Submitter No.	1840	Issue Reference:	9109
Submitter Type	Council	TOR Category	Social / **Waste** / Land
Name	**Barcaldine Regional Council**	Relevant EIS Section	1.1.4

DETAILS OF THE ISSUE

Other Project Components that will impact on the BRC are as follows:

- Power and water
- Temp and permanent accommodation
- Roads and tracks
- Upgrade airstrip
- Sewerage
- Borrow pits and quarries
- Waste facilities
- Weed and pest management, and
- Disaster management (flood/fire/drought/mine issue).

Specific discussions are required with BRC on all of these issues. A more important discussion is required as to BRC's current and future needs and resourcing requirements to administer all of these proposed projects, assessments, decisions and processes, now and in the future.

PROPONENT RESPONSE

Waratah Coal welcomes further opportunities to consult with the BRC over the above issues. Some issues, including power and water, roads and the airstrip, will be addressed under the proposed Galilee Basin CSIA Roundtable. Other issues will be addressed by Waratah with Council as requested.

Submitter No.	1840	Issue Reference:	4117
Submitter Type	Council	TOR Category	Social / Economy / Transport / **Waste**
Name	**Barcaldine Regional Council**	Relevant EIS Section	3.1.17

DETAILS OF THE ISSUE

It is expected that the townships of Jericho and Alpha will expand to provide services associated with the mine and any increase in the local population which services the mine site.' What will be the cumulative effects on the towns from all f the proposed developments. Including the following:

- Increase demands on local transport network
- Increase demand on local sewerage systems
- Increase demand on local waste management system, and
- Increase demand on all essential services.

Capacity of the local services may be compromised with the cumulative effects of other proposals.

PROPONENT RESPONSE

As described in the *SIMP* (see *SIMP* in *Appendices – Volume 2* of this SEIS), Waratah Coal would prefer to address the cumulative social and economic impacts by using the proposed Galilee Basin Cumulative Social Impact Assessment (CSIA) Rountable. It is expected that this forum will address the impacts of increased demand on essential services.

With regards to sewerage and waste the demands on sewerage and waste of the project have been investigated and they are summarised below:

- There are five Barcaldine Regional Council (BRC) waste management facilities, at Alpha, Aramac, Barcaldine, Jericho and Muttaburra, with the mine site located closest to the Alpha facility. All facilities accept general municipal waste, with the Barcaldine landfill also accepting regulated waste. Waste oil is accepted at the BRC Depot in Barcaldine. There are no transfer stations within the BRC.
- The project is expected to generate approximately 217,000 m^3 of waste across the 34-year mine life, including the construction, operation and decommissioning phases. A landfill facility will be constructed on-site to accept all general waste. Regulated waste will require transportation to the Barcaldine landfill for treatment, while all recyclable material will be transported to off-site facilities via licensed contractors.
- The project may indirectly contribute to the increased demand on the local sewerage and waste management systems. The majority of the mine workforce will be housed in purpose-built accommodation on the mining lease, which will be serviced by package sewage treatment facilities.
- Some contractors are expected to establish a base in Alpha or Jericho – if the workforces of these contractors reside in the townships, this will increase the overall level of sewage and domestic waste produced by the town.

The overall effects and mitigation measures will be determined during the detailed technical studies being undertaken, and during development of the EM Plan, as well as through negotiations and discussions with relevant stakeholders.

Submitter No.	**1840**	Issue Reference:	**4119**
Submitter Type	Council	TOR Category	**Waste**
Name	**Barcaldine Regional Council**	Relevant EIS Section	2.1.5

DETAILS OF THE ISSUE

Will the sewerage effluent be used on mine rehabilitation works?

PROPONENT RESPONSE

Sewage from the project will be treated in package sewage treatment facilities (STFs) located at the workers' compounds; it will be treated to at least a Class C recycled wastewater quality. Treated wastewater will be discharged to absorption beds and/or irrigation fields, except during heavy rainfall events when it will be temporarily stored in an alternative location, to be discharged at a later date (i.e. wet weather storage). Signage will be established to restrict access to these areas. Treated sludge will be transported off-site by a regulated waste contractor to a regulated waste facility.

Treated wastewater (at least Class C recycled wastewater quality) may be used in progressive revegetation works during the life of the project, and following the cessation of mining. Treated sludge will not be used on mine rehabilitation works.

Submitter No.	1840	Issue Reference:	4120
Submitter Type	Council	TOR Category	Waste
Name	Barcaldine Regional Council	Relevant EIS Section	3.1.16

DETAILS OF THE ISSUE

How can cumulative waste be managed on a regional level. How can the BRC benefit from the waste management requirements?

PROPONENT RESPONSE

There are a number of other coal projects proposed within the Galilee Basin, including some with adjacent leases to the Galilee Coal Project. Each of these projects, if they proceed, will produce similar quantities and types of waste. Rather than each of these projects building separate on-site landfills, a regional waste management strategy (RWMS) could be developed to address the cumulative generation of waste. The RWMS would involve a large-scale waste disposal facility capable of receiving (at a minimum) general waste from each of the projects, with costs split between the projects based on the quantity of the waste contributed.

There is the potential for the RMWS facility to be designed with excess capacity so that it can accommodate future waste generated within the BRC. If the facility is designed to also accept regulated waste, then this will reduce the demand on the Barcaldine landfill to accept this waste.

The RMWS requires the coordination of the state and/or local government to conduct a feasibility study to identify the most appropriate location and design for the large-scale waste disposal facility.

The RMWS facility could be initiated through the proposed Galilee Basin Cumulative Social Impact Assessment (CSIA) Roundtable (see *SIMP* in *Appendices – Volume 2* of this SEIS).

Submitter No.	419	Issue Reference:	4121
Submitter Type	Government	TOR Category	Waste
Name	DERM	Relevant EIS Section	Volume 2, Chapter 1, Project Description and Chapter 12, Waste

DETAILS OF THE ISSUE

The EIS and EM plan do not provide sufficient detail on the disposal of rejects from the CHPP. The EIS states that two options are being considered for tailings management, namely co-disposal of tailing in cells to be constructed within the open-cut spoil areas or filter pressing tailings to remove water and trucking to 'designated dump locations'. The EIS and EM plan give no detail on how the co-disposal cells or 'designated dump locations' would be sited, constructed or managed. The EIS should specifically address the material with the proposed overburden that would be suitable for constructing the outershell of cells in order to minimise the risk of acid leachate. In addition, the EIS should consider the structural aspects of containment systems with regard to the risk of failure during operation and provide an assessment of the long-term stability of the spoil dumps in relation to the co-disposal cells.

PROPONENT RESPONSE

Options for the tailings storage facility which have been investigated include trucking dry tailings, in-pit disposal of dry tailings, conventional thickener and tailings dam, and thickened tailings disposal. The preferred option from a

tailings methodology evaluation matrix is trucking tailings dry paste and rejects to disposal cells. The mine site water management system has been prepared for this method (see *Mine Site Water Management System* contained in *Appendices – Volume 2* of this SEIS).

Cells are to be designed and constructed in box cut and in pit spoil piles. A life of mine tailings emplacement strategy has been developed. Although testing to date indicates that tailings and rejects are benign, blanket encasement will prevent any oxidisation or seepage. Clay blankets will be properly engineered. Analyses have been completed for geotechnical stability of all cell batters.

Filter pressing is required to obtain a transportable tailings paste. Phoenix belt presses are proposed. Tailings and rejects will be trucked to the cells, dumped and then spread and track compacted by a dozer to reduce permeability and prevent oxidisation.

Waratah Coal have prepared a *Tailings Storage Facility Update Report* (contained in *Appendices – Volume 2* of this SEIS) which provides the details regarding the geochemical properties of the tailings and the proposed Tailing Storage Facility.

Submitter No.	**419**	Issue Reference:	**4122**
Submitter Type	Government	TOR Category	**Waste**
Name	**DERM**	Relevant EIS Section	Volume 2, Chapter 1, Project Description and Chapter 12, Waste

DETAILS OF THE ISSUE

The EIS and EM plan do not provide sufficient information on mineral waste and geochemical analysis. The EIS and EM plan do not provide sufficient measures to ensure that during operations overburden and interburden are adequately characterised with regard to their chemical and physical properties.

Neither the EIS nor EM plan provides sufficient detail on the measures to be taken to avoid placing sodic or dispersive material near the surface of spoil dumps or near the plant root zone. Similarly, the EIS and EM plan do not provide sufficient detail on the measures to be taken to test for spoil with acid producing potential and appropriately treat that material.

The EIS and EM plan should provide measures for the chemical and physical characterisation of overburden and interburden and define appropriate management actions for those waste materials.

The EIS and EM plan should provide details on the criteria to be used to select sodic or dispersive spoil for special handling and disposal, and the measures to be taken that will ensure selected material will be suitably placed and encapsulated or covered. The EIS and EM plan should similarly discuss the selection and disposal of acid generating material.

PROPONENT RESPONSE

Since submission of the EIS a report has been prepared that assesses the impacts of waste products produced through the mining operations at the mine site. The report provides a detailed description of waste generated through open-cut mining activities from the overburden and coal processing waste products known as coarse rejects and fine tailings. The report accounts for site geology, waste quantities being developed through mining activities, the manner in which different wastes are stored, the characterisation of waste products, the geochemical nature of coal and waste materials, and the mitigation and management measures put in place to handle waste. See the *Waste Rock, Rejects and Tailings Report* contained in *Appendices – Volume 2* of this SEIS.

A preliminary assessment of the physical and chemical characteristics of the project is contained at Appendix 1 of the *Waste Rock, Rejects and Tailings Report* contained in *Appendices – Volume 2* of this SEIS.

See the *Draft Mine EM Plan* (contained in *Appendices – Volume 2* of this SEIS) for management measures relating to mineral waste

Soils prone to erosion and dispersion have been discussed in Section 2 of the *Soils and Land Suitability SEIS Report* (contained in *Appendices – Volume 2* of this SEIS), with commitments for further work discussed in Section 6. Appendix B of the *Soils and Land Suitability SEIS Report* provides a list of the susceptibility of different soils to water and wind erosion. This information is mapped in Figures 2.4 and 2.5.

Submitter No.	**1840**	Issue Reference:	**4123**
Submitter Type	Council	TOR Category	**Waste**
Name	**Barcaldine Regional Council**	Relevant EIS Section	12.4.3

DETAILS OF THE ISSUE

As noted council has limited facilities and acceptance criteria for waste streams.

Any intent to dispose of waste oil at the BRC Depot facility should be communicated to council to ensure that the storage and associated conditions and obligations of council are met prior to acceptance of increased volumes of oil.

Any additional costs (i.e. monitoring/carbon tax/greenhouse gas/planning/design etc) for acceptance and disposal of mining related or generated wastes should be borne by the mining proponents and not the local community as this would create an additional burden on the community and limited rating funds as the landfill has not been designed to cater for the scale or size of activity proposed. Alternative methods including waste minimisation, treatment and alterative disposal sites are suggested to be explored.

Further discussion with Barcaldine Regional Council are required regarding waste disposal options.

Any waste disposal facility situated on-site for the proponent should be considered within design and rehabilitation plan to mitigate potential waste/water/contamination or final land form issues.

Waste management should also extend to ancillary and contractor/service providers utilised throughout the mining construction/operation/closure etc.

PROPONENT RESPONSE

As mentioned in the proponent response to Issue Reference 4057 in Part C – 18 – Environmental Management Plan – a non-mineral waste management plan will be prepared, which will include measures to avoid and/or reduce waste generation, or recycle waste. Where waste streams cannot be reduced and have to be disposed to council facilities, Waratah Coal will pay a reasonable price, as negotiated with Barcaldine Regional Council, for this service.

Waste oil will be stored in drums on-site, and will then be transported off-site by a (yet-to-be-determined) waste contractor for reuse, recycling or disposal. It will depend upon the contractor as to the disposal location for the waste oil, however if they do intend to transport it to the Barcaldine Regional Council depot in Barcaldine, then this will be negotiated in advance with the Barcaldine Regional Council.

Refer to Issue Reference 4040 (in Part C - 19 - Decommissioning and Rehabilitation) for more information.

Submitter No.	251	Issue Reference:	19082 / 4087
Submitter Type	Government	TOR Category	Hazard & Risk (Bushfire) / **Waste**
Name	**DCS**	Relevant EIS Section	Volume 1 – Project Overview, Chapter 7, EMP: Mine. Section 7.8.13.2 Element Plan

DETAILS OF THE ISSUE

Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.13.2 Element Plan states:

- Operational Policy Objective – Waste – Minimise the Generation of Wastes, Where Practicable and to Appropriately Contain, control and Dispose of all Waste Generated
  - No vegetative waste is to be burnt on site without a 'Permit to Burn' issued by the Rural Fire Brigade and compliance with any other relevant statutory requirement (p164).

It is recommended that the following be addressed in the EIS to ensure compliance with SPP 1/03[1]:

- Identify the areas in the Project corridor that are located on land subject to high or medium bushfire hazard. If the project is not located on land subject to high or medium bushfire hazard, state this as a justification for the Project being compatible with Outcome 1 of the SPP (suggest inclusion in Chapter 18 of Volume 2 and 3, and in Chapter 2 of Volume 4), and
- It is recommended that the EMP for the mine and rail infrastructure add additional mitigation measures that ensure adequate access for fire fighting/other emergency vehicles and safe evacuation is provided for during construction and maintenance in the project area.

PROPONENT RESPONSE

Refer to Issue Reference 19069 in Part C – 16 – Hazard and Risk.

Submitter No.	417	Issue Reference:	19118
Submitter Type	Council	TOR Category	**Waste** / Cumulative Impacts
Name	**Isaac Regional Council**	Relevant EIS Section	

DETAILS OF THE ISSUE

The EIS document should address the process of disposal of additional solid and sewerage waste waters from the operation and the likely increase in the volume of this waste in the region through cumulative effects.

PROPONENT RESPONSE

An *Updated Cumulative Impact Assessment* (CIA) has been undertaken for the project. See report contained in the *Appendices – Volume 2* of this SEIS.

Refer to Issue Reference 19017 (in Part C – 18 – Environmental Management Plan) for more information regarding sewerage management.

1 State Planning Policy 1/03 *Guideline: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide*, Qld Government, Dept. of Local Government and Planning. Department of Emergency Services. June 2003.

Submitter No.	1840	Issue Reference:	6000
Submitter Type	Council	TOR Category	Waste
Name	Barcaldine Regional Council	Relevant EIS Section	1.4.1

DETAILS OF THE ISSUE

Workforce accommodation – temporary 2,000 person workers village.

Waste infrastructure including remediation and movement of existing waste transfer facility and approvals of new transfer site. Solid wastes including sewage sludge from the mining facility will need to be handled separately and exceed the current provisions for septic services in the region. Appropriate long term sewage treatment facilities are required in Alpha to service the expansion and meet the growing demand for waste services.

The LOM is proposed for period of 25 years with ongoing operational workforce of ~2,000.

Please provide detail on adequacy of sewage treatment infrastructure and capacity during rainfall events.

Waste disposal site details are required by the proponent as council has limited capacity and restrictions on waste acceptance including solid, sewage, mixed etc.

PROPONENT RESPONSE

A non-mineral waste management plan (NMWMP) will be prepared that will address the management of all waste streams from the mine, with the exception of mineral wastes (i.e., waste rock, topsoil and tailings), dust, combustible emissions, and stormwater runoff, as these will be addressed within other management plans for the project. The NMWMP will describe the waste anticipated for the site and measures for the management, reduction, segregation, and removal of waste (regulated and non-regulated waste) from the site. This process and ongoing will include negotiations and collaboration with local government and relevant stakeholders on appropriate waste infrastructure.

As for sewerage waste, accommodation camp and mine site sewerage systems will require on-site treatment and disposal. On-site systems will be sized, designed and managed to current standards for the mining industry. Generally, this would entail a secondary treatment system capable of producing recycled water suitable for irrigation via surface and/or sub-surface irrigation systems. A detailed site assessment, including of site opportunities and constraints, soils and local climatic conditions will be coupled with MEDLI mass balance modelling to determine sustainable irrigation loads for the site, coupled with a suitably sized wet weather storage and buffer storage systems to manage variable loads and low irrigation demands during wet periods.

A management system will be developed (as a Site Based Management Plan or similar) to manage the treatment system and infrastructure, irrigation and required monitoring program to ensure the scheme remains sustainable over the long term. The SBMP will contain:

- A summary of the system
- Organisational structure and responsibility
- Objectives and Targets
- A Risk assessment and identification of environmental issues and potential impacts
- An Environmental Management Plan
- An environmental monitoring and inspection plan
- Procedures for communication, tracking, incident management, reporting, and training, and
- Procedures for periodic review and continual improvement.

The sewage sludge from the mine will be transported off-site by a regulated waste contractor to a regulated waste facility. It is likely that this will be disposed of within the Barcaldine Regional Council (BRC) area (this will be determined through stakeholder discussion and once the more detailed planning has been completed).

Submitter No.	**417**	Issue Reference:	**6053**
Submitter Type	Council	TOR Category	**Waste**
Name	**Isaac Regional Council**	Relevant EIS Section	

DETAILS OF THE ISSUE

The EIS document should address the process of disposal of additional solid and sewerage waste waters from the operation and the likely increase in the volume of this waste in the region through cumulative effects.

PROPONENT RESPONSE

The proposed rail line to Abbot Point crosses through the local government area of the Isaac Regional Council, and it is assumed that the comment relates to sewage from the rail line construction. There will be package sewage treatment facilities at each of the worker's compounds. Water will be treated to Class C recycled water standard or better, then discharged to 'land', the precise discharge locations are currently unspecified. Sludge will be transported off-site by a regulated waste contractor to a regulated waste facility. Further discussion and liaison will occur in the more detailed planning for these facilities, including with Isaac Regional Council regarding facilities for the acceptance of this waste stream.

Otherwise, accommodation camp and mine site sewerage systems are expected to require on-site treatment and disposal. On-site systems will be sized, designed and managed to current standards for the mining industry. Generally, this would entail a secondary treatment system capable of producing recycled water suitable for irrigation via surface and/or sub-surface irrigation systems. A detailed site assessment, including of site opportunities and constraints, soils and local climatic conditions will be coupled with MEDLI mass balance modelling to determine sustainable irrigation loads for the site, coupled with a suitably sized wet weather storage and buffer storage systems to manage variable loads and low irrigation demands during wet periods.

A management system will be developed (as a Site Based Management Plan or similar) to manage the treatment system and infrastructure, irrigation and required monitoring program to ensure the scheme remains sustainable over the long term. The SBMP will contain:

- A summary of the system
- Organisational structure and responsibility
- Objectives and Targets
- A Risk assessment and identification of environmental issues and potential impacts
- An Environmental Management Plan
- An environmental monitoring and inspection plan
- Procedures for communication, tracking, incident management, reporting, and training, and
- Procedures for periodic review and continual improvement.