

Appendix 5

Summary of Submissions and Proponent's Response to Submissions

REED RESOURCES LTD RESPONSES TO SUBMISSIONS ON THE BARRAMBIE VANADIUM PROJECT PUBLIC ENVIRONMENTAL REVIEW

Response to WA Health, Public Health Division Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of WA Health - Public Health Division and in particular Reed addresses the issues raised by WA Health as follows;

WA Health Comment 1

One remaining issue that needs to be addressed is the requirement for environmental approvals to be sought prior to undertaking any chemical treatment for the purpose of adult or larval mosquito control. This requirement should be incorporated in the final mosquito management plan.

Reed Response

Reed will put in place a mosquito management plan prior to the employment and accommodation of its workforce at Barrambie. A key feature of the management plan will be chemical treatment for the purpose of adult or larval mosquito control. Relevant environmental approvals will be sought prior to any the application of any chemical control.

WA Health Comment 2

Any treatment and application of pesticides must be applied in accordance with the Health (Pesticides) Regulations 1956.

- *A pest management plan should be adopted to ensure that the use of pesticides are minimised in the control of pests. Pests include insects. Weeds, and where appropriate feral animals.*
- *Where pesticides are applied by a contractor then those person(s) must hold a current pesticide operators licence with the correct endorsements and also hold a current pest management firm registration.*

Reed Response

Reed will adopt a pest management plan in accordance with the *Health (Pesticides) Regulations 1956* with the aim of ensuring that the use of pesticides are minimised in the control of pests. Pests include insects, weeds, and feral animals.

Where pesticides are applied by a contractor then that person must hold current pesticides operators licence with the correct endorsements and also hold current pest management firm registration.

WA Health Comment 3

The proponent will need to address the following:

- *Comply with the Australian Drinking Water Guideline 2004.*
- *Establish drinking water quality reporting procedures with WA Health.*
- *Establish a Drinking Water Quality Management Plan, including the extraction points, water supply pipeline, the water process and storage facilities.*

Reed Response

Reed intends to comply with the Australian Drinking Water Guideline 2004 and will establish drinking water quality reporting procedures with WA Health.

A Drinking Water Quality Management Plan including the identification of extraction points, water supply pipeline, the water treatment process and storage facilities.

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WA Health Comment 4

- *Where multiple wastewater treatment plans (WWTP) are to be used (it is likely the accommodation village and mine site have separate facilities), each installation requires approval under the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations.*
- *Due to the size of the accommodation village and the multiple systems on site, the WWTP installations require approval from WA Health (not the Shire of Sandstone , as referred to in the PER). Applications should still be lodged via the Shire of Sandstone.*
- *Proposals for the recycling of effluent, including for the maintenance of grounds, require separate approval. Submissions are to be made to the WA Health Water Unit, with Recycled Water Quality Management Plan, in accordance with the (draft) Guidelines for the Use of Recycled Water in Western Australia, April 2009.*
- *It should be noted that waste water recycling proposals are subject to ongoing water sampling and quality requirements.*

Reed Response

Reed intends to install multiple waste water treatment plants (WWTP) one at the accommodation village and the other at the mine site, and intends to seek approval for those facilities in accordance with the *WA Health (Treatment of Sewerage and Disposal of Effluent and Liquid Waste) Regulations*.

These WWTP installations will require approval from WA Health. Reed was intending to recycle the effluent for the maintenance of the grounds and has been made aware that it will have to put in place a Recycled Water Quality Management Plan in accordance with the (draft) Guidelines for the Use of Recycled Water in Western Australia, April 2009.

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Response to the Department of Mines and Petroleum – Minerals and Environment Branch Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of The Department of Mines and Petroleum – Minerals and Environment Branch (DMP MEB) and in particular Reed addresses the issues raised by DMP MEB as follows;

DMP MEB Comment 1

Tailings Storage Facilities (TSF) - It is proposed that the primary TSF will be unlined. RR will need to ensure that appropriate geotechnical design of the integrated Primary and Calcine TSF cells will be able to maintain embankment integrity to avoid cross contamination and potential movement/leaching of metals or hazardous materials through the Primary TSF. RR will need to ensure that the design and construction of the TSFs is managed by appropriately qualified geotechnical professionals”.

Reed Response

Reed and its design Engineers Sinclair Knight Merz (SKM) are aware of the requirement to ensure an appropriate geotechnical design of the integrated Primary and Calcine TSF cells in order to maintain embankment integrity and to avoid cross contamination and potential movement / leaching of metals or hazardous materials through the unlined Primary TSF.

Reed agrees that it will need to ensure that the design and construction of the TSFs is managed by appropriately qualified geotechnical professionals, and that geotechnical designs for these facilities will be subject to a Geotechnical Review by the DMP, Resources Safety Division.

Reed wishes to advise that the calcine tails dam will be lined with a 1.5mm HDPE sealed liner to contain the calcine tailings and prevent any seepage out of the calcine dam.

The Primary Tail “as mined rock and clays” has been subjected to leaching tests based on AS 4439.3:1997 (which is similar to USGS and USEPA Method 1311(TCLP) and showed very low levels of mobilised major metals and metalloids within the leach liquors the levels being significantly below the guideline levels.

DMP MEB Comment 2

Surface Water Management - RR will need to consider options for placement of waste facilities over historic and recent drill holes that may provide pathways for preferential seepage if such drill holes are not sealed and/or rehabilitated correctly.

All permanent infrastructure should be outside the area flooded by a 1 in 100 year 72 hour (recurrence interval) rainfall event, and armoured to withstand a potential maximum flood event (based on geotechnical assessment of the design) to ensure stability at closure”.

Reed Response

Reed Resources has drilled over 800 reverse circulation and diamond drill holes to define the Barrambie ore bodies and most of these holes are confined to the main mining lease M57/173 and generally speaking these holes will be exposed within the pit as the mining progresses. Infrastructure, waste landforms and the tailings dams have been situated on General Purpose leases external to the main mining lease have not been subject to the same level of drilling. Reed will not be placing waste facilities over historic drill holes.

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All permanent infrastructure will be either placed outside of the 1 in 100 year 72 hour average recurrence interval flood area or diversions designed to divert the 1 in 100 year flood will be constructed to ensure stability of that permanent infrastructure at closure.

DMP MEB Comment 3

Project Layout - It is difficult to determine if mining infrastructure is located outside the zone of pit instability. Mining Infrastructure must be located outside of the zone of pit instability around the pit(s). The process plant and the Northern borrow pits would be examples in part.

RR should be aware that pits cannot be directly adjacent to tenement boundaries as safety and abandonment bunding must be placed around the pits on the appropriate Mining Act 1978 tenure. Abandonment bunds must be placed outside the zone of pit instability, which generally results in them being some distance from the pit edge. The northern and southern open pits appear to be located on the tenement boundaries.

Reed Response

Barrambie infrastructure such as dumps, dams and process plant have been placed on General Purpose leases (G57/5, G57/6, G57/7 and G57/8) outside the zone of instability created by the pits and well clear of the Barrambie Mining Lease M57/173.

The position of the process plant has been checked and found to be outside the zone of instability. All dumps are well outside the zone of instability.

Due to the narrow nature of M57/173 it will be necessary in places for the abandonment bunds to be placed outside the mining lease and on the General Purpose leases in order to ensure the bunds are outside the zone of instability.

Mining Lease M57/173 is rather narrow (probably due to the historic amalgamation of a number of Mineral Claims) and cannot accommodate the open pit and the infrastructure. The open pit design engineers Snowden have confined the current open pit design within M57/173 however the pit perimeter does come within 10 metres of the mining lease boundary in a number of places.

Reed acknowledges the DMP requirement for mining infrastructure and abandonment bunds to be placed outside the zone of instability and will ensure its designs comply with these requirements.

DMP MEB Comment 4

Tenure - Much of the tenure for proposed mining infrastructure is located on several General Purpose Leases. There is an endorsement for this tenement that states: "The grant of the lease being confined to the natural surface of the land and there under to a depth of 15 metres". Figure 2.1 the "Barrambie Project Layout" illustrates a topsoil stockpile (south east) that is off Mining Act Tenure".

Reed Response

Reed acknowledges that the General Purpose Leases have the following endorsement "The grant of the lease being confined to the natural surface of the land and there under to a depth of 15 metres". Reed intends to comply fully with this requirement.

Reed will ensure that all topsoil stockpiles are located either on the mining lease M57/173 or are on one of the granted GP leases.

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DMP MEB Comment 5

Road Transport and Transport Corridors - The proponent needs to demonstrate that there is enough borrow material for on going construction. This area of 90Ha for haul roads needs to be clarified”.

Reed Response

Reed geologists have identified large quantities of lateritic gravels (greater than 3Mt) on the north east of M57/173 and believe there is sufficient gravel for construction and ongoing road maintenance operations. Reed notes that the Shire of Sandstone is currently obtaining gravel from the northern section of the mining lease.

It is assumed that there will be a maximum of 30km x 30m wide haul road totalling up to 90ha.

DMP MEB Comment 6

Closure, Decommissioning and Rehabilitation - A preliminary Closure Plan will need to be provided as part of the DMP Mining Proposal. A breakdown of volumes of materials required for construction / rehabilitation should be provided (eg TSF embankment, ROM pad, ponds, erosion resistant material for waste dump armouring), indicating the likely lithology they will be sourced from to establish that sufficient suitable material will be available for rehabilitation”.

Reed Response

Reed Resources advises that a preliminary closure plan has been provided in the Mining Proposal that was submitted to DMP on 30 July 2010.

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**Response to the Department of Mines and Petroleum, Health Management, Resources
Safety Division Submission**

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of The Department of Mines and Petroleum – Health Management, Resources Safety Division (DMP RSD) and in particular Reed addresses the issues raised by DMP RSD as follows;

DMP RSD Comment 1

The Project Description provided in the draft PER is of a higher standard than normal.

Reed Response

Reed thanks the Departments for the Comment that “*The Project Description provided in the draft PER is of a higher standard than normal and gives sufficient detail to adequately review the project at this stage of the process*”, and agrees that the mining and processing of the vanadiferous titanomagnetite is very similar to that of the Windimurra Vanadium Project.

DMP RSD Comment 2

Resource Safety Division (RSD) will hold meetings with the proponent prior to plant construction to review the design and operation of the mine and process plant.

Reed Response

Reed Resources is happy to meet with the Resources Safety Division prior to plant construction to review the design and operation of the mine and processing plant. Reed agrees with RSD that such a meeting could ensure that regulatory requirements for chemical storage and emissions management are incorporated into the plant design and this will have a significant impact on ensuring chemical spills are minimised and that air emissions are controlled.

Reed understands that while these requirements primarily focus on occupational health, safety and dangerous goods issues, they also assist in substantially reducing potential environmental impacts such as key air emissions as described in section 5.6.2 of the PER. Reed are pleased to note that the RSD believes that dust control is addressed within section 5.6.4 and that at this stage control techniques appear adequate.

DMP RSD Comment 3

The adequacy of plant design, operational management and dust/ emission control techniques will be assessed during operations under the Mines Safety and Inspection Regulations.

Reed Response

Reed acknowledges that the adequacy of plant design, operational management and dust/ emission control techniques will be assessed during operations under the *Mines Safety and Inspection Regulations* (MSIR) and that any observed deficiencies would be dealt with under MSIR.

DMP RSD Comment 4

One area that the PER is deficient is with reference to old repealed dangerous goods regulations.

Reed Response

Reed acknowledges that it inadvertently referenced the old repealed dangerous goods regulations. The PER should have instead referenced the more recent *Dangerous Goods Safety (Storage and*

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Handling of Non-explosive Regulations) 2007 and the Dangerous Goods Safety (Road and Rail Transport of Non-Explosives) Regulations 2007. Reed also acknowledges that the requirement for dangerous goods site licences at mine and port should also have been included in the PER.

Reed welcomes early meetings with the RSD prior to the construction phase including both the Mines Safety and Dangerous Goods Safety regulators so that Reed may be made aware of the requirements under the relevant dangerous goods safety legislation for explosives storage, general dangerous goods storage and the public safety requirements during transport and storage of final product.

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Response to the Department of Environment and Conservation – Environmental Management Branch Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of the Department of Environment and Conservation – Environmental Management Branch (DEC EMB) and in particular Reed addresses the issues raised by DEC EMB as follows;

DEC EMB Comment 1

That a condition be applied to require:

- *specific fauna management protocols for trenching activities to be developed and implemented in consultation with DEC; and*
- *that the protocols be consistent with the approved Dampier to Bunbury Natural Gas Pipeline (DBNGP) stage 5 fauna management protocol.*

Reed Response

Reed is supportive of a condition being applied to require specific fauna management protocols for trenching activities be developed and implemented in consultation with the DEC and that the protocols be consistent with the approved Dampier to Bunbury Natural Gas Pipeline (DBNGP) Stage 5 fauna management protocols detailed in the DBNGP Construction Environmental Management Plan 2006. Reed Resources has also reviewed Ministerial Statement 735 for the DBNGP Stage 5 Expansion and agrees that the fauna management protocols and requirements, and clearing personnel qualifications should be consistent with Condition 9.

The PER notes that Reed was aware of the potential for fauna to be come entrapped in the trenches associated with the water supply pipeline and had included some measures for managing impacts to fauna during trenching activities in management plans for the Project.

Reed is happy to develop the fauna management protocols in consultation with the DEC.

DEC EMB Comment 2

That an appropriate outcomes based condition/s be placed on the proposal incorporating the commitments made by the proponent that “during the first 5 years of operation of the Barrambie Borefield that 75% of the saturated thickness across the aquifer be retained and that the “saturated thickness of the calcrete aquifer across the area of investigations does not fall below 50% during the life of the project.

Reed Response

Reed Resources committed to trigger levels in the PER to retain 75% of the saturated thickness averaged across the area of drawdown within a section of the aquifer for the first five (5) years and not falling below 50% over the life of the Project. Reed has also committed to undertaking measures for monitoring and management of stygofauna and groundwater dependent vegetation to be agreed by DEC.

Reed consider that the commitments for trigger levels, monitoring and management of potential impacts on groundwater dependent ecosystems can be adequately enforced through both Ministerial Conditions under the *Environmental Protection Act* and the Groundwater Operating Strategy which will be required for a Licence to Take Water under Section 5 C of the *Rights in Water and Irrigation Act*.

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DEC EMB Comment 3

The DEC have recommended that mine pit voids be backfilled to at least two metres above the level of the pre-mining water table, if possible.

Reed Response

Reed resources does not agree with the concept of backfilling the mine pit voids in the context of the Barrambie Project because, in Reed's opinion it would sterilise or add additional costs to any future generation that may choose to mine the vanadiferous titanomagnetite seams that dip vertically below the existing pits (to unknown depths). Vanadium is a relatively rare element and its value has varied greatly (from \$3.00 per Kg to \$50 per Kg) during the 20th century and it is conceivable that a future generation may be compelled to mine the vanadium below the existing pits.

As long-term pit water levels will remain below pre-mining and regional water levels, the Barrambie pits will act as a groundwater sink, with groundwater flow toward the pit, and evaporative losses greater than inflows and incident rainfall. Although the groundwater within the pit lake will gradually become more saline in the long-term through evapo-concentration, the saline water is not expected to migrate from the pit due to the groundwater sink influence.

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Response to the Mid West Development Commission Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of the Mid West Development Commission (MWDC) and in particular Reed addresses the issues raised by MWDC as follows;

MWDC Comment 1

It is not clear where Reed Resources intends to source this labour from and what skills are required.

Reed Response

Reed Resources met with a representative of the Mid West Development Corporation on Thursday 19th August and advised the following:

As a general rule Reed will seek to employ local labour before fly in fly out labour but past experience was that the local supply of labour will not be sufficient to provide all the Barrambie projects labour needs.

Reed verbally advised the Mid West Development Commission of the following skills and numbers of people required for its permanent work force;

Administration and Technical	22
Process Plant Staff and Operators	47
Maintenance Tradesmen	20
Village, catering, paramedics and security	24
Open Cut Mining Personnel	102
Shut Down Personnel	29
Visitors	6
Total	250

MWDC Comment 2

The development of a buy and employ local policy would be beneficial in clarifying Reed Resources' aims and objectives in this regard.

Reed Response

Reed Resources is prepared to buy the goods and services it needs in the local mid west region provided they are competitive and employ local labour provided the skills are available.

MWDC Comment 3

The executive summary goes on to state that “substantial infrastructure will also be developed in the region with the construction of a sealed all-weather airstrip, a natural gas pipeline, and a contribution towards up grading and maintaining local roads. There may be opportunities here for Reed Resources to work collaboratively with others to provide apposite lasting legacy for Sandstone people through this investment in infrastructure.

Reed Response

Reed believes it is a responsible and compassionate member of the community in which it operates and is happy to investigate mutually beneficial infrastructure development and make its

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infrastructure available to the local community both during operations and in the future provided its needs are met.

MWDC Comment 4

Finally, the PER documents (page 8-3, row 1) the preference of local people for mine workers to be resident within the town of Sandstone. The Commission would like the opportunity to meet and partner with the proponents of this project to capture lasting benefits for regional communities. In particular the Mid West Development commission can assist in employing and training local people (through our connection with the Durack Institute of Technology), buying local (through the Mid West Procurement Officer), collaborative infrastructure requirements and locating a percentage of work in nearby communities.

Reed Response

Reed met with the Mid West Development Commission in Geraldton on Thursday 19th August 2010, and advised the Commission that Reed Resources was prepared to employ local people as appropriate, but it was unlikely that shift workers would be resident within the town of Sandstone because of safety concerns. The journey between Sandstone and Barrambie takes about 1 hour 15 minutes on a gravel road and when added to the 12 hour shifts at the mine it would mean the workers are doing 14.5 hour days with the resultant fatigue likely to cause an increase in accidents either at work or on the road.

Non-shift workers such as tradesmen, day workers and support staff who work less than 12 hours per day could be residents of Sandstone.

Reed are happy to investigate recruiting shift workers on a fly in fly out basis from Geraldton and buying local supplies such as diesel, bread, fruit and vegies etc in Geraldton. It is also likely that soda ash which is a bulk reagent (60,000 tonnes per annum) and some other bulk reagents can come in through Geraldton as well.

Infrastructure such as the gas pipeline and sealed airstrip could be a benefit to the whole district and Reed is happy to collaborate with the local communities to investigate how all stakeholders may benefit from the installation of such capital items.

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Response to Submission from Joy-Marie Valle on Behalf of the Valle Family Pastoral Lease Holders of Barrambie Station

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) from Joy-Marie Valle on behalf of the Valle Family Pastoral Lease Holders of Barrambie Station and in particular addresses the issues raised as follows;

Valle Family Pastoral Lease Holders Comment 1

As primary stakeholders (Barrambie Pastoral Lease Holders) I am disappointed that we have had no contact at all.

Reed Response

During the major drilling programs undertaken in 2006, 2007 and 2008 on the Barrambie deposit Reed Resources Ltd leased the Barrambie homestead from Mrs Anne Valle acting on behalf of the Valle family. During that time Reed was in touch with Mrs Valle on a number of occasions.

It was Reeds understanding that Mr John Bennett of Sandstone was the Manager of Barrambie during that time and not Ms Joy-Marie Valle and subsequently a copy of the PER document was forwarded to Mr John Bennett along with the other stake holders on 22nd June 2010.

Valle Family Pastoral Lease Holders Comment 2

I have not seen them uphold their environmental and ethical obligations within the initial stages on a smaller scale, so it does make me concerned what will happen on a broader scale. There has already been several level 1. Environmental incidences (GPS Co-ordinates can be provided, photos of incidences are included in this report at the end).

Reed Response

The GPS Coordinates provided by Ms Joy Valle have been checked and plotted and all lie outside Reed's Mining Lease M57/173 and were not drilled by Reed but were presumably drilled by other parties.

Furthermore Ms Joy Valle has identified a conservation area by a number of points some of which encroach on to Mining Lease M57/173 which is unacceptable to Reed.

Valle Family Pastoral Lease Holders Comment 3

Reeds States they are committed to maintaining a transparent process of communication with relevant stakeholders. The two most relevant stakeholders, The pastoral lease holders of Barrambie and the Managers of Cogla Downs Station had no idea they were even at the stage of EPA submissions let alone notified of how we could obtain a Review.

Reed Response

It was Reeds understanding that Mr John Bennett of Sandstone was the Manager of Barrambie during that time and not Ms Joy-Marie Valle and subsequently a copy of the PER document was forwarded to Mr John Bennett along with the other stakeholders on 22nd June 2010.

At that time Mr David Bruce the Manager of Cogla Downs was also forwarded a copy of the PER document. The PER document was initially returned as undelivered to Mr David Bruce and then later re-routed through Mr Ron Bradfield of Yulella Aboriginal Corporation to Mr David Bruce on 12 July 2010.

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Mr Ross Howden and Mrs Patrine Howden of Yarrabubba Station were also sent and received a copy of the PER document on the 22nd June 2010.

Valle Family Pastoral Lease Holders Comment 4

1. Water Supply - On page ES-16 of the review, it states “possible short to medium term, localised impact on pastoral bores” and “supplement local pastoral water supplies if adverse impacts are measured at pastoral bores”. I would like to know how you propose to do that.

Reed Response

The process water and camp water for the Barrambie Mining operation will be drawn from the a section of the Cogla Downs calcrete aquifer system on Yarrabubba Station situated about 30kms north of the Barrambie Project and piped to the Project and hence will have no impact on Barrambie Station water.

The dewatering of the mining pits is not expected to produce large draw down cones as the composition of the pit material and surrounding rock is predominantly clays with very low transmissivities.

If pit dewatering operations do impact negatively on Barrambie or Cogla Downs station bores then Reed will make water available to the pastoralists from its water piped in from the borefield on Yarrabubba Station.

As water is such a critical part of the proposed Barrambie operation Reed will monitor all bores including the Pastoral bores on a weekly basis.

Valle Family Pastoral Lease Holders Comment 5

2. Heavy Vehicle Movements

2.a) Dust and Noise Issues - For the Homestead (which is less than 16km from operation zone, approx 1km from road).

Reed Response

Reed will be employing industry best practice to keep the dust allayed at the mining operation and will be providing funding for the Shire of Sandstone to maintain the road.

Valle Family Pastoral Lease Holders Comment 6

Whilst David, Chris and Brian Smith all had my phone number since moving into the homestead around 2006, no-one contacted me so I assumed nothing was happening.

Reed Response

The Company rented the Barrambie Homestead from Mrs Anne Valle from 2006, 2007 to 2008 and was in constant contact with Mrs Valle during that period, the company was unaware (nor did Mrs Anne Valle make it aware that it should keep Ms Joy Valle informed of its activities).

Valle Family Pastoral Lease Holders Comment 7

“as they (R.R) have not correctly identified the real environmental matters and expectations, .It is also evident that other Government Departments have initiated remediation on some of the Environmental Incidences some time ago and as my photo’s illustrate, it has not been done yet”.

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Reed Response

Since receiving the submission to the PER the Company has met with Ms Valle who was advised the company intended to have a full time environmental officer and environmental management system as part of its regulations affecting its business.

As per Response 2, The Environmental Incidences noted by Ms Valle are outside Reeds Mining Lease and were presumably done by other company's.

Valle Family Pastoral Lease Holders Comment 8

It would be reasonable to ask that Reed Resources can demonstrate their capabilities to fulfil their obligation before this environmental review gives them the go ahead.

Reed Response

Reed's exploration clean up was audited by the Environmental Branch of the Mines Department on 5th August 2010 and the Company was advised "rehabilitation in general meets the standards required by the DMP. No further action is required".

Valle Family Pastoral Lease Holders Comment 9

Ms Joy Valle has advised Reed verbally that she intends to identify a conservation area on Barrambie around the Ballanhoe Peaks and undertake community training. With this in mind, it is fair to say that we will experience a fair amount of disruption and the area of great community significance which is the basis for our training as a sustainable community based program is under serious threat.

Reed Response

Reed's operations do not impact on the Ballanhoe Peaks and Reed has no need to go into the Ballanhoe Peaks and will make them out of bounds for all employees. However, Ms Valle has indicated a proposed conservation area that is to the East of Reed mining lease M57/173 and in places her boundary encroaches on to Mining Lease M57/173 which is unacceptable to Reed.

Reed has proposed a change to the western boundary of the proposed conservation area that separates it from Reeds Mining Lease M57/173.

Valle Family Pastoral Lease Holders Comment 10

2. Heavy Vehicle Movements

2. b) Impact on native fauna and livestock - no single person in the family was notified of their departure for three months. The bores were both left not working.

Reed Response

The Eternity Bore pump was not operational when Reed commenced occupancy of the homestead. The submersible bore pump had been made inoperable by the caretaker employed by the Valle family prior to the Reed occupancy.

The water supply for the homestead had to be carted by Reed from Freds Bore approximately 25km from the homestead. Freds bore was operational at the time of termination of the occupancy of the homestead and was repaired by Reed with the replacement of pump buckets prior to Reed ceasing to leases the property.

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Valle Family Pastoral Lease Holders Comment 11

2. Heavy Vehicle Movements

2. b) Impact on native fauna and livestock - I am concerned to be having 35 trucks a week going up and down and the many hundreds of delivery trucks over each year, also light vehicles.

Reed Response

Reed will attempt to consolidate the freight loads to keep truck movements to a minimum but it will be necessary for vehicular traffic to use the Sandstone Meekatharra road.

Valle Family Pastoral Lease Holders Comment 12

Appendices E and F to do with Botanical and Fauna Surveys in the area are unavailable for me to view as I only found out about the review by chance a short time ago, it was stated that some of the flora and fauna surveys were desk top surveys (ie Mattiskes, where desktop reviews.). I find it hard to understand how this can be completely relevant when a lot of the literature used was from some time ago and not in that particular area.

Reed Response

Appendices E and F were made available by Reed and handed to Ms Joy Valle at a face to face meeting with Ms Valle on 26th August 2010. The desktop surveys noted by Ms Valle were undertaken as a precursor to commencing field work and were surveys of relevant data bases undertaken for both flora and fauna prior to field surveys commencing.

Fauna surveys undertaken by Outback Ecology included two trips to Barrambie. Flora surveys undertaken by E. Mattiske and associates included four trips to Barrambie.

Valle Family Pastoral Lease Holders Comment 13

“employees or people related to the mine traversing our pastoral lease. These dog traps are not visible to the untrained eye and anyone could step out of their car or walk into one”.

Reed Response

Reed will advise the pastoral Lease holders of any future exploration programmes it plans on Barrambie and would expect the Pastoralists to advise the Company of any areas it was not safe for its exploration crews to go due to the presence of dog traps.

Valle Family Pastoral Lease Holders Comment 14

I currently am applying for Landcare grants myself to fence some of the area of most significance. This is outlined in the map of V.A.E.S. (Valle Agribusiness and Environmental Services) proposed conservation area (Handprint area).

Reed Response

Reed is not sure of the legal standing of a the privately created conservation area that the Valle family are proposing for the Barrambie Pastoral Lease, however Reed has no need to go into the Ballanhoe Peaks area as the area of Reeds interest is (at this point in time) confined to Mining Lease M57/173 that contains the vanadiferous titanite magnetite ore bodies and is situated on the flat ground to the West of the Ballanhoe Hills.

However Reed wishes to point out that the conservation area proposed by Ms Joy Valle encroaches on M57/173 and suggests that the Western boundary of Ms Valles proposed conservation area is modified to run outside M57/173 eastern boundary.

Valle Family Pastoral Lease Holders Comment 15

3. Aerodrome - not far off our North Boundary. The watering points on our North Side of station, close too if not in Reeds Operation area, are our main and best source of water. They are part of one of our principal grazing areas. With this in mind, I am concerned about the disruption to grazing livestock by low flying planes landing nearby.

Reed Response

This gravel air strip was initially put in by Ferrovanadium Corporation in the 1970's and was recently maintained by Reed to enable medical evacuation during the drilling program. It is not Reeds intention that this air strip is used on a permanent basis. The permanent sealed air strip will be situated approximately three kilometres to the West of M57/173 on ML 57/29. There will be approximately one fly in fly out plane every second day landing and taking off three kilometres to the west of Barrambies north eastern boundary.

Valle Family Pastoral Lease Holders Comment 16

4 European Heritage, Aboriginal Heritage, Local Recreation Area, Regional Planning, Pastoral Business Planning. - I know there will be environmental management systems for the workforce in place but how will you enforce it in relation to them going outside your mining tenement and traversing over our pastoral lease.

Reed Response

Employees will receive an induction pointing out the heritage value of the Ballanhoe Peaks area and they will be banned from going into the area. Employees will be working 12 hour shifts on a "fly in fly out" roster and will have very little leisure time and will not have their own vehicles. Company vehicles will be banned from entering the Ballanhoe Peaks area.

Reed rejects the suggestion that its exploration crews did any damage to the heritage values of the Ballanhoe Peaks and points out that the crews were under the constant supervision of a professional geologist at all times.

The Ballanhoe Peaks are situated approximately one kilometre off the Meekatharra Sandstone Road and members of the public have access to the area.

Valle Family Pastoral Lease Holders Comment 17

4 Continued - I am currently applying for Landcare grants, myself to fence and revegetate some of the areas of most significance. This is outlined in the map of V.A.E.S proposed conservation area below.

Reed Response

Reed was given the coordinates of the proposed Barrambie Station conservation area on 20th August 2010 and notes that the proposed private conservation area encroaches on Mining Lease M57/173. Reed requests that the Barrambie Pastoral Station owners move the boundary of the proposed conservation area to the east so that it does not encroach on M57/173.

Valle Family Pastoral Lease Holders Comment 18

Aboriginal Heritage - while there are none of the traditional landowners alive from this area, and so they could not claim native title, this area is an amazing part of Australian History.

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Reed Response

Reed has acknowledged the Yugunga-Nya community as Native Title Claimants for the area and have reached agreement with the claimants. Reed also acknowledges the value of the Ballanhoe Peaks and will adopt reasonable management measures to prevent disturbance of any of the potential Aboriginal ethnographic or archaeological heritage sites. These management measures were outlined in the PER document will include:

- Restriction of access from the Barrambie Project area to the area known as the Ballanhoe Peaks through the placement of the mine safety bund wall and fencing, including the relocation of portion of the Rabbit Proof Fence to the south east of the proposed mining operations.
- Advise all employees and contractors of the restrictions on access to the Ballanhoe Peaks area and One Tree Hill through inductions and information materials.
- Include information on archaeological items which could be found within the Project area in inductions so that employees and contractors are able to identify, report the location and avoid disturbance to such items.
- Record One Tree Hill as a potential ethnographic site on Reeds spatial files and quarantine from any disturbance as an interim measure until the final status of the place is determined in consultation with the Yugunga-Nya NT claimants group.
- Reed will delineate a buffer zone boundary of at least 10 metres around One Tree Hill by either flagging or fencing, as deemed appropriate.

Valle Family Pastoral Lease Holders Comment 19

“it has become evident that there is absolutely no room in the area, for operations of any kind, and the mining company cannot possibly keep this area protected unless it is fenced as specified”.

Reed Response

Reed believes that by putting in place appropriate bunds, fences and procedures it can ensure its workforce does not enter the Ballanhoe Peaks.

Valle Family Pastoral Lease Holders Comment 20

Reeds stated that there were no significant noise impacts on nearby residents and other sensitive premises. This is clearly not the case considering how close our operations will be.

Reed Response

On Pages ES-15 and 16 of the PER, Reed was referring to the Barrambie and Cogla Downs homesteads which are 16 and 20 kilometres away from its operations.

Valle Family Pastoral Lease Holders Comment 21

Also stated was medium change to visual amenity of the local area through the creation of rehabilitated waste landforms. Whilst this is not desirable, I believe with measurable parameters for rehabilitation and the regulations required, Reeds will be able to meet this criteria.

Reed Response

Reed is proposing to build land forms with gentle slopes no greater than 15 degrees and to progressively rehabilitate the land forms with locally occurring native vegetation so that they blend in with the surrounding country.

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Valle Family Pastoral Lease Holders Comment 22

From my understanding so far, Reeds has stated that they are not going to mine within 100 metres of Ballanhoe Peaks in accordance with supposed native title agreements. And they have generally expressed that they are not going to touch them. On Cogla Station a good part of these peaks are going to be gone, that means all that is left really beside a ten metre circle around a sacred site (one tree hill) at Cogla is this special area on Barrambie Station.

Reed Response

The hills that Reed understands to be the Ballanhoe Peaks are those that are approximately 2 kilometres to the East of the Sandstone to Meekatharra road and contain aboriginal rock paintings.

Valle Family Pastoral Lease Holders Comment 23

On their map and according to some marker pegs, it looks to me that they are going to mine straight into a little section of Ballanhoe Peaks. (the marker pegs in this section continue up the into the peaks).

Reed Response

Reed intends to mine within its mining lease M57/173 generally speaking the vanadiferous titanomagnetite beds are on the flats to the west of the ridges. The marker peg referred to in submission 23 is a local grid peg and does not indicate the open pit boundary.

Valle Family Pastoral Lease Holders Comment 24

Whilst one area in question the right of the proposed pit, before this bottom corner has little more than a hundred metres, between their operations and the bottom of Ballanhoe Peaks, this only encompasses a tiny area and only occurs on small random areas towards the lower end.

Reed Response

Reed agrees that the corner of M57/173 comes close to the hills in this area. However, Reed's mining activities will be confined to M57/173, and at this point the open pit is approximately 500 metres to the north. Reed will not be mining the "at risk land forms".

Valle Family Pastoral Lease Holders Comment 25

If the rabbit proof fence is being shifted south east, but they suppose not to damage that area of Ballanhoe Peaks, how is it possible to do this, when there is nearly no room in places to spare.

Reed Response

Reed has met with the Murchison Regional Vermin Council and agreed to reposition a portion of the fence at a future date and under their direction. In general the fence would be positioned on the eastern boundary of M57/173. Reed would not propose to alter the position of the fence in the region of the old gold mine. Reed will not be mining the old gold mine as mining will be confined to M57/173.

Valle Family Pastoral Lease Holders Comment 26

5. Soil and Ground Water Contamination and Landfill - It has been identified that all hydrocarbons will be cleaned up and disposed of as per regulations but most important point I would like to verify is, in the areas where any potential spills can occur will the ground be sealed? Are you willing to be able to actively show to the public/government organisations that Environmental Management Systems are in place and if they are successful or not at any time in your operating life?"

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Reed Response

The truck fuelling bay and the mobile work shop are all concrete bunded to manage the potential hydrocarbon spills. Reed currently has environmental management standards for its exploration programmes and in future operations will have a fully integrated best practice environmental management system and a senior full time environmental officer. Reed will be able to demonstrate the effectiveness of its environmental management systems.

Valle Family Pastoral Lease Holders Comment 27

Below are some photos, examples of the level 1 and possibly higher, Environmental Incidences that have already occurred. I acknowledge that not all uncapped drill holes, old sample bags etc. are from Reed Resources (those I did not include).

Reed Response

Reed have plotted the coordinates of the “Environmental Incidences” and have determined that they were not drilled by Reed. The Barrambie Project drilling programme was confined to M57/173. Furthermore the Department of Mines Environmental Division inspected the rehabilitation of reeds drilling on M57/173 and advised that it had been rehabilitated to the Departments Satisfaction and “No further action is required”.

Valle Family Pastoral Lease Holders Comment 28

The landfill facility as I left it was two big half filled holes, I normally in this situation would fill it in myself and revegetate native species on the area. Reed Resources in the time at the homestead filled up my two holes, started another that was left open for the rubbish to blow away, and left masses of rubbish at the original dump on top of the ground to blow away. Also the homestead was surrounded by litter and things left by the people involved that I have already corrected and spent four days clearing.

Reed Response

The landfill facility to which this submission refers is situated near the homestead and is mainly used for domestic rubbish. Reed Resources apologises to Ms Joy Valle for not tidying the area upon vacating the homestead, and for leaving the rubbish holes open. Since being made aware of this issue Reed has arranged with a contractor for the holes to be filled in.

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Response to Department of Environment and Conservation – Air Quality Branch Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of the Department of Environment and Conservation – Air Quality Branch (DEC AQB) and in particular Reed addresses the issues raised by DEC AQB as follows;

DEC AQB Comment 1

There does not appear to be any quantitative prediction of odour or dust concentrations. While PM₁₀ concentrations appear low enough to ensure dust levels are also low, there is no basis for the assertion about the acceptability of the odour concentrations.

Reed Response

Reed understands that the 'odour' threshold for SO₂ is well above the ambient assessment criteria for human sensitive receptors of 571µg/m³ (1-hour averaging period). For example, an odour threshold of around 0.5ppm would equate to approximately 1428µg/m³. Therefore controlling SO₂ emissions to remain within human health criteria will also control for odour.

DEC AQB Comment 2

In section 3.1, it is stated that "Reed Resources installed a weather station near the proposed aerodrome site in August 2008 which will provide comparative, local baseline climatic data". This is identical to the statement made a year previously, and by this stage there should be a sufficiently long period of monitoring to have allowed use of this data set.

Reed Response

Although the weather station was installed in August 2008 prolonged periods have occurred where data has not been obtained or is unreliable due to malfunction. This has been due to factors such as lightning strike and software issues. As the weather station is located in a remote location, it has been difficult to repair and service *insitu*. The weather station control box was recently been removed from site, completely refurbished and re-installed.

DEC AQB Comment 3

- (i) The wording implies that the control strategy will be invoked after a rise in SO₂ concentrations has been detected. Given the two-hour residence time of sulphate flux in the roasting system, and that the relevant air quality criterion is a one-hour average, it is clear that such a strategy will have no opportunity to prevent a one-hour standard being exceeded.*
- (ii) The potential to use a predictive management scheme instead was discussed in the original Air Quality Assessment report (SKM, March 2009). One based on a combination of predicted mixing depth and wind direction would have some chance of limiting SO₂ concentrations in the village area.*
- (iii) A commitment has been made to use a reactive strategy to limit SO₂ concentrations, this approach can not succeed due to the relatively long timescale required for the sulphate flux to pass through the roaster system. The use of a reactive strategy to control SO₂ concentrations at a specific location is less than ideal. A continuous SO₂ monitor should be required at the village to monitor the effectiveness of the control strategy for as long as the strategy is employed.*
- (iv) The possibility of using a lower fraction of sulphate flux is noted. This would reduce SO₂ concentrations in proportion, but no commitment to do so is made.*

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Reed Response

Reed Resources is committed to implementing an Adaptive Emissions Management Strategy as a predictive strategy rather than a reactive strategy. The basic approach for the Adaptive Emissions Management Strategy as a predictive management measure was described in Section 5.6.4 on Air Quality Management in the PER. The Adaptive Emissions Management Strategy will use predicative weather modelling to model potential ground-level SO₂ concentrations at the accommodation village and other selected sites. The addition of sodium sulphate to the kiln will be adjusted in advance, based on the model predictions, to ensure that nominated maximum ground level concentrations are not exceeded.

The purpose of the ambient monitoring programme, involving the use of continuous SO₂ monitors, will be to confirm satisfactory performance of the predictive emissions control strategy. This monitoring will feed into the predictive model, facilitating the identification of those days/times likely to contribute to poor dispersion, and in turn assisting decision making on the operating parameters for the process.

DEC AQB Comment 4

In section 5.6, the statement "The ground level concentration for PM₁₀ at the accommodation village is 6.3 µg/m³ and 12.6% of the assessment criteria" is made. The shortcoming of this point was noted in our initial (2009) response: it should state the relevant averaging period, which is 24 hours.

Reed Response

Reed Resources accepts that the relevant averaging period was not indicated in the particular statement as referenced above. However, Table 5.11 Air Quality Assessment Criteria Comparison of Modelled Results against Assessment Criteria on the following page in the PER provides averaging periods for all of the air quality parameters.

DEC AQB Comment 5

The potential for vanadium pentoxide to produce health effects other than as a component of the total ambient particulate concentration has still not been addressed. Our previous (2009) response suggested a limit of 18µg/m³, and at the it appears it will not be exceeded. However, this issue should be covered in the PER.

Reed Response

The potential health effects of vanadium compounds such as V₂O₅ include eye irritation, green tongue, metallic taste, throat irritation, coughing, fine rales, wheezing, bronchitis, dyspnoea (shortness of breath) and eczema. However, any potentially significant exposures to V₂O₅ which could possibly result in impacts on human health are confined to within the facility footprint.

Potential V₂O₅ exposure is therefore an occupational health matter which will be addressed in considerable detail under the *Mines Safety and Inspection Regulations* (MSIR) administered by Resources Safety Division of the Department of Mines and Petroleum. Comments provided by the Resources Safety Division on the PER acknowledge that the adequacy of the plant design, operational management and dust/ emissions will be further assessed prior to construction and during operations under the MSIR. The Resources Safety Division also commented that at this stage the dust control techniques described within the PER appear to be adequate.

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As potential V₂O₅ exposure is confined with the boundaries of the proposed Project and occupational health aspects will be further assessed and controlled under the *Mines Safety and Inspection Regulations*, this matter was considered to be outside the scope of the PER.

DEC AQB Comment 6

We do not assess the proposed technology in terms of emission control, and how this relates to requirements for implementation of "Best Practice" as per EPA Guidance Statement No. 55.

Reed Response

Reed Resources is committed to applying “Best Practice” technologies for emission control for Barrambie processing facilities, as appropriate. In this context, Reed Resources understands that Works Approval and Licencing is required under Part V of the *Environmental Protection Act*.

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Response to Department of Indigenous Affairs Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of Department of Indigenous Affairs (DIA) and in particular Reed addresses the issues raised by DIA as follows;

DIA Comment 1

It is noted that there is a potential Aboriginal heritage site within the Project area. Page 3-81 states that "the status of One-Tree Hill as a heritage site has not been confirmed in consultation with a necessary and sufficient portion of the Yugunga-Nya community." The proponent should seek further information regarding this site in order to be certain of the area's Aboriginal heritage values. The Proponent should also be reminded that only the Aboriginal Cultural Material Committee has the statutory authority to determine whether a place can be considered a site to which the terms of the Aboriginal Heritage Act 1972 (AHA) apply. Furthermore, the proponent should be aware of section 15 of the AHA. Section 15 discusses the obligatory reporting of any place to which the AHA might apply to the Registrar of Aboriginal Sites. As such, One-Tree Hill should be reported to the Registrar of Aboriginal Sites.

Reed Response

Reed Resources intends to commission further ethnographic and archaeological surveys, including further consultation with the Yugunga-Nya community, with regard to One Tree Hill as a potential Aboriginal site. This information will be referred to the Registrar for Aboriginal Sites for consideration by the Aboriginal Cultural Material Committee, prior to the commencement of ground disturbing activities associated with the implementation of the Project.

As stated in the PER, Reed Resources has recorded One Tree Hill on it's spatial files as a 'no-go' area with a 10m radius buffer zone.

DIA Comment 2

Mine Pit dewatering and Barrambie Borefield - It is noted that the project will require approximately 2.5GL/annum of water and that this will be primarily sourced from the Barrambie Borefield (p2-15). The sourcing of water from the bores has some ability to impact on groundwater levels in the region of the calcrete aquifer found in the Cogla Downs drainage system. It is also noted that dewatering of the mine pit is expected to result in a large cone of depression that may extend up to 2 km from the pit. The proponent should make themselves aware of all Aboriginal heritage sites in the general region that have cultural significance as a water source and ensure that potential drawdown of the watertable does not result in adverse impact to local Aboriginal heritage sites with associated water sources. It is suggested that any monitoring program implemented also address possible impact to Aboriginal cultural values caused by groundwater drawdown and that mitigative measures that will reduce impact to Aboriginal cultural values that may be caused by groundwater drawdown be formulated.

Reed Response

No natural surface expressions of the groundwater such as springs or soaks which would be likely to have cultural significance occur in the vicinity of either the proposed Barrambie Borefield or the minesite. Any impact of dewatering will be monitored in existing pastoral wells or bores to ensure that water supplies are maintained. As Reed progresses with the detailed project design, which will include further groundwater investigations knowledge will continue to be gained of the location and significance of the Aboriginal Heritage sites within the region.

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DIA Comment 3

It is also noted that the proponent now plans to bury approximately 80% of the water supply pipeline (p2-15) and that when archaeological surveys were undertaken over the area in 2008 the heritage consultant was under the impression that the water pipeline would be laid on top of the ground surface. As such the proponent should ensure that they are satisfied that the ground disturbing works that will be required in order to bury the pipeline will not be affecting any Aboriginal heritage values.

Reed Response

Much of the alignment of the water supply pipeline will be in areas of previous disturbance immediately adjacent to the Meekatharra to Sandstone Road. The archaeological survey conducted in August 2009 covered the proposed pipeline alignment within L57/30. While no items of cultural or scientific significance were identified during this survey, Reed understands that areas such as creek lines may contain some artefact materials and will ensure that personnel involved in ground clearing and trenching operations are trained to identify, report the location and avoid disturbance to such items.

DIA Comment 4

Page 5-53 states that there will be no adverse impacts to Aboriginal heritage values. Should it become apparent that there will be impact to Aboriginal heritage values the proponent must obtain consent under section 18 of the AHA in order to avoid breaching section 17 of the AHA.

Reed Response

Reed Resources understands its obligations under the *Aboriginal Heritage Act* and will ensure that consent is obtained under Section 18 of the Act should any Aboriginal Heritage values be identified at any time during the life of the Barrambie Project.

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Response to Department of Water Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of the Department of Water (DoW) and in particular Reed addresses the issues raised by DoW as follows;

DoW Comment 1

The department's main concern is that the Barrambie Vanadium Project PER and associated supporting appendices do not provide the confidence to substantiate that the Cogla Downs calcrete aquifer can sustainably support the abstraction of 2.5 GL/a without substantial drawdown, aquifer dewatering or subsequent impact upon the documented stygofauna population. The EPA objective for the management of groundwater is to maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance, are protected. The department believes the proponent has not provided sufficient information to satisfy the EPA's objective regarding groundwater.

Reed Response

Reed Resource's preferred water supply for the Barrambie Vanadium Project is based on a section of the Cogla Downs calcrete aquifer on Yarrabubba Station as identified in the PER. Initial hydrogeological investigations and groundwater modelling were undertaken for the proposed Barrambie Borefield as the first step in a staged approach to provide a desired level of confidence for the security of a water supply for the Project Definitive Feasibility Study.

The field investigations included the installation of fifteen exploration holes, three of which were completed as test production bores, in the calcrete aquifer along the main channel. Seven of the exploration holes were completed as monitoring bores for use as observation points during the subsequent pumping tests which were undertaken, and to establish a monitoring bore network for future groundwater monitoring. A numerical groundwater model was developed to evaluate the potential of the calcrete aquifer to meet the projected water supply demand and optimise the initial Borefield design.

The initial hydrogeological investigations and modelling have also been used to determine potential environmental impacts and develop appropriate management strategies to protect the environmental values.

While Reed is satisfied that there is sufficient water available within this section of the calcrete aquifer system to supply up to 2.5 GL/a for the 12 year life of the Project, a range of potential contingencies have also been identified as supplementary and/or replacement water supplies, should abstraction exceed conservative trigger levels.

Reed Resources recognise that further detailed hydrogeological investigations and monitoring need to be undertaken to prove the viability of the preferred water supply option, prior to commencing abstraction. Reed also understands that the results of further detailed investigations must satisfy the Department of Water for a Licence to Take Water to be granted under Section 5C of the *Rights in Water and Irrigation Act*.

Groundwater monitoring equipment has been purchased and will be installed shortly to collect baseline water level data. Detailed Project design work will commence immediately upon obtaining Project finance which will include further hydrogeological investigations of the preferred Barrambie Borefield within the calcrete aquifer on Yarrabubba Station. Hydrogeological investigations will also be undertaken for the identified contingency options.

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The *Mining Act* Miscellaneous Licence (L20/49) for the purpose of groundwater search has been retained by Reed Resources over the contingency areas for this very reason.

Reed believes that the additional hydrogeological investigation on the proposed Borefield will support its assertion that there is sufficient water in this section of the aquifer system to provide a sustainable water supply. However, should these more detailed investigations indicate that the proposed Borefield cannot provide a sustainable water supply for the life of the Project or significant environmental impacts may occur, Reed will consider development of identified contingencies.

The range of contingency options identified in the PER should be sufficient, either individually or collectively, to provide a sustainable water supply. Furthermore, groundwater resources are extensive throughout the Midwest region within economic development range of the Barrambie Project area. A water supply for the Project is therefore only limited by the distance/ cost of a pipeline. Reed Resources consider the potential cost implications of further pipeline and borefield development as an acceptable commercial risk.

Reed Resources understands that there is around six (6) GL of suitable quality water contained within the previously mined Gidgee open pits approximately 35km from Barrambie as an interim contingency. The owner of the Gidgee assets, Apex Minerals, has agreed in writing to allow Reed Resources to abstract water from the open pits.

Reed Resources believes that the EPA objective for the management of groundwater; “*to maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance, are protected*”, can be achieved.

The most significant environmental values associated with the calcrete aquifer system have been identified as:

- stygofuana populations
- potentially groundwater dependent vegetation
- pastoral water supplies

Reed Resources committed to trigger levels in the PER to retain 75% of the saturated thickness averaged across the area of drawdown within a section of the aquifer for the first five (5) years and not falling below 50% over the life of the Project. Reed has also committed to undertaking measures for monitoring and management of stygofauna and groundwater dependent vegetation to be agreed by DEC. Comments received from the DEC Environmental Management Branch on the PER recommended that appropriate outcome based conditions be placed on the Proposal to enforce these commitments. Reed Resources consider that the commitments for trigger levels, monitoring and management of potential impacts on groundwater dependent ecosystems can be adequately enforced through both Ministerial Conditions under the *Environmental Protection Act* and the Groundwater Operating Strategy which will be required for a Licence to Take Water under Section 5 C of the *Rights in Water and Irrigation Act*.

Concerns were also raised by the owners of Yarrabubba station regarding the potential long-term effect of pumping from the aquifer on stock water supplies. In response to these concerns, Reed Resources has now provided the Station owners with a written guarantee for the stock water supplies.

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DoW Comment 2

The department gave similar advice when commenting on the draft PER in July 2009. However, it appears the proponent has not revised the PER document and associated supporting appendices to alleviate the department's concerns and prove the proposed abstraction is sustainable.

Reed Response

Reed Resources appreciated DoW comments provided on the draft PER and made substantial changes to the document to include commitments to undertake further hydrogeological investigations, modelling and monitoring as requested. We understand that DoW requires the results of the additional investigations, modelling and monitoring to demonstrate that abstraction from the preferred Barrambie Borefield within the calcrete aquifer is sustainable. We also understand that further investigations need to be undertaken for the identified contingency options.

However, the further investigations and monitoring will require considerable time (4 – 6 months and expense. Reed has therefore progressed with a strategy for the PER which identifies several contingency options which should be sufficient, either individually or collectively, to provide a sustainable water supply. Detailed Project design work will commence immediately upon obtaining Project finance which will include further hydrogeological investigations in consultation with DoW.

Reed understands that the results of further detailed investigations must satisfy the Department of Water for a Licence to Take Water to be granted under Section 5C of the *Rights in Water and Irrigation Act*.

DoW Comment 3

The department presents the following issues and suggested additional work required to alleviate concerns and give confidence the 2.5 GL/a required for the project can be sustainably abstracted from the Colga Downs calcrete aquifer.

The bore hole network, design and associated pump testing is not adequate to provide appropriate information required to evaluate the resource.

Reed Response

Additional detailed Project design work will commence immediately upon obtaining Project finance which will include further hydrogeological investigations, drilling, test pumping and modelling as the basis for refining the final Borefield design. The programme for the additional work will be developed in close consultation with DoW and results will be provided in support of an application for a 5C licence.

DoW Comment 4

The use of the Sandstone 1:250 000 Geological Series map is not considered appropriate to determine the spatial boundaries of the palaeovalley / channel of the Colga Downs drainage system.

Reed Response

The preferred Barrambie Borefield is located on a portion of the Colga Downs calcrete drainage system on Yarrabubba Station and does not include the underlying palaeochannel. While the spatial boundaries of the calcrete aquifer on the *Sandstone 1:250 000 Geological Series* map may not be precise, the expected area of drawdown represents only a minor extent of the calcrete

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aquifer (around 15%). More recent radiometric data obtained by Reed Resources indicates the extent of the calcrete being reasonably in line with the Geological Series map.

As stated above, Reed Resources recognise the requirement for further hydrogeological investigations to be undertaken to satisfy the DoW when applying for a 5C licence. The proposed investigations and programme of works will be developed in close consultation with the Department of Water (DoW) and will include:

- The accurate designation of the palaeochannel system, by gravity survey.
- Additional deep-drilling to define the base of the palaeochannel sequence with targets chosen following the assessment of the gravity survey.
- Extended pump testing in relation to appropriately designed monitoring bores.
- Design and construction of an agreed monitoring bore network and the development of trigger levels and contingency measures.

DoW Comment 5

The accuracy of the model is highly questionable as it is built upon a set of aquifer characteristic assumptions and estimations that have not been defined by appropriate aquifer testing and evaluation.

Reed Response

The numerical groundwater flow model was developed to evaluate the potential of the calcrete aquifer to meet the projected water supply demand and predict the potential impact of groundwater abstraction from the Barrambie Borefield. The groundwater model was developed using data obtained during the field investigations including the testing of three production bores, in the calcrete aquifer along the main channel. Seven monitoring bores were used as observation points during the pumping tests.

The numerical model maintains a conservative approach as:

- It does not take into account recharge from rainfall, which is thought to contribute a significant portion of the recharge to the aquifer.
- The results of the predicted model water balance show that groundwater abstraction is sourced mainly from groundwater storage and had minimal groundwater inflow from the model boundaries. However, it is expected that groundwater throughflow will contribute to the calcrete aquifer resource (although this has not been allowed for in the model), in which case, it would reduce the volume of water abstracted from storage in the real system.
- The modelled calcrete does not take into account the eastern branch of the Cogla Downs drainage system, which would substantially increase the volume of groundwater available in storage.
- The inflow to the calcrete aquifer from adjacent alluvial sediments has not been included in this model. These surrounding alluvial sediments are expected to be in hydraulic connection with the calcrete aquifer.

As stated in the PER, Reed Resources will conduct additional numerical modelling based on more detailed hydrogeological investigations to more accurately assess groundwater drawdown and appropriate yield from the Cogla Downs calcrete aquifer system in consultation with the DoW. This modelling will incorporate an updated conceptual model of the Cogla Downs aquifer system based upon assessment of drilling results. The model will be used to develop predicted groundwater drawdown impacts on groundwater levels within the Cogla Downs aquifer system

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and regional areas. The additional numerical model will be redesigned through the input of new data on aquifer characteristics derived from the drilling, installation and testing of the proposed additional production and monitoring bores, the review of recharge to the calcrete aquifer and establishment of a more comprehensive baseline data set from the groundwater monitoring programme.

DoW Comment 6

Additional work on the two alternative Colga Downs calcrete aquifer water supply options, similar to what is needed for the proposed Colga Downs calcrete aquifer water supply, is required before these resources can be considered as viable.

Reed Response

Investigative drilling will be undertaken in the eastern area toward Errolls bore at the same time as the production bore drilling programme is implemented for the preferred Barrambie Borefield on Yarrabubba Station in order to assess the extent and saturated thickness of the calcrete aquifer in the east-west trending branch of the Cogla Downs drainage system. The programme for the investigations will be developed in consultation with DoW.

Data from this evaluation will be provided to the DoW for evaluation and consideration for an additional Section 5C licence, if required.

Previous investigations by Geotechnics (1972) identified the presence of a calcrete aquifer in the Scotties Well area to the south. However, it is recognised that preliminary calculations of potential yields from the Cogla Downs calcrete in the vicinity of Scotties Well would need to be confirmed by exploration drilling and aquifer testing.

This area is a lesser priority as a supplementary water contingency as the Gidgee open pits and/or the eastern area near Errolls bore are more strategically located. Therefore, a programme for detailed investigations of this part of the calcrete aquifer is not planned to commence at the same time as the development of the proposed Barrambie Borefield. It is envisaged that the lead time for the development of a supplementary water supply within the Cogla Downs calcrete aquifer in the vicinity of Scotties Well would be between 12 and 18 months depending upon response time and access for groundwater investigations to be undertaken, approvals to be granted and infrastructure to be established.

DoW Comment 7

The PER findings are based upon limited field observations. The background data gathered is considered insufficient for the development of a high priority project resource with a mine life of 12 years.

Reed Response

As indicated above, Reed Resources acknowledges that the initial hydrogeological investigations and groundwater modelling were undertaken for the proposed Barrambie Borefield to provide a desired level of confidence for the security of a water supply for the Project Definitive Feasibility Study.

Reed Resources recognise that further detailed hydrogeological investigations and monitoring are required to prove the viability of the preferred water supply option, prior to the commencing abstraction. In the unlikely event that these more detailed investigations indicate that the proposed Borefield cannot provide a sustainable water supply for the life of the Project or significant environmental impacts may occur, Reed will consider development of identified contingencies.

REED RESOURCES LTD RESPONSES TO SUBMISSIONS ON THE BARRAMBIE VANADIUM PROJECT PUBLIC ENVIRONMENTAL REVIEW

The range of contingency options identified in the PER should be sufficient, either individually or collectively, to provide a sustainable water supply. Furthermore, groundwater resources are extensive throughout the Midwest region within economic development range of the Barrambie Project area. A water supply for the Project is therefore only limited by the distance/ cost of a pipeline. Reed Resources has considered the potential cost implications of further pipeline and borefield development as an acceptable commercial risk.

DoW Comment 8

More detail is required for mine dewatering and how water will be used in whole mine water balance. At peak dewatering the excess water will represent 35% of the total water requirement.

Reed Response

More detail on mine dewatering requirements will be obtained through operational resource development drilling and the early years of mine development before the water table is intersected at around 35 – 50 metres below ground level. Dewatering will be achieved through sumps established within the pits. Dewatering bores may also be installed if higher yielding fractures are encountered during mining.

All water extracted for mine dewatering will be pumped to the process water circuit or recycled for dust suppression. If peak dewatering does produce up to 35% of the total Project water demand, this will be a significant benefit as it will directly off-set production from the water supply Borefield. It is highly unlikely that mine dewatering will ever exceed the total Project water demand for any period of time.

DoW Comment 9

The department also notes that the 5C licence applications for the Cogla Downs calcrete aquifer and dewatering at mine site have not yet been submitted by the proponent.

Reed Response

The process plant commissioning for the Barrambie Vanadium Project is not anticipated until December 2012. Therefore, the process water supply will not be required until around mid-2012. Reed Resources believes that there is sufficient time to undertake the more detailed hydrogeological investigations and monitoring required by DoW to support the 5C licence application.

REED RESOURCES LTD RESPONSES TO SUBMISSIONS ON THE BARRAMBIE VANADIUM PROJECT PUBLIC ENVIRONMENTAL REVIEW

Response to Yarrabubba Station Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) from the owners of Yarrabubba Station and addresses the issue raised as follows;

Yarrabubba Station Comment

We, the owners of Yarrabubba Station, where the proposed water source is located for the above named project, are concerned about possible effects to the water table.

Many of our wells and bores rely on the small, fresh, shallow, aquifers to supply stock water. We feel that the long term effect of pumping from the proposed sites will affect these aquifers.

If our water supply needs can be guaranteed, then we have no objections to pipelines etc for the proposed project, with consultation from ourselves, to go ahead.

Reed Response

Reed Resources has now provided the Station owners with a written guarantee for the stock water supplies.

Response to Western Australian Museum Submission

Reed Resources Ltd (Reed) acknowledges the submission to the Barrambie Public Environmental Review (PER) of the Western Australian Museum and addresses the issues raised as follows;

WA Museum Comment 1

The project occurs in the centre of an area rich in subterranean fauna with several distinct communities that comprise locally endemic species in the calcrete aquifers discussed 3.5.1 and as the main target for mine water supply (3.5.2): such aquifers have broadly been proposed as priority communities. Water abstraction is likely to affect the calcrete aquifers in the region and in the longer term regions downstream such as near Lake Anneen. All calcrete bodies in the region contain distinct stygofauna communities, and by extension, likely unique troglifauna communities. The Western Australian Museum has data, for example, from Nickyloo Bore in the centre of the project area, including a new species of Haloniscus (Oniscidea), a bathynellacean (probably new) and copepods, and the PER identifies a much greater diversity of stygofauna.

Nothing is known of the basic biology of these stygofauna, so unsubstantiated assertions are unacceptable, such as (Appendix G, 3-71) 'there are a number of [unspecified] factors which mitigate the risk to these taxa' when it would be clearly more the case that there are a number of factors which exacerbate the risk to these taxa.

Proposed stygofauna management is inadequate and a sustained independent research program to investigate impacts of water abstraction needs to be established.

Reed Response

Reed Resources believe that the proposed Barrambie Borefield management strategy to adopt conservative trigger levels to retain 75% of the saturated thickness averaged across the area of drawdown within a section of the aquifer for the first five (5) years and not falling below 50% over the life of the Project will protect resident stygofauna populations. Furthermore, the expected area of drawdown represents only a minor extent of the Cogla Downs calcrete aquifer system (around 15%).

Stygofauna management will form an integral part of the borefield management strategy. A network of monitoring bores will be established for ongoing groundwater and stygofauna monitoring. An annual stygofauna monitoring programme will be undertaken for at least the first five years. This measure will provide information on the stygal communities and assist in management efforts to ensure stygal populations are not adversely affected. Additional monitoring bores will be added to the ongoing stygofauna sampling programme as further investigation of potential groundwater contingency water supply options are undertaken.