWater Longford wastewater treatment plant (WWTP). In order to more effectively treat wastewater prior to it being directed to the TasWater WWTP, a Covered Anaerobic Lagoon (CAL) within the JBS Longford site is proposed. The CAL comprises two ponds with a combined volume of 30 ML and will treat approximately 375,000 kL per year of waste. The budgeted cost for the proposed CAL is $3.2 million.

1.6 Other proposals in the region

At the time of writing there are no other known proposals in the region, proposed or approved that will affect the development of a wastewater treatment plant at the Longford site.

1.7 Environmental legislation

1.7.1 Commonwealth legislation

The *Environment Protection and Biodiversity Conservation Act 1999* is not triggered by this proposal as the project area does not significantly impact any matters of national environmental significance (MNES).

1.7.2 State legislation

The Tasmanian Resource Management and Planning System (RMPS) was established to achieve sustainable outcomes from the use and development of the State's natural and physical resources. Several pieces of legislation embody the aims of the RMPS.

Within the context of this development proposal, there are a number of applicable statutes:

- State Policies and Projects Act 1993
- Land Use Planning and Approvals Act 1993
- Environmental Management and Pollution Control Act 1994.

These are briefly outlined on the following page.

State Policies and Projects Act 1993

The *State Policies and Projects Act 1993* establishes the process to put in place State Policies under the Resource Management and Planning System of Tasmania. State policies seek to ensure a consistent and coordinated approach and incorporate the minimum amount of regulation necessary to achieve their objectives of managing natural resources. State Policies are implemented through their integration into Local Government Planning Schemes.

Currently there are three State Policies:

- State Coastal Policy 1996 (Coastal Policy)
- State Policy on Water Quality Management 1997 (Water Quality Policy)
- State Policy on Protection of Agricultural Land 2009 (PAL Policy).

State Coastal Policy 1996 (Coastal Policy)
The purpose of the *State Coastal Policy 1996* is to implement the sustainable development objectives of the RMPS in Tasmania's coastal areas.

The Policy is based on the following three core principles that address these objectives:

- Natural and cultural values of the coast shall be protected
- The coast shall be used and developed in a sustainable manner
- Integrated management and protection of the coastal zone is a shared responsibility.

The Coastal Policy is applicable to all Tasmanian State waters and land (excepting Macquarie Island) within one kilometre inland of the high-water mark.

The Coastal Policy is not applicable to any part of this proposal as no part of the site is within one kilometre of the high-water mark.

State Policy on Water Quality Management 1997 (Water Quality Policy)
The purpose of the Water Quality Policy is to achieve the sustainable management of Tasmania's surface water and groundwater resources by protecting or enhancing their qualities while allowing for sustainable development in accordance with the objectives of the RMPS.

Management measures will be applied to ensure compliance with the Water Quality Policy. A full description of these measures is described in section 6.2.4.

State Policy on Protection of Agricultural Land 2009 (PAL Policy)
The purpose of the PAL Policy is to "conserve and protect agricultural land so that it remains available for the sustainable development of agriculture, recognising the particular importance of prime agricultural land". The main objective of the PAL Policy is to ensure that the productive capacity of agricultural land is appropriately recognised and protected in the use and development of agricultural land.

The PAL Policy focuses on protecting prime agricultural land (land capability classes 1, 2 and 3) from conversion to non-agricultural uses or from being fettered from being used for agricultural activities. The proposed Cal site is classified as Class 4.

There is no prime agricultural land in the area of the proposed development.

Land Use Planning and Approvals Act 1993 (LUPAA)

Under LUPAA, Councils are required to administer the development and use of land within their municipal boundary. The assessment of development and use is undertaken in accordance with the relevant planning scheme(s), for this project, the *Northern Midlands Interim Planning Scheme 2013*.

Environmental Management and Pollution Control Act 1994 (EMPCA)

The project is a level 1 activity, which is defined as an activity that may cause environmental harm which requires a permit under LUPAA, but does not include a Level 2 or Level 3 activity. The CAL is a standalone facility in its own right, and is not integral or essential to the operations of the abattoir. It is a pre-treatment facility to reduce the loading on the Longford wastewater treatment plant. Under clause 3(a) of Schedule 2 of the EMPCA, wastewater treatment plants are deemed to be Level 2 activities if they *"involve the discharge of treated or untreated sewage, septic tank effluent or industrial or commercial wastewater to land or water, being works with a design capacity to treat an average dry-weather flow of 100 kilolitres or more per day of sewage or wastewater."*

Irrespective of whether the CAL treats more than 100 kL per day, it discharges only to trade waste and not to the environment, and is consequently not a Level 2 activity. It therefore does not require referral to the EPA Board for environmental assessment. It is nevertheless an environmentally relevant activity which warrants advisory notification to the EPA Director, and hence JBS is providing the EPA with this Environmental Management Plan. If the EPA considers it appropriate to do so, any environmental requirements would be issued by the EPA Director through an environment protection notice.

This EMP describes in detail how the potential environmental impacts of the proposal will be managed and mitigated.

Other state legislation applicable to this project includes:

Aboriginal Relics Act 1975

A search of the Aboriginal Heritage Register (AHR), formerly the Tasmanian Aboriginal Site Index (TASI), found no Aboriginal heritage sites recorded within or close to the Longford site.

Threatened Species Protection Act 1995

The site is currently utilised for grazing and is mapped as Agricultural land (TASVEG 3.0). The proposed development is unlikely to impact on any flora or fauna species listed under the *Threatened Species Protection Act 1995*. Refer to sections 5.2.7 and 5.2.8 for further details.

Historic Cultural Heritage Act 1995

A search of the Tasmania Heritage Register[1], identified no historic heritage sites or values in the vicinity of the proposed CAL site.

Forest Practices Act 1985

For many activities a Forest Practices Plan (FPP) is required under the *Forest Practices Act 1985* where the clearing of forest is in excess of 1 hectare or 100 tonnes of timber (in areas of 'vulnerable land' these thresholds are lower).

A FPP is not required for this project as the land is already cleared.

[1] Search of the Heritage Register - theLIST, on 11.08.2016.

1.7.3 Local government

The proposed development is located within the boundaries of the Northern Midlands Council Municipality. The proposed use and development within the municipality will be assessed in accordance with the *Northern Midlands Interim Planning Scheme 2013*.

A development application was submitted to the Northern Midlands Council on the 8th September 2016. Refer to section 5.1 for information on the key planning aspects of the project.

2. Proposal Description

2.1 General Site Overview

The JBS Longford plant is the largest multi-species processing facility in Tasmania, and utilises state-of-the-art processing equipment and systems. Extensive cold storage facilities are also located at the plant. Production capacity is approximately 450 beef cattle and 1,500 sheep per day, sourced from Tasmania and King island giving it a premium product to supply to key markets in the USA, EU and China as well as domestically. The Longford site employs up to 450 people at peak production times.

The plant comprises the following areas:

- Main office, administration, training and amenities
- Cool stores including freezers and chillers
- The abattoir kill floor
- Rendering plant
- A boiler room
- Value added room for additional processing
- Workshop
- Covered and open holding yards
- An area for byproduct storage (meat meal, skin salting etc).

Existing plant details are provided in Appendix A.

The plant currently discharges wastewater to a TasWater wastewater treatment plant (WWTP) at Longford. Due to the potential for higher tradewaste charges in the future, JBS initiated an assessment of wastewater treatment options. A Covered Anaerobic Lagoon (CAL) was identified as the most appropriate option.

2.2 Wastewater Treatment Overview

2.2.1 Existing Wastewater Treatment

Wastewater from the JBS Longford plant is currently divided into two separate streams where the 'red' stream is pumped into two flow balance tanks prior to treatment through dissolved air flotation and the 'green' stream is pumped directly through a save-all prior to being pumped to the TasWater Longford WWTP. Stormwater (with the exception of the first flush) is directed to Back Creek via a drain. The existing flow of wastewater from the JBS Longford Plant is indicated in Figure 1.

At the TasWater Longford WWTP wastewater is directed to a CAL with an approximate 6 ML capacity. The CAL is a simple undivided HDPE lined lagoon, with an HDPE cover.

On exiting the CAL the wastewater enters the first in a series of aerated water treatment ponds prior to treated effluent being discharged to Back Creek.

The CAL has been operating for over a decade and has enabled a significant reduction in the biological load entering the aerated lagoons. The sludge build up and remaining effective lifetime of the existing CAL is unknown. It is the only entry point for wastewater from the JBS Longford Plant and it is estimated that between 45% and 50% of the total flow to the TasWater Longford WWTP is from the Plant.

2.2.2 Proposed Additional Wastewater Treatment Infrastructure

Following discussions with TasWater regarding the underperformance of the Longford WWTP, JBS is initiating a waste water treatment upgrade to improve the quality and reduce the quantity of tradewaste sent to the WWTP. In order to more effectively treat wastewater prior to it being directed to the TasWater WWTP, a CAL within the JBS Longford site is proposed to treat approximately 375,000 kL per year of waste.

All other facets of the existing water treatment system will remain the same. The proposed new CAL will discharge into the first of the series of aerobic ponds at the Longford WWTP or into the existing TasWater WWTP CAL, at the discretion of TasWater.

Due to space constraints the new CAL's chamber volume will comprise two stages, one slightly smaller than the other. As with the existing CAL, the new CAL's chamber will have a HDPE lining and cover. The total volume of the proposed JBS CAL will be significantly greater than the existing TasWater WWTP CAL (30 ML, rather than 6 ML) to ensure a high level of treatment. The new CAL will be positioned alongside the existing pipeline that runs from the JBS Longford Plant to the TasWater Longford WWTP and that pipeline will be intercepted to allow flow into and then out of the new CAL. The CAL has been designed to operate in the mesophillic range as per the existing CAL. Meatworks waste is usually a beneficial feedstock for anaerobic digestion and in this case has proven to perform well and cause no issues in the existing CAL over a long time period.

The CAL will be fitted with sludge withdrawal pipes along the base, a weighted HDPE cover, and with stormwater drainage to ensure safe management of the site. Methane generated will be dried in a gas treatment process train and flared to remove its greenhouse gas effect. The volumes of gas produced will be studied during the initial years to determine if it is economic for it to be pumped back to the plant and used in plant-water heating. Consistent with contemporary greenhouse gas management, the gas treatment train will contain a flare for any excess gas that is not used on the plant. The flare will be sized to take all of the methane produced to ensure continuous performance if needed.

For future possible gas use on the site the upper cover of the CAL will be able to elevate to store gas overnight. This will enable storage during times that the plant is not operating to ensure beneficial reuse whenever possible. The size of the covering membrane will accommodate weekend storage; however, initially the flaring of gas is likely to operate relatively continuously. The covering membrane will have safety valves for pressure protection of the CAL structure and weights to protect it from wind action.

The proposed wastewater flow following the construction of the proposed new CAL is indicated in Figure 2. A CAL design is provided in Appendix B.

A detailed description of all components is provided below.

Pond Liner system components

The CAL will comprise of two covered ponds, linked via a pipe. A gas collection ring main will be run around the perimeter of each pond underneath the pond covers. A single isolation valve and tee off will be provided for each ring main, with connection to a single feed to the flare station. This arrangement will allow for pressure equalisation in each pond, and allow one of the ponds to be taken off line for

maintenance while the other pond remains operational. Each pond will be provided with pressure relief vents to provide a degree of redundancy in the highly unlikely event that the flare fails to operate.

HDPE water-filled pipe ballast weights will be provided to direct pond cover stormwater to nominated areas on the cover to allow pooling and collection via stormwater pumps when the cover is deflated. When the cover is inflated water will automatically run-off into stormwater collection pipes. It is expected that a ribbed ballast weight system will be provided with two central weights (immediately adjacent to each other) running the full length of each pond. The pond covers will be designed to maximise biogas storage capacity while minimising wind effects and allowing for removal of all pond stormwater.
Each pond will be lined with minimum 2 mm thick HDPE liner to provide an impermeable membrane to contain the incoming effluent waste. An inflatable 2 mm thick HDPE cover will be provided to allow collection of the biogas. Biogas relief pressure is expected to be in the order of 60 Pa. The expected life of the liner and cover is a minimum of 20 years. Pond cover storm water pumps will be positive displacement self priming pumps less than 1 kW rating with a flexible suction line directed to the pond cover low points.

Hydraulic system components

Effluent from the abattoir will be diverted through the CAL ponds from the current pipe line that runs to the TasWater treatment plant at Longford. From the CAL it will discharge via gravity flow into a pump pit. The pumps will direct effluent back to the existing line where it will flow on to the TasWater treatment plant.

A weir will be provided in the pump pit to maintain the pond height at a fixed level. A small shed will be provided downstream of the pump station to house metering equipment for monitoring the effluent flow and quality.

A sludge handling system shall be provided at the base of each lagoon for removal of sludge in the event of biological process failure of the ponds. The handling system will comprise of two collection pipes running along the base of each pond, with pipe weights to prevent the pipes from rising due to gas build up. Extraction ports will be provided to allow removal of the sludge via pump truck. The collection pipes will have holes drilled at specified spacings to allow extraction of the sludge from the pond base.

Gas piping will be required to direct biogas from inside the pond covers to the flare/biogas facility and the pond pressure relief vents.

A clean water supply will be required to provide a source of water for priming the pond cover stormwater pumps, and gas relief pressure vents.

Gas train equipment

The gas train equipment includes a flare and biogas blower station and water seal gas relief vents, with one vent installed at each pond.

Design Basis
Equipment and piping is sized on 454 m^3/hr at STP of biogas production. This is double the expected output based on recommendations provided by the gas flare supplier. Calculations carried out to establish the expected gas production of the facility suggest a likely peak production rate of 227 m^3/hr; however, the storage of gas in the ponds overnight will allow for higher delivery rates during the day. Over sizing of the plant is therefore the main contingency in place to deal with excess gas production.

Combustion of generated gas and the proposed flare
Gas flaring will be on a pressure trigger. For the first years of operation gas will be flared relatively continuously as it is produced. This is similar to the existing flare approximately 600 m away at TasWater's Longford WWTP.

Re-use of gas in the plant will be investigated when ongoing production rates are clear and it will be subject to an economic study. There are not expected to be any barriers to re-use and the designs have been made anticipating the infrastructure needed. Under these conditions gas flaring is a last resort after beneficial reuse. Gas will be flared when the capacity of the liner to store gas is reached – with a pressure related trigger to initiate flaring. It is designed to operate only towards the end of a weekend (expected at full production to be on Sunday nights until plant startup early Monday morning). The flare will be an open type.

Gas production is expected to begin at 160 m^3/hr biogas with the design capacity up to 230 m^3/hr. Under a reuse scenario at the lower level (160 m^3/hr) the flare is not expected to operate at all. Under the higher level of gas production it will operate toward the end of the weekend (there is a 40 hour holding capacity in the liner).

Operational protocols and the maintenance program will be according to the manufacturer's standard protocols[2]. The normal procedures include automated warnings and weekly or monthly equipment checking and preventative maintenance. This will include but is not limited to top up of the gas pressure relief vent water trap, calibration of methane and flow meters every 6 months, burner maintenance and checks every year.

Flare equipment and operation

The capacity of the flare system is designed for a flow of 460 m^3/hr. The stack is expected to be approximately 8 m high.

As described above, initial gas production is expected to commence at a consumption rate of 160 m^3/hr, with design capacity at 230 m^3/hr.

The system for gas treatment is similar to that currently used at TasWater's Longford WWTP. This combination of water pot knock out and flare produces no noticeable odours.

The flare will use an LPG pilot and auto ignition system. The condition of the entire system will be monitored by a SCADA system and site warnings of errors including an automated telephone cascade for times when the plant is not running will be part of the setup.

[2] The anticipated manufacturer is ABM Combustion Pty Ltd.

PS

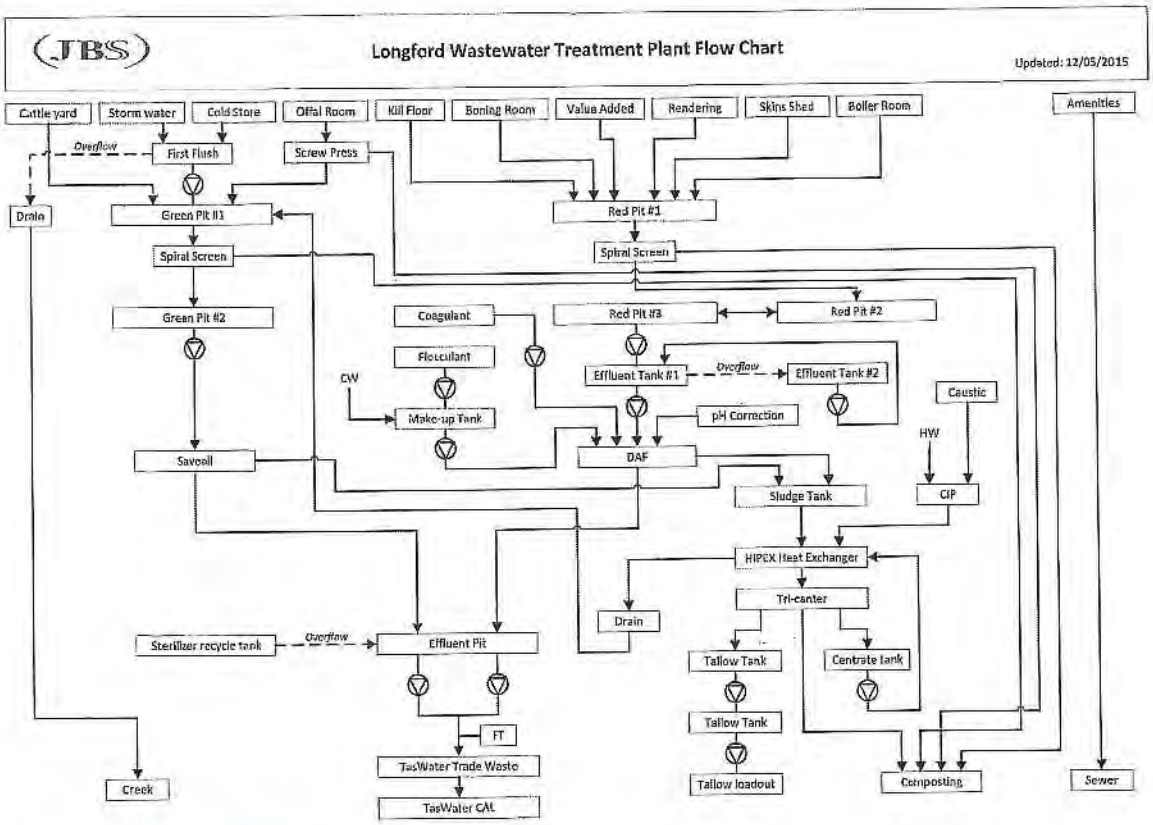

Figure 1 - Existing wastewater treatment process

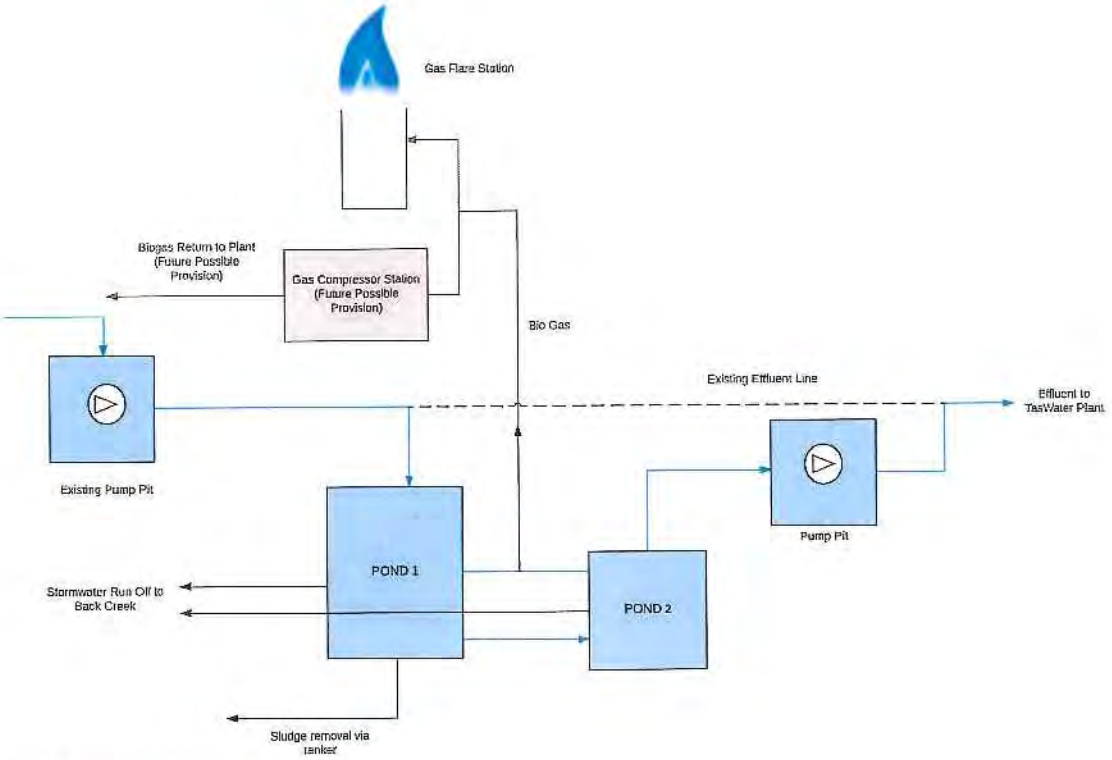

Figure 2 - Proposed new wastewater treatment process

2.3 Construction

Site preparation works

As the location for the proposed CAL is a cleared area, there are no site preparation works required prior to construction.

Plant hygiene measures

Plant hygiene measures will be implemented to prevent the introduction and/or spread of introduced plant species, weeds, pests and diseases (such as *Phytophthora cinnamomi*) during construction.

The plant hygiene measures are as follows:

- Machinery used in the clearance and construction work will be washed down prior to moving onto the site, to reduce the possibility of importing weed and soil pathogens onto the premises
- Machinery used in the clearance and construction work will be washed down prior to moving to another site, to reduce the possibility of transmitting any weed and soil pathogens in soil on machinery to other premises
- Any material required from outside the site will be sourced from suppliers that are certified to be free of *Phytophthora cinnamomi*
- In the event that *Phytophthora cinnamomi* is detected, wash down procedures will be instigated in accordance with Appendix 5 (Washing down) of *the Interim Phytophthora cinnamomi Management Guidelines* produced by the former Department of Primary Industries and Water now Department of Primary Industries, Parks, Water and Environment.

Construction methods

Construction of the proposed CAL will involve the following:

- Construction of access road(s)
- Stripping the topsoil from the lagoon footprint and placement in stockpiles
- Proof roll foundation for walls, remove any soft material and replace with compacted fill
- Excavate to pond invert level
- Cart excavated material to pond walls, place and compact
- Final trim of lagoon
- Place topsoil to outside of walls
- Inspect lagoon floor for presence of rocks or soft areas. Remove unsuitable materials and replace with compacted fill
- Construct liners
- Install pond covers
- Install pipework and pits
- Install pump station and flaring station.

The equipment expected to be used for construction is outlined below (however contractors may use different equipment to that specified)

- Excavation – scrapers
- Shaping excavated surfaces and lagoon walls 20 - 25 tonne hydraulic excavator
- Placing material in walls – D7 bulldozer, sheepsfoot compactor
- Water cart.

Timeframe

JBS plan to commence construction of the CAL in February 2017 with construction finishing in June 2017. The proposed timetable for the major components of construction are provided below. This timetable is indicative only and may be subject to change.

Task	Timeframe
Site establishment	February 2017
Construct access track(s)	February 2017
Bulk earthworks	February - April 2017
Hydraulics work	May - June 2017
Installation of pond liners	April – May 2017
Installation of pond covers	May 2017
Fill ponds	May 2017
Bio Gas Flare installation	late May 2017

2.4 Commissioning

The main items to be commissioned as part of the CAL development include the following:

- Pump station and metering equipment
- Stormwater pumps
- Electrical equipment associated with the bio gas flare.

It is anticipated that commissioning of plant will take one week.

Anaerobic material from the TasWater CAL at Longford will be utilised for seeding of both lagoons. This process can take between 6 to 12 months for the ponds to be fully efficient in BOD and suspended solids removal.

2.5 Off-site infrastructure

Construction access to the site is planned to be through the TasWater treatment plant and a farmer's paddock to the west of the site following the pipe easement from the abattoir to the treatment plant. All large deliveries will be planned for early in the project to maximise the opportunity for dry access presented by the drier late summer and early autumn weather conditions.

The existing access track along the southern fence line of the JBS site will be upgraded by laying down compacted gravel road base.

No new off-site infrastructure will be required as part of the proposed CAL.

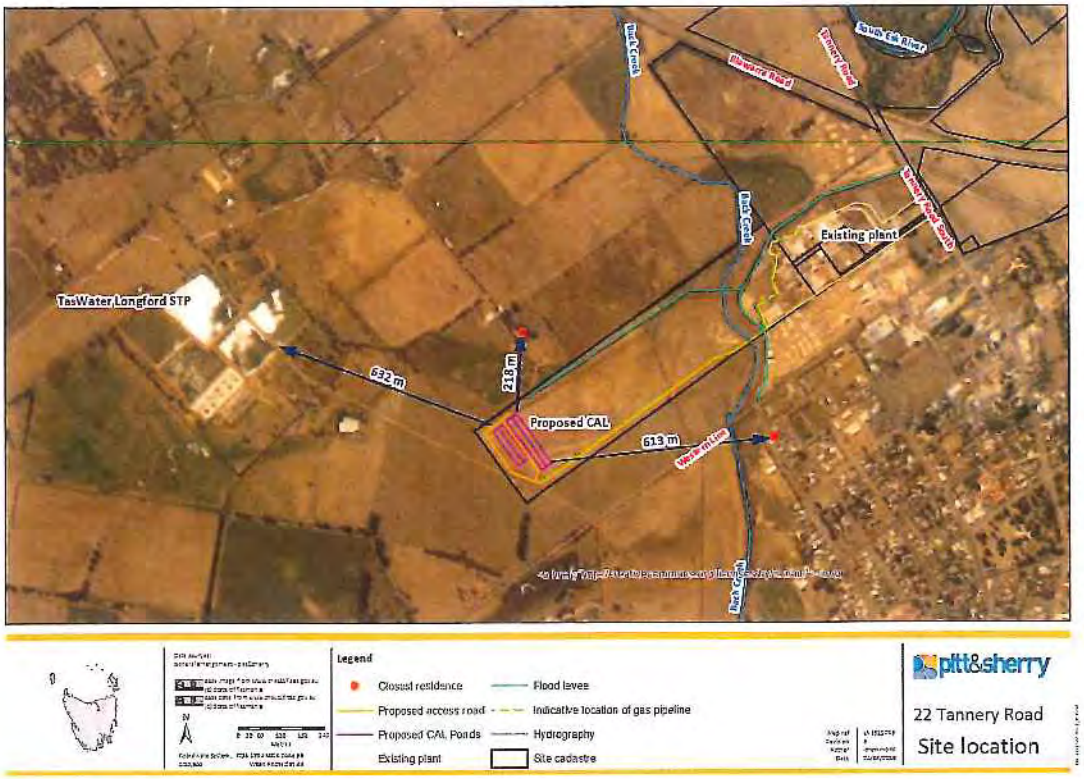

Figure 3 - Site location

3. Project Alternatives

The purpose of the proposed CAL is to reduce the load on the existing TasWater wastewater treatment system at Longford, with an estimated total flow of between 45% and 50% of the TasWater Longford WWTP coming from the JBS Plant.

The existing TasWater system has been underperforming and hence JBS initiated an assessment of treatment options. A Covered Anaerobic Lagoon (CAL) was identified as the most appropriate option.

The alternative treatment option investigated for the Longford site was that of a chemical based approach. That would have required an upgrade to the existing waste water system, including the replacement of the dissolved air flotation (DAF) and Saveall with additional or new DAF to handle the capacity. Further, the process would have necessitated a significant increase in annual chemical consumption to facilitate the required load reductions. Based on this the CAL was determined to be the most cost effective solution for the site.

4. Public Consultation

JBS has undertaken consultation with key stakeholders including the Northern Midlands Council, TasWater and the Environment Protection Authority.

Stakeholder consultation to date has included the following:

- Discussions with TasWater regarding CAPEX investment required at the Longford Municipal Treatment plant to address historical compliance issues.
- Combined meetings with TasWater/EPA at the JBS Longford site to discuss and scope the CAL option.
- EPA/TasWater/Community stakeholders visits to site at various times to review odour issues.
- Meetings with Northern Midlands Council and JBS Senior management regarding the proposed paths forward and the CAL option.
- EPA/Northern Midlands Council site visit to discuss the proposed approval process of the CAL.

Further stakeholder consultation will be undertaken as required.

5. The Existing Environment

5.1 Planning aspects

The site is located off Tannery Road in Longford in northern Tasmania. The certificate of title for the land is CT 127130/1.

The land tenure of the project area is private freehold. The surrounding land tenure to the north, south, east and west is also private freehold. Refer to Figure 4 for a map of the land tenure.

The site is currently zoned Rural Resource under the *Northern Midlands Council Interim Planning Scheme 2013*. All surrounding land use is also zoned Rural Resource. Refer to Figure 5. There is no requirement for rezoning of the land. Refer to Figure 5 for a map of the land use zoning of the site and surrounding land areas.

The existing plant is zoned General Industrial and the closest residences are General Residential. The TasWater Longford sewage treatment plant (to the north-west of the proposed CAL) is zoned Utilities.

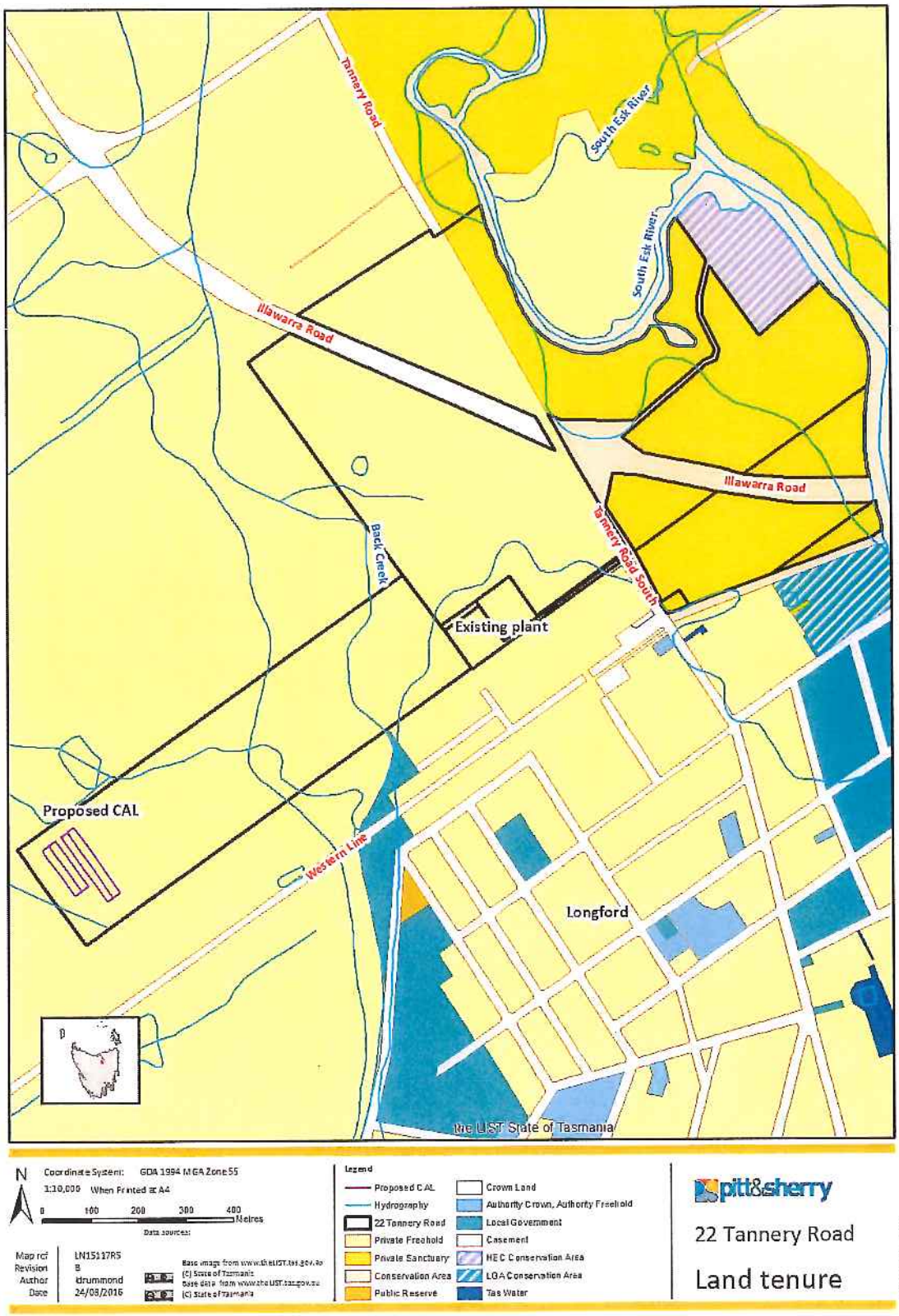

Figure 4 – Land tenure

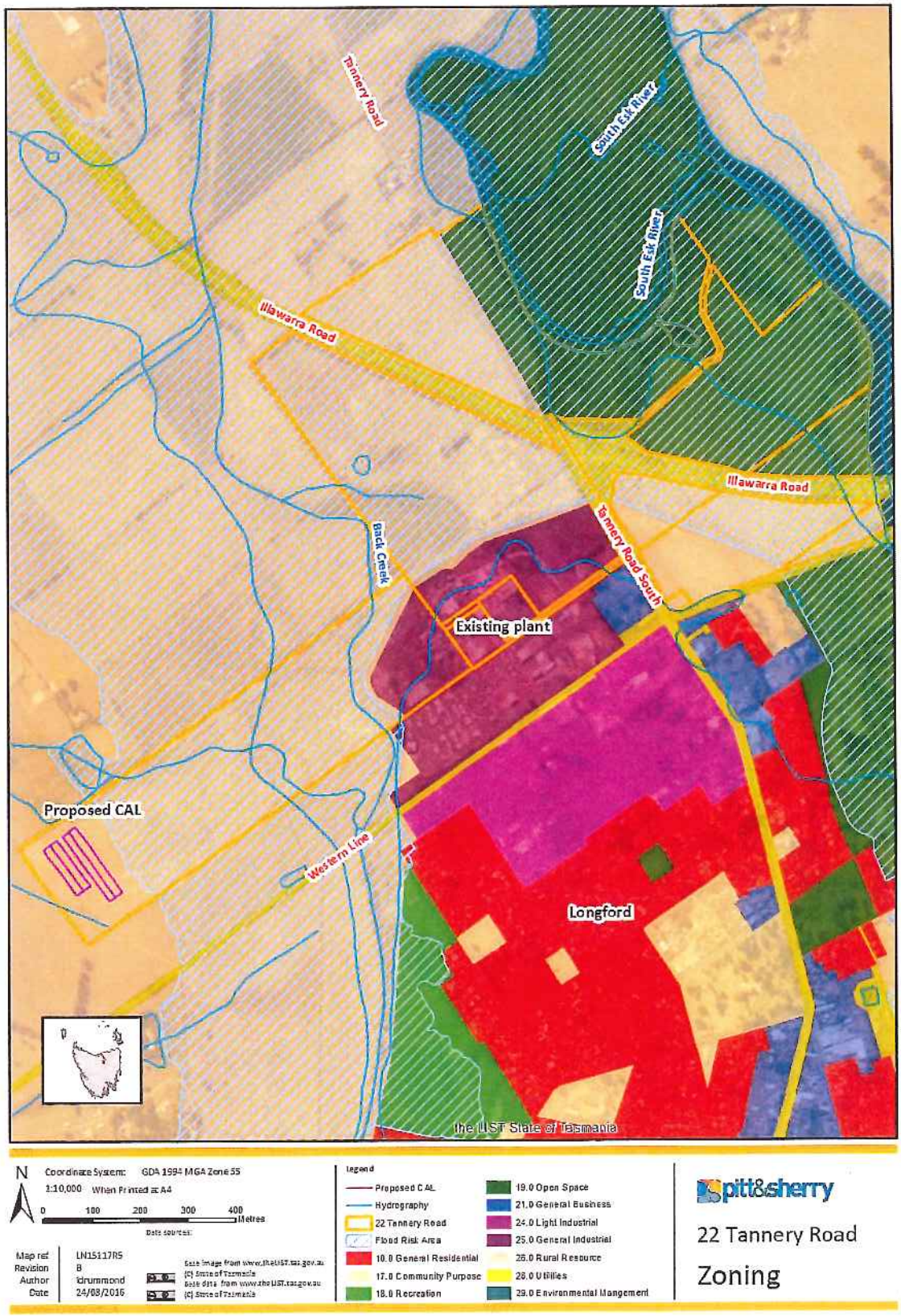

Figure 5 – Land zoning

5.2 Environmental Aspects

5.2.1 Topography

The topography of the area generally grades to Back Creek with the northern portion of the site (existing plant) sloping to the south west and the southern portion of the site (proposed CAL) sloping to the north west. More broadly, the area is comprised of gently undulating valleys with outcrops of older volcanic and alluvial gravel, sands and till. Figure 6 shows the location of the proposed CAL and the surrounding topography.

Figure 6 – Photo of the proposed CAL location

5.2.2 Local Climate

The closest active Bureau of Meteorology (BOM) weather station for rainfall is at Longford (Denton Close), Station no. 91054. The station opened in 1886 has an elevation of 140 m. Table 1 describes the monthly rainfall statistics for Longford. The closest active BOM site for temperature is at Launceston Airport, station no. 91311, which opened in 2004 has an elevation of 167 m. describes the monthly temperatures at the site.

Table 1 – Monthly rainfall summary statistics (Longford)

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	41.4	33.6	39.33	48.9	56.7	59.7	68.2	69.3	57.5	58.1	47.8	48.2	631.0
Lowest	3.8	0.0	1.3	0.0	3.8	2.0	12.9	10	10.5	5.9	5.4	1.8	369.7
Median	33.5	27.8	32.5	42.2	50.2	52.4	63.2	62.8	52.5	53.0	42.6	43.1	611
Highest	166.8	141.8	148.1	205.2	182.8	168.9	192.6	192.3	154.1	152.6	132.2	164.8	955.2

Table 2 – Monthly (mean) temperature statistics (Launceston Airport)

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Monthly mean maximum temperature													
Mean	25.1	24.8	22.6	18.2	14.7	12.1	11.8	13.0	15.2	17.7	20.3	22.5	18.2
Lowest	23.8	23.1	20.3	15.6	13.4	11.0	11.0	11.7	14.1	16.7	18.4	20.3	17.7
Median	25.5	24.9	22.6	18.0	14.9	12.1	11.9	13.1	15.4	17.7	20.4	22.5	18.1
Highest	26.3	27.4	24.9	19.5	15.8	13.1	12.8	13.9	16.2	19.7	22.2	24.9	18.8
Monthly mean minimum temperature													
Mean	10.9	11.3	9.4	6.7	4.3	2.5	2.2	2.9	4.1	5.4	7.7	8.9	6.3
Lowest	9.7	9.9	7.4	4.5	2.5	0.0	1.3	0.9	3.2	4.0	5.6	7.6	5.3
Median	10.8	11.2	9.2	6.8	4.1	2.5	2.1	2.7	4.0	5.3	7.5	9.2	6.4
Highest	12.7	13.4	10.6	8.2	7.2	4.1	3.6	6.1	5.5	7.3	9.5	10.0	6.8

The 9 am and 3 pm wind roses for Launceston Airport are shown in Figure 7 and Figure 8. The percentage of the year that winds blow from each of the eight (8) sectors (N, NE, E, SE, S, SW, NW and W) is shown by the length of the radial arms. The colours indicate the breakdown within different wind speed ranges.

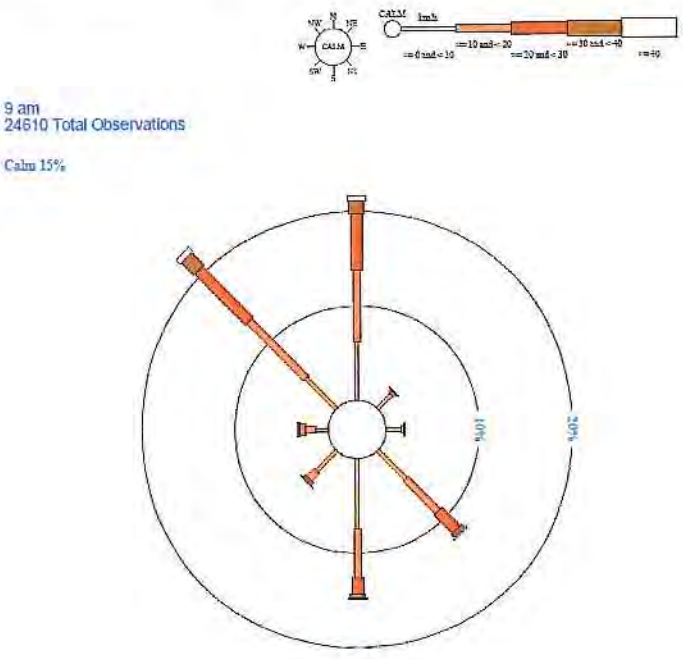

Figure 7 - 9am wind rose for Launceston Airport

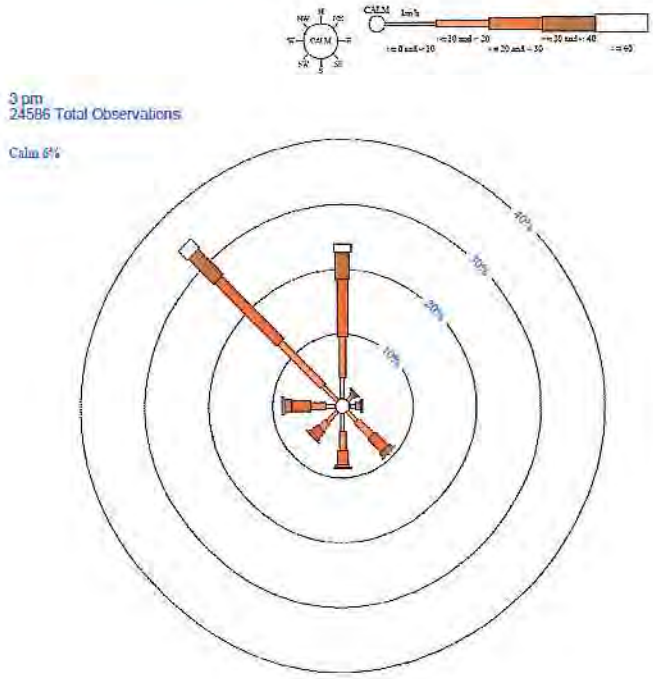

Figure 8 - 3pm wind rose for Launceston Airport

5.2.3 Land systems and Soils

There are three land systems mapped within the proposed project area[3]. These are described below.

394121 Powrana

Sandy loams with mottled yellowish brown duplex soils. Both the existing plant and proposed CAL is located on this land system. Hazards include moderate sheet and wind erosion.

384121 Cressy – Longford

Gravelly light clay with mottled grey and strong brown clay soil with a uniform texture. This system includes the area to the north of the proposed CAL. Hazards include moderate wind and rill erosion and low salting.

393121 South Esk River

Light clay with black clay soils with uniform texture. The area to the north of the existing plant is located on this land system. Hazards include moderate gully and stream bank erosion, flooding and waterlogging.

Land Capability

The 1:100 000 Land Capability Survey of Tasmania for South Esk was used to determine the land capability for the area[4]. The proposed site is classified as Class 4 land:

'Land marginally suitable for cropping because of limitations which restrict the range of crops that can be grown, and/or make major conservation treatment and careful management necessary. Cropping rotations should be restricted to one to two years out of ten in a rotation with pasture or equivalent. This land is well suited to intensive grazing.'

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[3] Pinkard, G. J. and Department of Agriculture, 1980, *Land systems of Tasmania: region 4*. Tasmanian Department of Agriculture Hobart, 1980.

[4] Grose, C. J. And Moreton, R. M., 1996, *Land Capability Survey of Tasmania. South Esk, 1:100 000 map*. Department of Primary Industry, Tasmania, Australia.

5.2.4 Geology

The underlying geology comprises undifferentiated Cainozoic and Quaternary sediments and Tertiary gravels with poorly consolidated clays, sands and silts of the Launceston Tertiary Basin.

A geotechnical report[5] found that across the proposed ponds area there was between 0.1 m and 0.5 m of topsoil overlying the natural soil profile.

The subsurface conditions comprised various layers of: high plasticity, orange/red/grey mottled clay; cobbles and gravel (rounded) with some sand and fines; and fine grained sand, grey/orange mottled, trace of clay; all overlying high plasticity clay, orange/grey.

Water inflow within two of the boreholes was at 1.5 m and 2.5 m below the surface. These inflows are most likely associated with perched water tables in (more permeable) gravel layers overlying clay layers.

5.2.5 Surface water

The main drainage features near Longford include Back Creek, the South Esk River and the Macquarie River. The site drains to Back Creek, which crosses the site to the south of the existing plant. Back Creek drains to the South Esk River approximately 3 km downstream of the site. The South Esk River is located on the northern side of Illawarra Road approximately 500 m north of the existing plant area. The Macquarie River joins the South Esk upstream of the Longford township.

Vulnerability of the site to flooding

Parts of the site are located within the Flood Risk Overlay for the *Northern Midlands Interim Planning Scheme 2013* (refer Figure 5). Low lying land within the Longford area is prone to flooding and the flood levees present along the northern boundary of the site form part of the Council's flood management system.

Recently provided hydrological flood modelling advice from the Northern Midlands Council[6] suggests that the 100 year AEP in the vicinity of the CAL will be RL 141.2 AHD. The current preliminary design has the RL of the top of the CAL at 141.4 AHD with a freeboard of 700 mm. It is therefore likely that based on the recent flood modelling information from Council the CAL cover is not at risk of inundation. However, inundation of the eastern embankment and the flare station could occur based on the advised flood level of RL 141.2. Inundation is not expected to pose a significant risk to the environment or community and the system is considered to be consistent with the requirements of the *Northern Midlands Interim Planning Scheme 2013*, in particular the Flood Prone Areas Code:

Flood Prone Areas Code
The purpose of the flood prone areas code is to:

a) Ensure that use or development subject to risk from flooding is appropriately located and that adequate measures are taken to protect human life and property and to prevent adverse effects on the environment.

b) Determine the potential impacts of flooding through the assessment of risk in accordance with the Australian Standard.

The CAL was located to avoid the known inundation area as shown on the planning scheme overlay mapping at the time of lodgement of the Development Application on 8th September 2016. The inundation map provided by Council on 27th September 2016 indicates that a significant proportion of the site is now

[5] Tasman geotechnics, 2016, Geotechnical Investigation Preliminary Factual Report, 22 Tannery Road Longford.
[6] Correspondence from Northern Midlands Council dated 27th September 2016.

considered likely to be inundated in a 100 year event. However, the proposed CAL location is still considered appropriate for the following reasons:

- Risk - The contents of the CAL represent a minimal threat to human health. There is no mixing with any human waste and there are therefore no helminth/macroscopic pathogen challenges that relate directly to people. The coliform load is a potential issue but this would be a widespread issue that would be shared with the stockyards at the site, adjacent farmland, and to a lesser extent (due to lower stocking densities) to bush land being inundated.
- Dilution – in the unlikely event that the CAL was breached the contents will be significantly diluted by the volume of floodwater.
- Structure - The CAL earthworks embankment has similar structural stability to the Longford levee and is constructed from the same fill material. There are minimal entry and exit points for the piping to the CAL and these are controlled by valves. Under risk of flooding the valves would be closed. The transfer pits have concrete covers from which minimal if any leakage is expected.
- Gas venting - The production of gas means that there will continue to be a gas pocket under the cover which will attempt to rise. In the event that the flare station was flooded and inoperable, venting of the gas would still be required. This would be addressed by the gas pressure relief vents located on the top of the embankment at RL141.4 (above the flood height). The gas pressure relief vents will also be provided with a firm concrete ballast anchor footing to resist any passing water movement.

5.2.6 Groundwater

The Water Information System of Tasmania (WIST) lists 5 registered bores within 1.5 km of the site. Groundwater data from these bores is given in Table 3.

Table 3 - Groundwater bore details

Bore ID	Depth (m)	Standing Water Level (m)	Depth Water Struck (m)	Cumulative Yield (L/s)	Total Dissolved Solids (mg/L)
3779	26	-	23.8	0.32	900
3839	21.3	-	17.1	0.07	480
18012	33.5	7.6	32.0	-	-
18032	39.6	25.5	33.0	0.76	-
41451	50	4.25	4.0	-	882

There is no information available on local or regional groundwater.

5.2.7 Flora

Vegetation communities

The vegetation community at the site, as recorded on the LIST in accordance with TASVEG version 3.0, indicates that the entire site is classified as Agricultural land (FAG), with the exception of the JBS Longford Plant site which is classified as urban areas (FUR). Refer to Figure 6 which shows the location of the proposed CAL in a paddock.

The site has been significantly modified in the past due to the construction of the existing flood levees.

Land surrounding the site is generally FAG with the exception of the following:

- Weed Infestation (FWU) near the South Esk River to the north of Illawarra Road and
- Lowland *Poa labillardierei* Grassland (GBL) near the South Esk River to the north of Illawarra Road.

Threatened flora species

A search of threatened flora points, lines and polygons from the LIST identified three flora species listed under the State *Threatened Species Protection Act 1995* (TSPA) recorded within 1 km of the site. The species were recorded in association with the South Esk River approximately 500 m to the north of the existing plant area.

- Slender waterpepper (Persicaria decipiens), listed as vulnerable
- Water woodruff (Asperula subsimplex), listed as rare
- Ferny buttercup (*Ranunculus pumilio* var. *pumilio*), listed as rare.

Due to the proposed site being heavily disturbed and now utilised for grazing it is considered unlikely that the proposed CAL will impact on any threatened flora species, particularly given that the identified threatened species occur over 1 km to the north of the proposed CAL site.

Introduced plants and pathogens

The closest recorded weeds species, as identified on theLIST, was gorse (*Ulex europaeus*), blackberry (*Rubus fruticosus*) and crack willow (*Salix x fragilis nothovar. fragilis*), which were all identified in a drainage line over 500 m to the south of the proposed site.

5.2.8 Fauna

A search of threatened fauna points, lines and polygons from the LIST identified only one threatened fauna species recorded within 1 km of the site, the green and gold frog. The green and gold frog (*Litoria raniformis*) has previously been recorded in association with the South Esk River approximately 500 m to the north of the existing plant area (over 1 km from the proposed CAL). It is listed as vulnerable under the State TSPA and Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999.*

Due to the proposed site being heavily disturbed and now utilised for grazing it is considered unlikely that the proposed CAL will impact on any threatened fauna species, with the closest threatened fauna species identified over 1 km to the north.

5.2.9 Aboriginal cultural heritage

A search of the Aboriginal Heritage Register (AHR) found no Aboriginal heritage sites recorded within or close to the proposed works.

Accordingly, there is no requirement for an Aboriginal heritage investigation and AHT have no objection to the project proceeding.

5.2.10 Historic cultural heritage

There are no historic heritage sites listed on the Tasmanian Heritage Register in the vicinity of the proposed CAL. The closest listed heritage site is a cottage in Howick Street in Longford, approximately 800 m the east of the site[7].

[7] Source: theLIST 11th August 2016

5.3 Socio-economic aspects

The Northern Midlands municipality, where the site is located, has a diverse and expanding economy. There are many business and investment opportunities in most industry sectors, particularly in the core industries of agriculture, manufacturing, tourism and services. The local government area has the third highest total value of agricultural production in the state, with the ABS data 2011 recording a value of $130.58 million (not including forestry and livestock sold interstate)[8].

Longford is an important town in the northern midlands municipality. The town has an extensive business hub and has a several significant manufacturers which produce economic prosperity for the town, which include a timber processor, meat works (JBS) and a brick works. The town also has industries and businesses that support the important irrigation district of the area[9].

There are currently 400 staff employed at the Longford site. No additional staff will be required for the operation of the CAL.

The proposed wastewater treatment plant (CAL) is expected to have minimal socio-economic impact on the local community and economy. It is envisaged that local contractors will be engaged during the construction of the CAL and that during construction there will be additional jobs for the local community, which is a positive impact; however, once constructed and commissioned no new jobs will be required.

A summary of the social and demographic characteristics of the population living in the region are available from the Australian Bureau of Statistics (ABS). The site is located in the township of Longford, which has a population of 3,053, in accordance with the 2011 ABS Census data.

A summary of statistics from the Longford Urban Centre, from the 2011 Census data is provided below. This provides a basic overview of the social and demographic characteristics of the area, where employees are likely to reside.

- The total population is 3,053 people with 1,464 males and 1,589 females, and a median age of 45.
- Children 0-14 years made up 17.3% of the population and people aged 65 years and older made up 21.1% of the population, 61.6% of the population were aged between 15 and 64.
- There are 883 families in the area with an average of 1.8 children per family.
- At the time of the 2011 census, there were 1,347 people who reported being in the labour force, and of these 53.1% were employed full time, 33.8% were employed part-time and 8.2% were unemployed.
- The most common occupations in Longford included technicians and trades workers 19.3%, labourers 16.5%, clerical and administrative workers 12.2%, community and personal service workers 10.5%, professionals 10.3%, sales workers 10.0%, managers 9.9% and machinery operators and drivers 9.5%.

[8] Northern Midlands Council website

[9] **pitt&sherry**, 2012, Longford Development Plan, prepared for the Northern Midlands Council

6. Potential impacts and their management

6.1 Air quality

6.1.1 Existing conditions

There are currently no atmospheric emissions from the proposed CAL site as it is cleared land with no activities undertaken within the land parcel.

6.1.2 Performance requirements

Air emissions from the operation of the project must comply with the following:

- Tasmanian Environment Protection Policy (Air Quality) 2004
- Tasmanian OHS requirements (Work Health and Safety Regulations 2012)
- National Environment Protection Measure (Air) – PM10 and PM2.5 limits at the boundary of the premises
- EMPCA environmental nuisance provisions
- Northern Midlands Interim Planning Scheme 2013.

6.1.3 Potential impacts

There is potential for air emissions from both the construction phase as well as operational phase of the proposed project.

Construction phase
The primary air pollutant source during the construction phase is anticipated to be dust and vehicle emissions.

- Dust generation will potentially occur from clearing and preparation of the site, including activities associated with movement of vehicles
- Emissions will occur from the operation of construction and transportation equipment and vehicles.

Dust has the potential to cause an environmental nuisance if it is blown beyond the boundary of the site. It can cause respiratory annoyance or problems, reduce visual amenity and fall onto land or surfaces in other ownership, with the potential to contaminate clean surfaces. Diesel exhaust fumes can cause an environmental nuisance and, like all fossil fuel exhausts, contribute to greenhouse gases.

Operational phase
The proposed CAL is fully enclosed, with a floating cover. Biogas generated in the CAL is captured and piped to a gas flare or a boiler where it is burnt. During normal operational conditions there is no potential for the direct emission of pollutants or odour to the atmosphere from the CAL. The flare will discharge various combustion gasses, including carbon dioxide, carbon monoxide and nitrous oxides. Preliminary calculations indicate that biogas volumes of 160-170 m^3/hr (equivalent to 1.7 to 1.8 MW) are expected, which is quite small compared with typical industrial boilers and other combustion sources that operate in regional Tasmania. The flare will be a standard installation, most likely to be supplied by *ABM Combustion*, which will reliably operate at optimum combustion conditions. The combustion process will destroy all odours associated with the biogas or the wastewater.

The proposed new CAL will supplement an existing CAL operated by TasWater at the Longford Sewage Treatment Plant (about 1 km to the west) which currently treats the effluent from the JBS plant.

The combustion emissions generated by the flare at the new CAL will displace existing combustion emissions that would otherwise have been generated from the TasWater CAL, so there will be no net change to potential combustion emissions (other than through more effective actual digestion by the new CAL compared to the current one).

Initially, all of the biogas produced will be burnt in the flare but a second stage is under consideration where biogas will be utilised to fire a boiler at the existing plant. This may be implemented by modifying the plant's existing 5 MW George and George natural gas fired steam boiler to utilise both natural gas and biogas or by installing a new hot water boiler specifically to use the biogas. Implementation of this second stage will result in a net reduction of combustion emissions in the locality.

Fault or breakdown conditions may occur during the life of the CAL that may allow leakage of biogas to the atmosphere. However, the design of the installation and the routine maintenance and operational activities conducted will minimise the risk of this occurring and ensure that any leakages that do occur are resolved rapidly.

Activities associated with any desludging have the potential for odour generation. Sludge would not be stored on site and any sludge handling or transport would be conducted in such a manner as to minimise discharge of odour. However, as indicated in Section 6.5 these activities will be very infrequent or may not occur at all.

JBS operate an existing CAL at their Dinmore processing plant in Queensland which has been operational since early 2013. There have been no odour complaints since it's installation with the closest sensitive receptor 250 m from the plant. There has been no detectable odour in the immediate vicinity of the covers. There is potential for discharge of odour if venting was to occur from the CAL however under these circumstances the odour generated is minimal and often intermittent.

6.1.4 Avoidance and mitigation measures

The following mitigation measures will be utilised to minimise atmospheric emissions during project construction and operation:

- Vegetation clearance will not be undertaken during hot, dry and windy periods
- Vehicular speeds will be limited to 40 km/h on areas of unconsolidated or unsealed roads within the construction site
- Exhaust emissions will be minimised by ensuring that all equipment is properly maintained; only reputable contractors with well-maintained equipment will be used on-site
- Areas of disturbed soil will be revegetated as soon as practicable
- Routine maintenance and operational activities will minimise the risk of a fault or breakdown conditions which may allow leakage of biogas to the atmosphere and ensure that any leakages that do occur are resolved rapidly.

6.1.5 Commitments

Commitments	When
Commitment 1 - Vegetation clearance will not be undertaken during hot, dry and windy periods.	Construction
Commitment 2 - Vehicular speeds will be limited to 40 km/h on areas of unconsolidated or unsealed roads within the construction site.	Construction
Commitment 3 - Exhaust emissions will be minimised by ensuring that all equipment is properly maintained; only reputable contractors with well-maintained equipment will be used on-site.	Construction
Commitment 4 - Areas of disturbed soil will be revegetated as soon as practicable following construction.	Construction
Commitment 5 - Routine maintenance and operational activities will minimise the risk of a fault or breakdown conditions which may allow leakage of biogas to the atmosphere and ensure that any leakages that do occur are resolved rapidly	On-going

6.2 Surface water quality

6.2.1 Existing conditions

Existing conditions relating to surface water at the site are outlined in Section 5.2.5.

There will be no new sources of emissions for stormwater or wastewater from the site, with the exception of the CAL itself, which will go directly to the TasWater WWTP. Liquid emissions at the existing plant currently comprise stormwater and wastewater. There will be no change to the type and quality of wastewater created by processes in the JBS Longford Plant.

An example of analytical results of effluent currently discharging to the TasWater WWTP CAL is provided in Table 4.

Table 4 - Historical inflow water quality parameters

CAL Influent Testing Results		pH	BOD (5day) (mg/L)	COD (mg/L)	Total dissolved solids (mg/L)	Ammonia (mg/L)	Total Kjedahl Nitrogen (mg/L)	Total Phos-phorous (mg/L)	Oil & Grease (mg/L)
2015-2016	median	6.5	2,525	5,720	1,100	66	260	36	430
	90%ile	6.8	3,765	9,930	1,372	100	373	45	1,234
	std dev	0.26	849	3,168	243	36	93	9.5	411
	Mean	6.51	2,741	6,330	1,102	71	270	35	559
	n	66	28	68	68	35	68	68	64
2016 YTD	median	6.4	1,950	3,650	930	60	195	33	329
(August to Oct)	90%ile	6.8	3,940	9,460	1,208	75.4	325	41.9	1,009
	std dev	0.29	1236	6,298	333	18	123	14.6	907
	Mean	6.4	2,206	5,430	871	52	195	29.5	626
	n	18	15	18	18	15	18	18	18

Preliminary calculations undertaken for conceptual design indicates that the proposed CAL should result in the following wastewater emissions:

- Output COD should be between 700 to 1200 mg/L
- BOD output 500 to 800 mg/L
- Total dissolved Solids 300 to 500 mg/L.

This would result in a significant improvement in effluent reporting to the TasWater Longford WWTP.

6.2.2 Performance requirements

Aqueous emissions from the site must maintain or enhance the quality of surface waters downstream of the site in accordance with the *State Policy on Water Quality Management 1997* (State Water Policy). Other legislative requirements include:

- Water Management Act 1999
- State Stormwater Strategy 2010
- Tasmanian State Coastal Policy 1996.

In 2000 Protected Environmental Values (PEVs) were set for Lower Macquarie and South Esk Rivers[10].

The PEVs for the Lower Macquarie and Lower South Esk Rivers for surface waters on private land are:

A: Protection of Aquatic Ecosystem
(ii) Protection of modified (not pristine) ecosystems from which edible fish are harvested.

B: Recreational Water Quality & Aesthetics
(i) Primary contact water quality (South Esk River – from ¾ km upstream of confluence with Macquarie River down to Longford Mill Dam)
(ii) Secondary contact water quality
(iii) Aesthetic water quality.

C: Raw Water for Drinking Water Supply
(ii) Subject to coarse screening and disinfection.

D: Agricultural Water Uses
(i) Irrigation
(ii) Stock Watering.

E: Industrial Water Supply (Hydro-Electric Power Generation)

That is, as a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a healthy, but modified aquatic ecosystem from which edible fish may be harvested; that is acceptable for irrigation and stock watering purposes; is suitable to supply town drinking water (subject to coarse screening plus disinfection); and which will allow people to safely engage in primary contact recreation (in specified areas) such as swimming and water skiing and secondary contact recreation activities such as paddling or fishing in aesthetically pleasing waters; and is suitable for use (following impoundment) in the Trevallyn Power Scheme.

[10] Department of Primary Industries, Water and Environment (2001) *Environmental Management Goals for Tasmanian Surface Waters – Great Lake & Brumby's Creek Catchments, and the Lower Macquarie & South Esk Rivers.*

6.2.3 Potential impacts

Erosion and sediment control - construction

There is the potential for erosion and sediment loss to occur throughout the construction phase of the project where exposed surfaces will be vulnerable to erosion. If not appropriately managed, sediment laden stormwater may contribute to surface water impacts.

The total area of disturbance is not expected to be more than 120 m by 200 m (2.4 ha) with a total volume of material to be excavated estimated at 25,810 m^3.

Anticipated wastewater characteristics from the CAL

As indicated above, preliminary calculations undertaken for design indicate the proposed CAL should result in the following wastewater emissions:

- Output COD should be between 700 to 1200 mg/L (85-90% reduction)
- BOD output 500 to 800 mg/L
- Total dissolved Solids 300 to 500 mg/L.

This reduction in emissions will result in a significant improvement in effluent reporting to the TasWater Longford WWTP.

Storage and use of fuel and oils

Any loss of fuels or oils has the potential to contaminate surface water, reduce the water surface water systems and degrade aquatic habitat. Loss of fuel or oil will be possible during construction, during refuelling or from spillage and breakage during normal construction activities.

There will be no storage or use of fuels or oils during operation of the site.

6.2.4 Avoidance and mitigation measures

The following mitigation measures will be implemented during the construction and operational phases to minimise potential impacts to surface waters by the project.

Construction

- Minimise soil exposure during construction via careful planning, clear delineation of clearance areas and limiting surface exposure until excavation is imminent.
- Erosion and sedimentation controls will be established prior to the commencement of works. This will include the installation of silt fences, settlement ponds (if required) and compacted or rock-lined drains.
- No clearance or construction works will be undertaken during high rainfall conditions that may present an unacceptable risk of sediment loss to the environment.
- Any drains established will utilise the natural topography to reduce the need for further ground clearance.
- Fuel and oil will be brought onto the site as required in a mobile tanker for the construction activities.
- Mobile refuelling facilities will satisfy appropriate standards and will carry fuel clean-up equipment in case fuel spills occur during refuelling.
- Refuelling and lubrication will be undertaken away from any freestanding water.
- If there is any residual contaminated soil evident after a spill and clean up, it will be excavated immediately and taken for disposal or treatment at an appropriately licensed facility.

Operation

The CAL will be designed to ensure stormwater is diverted away from the plant, via stormwater pumps. The site has been designed to direct all rain water surface run off into open vee drains which discharge into the natural water course on the adjacent low lying paddock.

6.2.5 Commitments

Commitments	When
Commitment 6 - Minimise soil exposure during construction.	Construction
Commitment 7 - Erosion and sedimentation controls will be established prior to the commencement of works.	Construction
Commitment 8 - No clearance or construction works will be undertaken during high rainfall conditions that may present an unacceptable risk of sediment loss to the environment.	Construction
Commitment 9 - Any drains established will utilise the natural topography to reduce the need for further ground clearance.	Construction
Commitment 10 - Fuel and oil will be brought onto the site as required in a mobile tanker for the construction activities.	Construction
Commitment 11 - Mobile refuelling facilities will satisfy appropriate standards and will carry fuel clean-up equipment in case fuel spills occur during refuelling.	Construction
Commitment 12 - Refuelling and lubrication will be undertaken away from any freestanding water.	Construction
Commitment 13 - If there is any residual contaminated soil evident after a spill and clean up, it will be excavated immediately and taken for disposal or treatment at an appropriately licensed facility.	Construction
Commitment 14 - The CAL will be designed to ensure stormwater is diverted away from the plant.	Design

6.3 Groundwater

6.3.1 Existing conditions

There is limited existing groundwater information available from the area. Refer to section 5.2.6 for existing groundwater information.

The depth to groundwater on site is currently unknown. However, there is considered to be perched groundwater in the gravels overlying the clay layers on site, with water inflow at 1.5 m and 2.5 m below the surface[11].

6.3.2 Performance requirements

Groundwater emissions from the site must comply with the following:

- State Policy on Water Quality Management 1997
- Water Management Act 1999
- Environmental Management and Pollution Control Act 1994

[11] Tasman geotechnics, 2016, Geotechnical Investigation Preliminary Factual Report, 22 Tannery Road Longford.

- Groundwater Act 1985
- State Stormwater Strategy 2010
- Tasmanian State Coastal Policy 1996.

6.3.3 Potential impacts

The potential for impacts to the local groundwater is considered unlikely, provided the design of the liner ensures no seepage from the treatment lagoons.

To minimise the risk to groundwater there is a two layer design of the lagoons. The ponds will be constructed with suitable available fill which is expected to comprise predominantly of clay.

6.3.4 Avoidance and mitigation measures

The mitigation measures utilised to protect surface waters, as outlined in section 6.2.4, will also protect groundwater.

The following measures will also be applied to protect groundwater quality.

- Quality control procedures including welding tests, inspections, leak (detection technology where appropriate) and documentation will be implemented during construction.
- No rocks or foreign objects will be left in the base course that could result in damage to the liner.

6.3.5 Commitments

Commitments	When
Commitment 15 - Quality control procedures including welding tests, inspections, leak detection and documentation will be implemented during construction.	During design and construction
Commitment 16 - No rocks or foreign objects will be left in the base course that could result in damage to the liner	During design and construction

6.4 Noise emissions

6.4.1 Existing conditions

The proposed site is currently utilised as agricultural land and hence there are no significant sources of noise on the site. The proposed CAL is approximately 600 m east of the existing TasWater WWTP and 700 m south west of the JBS factory site, which is closer to residential areas than the proposed CAL.

The most recent noise measurements undertaken at the Longford plant were in March 2005[12]. The noise report was prepared following the installation of a new rendering plant at the Longford site. A summary of the results is provided below. Although the proposed CAL site is 700 m from the factory, the noise measurements provide an indication of noise levels in the community.

Measurement results for 30th March 2005 are provided in Table 5.

[12] Graeme E. Harding & Associates Pty Ltd, Longford – Noise Measurements at New Rendering Plant, April 2005.

Table 5 – Community Noise Measurements, 30th March 2005

Location	Street address	Time of measurement	Wind conditions	Noise Level (dB) Leq	
				Linear	A-weighted
7	Gay St, south side, 20 m west of George St	22:00-22:15	WNW 9km/hr	60	47
8	12 Goderich St	22.45-23:00	NW 7 km/hr	54	41
9	South west corner, Park and Goderick Sts	23:10-23:25	NNW 9 km/hr	55	45
10	Howick St	23:30-23:45	NNW 9 km/hr	55	44
11	21 Catherine St	00:30-0:45	N 7 km/hr	45	32
12	Wellington St, south of railway line	11:55-00:10	N 9km/hr	56	44

The noise measurements were carried out whilst weather conditions were favourable for noise transmission from the plant to the residential area, providing the worst case scenario.

6.4.2 Performance requirements

Noise emissions from proposed activities must comply with the following:

- Environmental Management and Pollution Control Act 1994 – environmental nuisance
- Environment Protection (Miscellaneous Noise) Regulation 2004
- Environment Protection Policy (Noise) 2009.

6.4.3 Potential impacts

The proposed CAL site is located about 300 m from the nearest neighbouring residence (an isolated farm house to the north). Other nearby residences are greater than 600 m away in the Longford township.

The proposed CAL includes a small number of plant items that will generate modest levels of noise. These include two pumps, the gas flare and a gas blower. The blower and flare are rated at 80 dBa at 1 m. The noise emissions from this equipment are unlikely to be audible at the nearest residences above the existing background noise, even at the quietest times of the night.

The additional noise sources will most likely result in a negligible increase in the current overall noise emissions from the site.

There will be minimal noise emissions as a result of construction with the exception of machinery, which will be during daylight hours.

6.4.4 Avoidance and mitigation measures

Minimal noise is anticipated from the construction and operation of the CAL but the following mitigation measures will nevertheless be implemented to minimise noise emissions during construction:

- Construction activities will occur during daytime hours only, from 7.00 am to 7.00 pm
- The quietest equipment will be utilized, when practical and available
- Ensure equipment utilized is maintained and operated as per manufacturers' specifications.

6.4.5 Commitments

Commitments	When
Commitment 17 - Construction activities will occur during daytime hours only, from 7.00 am to 7.00 pm.	During construction
Commitment 18 - The quietest equipment will be utilized, when practical and available.	During construction
Commitment 19 - Ensure equipment utilized is maintained and operated as per manufacturers' specifications.	During construction

6.5 Waste management

6.5.1 Existing conditions

There are currently no wastes generated from the proposed CAL site.

During the construction phase waste construction materials, packaging and putrescibles may be generated. These materials will be disposed of to an appropriately licensed facility in accordance with current JBS site procedures.

Sewage sludge removed from the proposed CAL during operation could be beneficially reused in accordance with the Tasmanian *Biosolids Reuse Guidelines (1999)* and the *Approved Management Method (AMM) for Biosolids Reuse (2006)*. If beneficial reuse was not possible the sludge would be disposed of at an appropriately licensed facility.

6.5.2 Performance requirements

Solid and controlled waste from the proposed activity must comply with the following:

- Environmental Management and Pollution Control (Waste Management) Regulations 2010
- National Environment Protection (Movement of Controlled Waste between States and Territories) Measure 2004
- Tasmanian Biosolids Reuse Guidelines (1999) and the Approved Management Method (AMM) for Biosolids Reuse (2006).

6.5.3 Potential impacts

Waste material can cause environmental nuisance or harm if it is not contained and disposed of appropriately. The likely frequency of desludging the lagoons is expected to be very low, if not zero, in normal operation. Experience indicates that meatworks waste has a very low level of inert solids, and digesters on this feedstock seldom require sludge removal.
Provision has been made for removal of sludge in the event that build-up is more than usual, that seed sludge might be required for any other facility, or in the case of any poisoning of the reactor. However, if

the process is functioning correctly sludge build up should not occur and this provision is a precautionary measure.

Most meatworks CALs in Australia are designed for sludge removal based on calculations of a generic (municipal) nature. The reality is that it is almost unheard of for a meatworks CAL with proper prior FOG and gross solids removal to require desludging. This is over a 20 to 30 year history. This is especially so where the retention time is long enough, and the design amenable, for a secondary waste type and its associated microbial population to establish.

If desludging is required, the desludging design for the Longford CAL is based on the JBS King Island CAL design. This design was the subject of an MLA report and desludging was actually performed successfully with this design toward the end of the King Island operation (even though it was not at that time required – it was experimental). The procedure identified in the MLA report – which involves drawing out from the staged draw de-sludging lines while monitoring visual and pressure / volume cues to be sure that the sludge blanket is drawn down relatively continuously and without break through to upper levels of supernatant.

6.5.4 Avoidance and mitigation measures

The following mitigation measures will be continued at the site to minimise the environmental impacts from solid waste:

- All construction waste materials will be disposed of off-site, in accordance with EPA and the Northern Midlands Council requirements
- Sewage sludge removed from the CAL could be beneficially reused or if beneficial reuse was not possible the sludge would be disposed of at an appropriately licensed facility.

6.5.5 Commitments

Commitments	When
Commitment 20 - All construction waste materials will be disposed of off-site, in accordance with EPA and the Northern Midlands Council requirements.	During construction
Commitment 21 – Any sewage sludge removed from the CAL could be beneficially reused or if beneficial reuse was not possible the sludge would be disposed of at an appropriately licensed facility.	During operation

6.6 Dangerous and environmentally hazardous materials

6.6.1 Existing conditions

Fuels and lubricants will be utilised for machinery involved in construction activities and these will be managed in accordance with current JBS Plant site requirements. No other dangerous goods or environmentally hazardous materials will be utilised during the construction or operational phases of the project.

6.6.2 Performance requirements

Dangerous goods management must comply with the following statutes, regulations and codes:

- Work Health and Safety Act 2012
- Australian Dangerous Goods Code 7th Edition
- NOHSC:1015 (2001): National Standard for Storage and Handling of Dangerous Goods
- NOHSC:1005 (1994): National Model Regulations for the Control of Workplace Hazardous Substances
- NOHSC:2017 (2001): National Code of Practice for Storage and Handling of Dangerous Goods
- AS 1940-2004: The storage and handling of flammable and combustible liquids
- Dangerous Goods (Road and Rail Transport) Act 2010
- Environmental Management and Pollution Control Act 1994 – Environmental nuisance or harm provisions
- Environmental Management and Pollution Control (Waste Management) Regulations 2010
- Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010.

6.6.3 Potential impacts

Any loss of fuels and oils has the potential to contaminate soils and surface water and reduce the water quality of the surface water systems during the construction phase if appropriate mitigation measures are not implemented.

6.6.4 Avoidance and mitigation measures

The following mitigation measures will be implemented at the site to minimise the environmental impacts from dangerous and environmentally hazardous materials.

- Fuel clean up equipment will be readily accessible during construction
- Oil spill absorption materials will be used immediately for clean up if there is a spill
- All workers will be trained to respond to spills and leaks.

6.6.5 Commitments

Commitments	When
Commitment 22 - Fuel clean up equipment will be readily accessible during construction.	During construction
Commitment 23 - Oil spill absorption materials will be used immediately for clean up if there is a spill.	During construction
Commitment 24 - All workers will be trained to respond to spills and leaks.	During construction

6.7 Biodiversity and natural values

6.7.1 Existing conditions

Refer to sections 5.2.7and 5.2.8 for existing site conditions.

6.7.2 Performance requirements

Flora and fauna management must comply with the following statutes:

- Environment Protection and Biodiversity Conservation Act 1999
- Threatened Species Protection Act 1995
- Nature Conservation Act 2002
- Forest Practices Act 1985
- Forest Practices Code 2000
- Crown Lands Act 1976
- Weed Management Act 1999.

6.7.3 Potential impacts

Clearing of paddocks will be required for the construction of the CAL plant. It is envisaged that 2.4 ha of paddocks/grassland will be cleared for construction of the ponds. As the access track is an existing track, further clearing is not anticipated for access.

The primary potential impact will be erosion control from vegetation clearance and exposure of soils. Refer to section 6.2 for further information.

6.7.4 Avoidance and mitigation measures

As outlined in section 6.2, the following mitigation measures will be implemented during the construction phase to minimise potential impacts of erosion.

- Minimise soil exposure during construction via careful planning, clear delineation of clearance areas and limiting surface exposure until excavation is imminent
- Erosion and sedimentation controls will be established prior to the commencement of works. This will include the installation of silt fences, settlement ponds (if required) and compacted or rock-lined drains
- No clearance or construction works will be undertaken during high rainfall conditions that may present an unacceptable risk of sediment loss to the environment
- Any drains established will utilise the natural topography to reduce the need for further ground clearance.

6.7.5 Commitments

Commitments made in section 6.2.5 for erosion and sediment control apply here.

6.8 Marine and coastal

The Longford township is located approximately 25 km inland from Launceston in northern Tasmania, therefore the project will have no impact on marine or coastal areas.

6.9 Greenhouse gases and ozone depleting substances

6.9.1 Existing conditions

There are currently no greenhouse gas emissions or ozone depleting substances from the proposed CAL site.

6.9.2 Potential impacts

Generation of greenhouse gases on the site throughout construction will be from vehicle emissions both on site and transportation to and from the site, as well as plant and equipment. The generation of greenhouse gases is considered to be minimal during construction.

During the initial stages of operation, methane generated will be collected in the gas treatment process train and flared to remove its greenhouse gas effect. The volumes of gas produced will be studied during the initial years to determine if it is economic for it to be distributed back to the plant and used in plant-water heating. The flare will be sized to take all of the methane produced to ensure continuous performance and minimise greenhouse gas emissions.

In the event that it is economic in the future to use gas on the site, the upper cover of the CAL will be able to elevate to store gas overnight. This will enable storage during times that the plant is not operating to ensure beneficial reuse whenever possible. The size of the covering membrane will accommodate weekend storage; however, initially the flaring of gas is likely to operate relatively continuously.

While the size of the future plant hot water boiler is yet to be confirmed, irrespective of its gas uptake capacity the flare system will be designed to seamlessly and automatically flare off any excess gas that is not utilised by the boiler.

There will be no ozone depleting substances on site.

6.9.3 Avoidance and mitigation measures

The following mitigation measures implemented at the site to minimise the environmental impacts from greenhouse gases.

- All plant, equipment, machinery and vehicles will be well maintained in order to minimise the generation of greenhouse gases.

6.9.4 Commitments

Commitments	When
Commitment 25 - All plant, equipment, machinery and vehicles will be well maintained in order to minimise the generation of greenhouse gases	During construction and on-going

6.10 Heritage

6.10.1 Aboriginal heritage

Existing conditions

A search of the Aboriginal Heritage Register was conducted by Aboriginal Heritage Tasmania (AHT) in September 2016 for the proposed CAL site. AHT advised that there was no Aboriginal heritage sites recorded within or in the vicinity of the site.

The site has been significantly modified in the past due to the construction of the existing flood levees.

Performance requirements

The project must comply with:

- Tasmanian Aboriginal Relics Act 1975
- Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984.

Potential impact

There is considered to be no potential impact on Aboriginal heritage due to lack of Aboriginal heritage values within or in the vicinity of the site.

AHT have no objection to the project proceeding.

Avoidance and mitigation measures

Although there are no identified Aboriginal heritage values at the site, all Aboriginal heritage is protected under the *Aboriginal Relics Act 1975*. If at any time during works suspected Aboriginal heritage is discovered, works will cease immediately and AHT will be contacted for advice. An Unanticipated Discovery Plan provided by AHT (Appendix C) will be implemented during construction works, to provide guidance to construction personnel.

Commitments

Commitments	When
Commitment 26 - An Unanticipated Discovery Plan will be implemented during construction works.	During Construction

6.10.2 Historic heritage

Existing conditions

A search of the Tasmanian Heritage Register, identified no historic heritage sites in the vicinity of the site.

Performance requirements

The project must comply with the *Historic Cultural Heritage Act 1995*.

Potential impact

There is considered to be no potential impact on historic heritage values from the increase in production.

Avoidance and mitigation measures

In the event that unrecorded cultural material is discovered during construction, then an Unanticipated Discovery Plan, as outlined below will be followed:

1) If there is a discovery of cultural heritage materials, then earth disturbance works in the general vicinity of the area will stop immediately.
2) A buffer protection zone of 10 m x 10 m will be established around the suspected cultural heritage site or items. No unauthorised entry or earth disturbance will be allowed within this 'archaeological zone' until such time as the suspected cultural heritage items have been assessed, and appropriate mitigation measures have been carried out.

3) Heritage Tasmania (HT) in Hobart will be contacted immediately and informed of the discovery. HT will make necessary arrangements for the further assessment of the discovery. Based on the findings of the assessment, appropriate management recommendations should be developed for the cultural heritage find.

Commitments

Commitments	When
Commitment 27 - In the event that previously unrecorded cultural material is discovered during construction of the dam the Unanticipated Discovery Plan will be followed.	During construction

6.11 Land use and development

6.11.1 Existing conditions

The proposed CAL site is currently utilised as agricultural land. However, it is adjacent to the existing JBS abattoir and as previously stated is approximately 600 m from TasWater's existing Longford wastewater treatment plant.

6.11.2 Performance requirements

The project must comply with the requirements of the *Northern Midlands Interim Planning Scheme 2013*.

6.11.3 Potential impacts

The proposed CAL is not considered to conflict with other land uses or development in the area.

6.11.4 Avoidance and mitigation measures

No mitigation measures are required as the land use and development is in accordance with existing land use of the area.

6.12 Visual impacts

The proposed CAL will not be visually intrusive in the landscape. The ponds will be excavated and there will be minimal infrastructure that would be seen from public roads.

6.13 Socio-economic issues

A summary of the demographic of the Longford Township is provided in Section 5.3- Socio-economic aspects

There is considered to be minor positive socio-economic impacts from proposed CAL. The Longford facility is already operating as an abattoir and currently employs 400 people. The proposed new wastewater treatment plant (CAL) will require no additional staff for its operation.

The construction of the CAL will provide short term employment for contractors to design as well as construct the lagoons.

An estimate of total capital expenditure for the CAL is estimated at $3.2 million.

6.14 Health and safety issues

Safety management systems consistent with the requirements of Workplace Standards Tasmania, and any requirements attached to the approval of the project, will be applied during the operation CAL.

All operations, maintenance, health and safety management on the project site will be compliant with the *Work Health and Safety Act 2012* and the *Work Health and Safety Regulations 2012*.

Appropriate security arrangements to prevent unauthorised access to the site will be established.

6.15 Hazard analysis and risk assessment

The environmental risks identified with the project include air emissions as well as potential surface water and groundwater impacts.

Air emissions have been assessed, with a summary provided in section 6.1.

Potential risks to surface water and groundwater have been assessed, with a summary provided in sections 6.2 and 6.3 respectively.

JBS will undertake a HAZOP prior to construction commencing. The HAZOP will identify all potential hazards to people and the environment which may occur during construction, operation, maintenance and decommissioning of the CAL and any proposed safeguards to prevent such an occurrence.

A gas safety management plan will be prepared and submitted to the Workplace Standards Tasmania for approval, prior to operation of the CAL.

6.16 Fire risk

6.16.1 Existing Conditions

The potential fire risks, potential onsite sources and potential onsite avoidance measures are identified below.

Potential fire risks

- Fire originating within the site
- Fire escaping from the site
- Fire originating from outside the site.

Potential on-site sources

- Electrical fire
- Explosion from vapours
- Equipment exhaust on flammable material and dry vegetation
- Discarded cigarettes and dry vegetation
- Lightning strike
- Arson.

The potential fire risk associated with the project is considered to be low for the following reasons:

- No explosives will be used on site
- A hazardous area assessment will be carried out to the requirements of AS60079 2009. Any equipment located within hazardous area exclusion zones will be explosion rated
- The plant will be operated in accordance with the gas safety management plan
- Security fencing and signage will be provided to restrict access.

6.16.2 Performance Requirements

The legislative and regulatory framework for fire management is outlined below:

- Fire Services Act 1979
- Relevant Australian Standards
- Northern Midlands Interim Planning Scheme 2013 requirements.

The main objectives of the Fire Management Plan are to protect life and property and surrounds in the event of fire.

6.16.3 Fire Management Plan

The operations on site will be conducted in accordance with the JBS's Longford Emergency Plan.

6.17 Traffic impacts

During construction an excavator along with rolling and compaction equipment will be utilised during the earthworks phase. The lining phase will require small excavators and concrete trucks as well as standard delivery trucks for the HDPE liner. There will be additional small vehicle movements day to day during this phase for personnel movement.
No additional traffic is expected during day to day operation of the CAL. No bulk materials are required for either the construction or operational phases of the project.

7. Commitments

A summary of commitments is provided in Table 6 below.

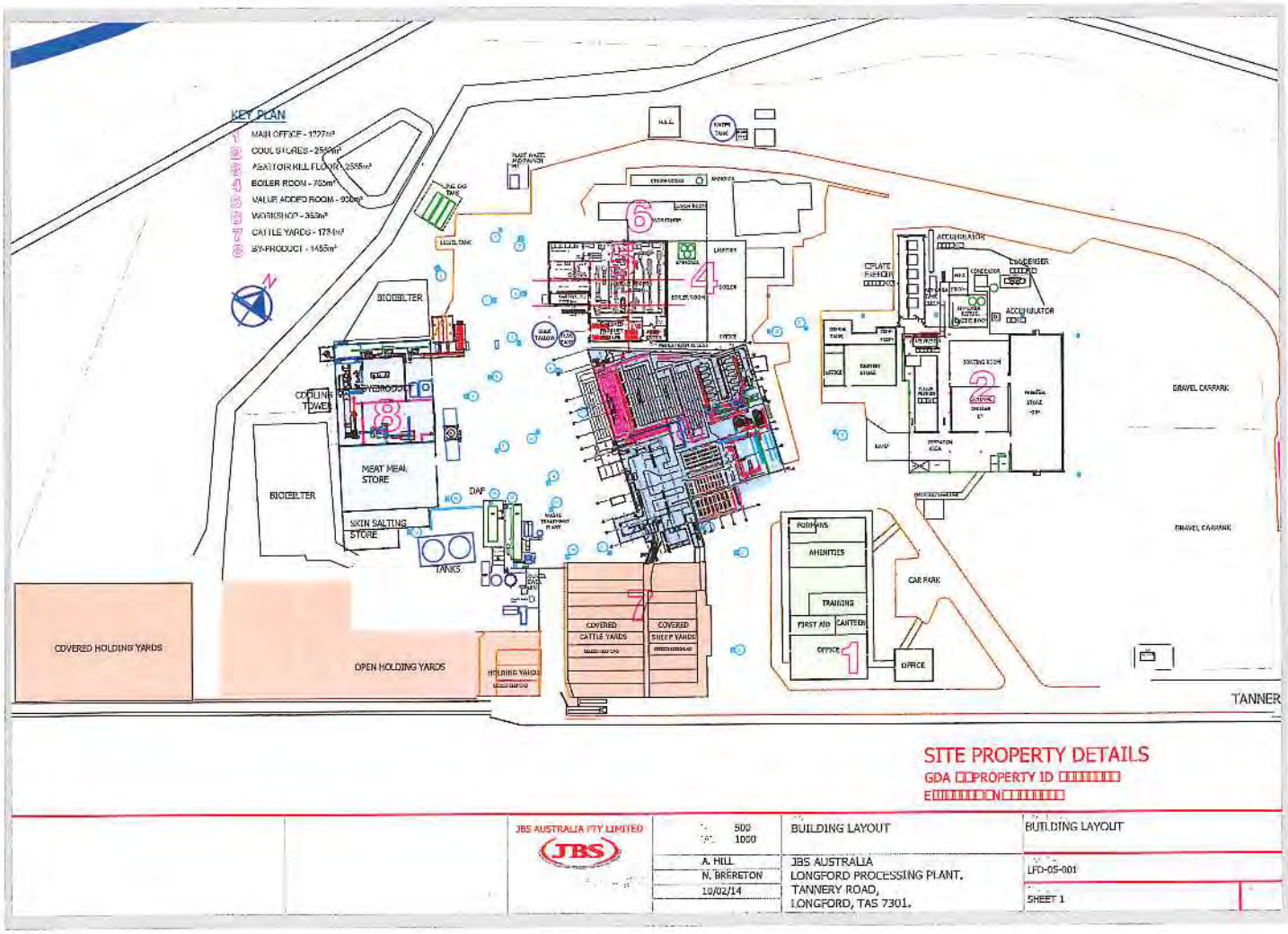
Table 6 – Summary of commitments

Commitments
Commitment 1 - Vegetation clearance will not be undertaken during hot, dry and windy periods.
Commitment 2 - Vehicular speeds will be limited to 40 km/h on areas of unconsolidated or unsealed roads within the construction site.
Commitment 3 - Exhaust emissions will be minimised by ensuring that all equipment is properly maintained; only reputable contractors with well-maintained equipment will be used on-site.
Commitment 4 - Areas of disturbed soil will be revegetated as soon as practicable following construction.
Commitment 5 - Routine maintenance and operational activities will minimise the risk of a fault or breakdown conditions which may allow leakage of biogas to the atmosphere and ensure that any leakages that do occur are resolved rapidly
Commitment 6 - Minimise soil exposure during construction.
Commitment 7 - Erosion and sedimentation controls will be established prior to the commencement of works.
Commitment 8 - No clearance or construction works will be undertaken during high rainfall conditions that may present an unacceptable risk of sediment loss to the environment.
Commitment 9 - Any drains established will utilise the natural topography to reduce the need for further ground clearance.
Commitment 10 - Fuel and oil will be brought onto the site as required in a mobile tanker for the construction activities.
Commitment 11 - Mobile refuelling facilities will satisfy appropriate standards and will carry fuel clean-up equipment in case fuel spills occur during refuelling.
Commitment 12 - Refuelling and lubrication will be undertaken away from any freestanding water.
Commitment 13 - If there is any residual contaminated soil evident after a spill and clean up, it will be excavated immediately and taken for disposal or treatment at an appropriately licensed facility.
Commitment 14 - The CAL will be designed to ensure stormwater is diverted away from the plant.
Commitment 15 - Quality control procedures including welding tests, inspections, leak detection and documentation will be implemented during construction.
Commitment 16 - No rocks or foreign objects will be left in the base course that could result in damage to the liner
Commitment 17 - Construction activities will occur during daytime hours only, from 7.00 am to 7.00 pm.
Commitment 18 - The quietest equipment will be utilized, when practical and available.
Commitment 19 - Ensure equipment utilized is maintained and operated as per manufacturers' specifications.
Commitment 20 - All construction waste materials will be disposed of off-site, in accordance with EPA and the Northern Midlands Council requirements.
Commitment 21 – Any sewage sludge removed from the CAL could be beneficially reused or if beneficial reuse was not possible the sludge would be disposed of at an appropriately licensed facility.

Commitments
Commitment 22 - Fuel clean up equipment will be readily accessible during construction.
Commitment 23 - Oil spill absorption materials will be used immediately for clean up if there is a spill.
Commitment 24 - All workers will be trained to respond to spills and leaks.
Commitment 25 - All plant, equipment, machinery and vehicles will be well maintained in order to minimise the generation of greenhouse gases
Commitment 26 - An Unanticipated Discovery Plan will be implemented during construction works.
Commitment 27 - In the event that previously unrecorded cultural material is discovered during construction of the dam the Unanticipated Discovery Plan will be followed.

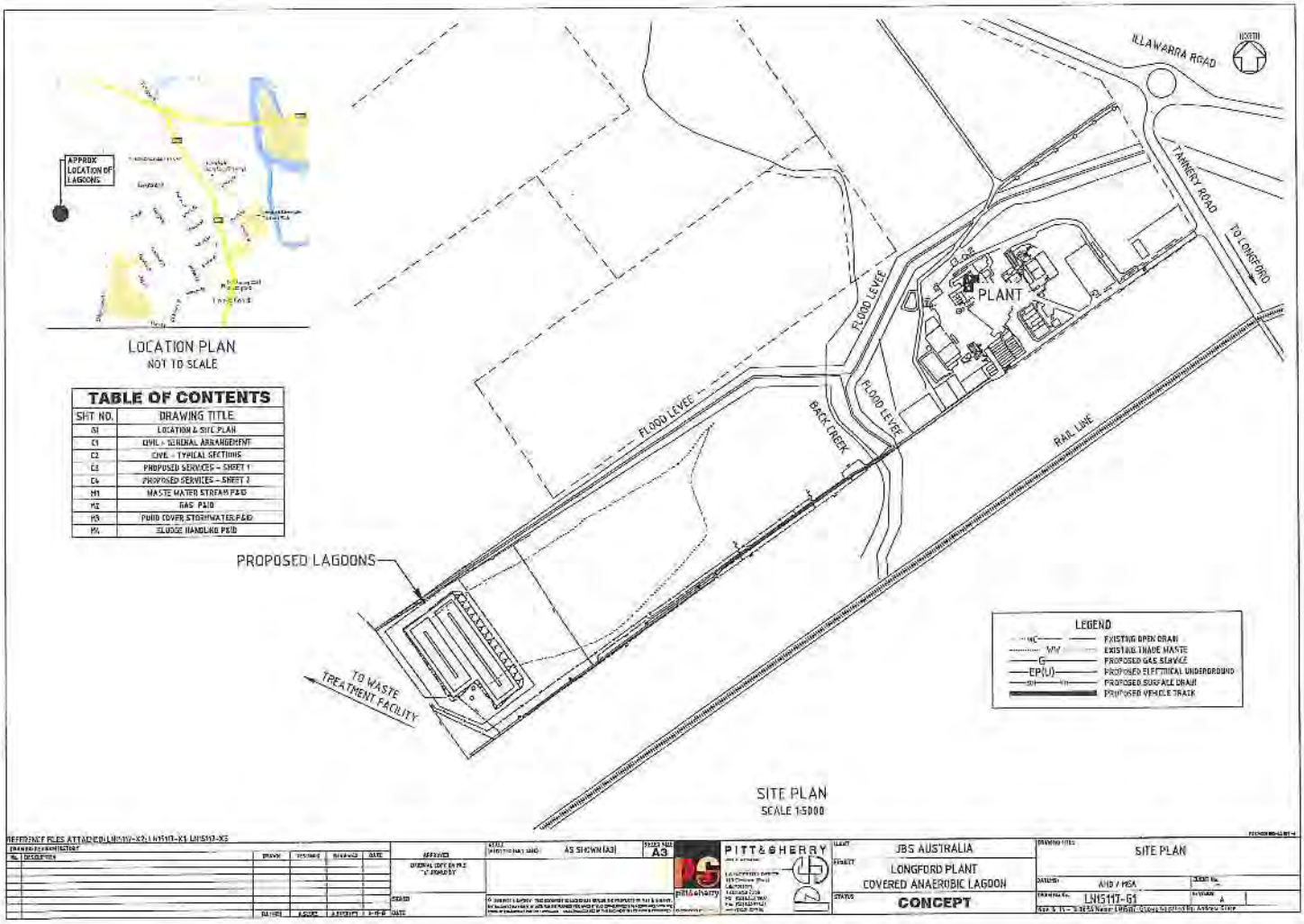
Appendix A

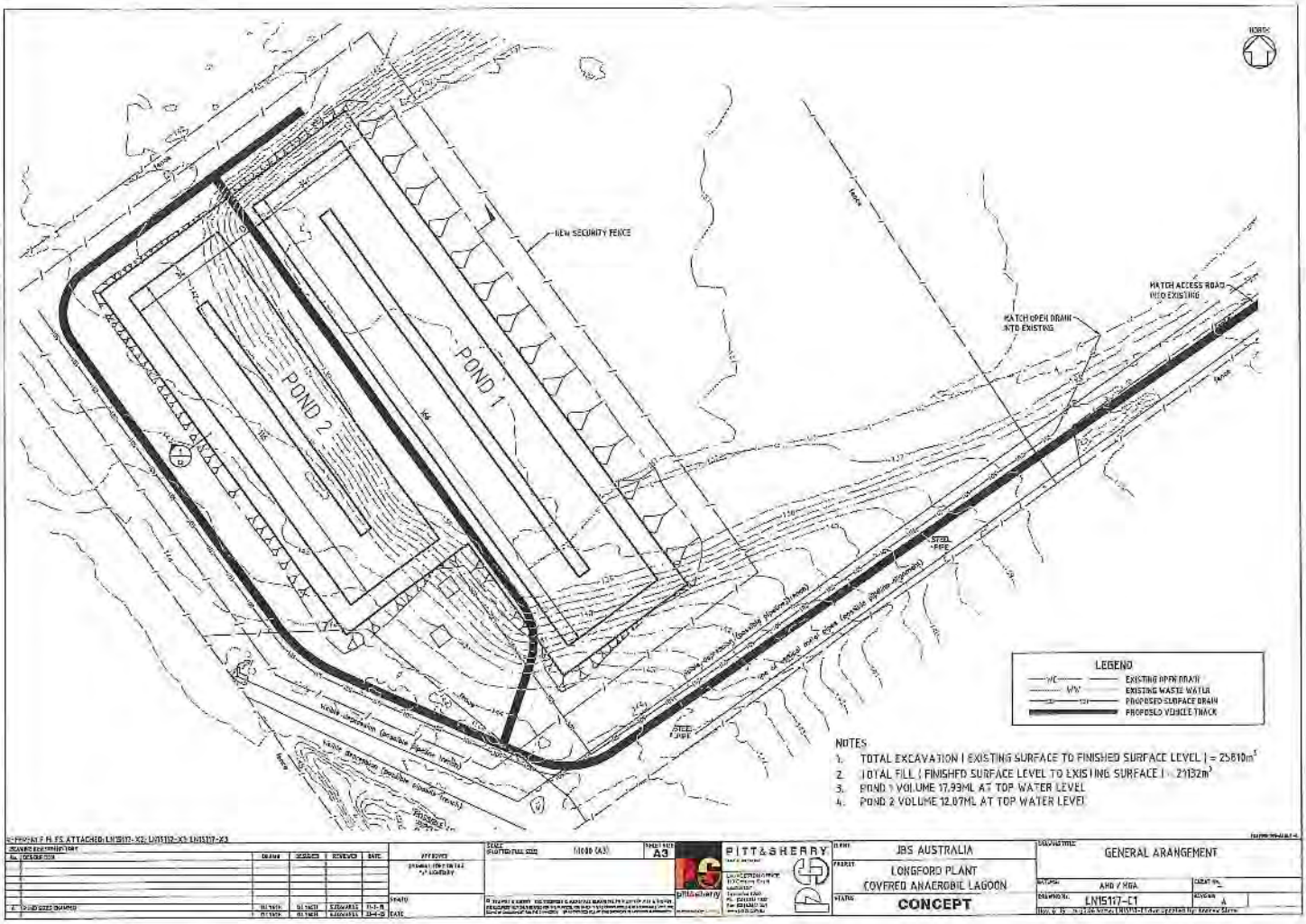
Existing plant details

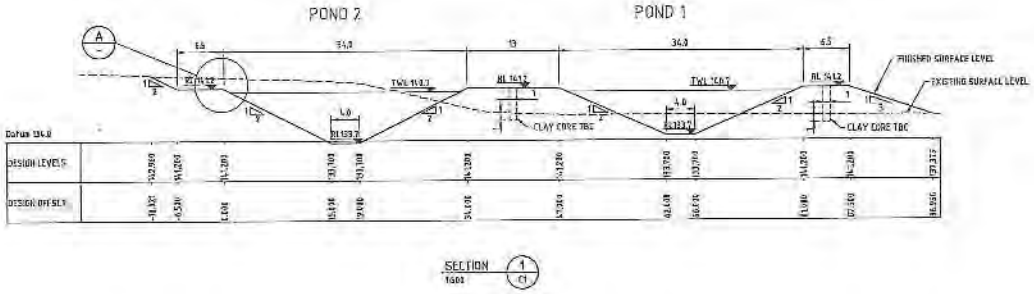

KEY PLAN
1 MAIN OFFICE - 1127m²
2 COOL STORES - 2564m²
3 ABATTOIR KILL FLOOR - 2585m²
4 BOILER ROOM - 750m²
5 VALUE ADDED ROOM - 900m²
6 WORKSHOP - 365m²
7 CATTLE YARDS - 1784m²
8 BY-PRODUCT - 1455m²
BIOFILTER
COOLING TOWER
OVERHOOKS
MEAT MEAL STORE
BIOFILTER
SKIN SALTING STORE
DAF
TANKS
COVERED HOLDING YARDS
OPEN HOLDING YARDS
HOLDING YARDS
COVERED CATTLE YARDS
COVERED SHEEP YARDS
ACCUMULATOR
CONDENSER
ACCUMULATOR
GRAVEL CARPARK
GRAVEL CARPARK
ABLUTIONS
AMENITIES
CAR PARK
TRAINING
FIRST AID
CANTEEN
OFFICE
OFFICE
TANNER
SITE PROPERTY DETAILS
GDA PROPERTY ID
E N
JBS AUSTRALIA PTY LIMITED
JBS
1:500
1:1000
BUILDING LAYOUT
BUILDING LAYOUT
A. HILL
N. BRERETON
10/02/14
JBS AUSTRALIA
LONGFORD PROCESSING PLANT.
TANNERY ROAD,
LONGFORD, TAS 7301.
LPD-05-001
SHEET 1

Appendix B

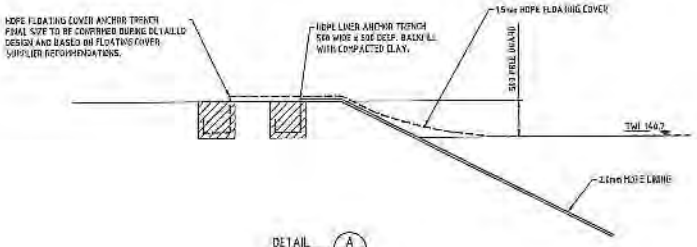
CAL design drawings


APPROX LOCATION OF LAGOONS
LOCATION PLAN
NOT TO SCALE
TABLE OF CONTENTS
SHT NO. | DRAWING TITLE
G1 | LOCATION & SITE PLAN
C1 | CIVIL - GENERAL ARRANGEMENT
C2 | CIVIL - TYPICAL SECTIONS
C3 | PROPOSED SERVICES - SHEET 1
C4 | PROPOSED SERVICES - SHEET 2
M1 | WASTE WATER STREAM P&ID
M2 | GAS P&ID
M3 | FIXED COVER STORMWATER P&ID
M4 | SLUDGE HANDLING P&ID
ILLAWARRA ROAD
TANNERY ROAD
TO LONGFORD
PLANT
FLOOD LEVEE
FLOOD LEVEE
FLOOD LEVEE
BACK CREEK
RAIL LINE
PROPOSED LAGOONS
TO WASTE TREATMENT FACILITY
LEGEND
EXISTING OPEN DRAIN
EXISTING TRADE WASTE
PROPOSED GAS SERVICE
PROPOSED ELECTRICAL UNDERGROUND
PROPOSED SURFACE DRAIN
PROPOSED VEHICLE TRACK
SITE PLAN
SCALE 1:5000
PITT&SHERRY
JBS AUSTRALIA
LONGFORD PLANT
COVERED ANAEROBIC LAGOON
CONCEPT
SITE PLAN
A3
LH5117-G1


NORTH
NEW SECURITY FENCE
POND 1
POND 2
MATCH ACCESS ROAD INTO EXISTING
MATCH OPEN DRAIN INTO EXISTING
STEEL POST
LEGEND
EXISTING OPEN DRAIN
EXISTING WASTE WATER
PROPOSED SURFACE DRAIN
PROPOSED VEHICLE TRACK
NOTES
1. TOTAL EXCAVATION (EXISTING SURFACE TO FINISHED SURFACE LEVEL) = 25810m³
2. TOTAL FILL (FINISHED SURFACE LEVEL TO EXISTING SURFACE) = 22132m³
3. POND 1 VOLUME 17.99ML AT TOP WATER LEVEL
4. POND 2 VOLUME 12.07ML AT TOP WATER LEVEL
PITT&SHERRY
JBS AUSTRALIA
LONGFORD PLANT
COVERED ANAEROBIC LAGOON
CONCEPT
GENERAL ARRANGEMENT
LN15117-C1



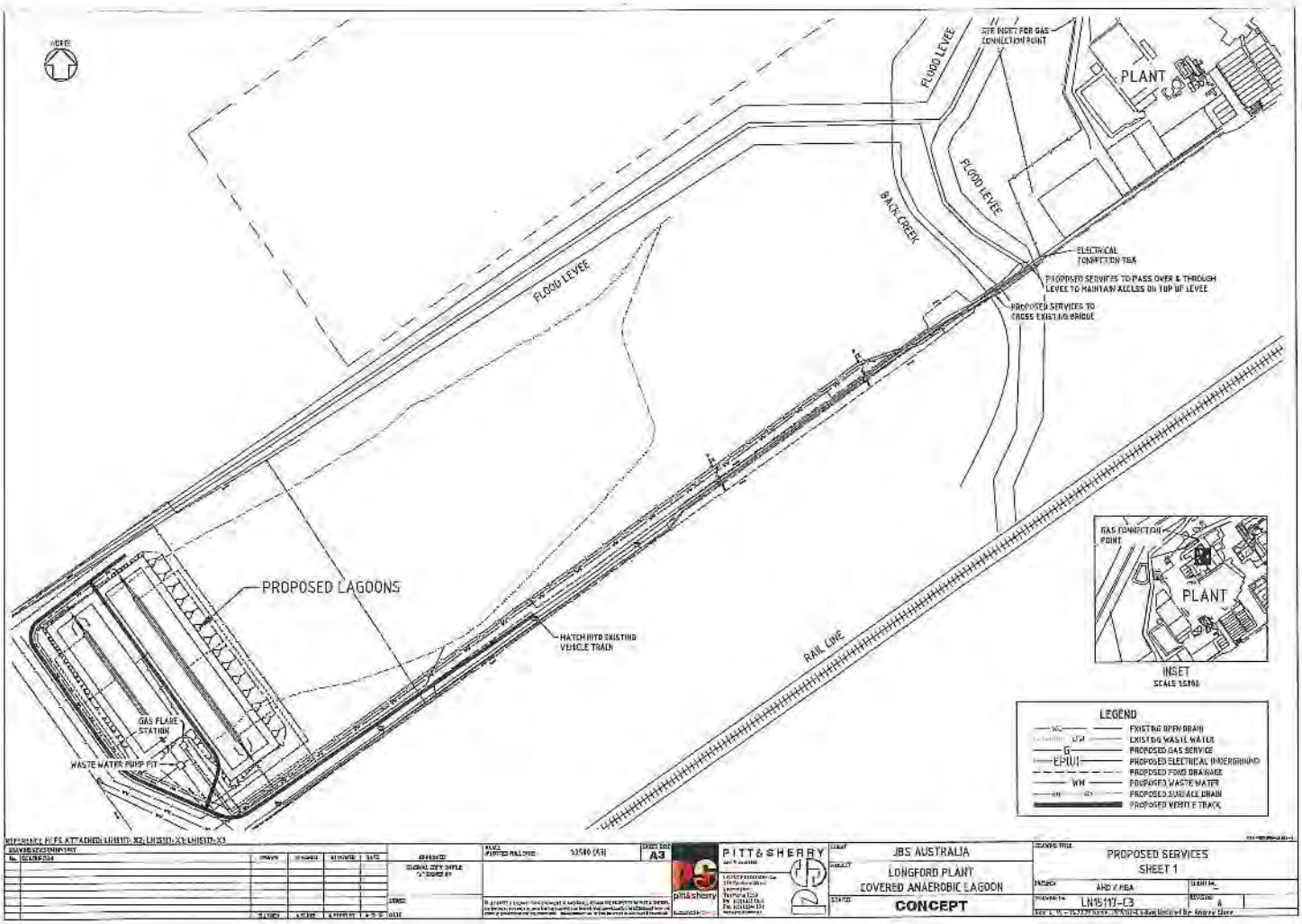
SECTION 1 / C1
1:500



DETAIL A / -
1:50

REFERENCE FILES ATTACHED:										
BUILDING SYSTEM INTENT										
No.	DESCRIPTION	DRAWN	DESIGNED	CHECKED	DATE	APPROVED	SIZE / PROFESSIONAL SEAL	SCALE	UNIT NO.	PITT&SHERRY
									A3	
1	FINAL ISSUE DRAWING	DJ/MCH	DJ/MCH	S.SPENCER	10-3-15	APPROVED				
		DJ/MCH	DJ/MCH	S.SPENCER	16-1-15	DATE				

CLIENT	JBS AUSTRALIA
PROJECT	LONGFORD PLANT COVERED ANAEROBIC LAGOON
STATUS	CONCEPT
DRAWING TITLE	TYPICAL SECTION
SYSTEM	AHD / MGA
DRAWING No.	LN15117-C2
VERSION	A
PLOT DATE & TIME	16-3-15 12:27:00pm by Andrew Sims


NORTH
SEE INSET FOR GAS CONNECTION POINT
FLOOD LEVEE
PLANT
FLOOD LEVEE
BACK CREEK
ELECTRICAL CONNECTION PBA
PROPOSED SERVICES TO PASS OVER & THROUGH LEVEE TO MAINTAIN ACCESS ON TOP OF LEVEE
PROPOSED SERVICES TO CROSS EXISTING BRIDGE
FLOOD LEVEE
PROPOSED LAGOONS
HATCH INTO EXISTING VEHICLE TRACK
RAIL LINE
GAS FLARE STATION
WASTE WATER PUMP PIT
GAS CONNECTION POINT
PLANT
INSET
SCALE 1:5000
LEGEND
EXISTING OPEN DRAIN
EXISTING WASTE WATER
PROPOSED GAS SERVICE
PROPOSED ELECTRICAL UNDERGROUND
PROPOSED POND DRAINAGE
PROPOSED WASTE WATER
PROPOSED SURFACE DRAIN
PROPOSED VEHICLE TRACK
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PLOTTED AT: 1:2500 (A3)
A3
PITT & SHERRY
JBS AUSTRALIA
LONGFORD PLANT
COVERED ANAEROBIC LAGOON
CONCEPT
PROPOSED SERVICES
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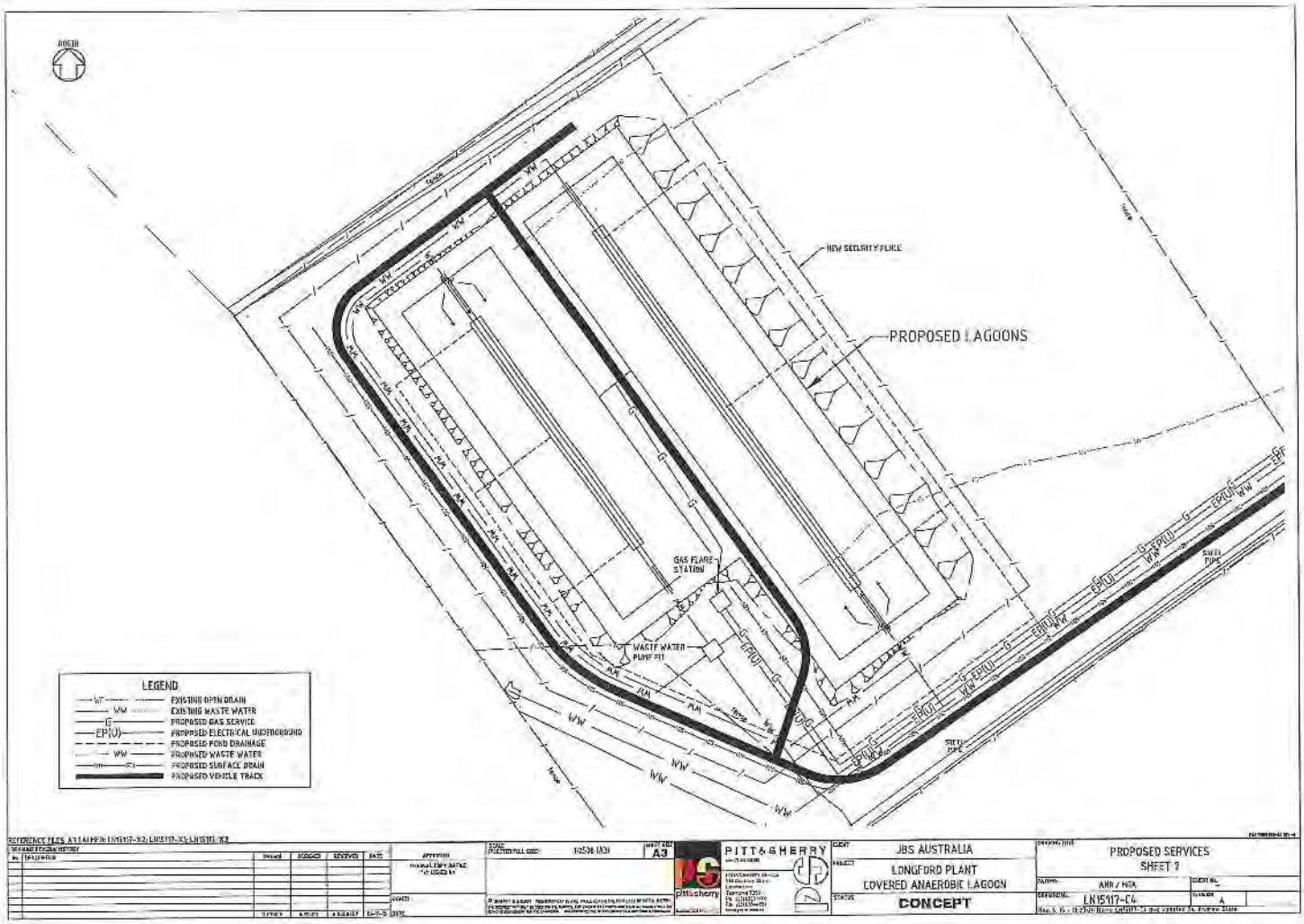
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GAS FLARE STATION
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LEGEND
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PROPOSED ELECTRICAL UNDERGROUND
PROPOSED POND DRAINAGE
PROPOSED WASTE WATER
PROPOSED SURFACE DRAIN
PROPOSED VEHICLE TRACK
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COVERED ANAEROBIC LAGOON
CONCEPT
PROPOSED SERVICES
SHEET 2
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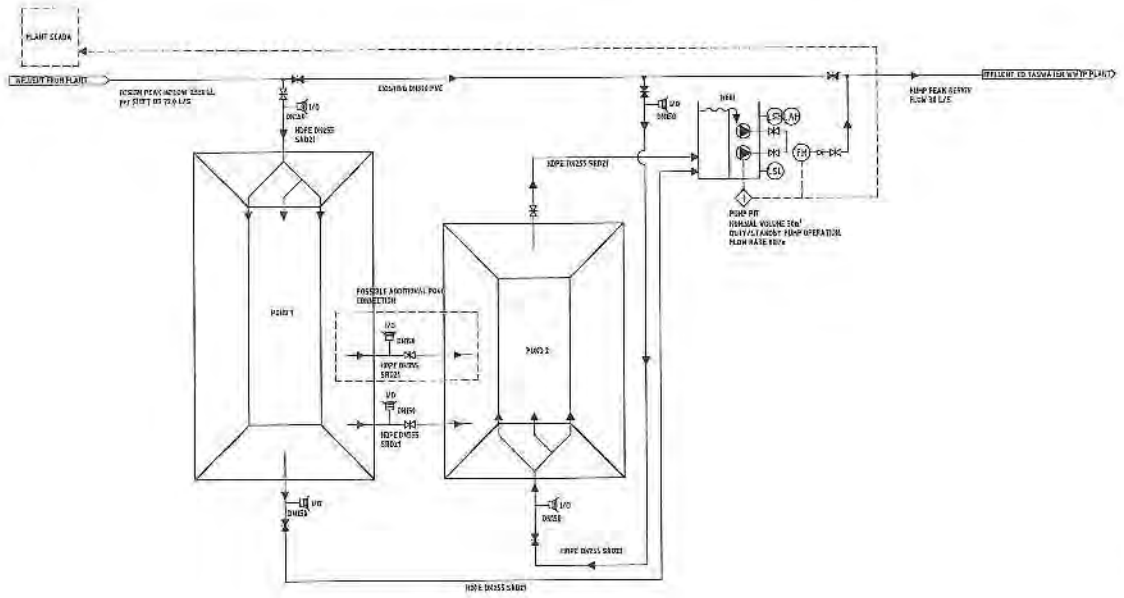

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MEANING	SYMBOL
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GATE VALVE NORMALLY OPEN	
CENTRIFUGAL PUMP	
PRESSURE GAUGE	PG
LEVEL SWITCH LOW	LSL
LEVEL SWITCH HIGH	LSH
LEVEL ALARM HIGH	LAH
FLOW METER	FM
INSPECTION OPENING WITH CAM LOCK COVER	I/O
NON RETURN VALVE	
ELECTRICAL INTERLOCK	

REFERENCE FILES ATTACHED:

DRAWING REVISION HISTORY

No.	DESCRIPTION	DRAWN	DESIGNED	REVIEWED	DATE

NEW LEVEL ALARM HIGH, DECANT AND CONNECTION ZONES — JMPEL — 8/11/11

APPROVED — MANAGER SIGN ON FILE "A" SIGNED BY — BOARD — DATE

SCALE: PLOTTED FULL SIZE — AS SHOWN (A3) — SHEET SIZE: A3

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pittsherry

PITT&SHERRY

CLIENT: JBS AUSTRALIA

PROJECT: LONGFORD PLANT COVERED ANAEROBIC LAGOON

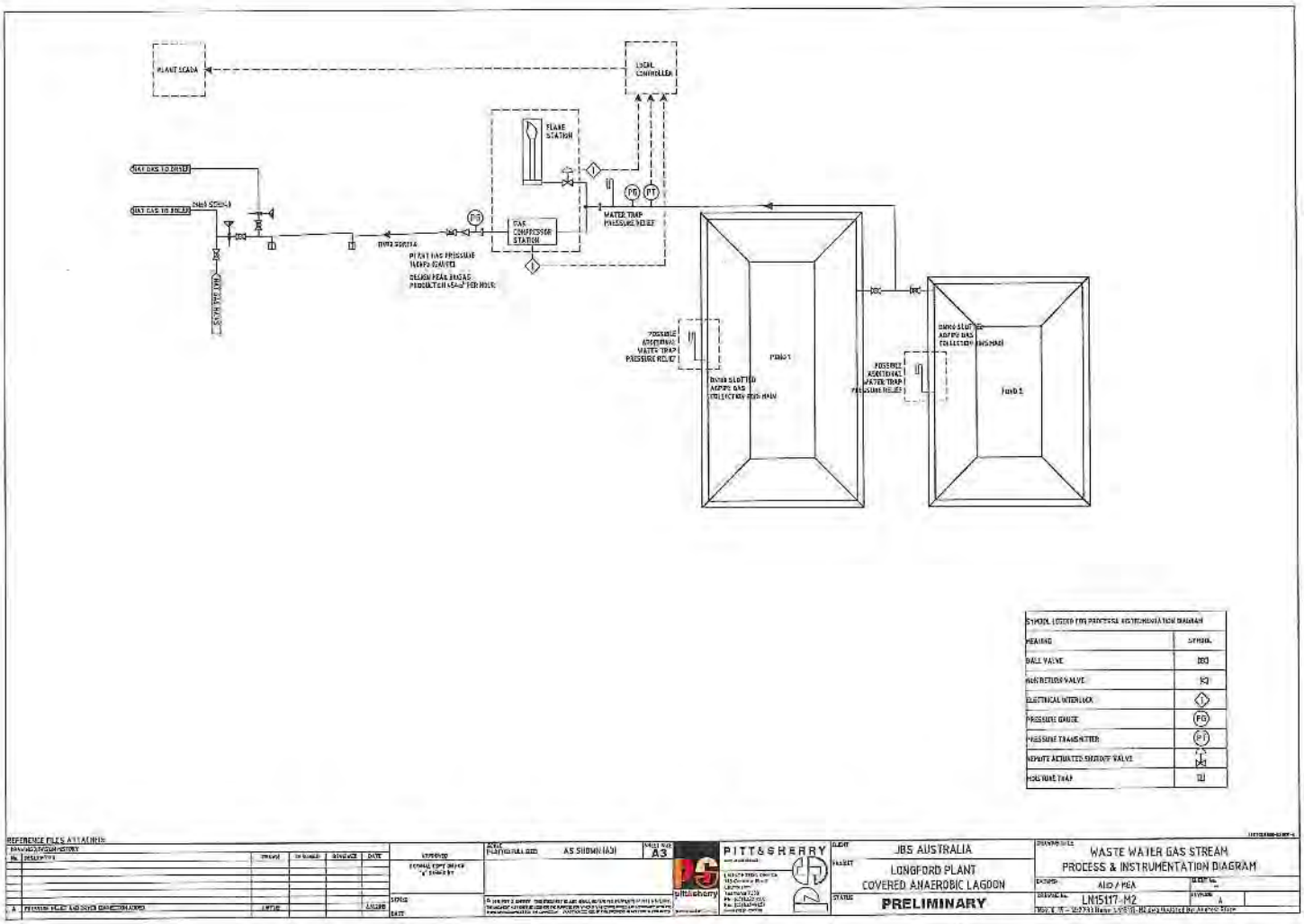
STATUS: PRELIMINARY

DRAWING TITLE: WASTE WATER STREAM PROCESS & INSTRUMENTATION DIAGRAM

CAD FILE: AND / MDA — JOB No.: —

DRAWING No.: LN15117-M1 — REVISION: A

Rev. A, B – 16/12/10 Name: LN15117-M1.dwg Drawn By: Antonio Stark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WATER TRAP PRESSURE RELIEF
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NON RETURN VALVE
ELECTRICAL INTERLOCK
PRESSURE GAUGE
PRESSURE TRANSMITTER
REMOTE ACTUATED SHUTOFF VALVE
MOISTURE TRAP
PITT&SHERRY
CLIENT
JBS AUSTRALIA
PROJECT
LONGFORD PLANT
COVERED ANAEROBIC LAGOON
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PRELIMINARY
WASTE WATER GAS STREAM
PROCESS & INSTRUMENTATION DIAGRAM
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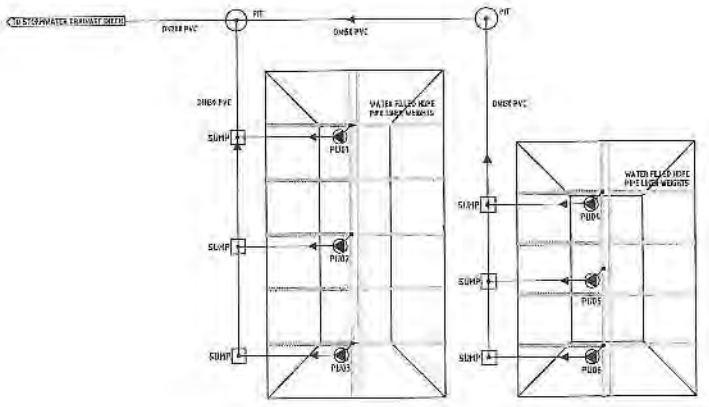


SYMBOL LEGEND FOR PROCESS INSTRUMENTATION DIAGRAM	
MEANING	SYMBOL
CENTRIFUGAL PUMP – WITH START WITH DRY RUN PROTECTION	

REFERENCE FILES ATTACHED

No.	DESCRIPTION	DRAWN	DESIGN	REVIEWED	DATE

APPROVED
ORIGINAL COPY ON FILE AT SIGNED BY

SIGNED

DATE

NOTE: DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

AS SHOWN (A3)

SHEET SIZE A3

PITT & SHERRY

CLIENT: JBS AUSTRALIA

PROJECT: LONGFORD PLANT
COVERED ANAEROBIC LAGOON

STATUS: PRELIMINARY

DRAWING TITLE: POND COVER STORMWATER PROCESS & INSTRUMENTATION DIAGRAM

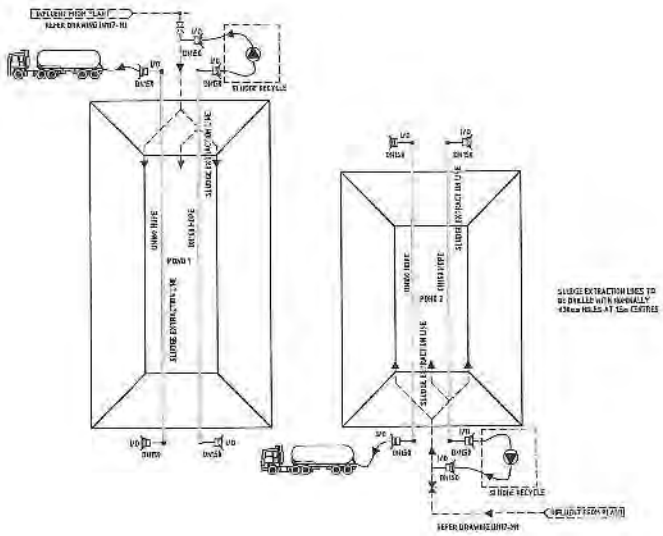
DRAWN: ANB / MEA

DRAWING No.: LN15117-M3

ISSUED: –

REVISION: –

Rev. A 16.12.2021 SOPs & Control Philosophy Updated By Andrew Slater



SYMBOL LEGEND FOR PROCESS & INSTRUMENTATION DIAGRAM	
DEMAND	SYMBOL
GATE VALVE	
CENTRIFUGAL PUMP	
INSPECTION OPENING WITH CAMLOCK COVER	I/O

REFERENCE FILES ATTACHED

No.	DESCRIPTION	DRAWN	DESIGNED	REVIEWED	DATE

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APPROVED
ISSUED COPY UNTIL "A" ISSUED BY

SIGNED
DATE

SCALE: AS SHOWN (A3) | SHEET SIZE: A3

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CLIENT: JBS AUSTRALIA
PROJECT: LONGFORD PLANT
COVERED ANAEROBIC LAGOON
STATUS: **PRELIMINARY**

DRAWING TITLE: SLUDGE HANDLING
PROCESS & INSTRUMENTATION DIAGRAM

DRAWN: MD / KDA | DESIGN: –
APPROVED: LM15117-M4 | REVISION: A

Appendix C

Aboriginal heritage
Unanticipated discovery plan

Unanticipated Discovery Plan

For proponents and consultants dealing with Aboriginal Heritage in Tasmania

This paper provides a Plan that should be followed when dealing with unanticipated discoveries of Aboriginal Cultural Heritage such as sites and objects. The plan provides guidance to project personnel so that they may meet their obligations with respect to Aboriginal heritage in accordance with the *Aboriginal Relics Act 1975* and the *Coroners Act 1995*.

The Unanticipated Discovery Plan is in two sections. The first section primarily explains mitigation strategies that should be employed when any Aboriginal Cultural Heritage sites or items are discovered excluding skeletal remains (burials), while the second process deals specifically with skeletal remains (burials).

Discovery of Cultural Heritage Items

Step 1: Any person who believes they have uncovered Aboriginal Cultural Heritage material should notify all employees or contractors that are working in the immediate area that all earth disturbance works must cease immediately.

Step 2: A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal Cultural Heritage site or relics. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal Cultural Heritage relics have been assessed by a recognised Aboriginal Heritage Practitioner.

Step 3: Aboriginal Heritage Tasmania (AHT) in Hobart (ph 6165 3152) needs to be notified and consulted as soon as possible and informed of the discovery. AHT will then provide further advice in accordance with the *Aboriginal Relics Act 1975*.

Discovery of Skeletal Material

Step 1: Call the Police immediately. Under no circumstances should the suspected skeletal remains be touched or disturbed. The area must now be considered a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2: Any person who believes they have uncovered skeletal material should notify all employees or contractors that are working in the immediate area that all earth disturbance works must cease immediately.

Step 3: A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal remains. No unauthorised entry or works will be allowed within this no-go' zone until the suspected skeletal remains have been assessed by the Police and or Coroner.

Step 4: Should the skeletal remains be determined to be of Aboriginal origin, the Coroner will contact an Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

Aboriginal Heritage Tasmania
Natural and Cultural Heritage Division
Department of Primary Industries, Parks, Water and Environment

Guide to the most common sites types in Tasmania.

Stone Artefact Scatters

A stone artefact is any stone or rock which has been modified by Aboriginal people. Often this is the result of fracturing or 'flaking' fine grained rocks to produce sharp cutting or scrapping implements. The most common stone types utilised by Tasmanian Aboriginal people are silcrete and chert, on account of their availability and excellent tool making properties. However we also find hornfels, chalcedony, spongelite, quartzite and other stone types where locally available.

In Tasmania, stone artefacts are typically recorded as being 'isolated' (i.e. only one) or in a 'scatter' (i.e. two or more within a 50m radius). Stone artefacts are found all over Tasmania, in all landscapes and situations, and are the most basic indicator of Aboriginal occupation.

Shell Middens

Middens are occupational deposits created through an accumulation of debris from human activity. Midden sites can range in size from large mounds to small scatters of shell. The most common shellfish species found in middens in Tasmania are abalone, oyster, mussel, warrener and limpet, however they can also contain other debris such as animal bone, charcoal from campfires and discarded tools made from stone, shell or bone These sites are usually found near waterways and coastal areas.

Rockshelters

Caves and rock overhangs which bear signs of human activity are, for the purpose of the Aboriginal Heritage Register (AHR), collectively called occupied rock shelters. Aboriginal people utilised these places for shelter, ceremony and other cultural practices, leaving behind occupational deposits such as middens and hearths, tools, or in some cases, rock markings. Rock shelters are usually found where the geology is conducive to the formation of caves and rock overhangs.

Quarries or Stone Procurement Sites

A quarry is a place where material has been extracted from a natural outcrop by Aboriginal people. The two types of quarry recorded on the AHR are stone and ochre; each typically being located wherever suitable ochre for painting and decoration, or stone for tool-making appear. Quarries can be recognised by evidence of human manipulation, and by the debris left behind from processing the material. Quarries can be extensive or discrete, depending on the size and quality of the outcrop, and how often it was utilised and visited.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks, which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Burial sites are highly sensitive places. They can occur anywhere, and have previously been recorded in sand dunes, shell middens and rock shelters.

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pitt&sherry

Additional Technical Assessment Report

JBS Longford Plant
Waste Water
Treatment Facility

For: Northern Midlands Council

Project No: 5692

Environmental Service & Design

14 Cattley Street PO Box 651
Burnie TAS 7320 Burnie TAS 7320
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Document Control

Prepared & Published by:	ES&D
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Prepared For:	Northern Midlands Council

			Date:
DRAFT 1	Ted Kulinski	ES&D	11/12/2016
DRAFT 2	Bruce Harpley	ES&D	11/12/2016
REVIEW	Rod Cooper	ES&D	12/12/2016
FINAL	Rod Cooper	ES&D	12/12/2016

Contents

List of Figures

Introduction

Municipality	Northern Midlands
Location	Longford
Client	Northern Midlands Council
Date of Assessment	12 December 2016
Desktop Study	11 December 2016

Figure 1 – Location Plan

1 Background

Environmental Services and Design Pty Ltd have been engaged by Northern Midlands Council to conduct a further technical review of the Environmental Management Plan (EMP) for the proposed JBS Longford waste water treatment facility in relation to potential environmental impacts of the covered anaerobic lagoon.

The EMP had not been supplied to Council at the time of lodging the development application.

2 Proposal Review

An initial desktop review of the proposal was conducted on 30 November and 1 December 2016 to assess mitigation measures proposed for potential environmental impacts identified in the Pitt & Sherry report supplied to Council.

The assessment of the Pitt & Sherry report supplied to Council remains unchanged.

This review deals specifically with the information supplied in the JBS Longford Waste Water Treatment Plant Environmental Management Plan dated 17 November 2016. It could be used as a stand alone permit requirement.

3 Discussion

3.1 Environmental Legislation

When addressing the requirements of the Environmental Management and Pollution Control Act 1994 (refer page 4) the narrative takes a very narrow view of the 'environment' as it states that the CAL discharges only to trade waste but does not consider discharges to air, ground water, surface water, soil or noise. These elements of the 'environment' are however identified as potential issues later in the document.

For a project of this size background environmental data is essential.

3.2 Proposed Additional Waste Water Treatment Infrastructure

3.2.1 Additional Waste Water Treatment Infrastructure

Section 2.2.2 of the EMP discusses the sludge withdrawal pipes and stormwater drainage. However, it does not discuss the fate of the withdrawn sludge or where the storm water is to be directed to.

To determine environmental risk all inputs and outputs need to be known.

This section also states that the CAL cover is to be weighted to protect it from wind action but does not detail that weight calculations are adequate for the wind speeds and direction expected.

To determine environmental risk all inputs and outputs need to be known.

3.2.2 Hydraulic System Components

Page 7 of the report explains how the effluent enters and exits the CAL and flows to the TasWater treatment plant. There is no consideration of potential blockages in the system and a corresponding hazard assessment and response. For example, if a blockage occurs, what is the impact on the proposed CAL and treatment capacities.

Require evidence of HAZOP or emergency responses that produce spills and emissions.

The sludge handling system indicates that extraction ports will be provided in the sludge handling pipes, to enable removal via trucks. There is no indication of where the sludge is to be disposed of by the collection trucks.

3.2.3 Gas Train Equipment

As the proposed facility is to be within 218 m and 600 m of existing housing it is an industry standard to produce modelling from the existing system to show that gas such as NOx, CO2 and vented methane are not a potential environmental nuisance. This wouls remove the need for ongoing monitoring of air quality.

Require a commitment to produce via TAPM, air modelling showing no risk to nearest residence. If done properly it should also cover odour risk.

3.2.4 Gas Flaring Equipment

It appears from the discussion relating to the gas flaring equipment that the area will be un-manned and rely on automated warning systems. There is no indication of the potential for large scale odour release following equipment failure. See commitment above.

Potential impacts from air emissions are accepted and commitments are made. Reliance on routine maintenance and operational activities to minimise emissions does not fully mitigate the risk of a larger plant closer to sensitive receptors. There is a need for initial modelling and monitoring, at the least, to show there will be no gas or odour impacts on residents.

This needs to be monitored during commissioning, with possible odour monitoring in place to quantify any escapes. As the new CAL is to be closer to residences, it cannot be assumed that there will not be a problem. Mitigation controls may need to be developed.

Require a commitment to produce some odour monitoring during commissioning as a baseline for future defence if required. Monitoring to be targeted at worse case situations such as venting.

3.2.5 Groundwater

Table 3, page 21, details the groundwater bores but does not show the distance from the proposed CAL. Nor does it address potential effects.

Section 6.3.3 of the EMP relies on design of the pond liner to protect groundwater quality with mitigation measures restricted to quality control and no rocks or foreign objects under the liner. This is not an assurance of no impact to groundwater. From design information the perched groundwater may/will be in contact with the liner at 1.5 meters. It is a normal and regular occurrence of leaks through liners and clay even with guarantees.

Require a commitment to install some groundwater bores to monitor potential impacts prior to installation. This is an industry standard where contaminants can impact groundwater and acts as security and ongoing monitoring if required.

3.2.6 Surface Water

Table 4 – Historical Inflow Water Quality Parameters shows analysis confirms that groundwater and surface water should be monitored from commissioning.

Section 6.2.2 of the EMP discusses performance requirements for protection of ecosystems, recreational waters, drinking water and agricultural use but there is no discussion or commitments to determine impacts from the CAL.

Require a commitment to monitor surface water quality for a period sufficient to draw long term conclusions on impacts, based on Table 4.

3.2.7 Noise

The EMP states that "the additional noise sources will most likely result in a negligible increase in the current overall noise emissions from the site".

Checking the noise power data provided and the distances it is reasonable to conclude that noise will not be a concern.

Require a commitment to conduct noise monitoring during commissioning to confirm that the operation does not pose a noise issue at the nearest residences.

3.2.8

JBS must have a De-sludging method or procedure in place. As that activity will generate significant odour release, and this should be minimised during such an event. Although there is to be air displacement from one vessel to the other escape of odour remains a potential issue. Hence the monitoring requirements.

4 Conclusion

As stated in the previous review Council should consider whether the proposal meets their requirements for the environmental performance of the site or whether the proposal and permit is limited to addressing the waste flow quality from the site to improve TasWater treatment plant performance only. The main risk factor is having the new installation closer to town, although prevailing winds and modelling may show this is a low risk.

The Environmental Management Plan addressing a number of potential environmental impacts and nuisances associated with the development. A number of these issues, as noted in section 3, are not adequately addressed through initial testing / modelling or ongoing monitoring.

Yours faithfully

B. Harpley

Bruce Harpley
Technical Consultant

20 December 2016

Paul Godier
Senior Planner
Northern Midlands Council
PO Box 156
LONGFORD TAS 7301

Dear Paul,

Subject P16-215 – Response to additional third party assessment

I refer to your email dated 16 December 2016 providing a copy of the comments received from Environmental Services and Design Pty Ltd (ES&D) in response to the environmental management plan provided to Council.

I have referred the comments to our Senior Scientist and our Project Designer/Manager for review and they have provided the attached further clarification and feedback.

I also understand that the Environment Protection Authority were contacted by our environment team and as far as we are aware they will not be requiring any further information for their assessment. They indicated they may require a construction environmental management plan by way of condition however this is not unusual or unexpected in this case.

I trust this addresses all of Council's concerns in this regard. Please let me know if you require any further clarification of any of these points.

Yours sincerely

Leigh Knight
Senior Land Use Planner

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Comments on additional ES&D review

1. Background

Environmental Services and Design Pty Ltd have been engaged by Northern Midlands Council to conduct a further technical review of the Environmental Management Plan (EMP) for the proposed JBS Longford waste water treatment facility in relation to potential environmental impacts of the covered anaerobic lagoon.

The EMP had not been supplied to Council at the time of lodging the development application.

2. Proposal Review

An initial desktop review of the proposal was conducted on 30 November and 1 December 2016 to assess mitigation measures proposed for potential environmental impacts identified in the Pitt & Sherry report supplied to Council.

The assessment of the Pitt & Sherry report supplied to Council remains unchanged.

This review deals specifically with the information supplied in the JBS Longford Waste Water Treatment Plant Environmental Management Plan dated 17 November 2016. It could be used as a standalone permit requirement.

3. Discussion

3.1 Environmental Legislation

When addressing the requirements of the Environmental Management and Pollution Control Act 1994 (refer page 4) the narrative takes a very narrow view of the 'environment' as it states that the CAL discharges only to trade waste but does not consider discharges to air, ground water, surface water, soil or noise. These elements of the 'environment' are however identified as potential issues later in the document.

For a project of this size background environmental data is essential.

pitt&sherry Comment:

Section 1.7.2 of the EMP outlines the approval process, as agreed with the EPA and Council at a meeting on site on the 20th September 2016.

Section 1.7.2 relates the project to the requirements under EMPCA and the classification of the type of activity as a Level 1 as opposed to a Level 2 activity and the reasoning behind this. The purpose of this section isn't to outline the potential impacts to the environment, that is the purpose of the EMP.

3.2 Proposed Additional Waste Water Treatment Infrastructure

3.2.1 Additional Waste Water Treatment Infrastructure

Section 2.2.2 of the EMP discusses the sludge withdrawal pipes and stormwater drainage. However, it does not discuss the fate of the withdrawn sludge or where the storm water is to be directed to.

To determine environmental risk all inputs and outputs need to be known.

This section also states that the CAL cover is to be weighted to protect it from wind action but does not detail that weight calculations are adequate for the wind speeds and direction expected.

To determine environmental risk all inputs and outputs need to be known.

pitt&sherry Comment:

Withdrawal of sludge is discussed in section 6.5. As outlined in the EMP desludging is unlikely to be required, and if it is then the sludge will be reused or disposed of at an appropriately licenced facility in accordance with Tasmanian Biosolids Reuse Guidelines (1999) and the Approved Management Method (AMM) for Biosolids Reuse (2006) and with approval from the EPA.

Stormwater run-off will be directed to Back Creek via open vee drains which discharge into the natural water course on the adjacent low lying paddock, refer to Figure 2, page 10 and section 6.2.4.

The cover weighting system will be designed by specialist contractors experienced in the design and construction of gas inflated covered anaerobic lagoons. The tender documents stipulate the local meteorological conditions that the tenderer needs to allow for including wind rose data. The Tenderer will be required to demonstrate the suitability of their weighting system design for the local conditions. As is standard practice, the cover will also be designed with radiused corners to minimise the development of stress points and potential tearing due to wind loading. The weighting system will comprise of water or sand filled weights running along the centre of the pond on the longitudinal axis, with a series of ribs branching laterally to form a ribbed pattern. Depending on the prevailing wind conditions more or less ribs can be added as required. A double trench system is also to be provided. The double trench system comprises of a trench for the pond liner and a second trench for the cover. In the unlikely event of damage to the cover due to wind or other factors the affected area can be repaired without the need to disturb the pond liner.

3.2.2 Hydraulic System Components

Page 7 of the report explains how the effluent enters and exits the CAL and flows to the TasWater treatment plant. There is no consideration of potential blockages in the system and a corresponding hazard assessment and response. For example, if a blockage occurs, what is the impact on the proposed CAL and treatment capacities.

Require evidence of HAZOP or emergency responses that produce spills and emissions.

The sludge handling system indicates that extraction ports will be provided in the sludge handling pipes, to enable removal via trucks. There is no indication of where the sludge is to be disposed of by the collection trucks.

pitt&sherry Comment:

JBS have utilised the pipeline from the abattoir site to the TasWater treatment plant for 10 years without any blockages occurring. This same pipeline will be utilised.

A HAZOP for the proposed CAL will be prepared by JBS prior to construction commencing, refer section 6.15.

Refer comments above re sludge removal.

3.2.3 Gas Train Equipment

As the proposed facility is to be within 218 m and 600 m of existing housing it is an industry standard to produce modelling from the existing system to show that gas such as NOx, CO2 and vented methane are not a potential environmental nuisance. This would remove the need for ongoing monitoring of air quality.

Require a commitment to produce via TAPM, air modelling showing no risk to nearest residence. If done properly it should also cover odour risk.

pitt&sherry Comment:

Which industry standard is the above comment referring to?

As outlined in section 6.1, during normal operational conditions there is no potential for the direct emission of pollutants or odour to the atmosphere from the CAL as all Biogas generated will be captured, piped and flared.

The proposed CAL will supplement the existing TasWater CAL and hence the emissions combusted by the new flare will displace the existing emissions combusted. It is also noted in section 6.1.3 that the existing JBS CAL in Dinmore which is located 250m from the closest receptor has had no operational issues in relation to odour.

Initial discussions with the EPA prior to the development of the EMP concluded that the atmospheric modelling or monitoring of the proposed CAL would not be required. The EPA have since reviewed the EMP and do not require modelling or monitoring.

3.2.4 Gas Flaring Equipment

It appears from the discussion relating to the gas flaring equipment that the area will be unmanned and rely on automated warning systems. There is no indication of the potential for large scale odour release following equipment failure. See commitment above.

Potential impacts from air emissions are accepted and commitments are made. Reliance on routine maintenance and operational activities to minimise emissions does not fully mitigate the risk of a larger plant closer to sensitive receptors. There is a need for initial modelling and monitoring, at the least, to show there will be no gas or odour impacts on residents.

This needs to be monitored during commissioning, with possible odour monitoring in place to quantify any escapes. As the new CAL is to be closer to residences, it cannot be assumed that there will not be a problem. Mitigation controls may need to be developed.

Require a commitment to produce some odour monitoring during commissioning as a baseline for future defence if required. Monitoring to be targeted at worse case situations such as venting.

pitt&sherry Comment:

Refer above comment. Monitoring is not required by the EPA.

3.2.5 Groundwater

Table 3, page 21, details the groundwater bores but does not show the distance from the proposed CAL. Nor does it address potential effects.

Section 6.3.3 of the EMP relies on design of the pond liner to protect groundwater quality with mitigation measures restricted to quality control and no rocks or foreign objects under the liner. This is not an assurance of no impact to groundwater. From design information the perched groundwater may/will be in contact with the liner at 1.5 meters. It is a normal and regular occurrence of leaks through liners and clay even with guarantees.

Require a commitment to install some groundwater bores to monitor potential impacts prior to installation. This is an industry standard where contaminants can impact groundwater and acts as security and ongoing monitoring if required.

pitt&sherry Comment:

Engineering design of the ponds and quality control procedures to be implemented during construction of the liner, added to the predominantly clay fill layer underneath the liner will ensure any potential impacts to the groundwater will be minimised.

Which industry standard is the above referring to?

3.2.6 Surface Water

Table 4 – Historical Inflow Water Quality Parameters shows analysis confirms that groundwater and surface water should be monitored from commissioning.

Section 6.2.2 of the EMP discusses performance requirements for protection of ecosystems, recreational waters, drinking water and agricultural use but there is no discussion or commitments to determine impacts from the CAL.

Require a commitment to monitor surface water quality for a period sufficient to draw long term conclusions on impacts, based on Table 4.

pitt&sherry Comment:

Table 4 refers to wastewater quality to be treated within the proposed CAL and which will then go directly to the TasWater wastewater treatment plant for further treatment. We are not sure how Table 4 can confirm that groundwater and surface water should be monitored. This comment is not clear.

Process water will not come into contact with surface water therefore there will be no change to existing surface water quality.

3.2.7 Noise

The EMP states that "the additional noise sources will most likely result in a negligible increase in the current overall noise emissions from the site".

Checking the noise power data provided and the distances it is reasonable to conclude that noise will not be a concern.

Require a commitment to conduct noise monitoring during commissioning to confirm that the operation does not pose a noise issue at the nearest residences.

pitt&sherry Comment:

As ESD have concluded noise will not be a concern, pitt&sherry are uncertain why ESD then recommend noise monitoring.

The noise generated will be negligible. Monitoring is not required by the EPA.

3.2.8 De-sludging

JBS must have a De-sludging method or procedure in place. As that activity will generate significant odour release, and this should be minimised during such an event. Although there is to be air displacement from one vessel to the other escape of odour remains a potential issue. Hence the monitoring requirements.

pitt&sherry Comment:

Refer to comments above re desludging.

4. Conclusion

As stated in the previous review Council should consider whether the proposal meets their requirements for the environmental performance of the site or whether the proposal and permit is limited to addressing the waste flow quality from the site to improve TasWater treatment plant performance only. The main risk factor is having the new installation closer to town, although prevailing winds and modelling may show this is a low risk.

The Environmental Management Plan addressing a number of potential environmental impacts and nuisances associated with the development. A number of these issues, as noted in section 3, are not adequately addressed through initial testing / modelling or ongoing monitoring.

pitt&sherry Overall Comment:

The purpose of the proposed JBS CAL is to improve the quality and reduce the quantity of trade waste sent to the TasWater Longford wastewater treatment plant. The existing TasWater CAL is 6 ML and the proposed JBS CAL is 30 ML which will lead to significant environmental improvements with the TasWater wastewater treatment plant.

Due to the expected environmental improvements as a result of this project and the simplicity of the project, extra onerous conditions for the proposed CAL are considered not to be required by pitt&sherry or the regulatory assessment officer at the EPA.

The EPA, who have assessed the EMP, do not require any modelling or monitoring to be undertaken.

ATTACHMENT C

Comments on ES&D's Technical Assessment Report

Environmental Legislation
When addressing the requirements of the Environmental Management and Pollution Control Act 1994 (refer page 4) the narrative takes a very narrow view of the 'environment' as it states that the CAL discharges only to trade waste but does not consider discharges ta air, ground water, surface water, soil or noise. These elements of the 'enviranment' are however identified as potential issues later in the document.

For a project of this size background environmental data is essential.

Pitt&Sherry Comment:

Section 1.7.2 of the EMP outlines the approval process, as agreed with the EPA and Council at a meeting on site on the 20th September 2016. Section 1.7.2 relates the project to the requirements under EMPCA and the classification of the type of activity as a Level 1 as opposed to a Level 2 activity and the reasoning behind this. The purpose of this section isn't to outline the potential impacts to the environment, that is the purpose of the EMP.

NMC Planner's Comment:

The proposal is classified as a Level 1 Activity and was referred to the EPA who advise that they are satisfied with the information provided in the Environmental Management Plan to allow assessment of the proposal.

Additional Waste Water Treatment Infrastructure
Section 2.2.2 of the EMP discusses the sludge withdrawal pipes and stormwater drainage. However, it does not discuss the fate of the withdrawn sludge or where the storm water is to be directed to. To determine environmental risk all inputs and outputs need to be known. This section also states that the CAL cover is to be weighted to protect it from wind action but does not detail that weight calculations are adequate for the wind speeds and direction expected. To determine environmental risk all inputs and outputs need to be known.

Pitt&Sherry Comment:

Withdrawal of sludge is discussed in section 6.5. As outlined in the EMP desludging is unlikely to be required, and if it is then the sludge will be reused or disposed of at an appropriately licenced facility in accordance with Tasmanian Biosolids Reuse Guidelines (1999) and the Approved Management Method (AMM) for Biosolids Reuse (2006) and with approval from the EPA. Stormwater run-off will be directed to Back Creek via open vee drains which discharge into the natural water course on the adjacent low lying paddock, refer to Figure 2, page 10 and section 6.2.4.

The cover weighting system will be designed by specialist contractors experienced in the design and construction of gas inflated covered anaerobic lagoons. The tender documents stipulate the local meteorological conditions that the tenderer needs to allow for including wind rose data. The Tenderer will be required to demonstrate the suitability of their weighting system design for the local conditions. As is standard practice, the cover will also be designed with radiused corners to minimise the development of stress points and