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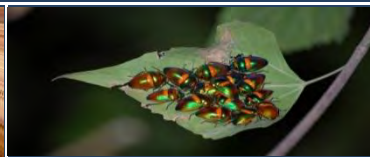
Environmental
Services

Appendix A - Copy of submissions



Sherwin Iron (NT) Pty Ltd

Sherwin Creek Iron Ore Project



2014



Our ref: EN2011/0250

Mr Rodney Illingworth
Sherwin Iron Limited
GPO Box 3494
DARWIN NT 0801

Dear Mr Illingworth

**RE: SHERWIN IRON LIMITED – SHERWIN CREEK IRON ORE
PROJECT – REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT**

The Northern Territory Environment Protection Authority (NT EPA) has examined the draft Environmental Impact Statement (draft EIS) for the above project and submits the collated comments (Attachment A). Comments provided by the Australian Government Department of the Environment have also been incorporated into the NT EPA submission. Comments from other NT Government agencies were submitted previously under separate cover.

Pursuant to the NT Environmental Assessment Administrative Procedures (EAAP), Sherwin Iron Limited (Sherwin Iron) is now required to provide the NT EPA with a Supplement to the draft EIS (Supplement) for the proposal. The Supplement should address all issues raised by the public and Government agencies in comments submitted on the draft EIS. Following the receipt of the Supplement from Sherwin Iron, the NT EPA will circulate the document to advisory agencies to provide opportunity to review the information provided.

If the information provided in the Supplement is not sufficient for adequate assessment, the NT EPA can request further information from Sherwin Iron to enable assessment to be completed, pursuant to the EAAP. The NT EPA has 35 days after the Supplement has been lodged, or after any requested further information is received, or a longer period if specified by the NT EPA (whichever is the later), to provide an assessment report and recommendations for the proposal to Sherwin Iron, the Minister for Lands, Planning and the Environment and the Australian Government Minister for the Environment.

As this proposal is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999*, the Supplement needs to demonstrate that proposed activities can be managed to ensure unacceptable impacts to matters of National Environmental Significance do not occur.

Any queries with regards to the attached comments should be directed to Rod Johnson on telephone 0409 897 145 or 07 5435 8741.

Yours sincerely

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DR BILL FREELAND
Chair

23 February 2014

Attachment A - Review of the Sherwin Creek Iron Ore Project draft Environmental Impact Statement

General

The EIS needs to be very clear about what is and what is not included in the scope of this assessment.

Variation to the proposal

The scale of the action has reduced from that referred to the Department of the Environment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 22 January 2013, with the draft Environmental Impact Statement (EIS) only assessing the mining of Deposit C. The draft EIS states that a number of aspects are no longer included as part of the project, including mining of Deposits W and X, the dam, airstrip and haul roads between Deposit C and the other Deposits. The proponent will need to submit a variation request under section 156A of the EPBC Act. In order to satisfy Parts 5.07 and 5.08 of the EPBC Regulations, the request will need to be made in writing or electronically, will need to be given or sent to the Department of the Environment, and will need to address:

- (a) details of the proposed variation to the action;
- (b) the reasons for the proposed variation;
- (c) how the impacts of the proposed variation on matters of national environmental significance compare with those of the original proposal;
- (d) if applicable, the impacts of the proposed variation on matters of national environmental significance not considered in the referral or assessment of the original proposal; and
- (e) if applicable, alternatives, mitigation measures and offsets to compensate for additional impacts on matters of national environmental significance.

Acid and metalliferous drainage

The draft EIS contains contradictory information about the presence of PAF material and the risk of generating acid and metalliferous drainage (AMD). In section 2.5.5, the draft EIS indicates that further site-specific characterisation, demarcation, prevention and remediation of potentially acid forming (PAF) material will commence in year 3 following disturbance of PAF material at the north-western section of deposit C. Page 2-27 indicates that a PAF cell is not considered to be required, provision for such material would be made if it is detected. The risk assessment in Chapter 3 indicates that the risk to downstream water quality from AMD is high in the absence of appropriate mitigation measures.

Although based on the current limited sampling the residual risk of AMD may be considered moderate to low, more-detailed discussion and contingencies for such an event should be included in the EIS to allow an adequate

assessment by the NT EPA of future risks, associated potential impacts and management.

Water supply and discharge

2.8.4 – Despite investigations of groundwater at the site, there is very little certainty that there will be adequate or sustainable groundwater supply for the project. There is very little information in the main body of the EIS to support the likelihood of a dependable water supply for the project. If there is a water supply issue, discuss how the project would satisfy its significant water requirements, including any associated impacts and management of alternatives.

The EIS indicates there will be no requirement for discharge from the site except for treated storm water. As water supply may be an issue, excess water may be required for dust suppression during dry times however it may also impede mining. Clarification is required on how excess stormwater in pits will be handled.

Transport and Traffic Management

2.7.3 – This section indicates that the Roper Highway upgrade work, which is proposed to be completed prior to any increase in ore transport by Sherwin above 1.5 million tonnes per annum (Mtpa), does not form part of this EIS submission. Does the 'increase' in ore transport referred to include increase above current bulk sample volumes or is it an increase above the proposed volumes in this EIS? This needs to be made very clear. If there is an increase in transport volumes planned above the bulk sampling volumes (which is confirmed later in the document), explain why the highway upgrade work not be included in the EIS.

2.8.1 – As above, the draft EIS indicates on page 2-20 that ore production rate would increase to 2.0Mtpa from 2014, which exceeds the currently approved annual allowance for transport tonnages on the current Roper Highway indicated above. This would suggest that either a stockpile of DSO would be required to ensure the annual allowance is not exceeded or a road upgrade is likely to be required almost immediately. If the upgrade is required for this proposal then it must be adequately assessed as part of this EIS.

2.8.3 – The EIS should indicate which sections of the Roper Highway will be upgraded to dual lane. Even with dual lane, discuss the implications for traffic wishing to overtake given the convoy configuration. Paragraph 3 states that the road will be upgraded 'eventually' and paragraph 4 states '2014'. Further on the draft EIS states that a road upgrade 'is anticipated' 'in the future'. The wording is vague and non-committal. Clarification is required.

2.8.3 – The section on transport systems and traffic management indicates convoys would be employed with average spacings between convoys (2 hours

for bulk sampling and 1 hour for an upgraded road). However, the section on traffic generated by the project indicates that there would be 30-minute intervals between road trains. Will the trucks travel in convoys or not and under what circumstances? Clarification is required.

On page 2-33, the draft EIS states: *“Total truck requirements for 1.5 Mtpa will be four trips for 13 trucks between the mine and Mataranka”*.

This doesn't appear to make sense as it is assumed from the preceding text in the document that the ore would be transported from the Mine to the stockpile area at Mataranka in convoys consisting of 5 road trains. If the ore product was only transported in convoys, then this scenario of 13 'trucks' would not be able to meet the current quota of 1.5 Mtpa as the maximum number of convoys in a day would be 8.

The scenario of 13 trucks (assuming each truck is a quadruple trailer road train) making 4 return trips, would equate to 52 road train deliveries or 208 trailers or 5.2kt of ore product being delivered to the stockpile area each day. However, this is only under the assumption that the ore is not being transported in convoys. This would mean that a road train is departing approximately every 25 minutes from the Mine to Mataranka under a 24/7 operation.

3.2.16 – This section indicates that the risk of traffic collision is extreme. One of the key issues identified is the possibility of interaction with non-mine traffic on the public road network. Given that the Roper Highway is single lane and there will be quad trucks travelling both ways, it would seem that this particular risk should be targeted for mitigation in the short term. The only mitigation proposed does not appear adequate. Discuss the mitigation of traffic risks in detail considering the likely non-mine users of the road. Provide clear justification for downgrading the risk of traffic collision on the Roper Highway from extreme to high.

Appendix L – Traffic Management

This Appendix does not support the main body of the EIS text in some regards. For example, there are mixed messages about whether the Roper Highway will be sealed in two lanes in its entirety or just certain sections slightly modified to allow passing. Provide clear discussion of the intent and timing in relation to proposed mining activities.

The Introduction indicates that Phase 2 will involve transport of 1 000 000t/a on the public road network for a maximum of two years and that Phase 3 of the Project would involve 3 000 000t/a ore to be transported off the public road network to a railhead and then to Darwin, with another 7 000 000t/a from the Gulf of Carpentaria. This is problematic as the main document indicates the project will continue for approximately 6 years and Sherwin Iron considers that Phase 3 is not part of the assessment. This needs to be clarified.

A transport coordinator is proposed to be used to coordinate mine traffic. Describe how the Proponent intends to ensure that all requirements of traffic management arising from the assessment are transferred to the traffic contractor as requirements.

The Appendix indicates that convoys will contain only four quadruple road trains; in EIS chapter two it is five. See previous comments on road train numbers, convoys and configurations

Authorisation for more than one bulk sampling has been given, which would appear to extend phase one beyond that given in the Appendix. Again, this needs to be clarified.

100km/hr speed limits seem excessive for such large, heavy vehicles on such a narrow road, particularly if there is oncoming traffic. Is there any intent to curb speed limits for heavy mine traffic or ensure speeds are reduced with approaching traffic?

Further detail needs to be provided regarding the risk of vehicle strike to fauna along the haul roads and Roper Highway as the proposed increase in vehicle movements along the Roper Highway is substantial. Information regarding the EPBC-listed mammal species potentially impacted along the transportation route, the nature of any impacts and proposed mitigation measures must be provided. This assessment should include the Greater Bilby (*Macrotis lagotis*), Northern Brush-tailed Phascogale (*Phascogale pirata*), Brush-tailed Rabbit-rat (*Conilurus penicillatus*) and the Northern Quoll (*Dasyurus hallucatus*).

Risk Assessment

It is acknowledged that risk assessment methodology is subjective, however, in most cases, there does not appear to be justification for the level to which residual risks are modified from inherent risks following listing of controls in this section. This makes the assessment more subjective than it otherwise could be and leaves the reader with no comfort that the risks have been appropriately rated and can therefore be appropriately managed.

Habitat clearance and disturbance

In order to be able to assess the impacts to the Gouldian Finch (*Erythrura gouldiae*), Northern Quoll (*Dasyurus hallucatus*) and Crested Shrike-tit (northern) (*Falcunculus frontatus whitei*) from the clearance/disturbance of habitat, the extent and quality of suitable habitat for the above species in the area to be cleared/disturbed needs to be quantified and put into the context of the surrounding area. The extent and quality of habitat in the surrounding area should also be quantified.

For the Gouldian Finch, an assessment of suitable habitat should take into consideration breeding trees, proximity to waterholes, wet season foraging habitat and dry season foraging habitat.

For the Northern Quoll, it should be noted that the 'EPBC Act referral guidelines for the endangered Northern Quoll (*Dasyurus hallucatus*)' states that: "*Where denning / shelter habitat occurs within the modelled distribution of the species, it is considered **habitat critical to the survival of the species**. Habitat critical to the survival of the Northern Quoll occurs in three forms across the species range which includes:*

- *Rocky habitats such as ranges, escarpments, mesas, ranges, gorges, breakaways, boulder fields, major drainage lines or treed creek lines*
- *Structurally diverse woodland or forest areas containing large diameter trees, termite mounds or hollow logs*
- *Off shore islands where the northern quoll is known to exist"*

Therefore the assessment of habitat to be cleared or disturbed should take such habitat into consideration.

An assessment of the potential impacts to the aforementioned species should be undertaken, taking into consideration the quantified extent of clearance/disturbance, the regional context of the species, the risk of direct mortality from clearance (including direct mortality of eggs or chicks), the loss of habitat (in particular nesting trees or denning habitat) and fragmentation of habitat. Mitigation measures to reduce the risk of these impacts should be provided.

The draft EIS states that suitable nesting habitat for the White-bellied Sea Eagle (*Haliaeetus leucogaster*) is not found at Deposit C and therefore further consideration of the species is not warranted. Further detail should be provided to justify this statement.

Confirm that the Derby White-browed Robin (*Poecilodryas superciliosa cerviniventris*) is not present in the project area, noting that the Buff-sided Robin (*Poecilodryas cerviniventris*) is not listed under the EPBC Act as threatened or migratory.

Freshwater Sawfish

As the Freshwater Sawfish (*Pristis microdon*) is known to occur in the Roper catchment, an assessment of impacts to the Freshwater Sawfish from the proposal is required. This assessment should include consideration of:

- Changes to water quality from Acid Mine Drainage and turbidity;
- Changes to hydrology from modification/removal of drainage lines and waterway crossings, as sawfish may use Sherwin Creek to return to Roper River after a wet season/flood event;

- Impacts to Sherwin Creek and Roper River, particularly refuge pools during the dry season as a result of groundwater use by the mine, as Sherwin Creek appears to interact with and be supplemented by groundwater; and
- Any proposed mitigation measures to mitigate the above impacts.

Offsets

Without further detail on the clearance/disturbance impacts and the transport-related impacts it is possible that impacts to the above species could be considered significant and that offsets would therefore be required. Further certainty regarding the importance of the area for the species and mitigation measure effectiveness should be provided, or offsets in accordance with the EPBC Act Environmental Offsets Policy, October 2012 should be proposed.

Surveys

In Appendix H1 Table 1, the details regarding the Mt Scott survey sites are absent. These should be included.

Cumulative Impacts

It is noted in the draft EIS that the mining of Deposit C is likely to be the first stage in the development of a much larger project (Section 3.9.1). An assessment of the likely cumulative impacts to EPBC listed-species as a result of habitat clearance and/or degradation and from vehicle strike taking into consideration the potential much larger project should be provided.

The cumulative impacts of increased truck movements from this project in conjunction with other projects transporting product along the Stuart Highway, particularly through the town of Katherine, should be discussed.

Dr Bill Freeland
Chairman
Environment Protection Authority
GPO Box 3675
DARWIN NT 0801

Mines Directorate
5th Floor, Centrepont Building
The Mall, Darwin
Postal address GPO Box 4550
Darwin NT 0801
Tel 08 8999 6528
Fax 08 8999 6527
mineral.info@nt.gov.au

Our file ref M2011/0140

Dear Dr Freeland

RE: SHERWIN IRON PTY LTD: SHERWIN CREEK IRON ORE PROJECT EIS

I refer to the above report submitted by the Environment Protection Authority to this Department on 13 December 2013.

Department officers have reviewed this document and comments have been included in attachment A for your consideration.

Please contact Andrew Scott on (08) 89995385, or by email to mineral.info@nt.gov.au, if further information is required.

Yours sincerely



ALAN HOLLAND
Acting Executive Director Mines
10 February 2014

Attachment A

Comments on Sherwin Creek Iron Ore Project EIS

Date of Assessment : 7 February 2014
Department Reference : MR2013/0515

Section / Reference	Comments
Executive Summary	Development Schedule The proposed commencement of Q1 2014 may not be feasible considering Sherwin Iron will still be required to submit a Mining Management Plan for approval following the EIS process and prior to commencement of works. Schedule may need to be revised to accurately reflect timing of government approvals.
1.5 Potential Future Increases	<i>Beneficiation: Sherwin believe this low grade ore can be beneficiated to 60% Fe.</i> Does the potential for low grade material to be beneficiated pose a risk to the proposal to dispose of waste in-pit? I.e. will in-pit waste dumps sterilise the resource? Has Sherwin considered the risk of metals leaching from low grade ore stockpiles?
2.5.5 Acid Mine Drainage	<i>Disturbance of PAF material at the northern part of Deposit C will occur only when the pit expands from 30m to 40m below surface between years 4 and 6. Further site-specific characterisation, demarcation, prevention and remediation will commence in year 3.</i> There are a number of PAF zones which will have to be managed in earlier years. Even if all the material is removed a management plan is required. AMDAC zone 14 is on the stockpile wall.
2.8.1 Mine	Mining Types and Methods An overview of the proposed mine design will be required to be provided in the Mining Management Plan with surveyed plans of the current status of the pit. Vegetation clearing and disposal <i>Areas to be cleared for mining and associated activities will be grubbed of trees and large vegetation, which will be collected and stored outside the footprint of all mining activity.</i> Where will the proposed storage site be positioned and will there be further clearing required for access tracks and cleared vegetation piles?

2.8.2 Crushing Circuit	Quantities and characteristics of the product and reject streams <i>Only 20 drilled samples... have any trace sulphurous material (0.2 - 2.0%). These intersections lay almost exclusively outside the pit perimeter... As such, no special consideration is required</i> PAF material will be encountered in the north west of the pit in years 4-6. Details for PAF waste storage are required.
2.8.4 Water	Dust suppression It has been identified, during exploration and bulk sampling operations, that dust is a major issue on the site. There is also a lack of available water for dust control. Polymers only reduce water use by 50%. Sherwin should consider sealing all major haul roads to reduce dust emissions.
2.8.6 Waste management	Waste streams <i>A Wastewater Treatment Plant with a capacity of 50 kL/day will be installed at the accommodation village. The treated product will be suitable for reticulating throughout the accommodation village landscaping and used for dust suppression, with surplus to be stored in a Turkey's Nest next to the camp (see Figure 2-16).</i> Water reclaimed from sewage treatment plants are commonly high in nutrients making it unsuitable for dust suppression in areas where surface water runoff is into creeks. Sherwin should avoid using this water in areas where it can run in to waterways.
2.8.9 Closure and Rehabilitation	Staging and Timing <i>The sub-grade dump will be rehabilitated to a stable landform during the course of open pit mining...Should sale of this sub-grade material prove economically viable it will be sold...</i> In terms of revegetation and closure, what options have been considered in the event that the sub-grade material is not considered a suitable growing medium?
3.2.4 Air Emissions	<i>Dust generated by moving vehicles and wind can have a negative effect on persons health if they breathe in this dust. The crystalline silica (quartz) component of dust from iron mining is of interest due to its potential for causing silicosis. The inherent risk associated with exposure to emissions is <u>high</u>.</i> How is dust from blasting controlled? <i>Respirable crystalline silica monitoring will be routinely conducted to ensure exposure is within acceptable limits.</i> Please outline the monitoring routine as this contradicts Appendix D – Environmental Management Plan Section 3.2.9 Air and dust.

Appendix F-1 4.2.3 Groundwater levels	<i>The groundwater resources identified to date in the vicinity of the mine site (i.e. long-term sustainable yield = 12 ML/a) are inadequate to meet the total operational requirements of the mine (i.e. 50 ML/a)</i> <i>From Appendix F-2; Within the mining area ground water yields are expected to be low and consequently the hydraulic parameters of the weathered and fractured sedimentary rocks would also be low. Fracture zones, which contain secondary porosity with little storage capacity for recharge, are expected to be shallow and thus possess little potential to host significant aquifer systems.</i> The DME is concerned that proponent has identified a significant limitation on the project due to a lack of water available to meet the forecast requirements. • There is a low amount of sustainable groundwater available – over extraction may have a detrimental impact on the aquifer and any dependent ecosystems • It seems unlikely that any water budget deficit can be recovered from additional groundwater bores in the area. • The volume of rainwater that will be collected in an unused section of the pit during the wet season is unknown and will be unreliable due to variable rainfall. Long term storage of water will suffer losses from evaporation and a degradation in quality due to evaporation and interaction with pit materials • It is noted that a polymer product is planned to be used on high traffic areas to reduce the amount of water required for dust suppression, but this strategy is unlikely to address the current water deficit. • The proposal to use water from sewage treatment as dust suppression is not sufficient to address the current deficit and risks eutrophication of local water bodies and nutrient seepage to shallow groundwater.
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Appendix F-1 4.2.3 Groundwater levels (cont.)	There is also a concern that the water requirements for this project have been severely underestimated, particularly for dust suppression. According to Table 2-1 (Appendix F-1): • 3ML/a is required in the crushing circuit and • 17ML/a is required for dust suppression around the haul roads/ ROM/ open pit. Based on the experience of the DME: • It is likely that water usage at the crushing circuit will be greater than 3ML/a • The estimate for dust suppression on haul roads, ROM and Pit could be significantly (up to 30 times) greater than the current forecast of 17 ML/a. • A minimum of two water carts are required for the site • The annual water requirement for the site may be closer to 500 ML/a. Dust is of special concern at this site considering <i>crystalline silica (quartz) component of dust from iron mining is of interest due to its potential for causing silicosis... The inherent risk associated with exposure to emissions is high (Chapter 3, Section 3.2.4 Air emissions)</i>. Dust is both a health and environmental hazard, and the DME has identified concerns about dust management with the operator during the bulk sample phase of this project with substantial smothering of the surrounding vegetation. In order for the Assessment process to effectively evaluate the environmental impact from the project, the proponent should: • Review the forecasts for water usage during the project • Identify alternative sources of water to meet the deficit and supplement seasonable variability in currently identified sources. • Present the water usage and sources under scenarios for dry, average and wet years.
Appendix F-1 5.1.1 Surface water monitoring	<i>E.coli</i> or faecal coliforms measurement should be included in the surface water monitoring program if Sherwin proceed with the use of treated water reclaimed from the Wastewater Treatment Plant for dust suppression on site.
Appendix F-1 5.2.1 Water quality trigger values	<i>In addition to the above, water discharged shall have no visible surface films, oils and greases, Total Petroleum Hydrocarbons, litter or suspended matter</i> Total Petroleum Hydrocarbons should also be included in the surface and groundwater monitoring programs considering the large volume of fuel being stored on site.

Appendix F-2 6 Groundwater monitoring program	Frequency – Construction and operations <i>Depth to ground water level: monthly for the first two years to better understand the impacts of wet and dry seasons at the site; quarterly or bi-annually thereafter.</i> Considering the current dependence on groundwater for all activities on site and the low hydraulic properties of the aquifers in the area, the groundwater level should be monitored fortnightly. Frequency – Post Closure <i>Depth to ground water level: bi-annually for two years.</i> <i>Hydro-chemical: ground water: seasonally (bi-annually) for two years.</i> Site monitoring will be required to continue post closure until it can be demonstrated that mining activities have left no ongoing legacy issues for the environment. This may take longer than two years.
Appendix M- Dust Report	The co-ordinates supplied for the dust monitoring locations are incorrect (the southing value is actually the easting value, and vice versa). It appears that dust monitoring has only occurred around the proposed camp site, and that no monitoring has occurred around the actual mine itself where the dust levels are expected to be elevated. Health concerns from dust are outlined by the proponent; <i>crystalline silica (quartz) component of dust from iron mining is of interest due to its potential for causing silicosis... The inherent risk associated with exposure to emissions is high</i> (Chapter 3, Section 3.2.4, Air emissions). The DME is also concerned that the dust generated on site can have serious impacts on surrounding vegetation via smothering and aquatic communities due to the quality of surface water contaminated by run off. The DME has also raised concerns about dust management during the bulk sample (exploration) phase of the project with evidence of smothering on surrounding vegetation even though there was a dust cart present on site. Considering the potential impacts due to dust generation, the proponent should: • Design and implement a dust monitoring program which includes dust deposition and volumetric air sampling in appropriate locations around the mine, ROM pad, camp site and haul roads. • The monitoring program should adhere to standards including but not limited to: ○ AS/NZS3580.1.1:2007: Guide to Siting Air Monitoring Equipment ○ AS/NZS3580.9.9.2006: Determination of Suspended Particulate Matter – PM10 Low Volume Sampler ○ NATA accredited laboratory analysis • Design and implement a soil and sediment monitoring program to support the dust monitoring program in its assessment of the depositional nature of the dust generated and its impacts on surrounding soils and waterways.

General	It is very difficult to tell from supplied maps the exact location of proposed storage of topsoil and other infrastructure. Some appear to be on a slope and/or in a creek. Sherwin need to provide more accurate maps of the site plan including <u>all</u> creeks and drainage and proposed infrastructure.
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AFANT



AMATEUR FISHERMEN'S ASSOCIATION OF THE NT INC.

AFANT comments on the Sherwin Creek Iron Ore Project EIS

AFANT has given careful consideration to the Sherwin Creek Iron Ore Project Draft EIS and we believe that the project, as a direct shipping ore (DSO), can be established and operated with minimal environmental impact.

The majority of onsite works for the Sherwin Creek Iron DSO project have already been undertaken as part of the so called bulk sample.

It is disappointing that a more detailed and comprehensive EIS which outlined what works, clearing and earth moving has been undertaken on site as part of developing the bulk sample and what additional works will be required to move to the next stage of production. It would also have been relevant to include up-to date information and observations on hydrology at the site and how the existing works had handled the early wet season rainfall.

The main issues that AFANT has with the project relate to social impacts and unacceptable risks.

We have a number of serious concerns with the proposal as it is outlined and believe that the following issues need further consideration and an adequate response:

- Transport and road user safety;
- Decline in the recreational fishing tourism and visitor experience to the Roper river region
- The timeline for transport and road upgrades is unsatisfactory;
- Site layout and water risk on site;
- Question the ability of the mine operation to have no discharge of waste water during wet seasons;
- Water runoff from mine operation areas (crushing loading and waste rock piles) outside of mine pit;
- Potential impact from future operations and options that are planned but outside the scope of this EIS;
- Any upgrades to road infrastructure, bridges, crossings or flood ways must meet best practice fish passage; and
- Onsite mine water must be included in broader catchment water planning and allocation process.

Representing recreational fishing in the NT and ensuring the quality of our sport

PO Box 40694 Casuarina NT 0811

Phone: 08 8945 6455 Fax: 08 8945 6055 Email: craig@afant.com.au

www.afant.com.au

AFANT notes the risk assessment in the EIS identifies that the risk of traffic collision from the project is extreme and we have concerns that unless further management measures are implemented the risk cannot be substantially addressed.

The major collision risks are as follows:

- Roper Highway condition; narrow pavement, limited ability to move of the road in some areas, narrow and obscured vision areas as well as road width at culverts and bridges;
- Stuart Highway; increased road trains and limited overtaking opportunities from Mataranka to Darwin; and 100 quadruple road train truck movements per day, 50 return trips increasing to up to 200 truck movements per day in the next stage after a road upgrade to the Roper Hwy.

AFANT believes that the only acceptable and safe option for the project ore transport is for a major upgrade of the Roper Highway from a sealed single lane to a dual highway with multiple overtaking lanes. The upgrade should include line marking, surfaces and shoulders all to a relevant standard (fit for use).

The Stuart Highway also needs to be addressed so as to include suitable areas for passing and increased overtaking lanes to be installed.

Governments both NT and commonwealth must also provide financial and infrastructure support as not all of the increased mining traffic will be a result of the Sherwin mine with other mines vastly increasing heavy vehicle traffic in this area.

As Government is promoting the areas for development this promotion and industry encouragement must come with the required investment in infrastructure. There has been a lack of investment from Territory and Commonwealth Governments in key infrastructure in mining areas like the Roper region. Transport and communications infrastructure are also required to make these areas safer to the general public and should be invested in at the time operations are establishing or being approved.

In the Roper region three mines are already operating; all increasing the traffic and risks on the regions narrow and degraded roads.

The question that must be asked when considering this approval is; what is the value of a human life on the Roper Highway and what investment government and Sherwin iron are going to make to address this real and present risk.

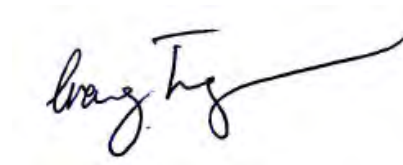
Governments have stated that they are open for business for mining development. This undertaking needs to come with real commitments to provide adequate infrastructure to protect both human life and the environment.

AFANT does not believe some of the socio-economic risks have been adequately addressed in the draft EIS, in particular the impact on other industry's like recreational fishing tourism, the recreational fishing tourism sector is one of the fastest growing sectors of the NT tourism industry,

The increased risk of vehicle accidents and increased heavy vehicle traffic will have a real impact on the tourism experience of visitors in the Roper River area as well and those traveling on the Stuart Highway.

Concerns with road safety and lack of a positive experience that will come from visitors traveling the regions roads needs to be considered not just as a risk issue to road users but also as a negative to the attractiveness of the NT as a traveling destination

Yours sincerely

A handwritten signature in black ink, appearing to read 'Craig Ingram', with a long horizontal flourish extending to the right.

Craig Ingram
Executive officer AFANT
28 January 2014



Northern
Territory
Government

DEPARTMENT OF
LANDS, PLANNING AND THE ENVIRONMENT

Our ref LUPD2011/0097-24

Your ref Sherwin Iron Pty Ltd - Sherwin Creek Iron Ore Project

Lands Planning

First Floor, Arnhemica House

16 Parap Road

Parap NT 0804

Postal address GPO Box 1680

Darwin NT 0801

Tel 08 8999 6109

Fax 08 8999 7189

Email mark.meldrum@nt.gov.au

Rod Johnson
A/Manager, Environmental Assessment
Northern Territory Environment Protection Agency
PO BOX 496
PALMERSTON NT 0831

Dear Mr Johnson

**Draft Environmental Impact Statement for comment - Sherwin Iron
Pty Ltd - Sherwin Creek Iron Ore Project**

The Department of Lands, Planning and the Environment have no objections in principle to the proposal subject to the below comments.

Heritage Branch further advises that all heritage/archaeological issues have been adequately addressed in the Draft EIS and looks forward to receiving the final EIS (including a copy of a final Cultural Heritage Management Plan).

Please contact Dianne Bensley, Heritage Branch on (08) 8999 5051 if you require any additional information concerning this matter.

Yours sincerely

MARK MELDRUM
For FABIO FINOCCHIARO
Executive Director, Land Services

4/2/2014



DEPARTMENT OF LAND RESOURCE MANAGEMENT

A handwritten signature in black ink, appearing to be "James Pratt".

Our ref NR2115
Your ref

Executive Director, Rangelands
Goyder Centre
25 Chung Wah Terrace, Palmerston
Postal address PO Box 496
PALMERSTON NT 0831
Tel 08 8999 3692
Fax 08 8999 4403
Email james.pratt@nt.gov.au

Roderick Johnson
Environmental Assessments
Environment Protection Agency
GPO Box 3675
DARWIN NT 0801

Dear Mr Johnson

RE: Draft Environmental Impact Statement (EIS) for Comment – Sherwin Iron Pty Ltd – Sherwin Creek Iron Ore Project

The Department of Land Resource Management has assessed the information contained in the above draft EIS and provides the following comments:

- Appendix E, Erosion and Sediment Control Plan (ESCP), proposes a number of erosion and sediment control (ESC) works including sediment basins (Section 6.2). These have been sized as both Type C and Type F/D basins. To provide direction for construction and to assist accurate project costing, the Department recommends that basin type is clarified for each location shown on drawings SK02 – SK06.

Typical drawings are required for basin types, including emergency spillways and detail of basin outlets/dewatering provisions. Further information on sediment basin application and design is contained in the International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control Guidelines (2008), Book 2, Appendix B. Further information about IECA publications can be found at www.austieca.com.au. The Department also recommends that outlets for sediment basins, culverts and level spreaders are stabilised to ensure receiving waterways or downslope areas are not at risk from accelerated erosion, with detail described in the ESCP and displayed in appropriate typical drawings.

The Department recommends the preparation of a schedule for staging of ESC works throughout site development. The Department strongly recommends that all proposed works within the ESCP are planned by a Certified Professional in Erosion Control (CPESC, refer www.austieca.com.au), and all hydrological design calculations are reviewed by a suitably qualified engineer.

In addition to rock filter dams (i.e. rock check dams) Section 6.1 refers to sediment weirs, with locations shown on Drawings SK03 and SK04. A typical drawing/construction detail of the proposed weir type is required. Further information and typical drawings are also required regarding rock lining of drains. Locations of proposed diversion bunds and sediment fences (Section 5.2.2) for topsoil stockpiles should be indicated on Drawings SK04, SK05 and SK07. With regard to potential sediment discharge from the north-western side of the subgrade stockpile to adjacent tributaries of Sherwin Creek, the Department suggests review and possible upgrade of sediment containment measures.

With regard to stabilisation of disturbed soil surfaces, Table 9 in Section 5.2 lists a number of methods. More detail is required regarding the selected method(s) for soil stockpiles, drain and road margins, disturbance associated with installation of ESC works, or stabilisation of drainage outlets. The Department also recommends that any area of soil disturbed during site construction (not subject to future works) be progressively rehabilitated by revegetation, mulching or other appropriate means, to the satisfaction of the Department of Mines and Energy.

Section 5.2.1 refers to the use of gypsum where sodic (dispersive) soils may be encountered. The Department recommends further detail is provided about the assessment and ESC management requirements of dispersive soils. Further information can be found in the IECA Best Practice Erosion and Sediment Control Guidelines (2008), Book 2, Appendix C.

The Department recommends that maintenance provisions include regular inspections of ESC works, plus inspection following major storm events, and definition of responsibilities for personnel allocated to inspection and maintenance work, including removal of sediment or ESC works repair. Inspection and maintenance activity should also include receiving waterways downstream of outlet structure discharge. The Department also recommends that an inspection template be developed for use by allocated personnel, and that a copy of this template is included as an attachment to the ESCP.

With regard to mine site rehabilitation, the Department suggests that the proposed revegetation trial work be conducted at the earliest opportunity and not be delayed for two years, to optimise the development and availability of site specific methodology for progressive rehabilitation. This would probably require the formation a dedicated trial area at the outset of the project to simulate soil, substrate and slope conditions likely to be encountered during future rehabilitation.

- Macroinvertebrates

The macroinvertebrate survey sampled three sites, but only one site was within Sherwin Creek. This cannot be represented as adequate pre-mining data to determine the extent of post-mining changes in macroinvertebrate community structure. However, the data does highlight the presence of the family Leptophlebiidae, which may provide a focus for monitoring the effects of acid mine drainage in Sherwin Creek.

Macroinvertebrate taxa are mostly identified to family level only, consequently there is little to no basis to suggest that this provides an inventory of macroinvertebrate diversity, nor adequate evidence of the absence of significant aquatic invertebrate taxa (if only because lists of such taxa do not currently exist in the NT).

- Fish

The fish survey sampled eleven sites within Sherwin mine tenements, with data also included from an additional site in the main-stem of the Roper River from a previous survey. Only two of these sites are within Sherwin Creek, and it is unclear whether others are within hydrologically analogue streams which might serve as control streams within a program to monitor impacts from mining activities. Surveys of Sherwin Creek sites identified seven fish species, all common and widespread species. Sherwin Creek does not provide habitat for a diverse fish assemblage and is very unlikely to provide habitat for significant species such as Freshwater Sawfish. The claims made in the report are valid and reasonable.

- Water Management Plan

The surface water monitoring program consists of monthly sampling at seven sites, six of which are distributed on Sherwin Creek, with the seventh on a control creek. Two issues have been identified. Firstly, the program is based on a monthly schedule and is not continuous (using loggers) or event-based. The second issue is one of data interpretation; without ecological measurements (e.g. macroinvertebrates within an adequate experimental design) it is hard to decipher what the ecological significance of variation in water quality might be.

The 'baseline' water quality data for Sherwin Creek presented in Table 1-3 is very limited in terms of number of sites and the number of sampling occasions and cannot be used to define pre-mining conditions. Two sites in Sherwin Creek, sampled on the same day (17/5/2012) had %DO of 1.1% and 73%, and Total Nitrogen of 2.8 mg/L and 0.1 mg/L. Locally derived water quality trigger values would be useful, but preferably the data used for derivation should be limited to flowing waters and/or account for seasonal variation.

- While only six flora sites and five fauna sites were sampled (Appendix H1, Figure 7 and Appendix H2, Figure 2) in the total footprint area of 350 ha, other available biodiversity data for the surrounding region and expert knowledge of the regional distribution of significant flora and fauna suggest the risk of significant impact to regional biodiversity values is low.
- The *Weeds Management Act* states that the owner and occupier of land must – (a) take all reasonable measures to prevent the land being infested with a declared weed; (b) take all reasonable measures to prevent a declared weed or potential weed on the land spreading to other land. It is recommended that prior to commencement of works, any machinery, equipment, vehicles and any materials such as fill being brought on site is clean of weeds and or weed seeds.

Should you have any further queries regarding these comments, please contact Luis Da Rocha by email luis.darocha@nt.gov.au or phone (08) 8999 6391.

Yours sincerely



JAMES PRATT

5 February 2014



Territory Wide Services
Environmental Health Branch
2nd Floor, Casuarina Plaza
258 Trower Road, CASUARINA NT 0810
Postal Address: PO Box 40596
CASUARINA NT 0811
Tel: 08 8922 7152
Fax: 08 8922 7334
eMail: xavier.schobben@nt.gov.au
Our Ref: DD2014/00291

Mr Rod Johnson
Environmental Assessment
Northern Territory Environment Protection Authority
GPO Box 3675
DARWIN NT 0801

Dear Mr Johnson

**RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR COMMENT – SHERWIN
IRON PTY LTD: SHERWIN CREEK IRON ORE PROJECT**

Thank you for the opportunity to provide comment on the draft Sherwin Creek Iron Ore Project, Environmental Impact Statement. The Department of Health (DoH) – Environmental Health Branch comments are:

Chapter 1.10.2: Northern Territory Legislation

Please include the *Public and Environmental Health Act 2011*. This Act will apply for the registration of accommodation, and design approval for the wastewater treatment facility, as well as in general assuring that no public health nuisance arises during the construction phase and actual operation of the project.

Also include the *Food Act 2004*. This Act is applicable to any commercial food preparation area associated with the site. The Act also requires food business registration with the Department of Health. A bacteriological water sample and chemical and metal suite is required as part of the proponents submission for food business registration. Fact sheet 415 Private Water Supplies in Food Businesses has further details and is available at:

http://health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/84/36.pdf&siteID=1&str_title=Food Business Water Samples.pdf

Chapter 2.8.4: Water

It is stated in the draft EIS that the potable water supply will be treated by Reverse Osmosis and then disinfection by ultraviolet light (uv). It should be noted that uv has no residual disinfecting action and therefore the uv system should be installed as close to the point(s) of use as possible. If potable water is to be distributed between the mine site and the accommodation camp the use of at least one uv disinfection system at each site should be considered.

A modular waste water treatment plant with water recycling to irrigation and dust suppression has been proposed. A site specific design approval will need to be obtained from the Environmental Health Branch prior to the commencement of any works.

Appendix F1: Water Management Plan 1.2.1

The EIS states 'Under section 57 of the NT *Water Act*, any bore drilled within the WCD requires a bore construction permit, except for mining operations. A bore located outside a WCD does not require a construction permit, noting that under the same Act, a Northern Territory licensed driller must be used to drill the bore.'

This statement implies no action is required outside a water control district however under the Public Health (Nightsoil, Garbage, Cesspits Wells and Water) Regulations if a bore is to be drilled outside of a water control district notification must be received by the Department of Health.

DoH Fact Sheet 700: Requirements for Mining and Construction Projects

The proponent and contractors must take note of the current DoH Fact Sheet 700: Requirements for Mining and Construction Projects available at:

[http://health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/16/49.pdf&siteID=1&str_title=Requirements for Mining and Construction Projects.pdf](http://health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/16/49.pdf&siteID=1&str_title=Requirements%20for%20Mining%20and%20Construction%20Projects.pdf)

It is the responsibility of the proponent to obtain DoH approvals and licences for the mining site. It is the proponent's responsibility to alert DoH Environmental Health of the commencement of works and in this case, the proponent will be required to contact either Karla James or Chris Blow at the DoH Environmental Health Office in Katherine:

Karla James: ph. 8973 9061 or karla.james@nt.gov.au

Chris Blow: ph. 8973 9062 or christopher.blow@nt.gov.au

Radiation Protection

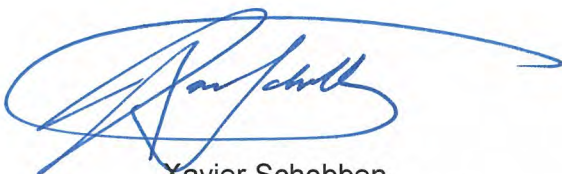
Radiation is a potential issue and has not been mentioned in the draft EIS. If the operator has any material that is a radiation source, as defined under the *Radiation Protection Act*, the operator must apply for all relevant authorities under that Act. It is the responsibility of the operator to apply for all relevant authorities. If naturally occurring radioactive material (NORM) is found on site, it may, possibly, require appropriate authorities to possess it. For more information, the proponent should refer to the following internet location:

www.nt.gov.au/health/radiationprotection

Other

Medical Entomology Branch will provide separate comment on biting insects. If you require further information about the Environmental Health comments then please contact Peter Rogers, Senior Program Development Officer, on 8922 7476.

Yours sincerely



Xavier Schobben

Director Environmental Health Branch

17 January 2014

Our file ref: 2013/0329

GPO Box 3000
Darwin NT 0801
AUSTRALIA
www.nt.gov.au

Manager Environmental Assessment
NT Environment Protection Authority
GPO Box 3675
DARWIN NT 0831

Attention: Mr Rod Johnson

**Environmental Impact Statement for Comment: Sherwin Creek Iron Ore Project,
Roper Gulf Shire**

Thank you for the opportunity to comment on the above Environmental Impact Statement (EIS). This department has examined the proposal and has determined that the EIS has given the appropriate level of consideration to the potential impact the project might have on the aquatic environments in the vicinity and downstream of the Sherwin Creek site located in the Roper River catchment. From this department's perspective and interests, it is considered that the EIS adequately recognises potential impacts on hydrology, sedimentation, erosion and aquatic biodiversity, and the possibility of acid mine and metalliferous drainage by documenting appropriate monitoring and mitigation plans.

One concern with this proposal is the transportation of ore by road train to Darwin along public roads, with a plan for 50 road trains per day initially, scheduled to increase to 100 per day. This expansion in transport will have an impact on the structure and condition of both highways and significant impact on road users and flow-on effects to industries operating in the area. Sectors of the economy affected will be commercial and recreational fishing and primary industries. It is not clear how these impacts can be mitigated or offset by the proponent.

If you require any further information, please contact me in the first instance and I will direct you to the appropriate area within this department.

Yours sincerely



CHRISTINE LONG
for Chief Executive

Tel +61 8 8999 2394
Fax +61 8 8999 2010

3 February 2014

23rd January 2014

NT Environment Protection Authority
Department of Lands, Planning and the Environment
GPO Box 3675. Darwin NT 0801

To whom it may concern;

RE: Sherwin Creek Iron Ore Draft EIS

We welcome the opportunity to comment on the draft environmental impact statement for the proposed Sherwin Creek Iron Ore mine. Please consider our following concerns regarding the proposal, to be addressed by the proponent in the supplement to the EIS.

Size and scale of the project

This EIS deals with stage one of the Roper River Iron Ore Project. The EIS states that the Sherwin Creek project is likely to be the first stage in the development of a much larger project. The original NOI and EIS guidelines included the Hodgson Downs deposits and yet this EIS refers only to Sherwin Creek deposit C. There is concern that future stages will not be required to undertake the same level of environmental assessment as this stage.

As the EIS does not look at the entire project, it is difficult to capture the cumulative impacts. As a result the proponent does not see any cumulative impact risks on regional ecosystems, perception of the region as remote and wilderness, and on key habitats. How will cumulative impacts be properly assessed in terms of the overall Roper River Iron Ore project? We would like clarification on future stages of the project requiring the same level of scrutiny as this EIA process, and for future approvals to be dependent upon the cumulative impacts at that stage.

Energy generation

We are disappointed that Sherwin Iron has not committed to the use of renewable energy for mining operations, including electricity generation for the camp and the offices and workshop. The energy requirements of the mine are not substantial compared with other mining operations, a total of 800kw according to the proponent. Such a small amount of energy can be easily provided through different solar PV options, and cost competitive with diesel generation. The proponent should detail how they investigated alternative sources of power. The EIS guidelines specify that the proponent must detail alternative sources of energy generation, including a discussion as to why the chosen option is preferred to another. Currently the information given is inadequate.

We have had a number of discussions with different solar companies that can easily provide the energy needs for the project. Furthermore, some offer easily

transportable modules that are cost competitive to diesel use. The transportable modules would allow easily shifting to new deposits over the life of the Roper River Iron Ore project. The initial capital costs of investing in this form of energy could be reduced if partnerships were made from NT government, and ARENA funding sought. Therefore, this option needs to be investigated further, and would make the company far more acceptable to the community. Such a commitment would also help to promote renewable energy uptake for other mines. The Environment Centre NT would be happy to assist Sherwin Iron explore alternative electricity generation options for the project.

Australia's uptake of renewable energy in the mining industry has lagged behind other mining nations, such as Canada, South Africa and Chile. Given the high price volatility of diesel, and the rising costs over the lifespan of the mine, it makes both economic and environmental sense to pursue a solar option further. Solar PV can not only offer significant cost reductions from diesel, but solar energy can also help to increase the lifespan of diesel engines used in hybrid arrangements for backup and night-time loads¹.

Environmental Offsets

Since the release of the draft EIS, the final EPA guidelines for offsets are now available. We acknowledge that consultations for appropriate offsets will take time in order to effectively engage with local Traditional Owner groups. However, as a result of there being no formal commitments in the chapter on commitments in the EIS it is difficult for the EPA to consider this aspect of the project. The proponent does not make any explicit financial commitments, and there needs to be some other measures put in place to ensure this occurs in time.

One option that could be integrated into the discussions, is the potential for a small solar PV plant that could deliver energy needs to the mine, and also in the future to local communities such as Ngukurr. An offsets package could train local people to operate and maintain the station, and deliver the energy needs of the community, thereby reducing reliance on diesel use. Similarly, discussions could be had with Western Desert Resources to co invest in a plant that could provide both mines energy needs as well as the surrounding local communities.

There is also no mention of habitat offsets to replace the clearing of vegetation that contains threatened species such as gorge habitat for the Buff Robin.

Biodiversity and habitat

The residual risk of impacts on terrestrial and aquatic habitat quality in the form of weeds from clearing remains high after management actions. Greater effort should be undertaken to manage this risk to reduce it from a residual risk of high to at least medium.

Furthermore, impacts on biodiversity and habitat should take into account the cumulative impacts of the intended future stages of the Roper River Iron Ore project, not just the small area of Deposit C.

There were found to be two threatened species and ten near threatened species in the survey area under the TWPC Act. In addition there were three species

¹ <http://www.resourceinfocus.com.au/index.php/2013/12/20/solar-energy-in-mining/>

listed as migratory under the EPBC Act. Furthermore, there is a potential of 25 threatened species that could occur in the exploration lease area.

Cumulative impacts will be important, particularly for near threatened species such as the Buff Robin that are likely to have reduced habitat from the Deposit C clearing of gorge country and monsoonal thickets.

The survey areas do not seem to cover the proposed camp area or impacts that are likely to have been incurred from the construction of haul roads. Further survey work should be undertaken in these areas to determine impacts. However, it is likely the impacts have already been incurred given the allowance for bulk sampling ahead of any environmental approvals.

Rehabilitation and mine closure

There remains significant risks of rehabilitation failures after management measures are put in place. These should be required to be strengthened to reduce the likelihood of failure. The biggest risk comes from failure in implementation or failed activities. Furthermore, there remain high risks from PAF materials after management measures are put in place. Are there more stringent measures that could be put in place to reduce this risk?

Concern over bulk sampling

The Environment Centre NT has previously expressed concern over the fact that significant mining is occurring already under the veil of bulk sampling. We understand the need for bulk sampling to occur in terms of assessing project viability, however we are concerned that there is minimal environmental approval conditions attached to bulk sampling. Given the large amount of bulk sampling currently being undertaken, it is difficult to see how the company and the NT government are employing ESD principles. Bulk sampling obviously creates significant disturbance to the landscape and this is happening prior to the EIS process that identifies environmental values and risks that need attention.

Thank you for the opportunity to make comment on this draft EIS. We look forward to providing further comment in the supplement to this EIS.

Regards,

A handwritten signature in black ink, appearing to be 'Rob Law', written in a cursive style.

Rob Law
Manager Policy and Climate
Environment Centre NT



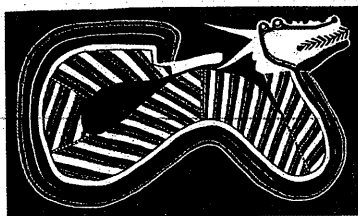
5/84 Smith Street, Darwin, NT
GPO Box 4289 Darwin NT 0801
Tel. 08 8981 5883
edont@edont.org.au
www.edont.org.au

Table: Comments on Draft EIS – Sherwin Creek Iron Ore Project.

ISSUE	COMMENTS	RECOMMENDATION
Risks to biodiversity Clause 3.4.1	• The report notes that “gorge habitat” will be affected by the development. Notably 25 hectares of gorge habitat will be removed. Of that 25 hectares .65 of a hectare of dry monsoonal rainforest will be removed. • In our submission the development should be amended to avoid any removal of “gorge habitat”, and at the very least should be amended to protect the .65 hectares of dry monsoonal rainforest that it is proposed be removed. • The Draft EIS notes that ‘dry monsoonal rainforest’ is considered a sensitive vegetation community. This classification is “due to its species richness, supporting approximately 13% of the Northern Territories flora species whilst occupying just 0.2% of the Northern Territory land area”. • The Draft EIS places specific emphasis on the economic favorability of approval of the development, however, economic arguments should not outweigh the removal of this kind of vulnerable vegetation community that supports a vast array of unique ecosystems. • It is important to note that during the survey the area to be cleared was found to support <i>EPBC Act</i> migratory species, including the Near Threatened Buff-sided Robin (<i>Poecilodryas cerviniventris</i>).	Appropriate buffering and independent oversight should be provided during all land clearing to ensure that no gorge habitat or dry monsoonal rainforest is cleared. It is assumed that no part of the vulnerable vegetation community has been cleared as part of Sherwin Iron Pty Ltd’s ‘Bulk sampling’ operation.

	• We do not agree that the clearing of sensitive habitat (gorges) is “inconsequential” by virtue of other gorge areas being located nearby.	
Risks to threatened and migratory species. Appendix H1	We note that in Appendix H1, the Draft EIS notes that approximately 25 threatened species could potentially occur within the boundaries of the Deposit C. Of those 25 threatened species the Draft EIS found that 12 of them ‘May’ inhabit the site. In addition to the above three migratory species were found during the survey. Given the developer cannot rule out the potential for a high number of threatened species (including three critically endangered species) to inhabit the site, priority should be given to areas of the site that are likely to provide habitat to those species. It is noted that no accurate picture is given by the Draft EIS about the actual presence or otherwise of threatened species due to “the results of the surveys are only a snapshot in time, and do not allow for temporal variations or species migration”. In light of the above, and the uncertainties present due to resource constraints in the flora and fauna surveys, the principal of ecologically sustainability development, as outlined in section 3A of the <i>Environment Protection and Biodiversity Act</i> 1999 should apply.	All areas of habitat that could potentially support threatened or migratory species should be adequately protected from clearing.
Climate change impacts Appendix R	The <i>Environmental Protection and Biodiversity Act</i> 1999 requires “all adverse impacts” to be assessed. In our submission inadequate consideration has been given to the potential increases in carbon emissions arising from the development. The Draft EIS appears to only consider greenhouse gas emissions in terms of the energy needs of the site, the emissions generated from mining operations, transport and vehicles. Further detail should be provided in terms of: - increase in emissions from vegetation clearing; and - cumulative impacts of emissions from this site and the proposed expansion to	When making a decision about whether to approve the development and (if it is approved) in developing appropriate conditions, consideration should be given to increases in carbon emissions from vegetation removal. Consideration for potentially large increases in carbon emissions from further development of the mining area should be considered as cumulative impact.

	other areas of the site.	
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Northern Land Council

ABN 56 327 515 336

Address all correspondence to:

CHAIRMAN
GPO Box 1222
DARWIN NT 0801

45 Mitchell Street, Darwin NT 0800

Phone: (08) 8920 5100

Fax: (08) 8945 2633

Freecall: 1800 645 299

3 February 2014

Dr William Freeland
Chairman
Northern Territory Environmental Protection Authority
GPO Box 3675, Darwin NT 0801
By email

Dear Dr Freeland

SHERWIN CREEK IRON ORE PROJECT – DRAFT ENVIRONMENTAL IMPACT STATEMENT

Please find enclosed a submission from the Northern Land Council (NLC) in relation to the Sherwin Creek Iron Ore Project Draft Environmental Impact Statement (EIS).

The submission highlights a number of shortcomings in the EIS. The EIS appears incomplete and to not comply with the much broader Guidelines issued by the EPA in June 2013 in relation to Sherwin's broader proposals in the Roper Region.

The submission also highlights a number of concerns in relation to specific environmental aspects of the proposed project, and includes recommendations for both the proponent and the assessor. Key areas of concern include the use of the Roper Highway to transport iron ore product, the proposed environmental management structure, water management, and mitigation of potential acid forming materials to prevent acid leaching into local groundwater aquifers

Yours sincerely,

Robert Graham
ACTING CHIEF EXECUTIVE OFFICER

BORROLOOLA
PO Box 453
Borroloola NT 0854
Ph: (08) 8975 8848
Fax: (08) 8975 8745

JABIRU
PO Box 18
Jabiru NT 0886
Ph: (08) 8938 3000
Fax: (08) 8979 2650

KATHERINE
PO Box 396
Katherine NT 0851
Ph: (08) 8971 9899
Fax: (08) 8972 2190

NGUKURR
PMB 85
via Katherine NT 0851
Ph: (08) 8975 4755
Fax: (08) 8975 4601

NHULUNBUY
PO Box 820
Nhulunbuy NT 0881
Ph: (08) 8986 8500
Fax: (08) 8987 1334

PALMERSTON
PO Box 1249
Palmerston NT 0831
Ph: (08) 8931 5500
Fax: (08) 8931 1875

TENNANT CREEK
PO Box 55
Tennant Creek NT 0861
Ph: (08) 8962 1884
Fax: (08) 8962 1636

TIMBER CREEK
43 Wilson Street
via Katherine NT 0852
Ph: (08) 8975 0789
Fax: (08) 8975 0664

1. GENERAL COMMENTS

Generally, the EIS document and the information enclosed in the appendices gave the impression of being incomplete. It is notable that the Final Guidelines issued by the NTEPA in June 2013, in response to the proponents Notice of Intent (NOI) in late 2012, required the proponent to prepare a description of all relevant matters in relation to a project encompassing two mining sites and new haulage road/s. Instead, the proponent has prepared its draft EIS in relation to a smaller portion of the project, a small portion of the project life and relegated many issues to future studies, future planning and future approvals.

This approach has resulted in an EIS that could be inadequate for understanding the environmental, social and economic impact of Sherwin's project. As the EIS does not address many of the broader requirements included in the Final Guidelines, it makes it difficult to assess the project in the manner envisaged by the *Environmental Assessment Act* (NT) or the *Environmental Assessment Administrative Procedures* (NT). As whole-of-project life assessment has not been completed, the following inclusions are required in a Supplementary report:

- *The EIS should identify all the processes and activities intended for the Sherwin Creek and Hodgson Downs Iron Ore Project and associated ancillary activities, during the life of the Project.*¹
- *The EIS should be undertaken with specific emphasis on the identification, analysis and treatment of risks through a whole-of-project risk assessment;*² and
- *The EIS should describe any feasible alternatives to carrying out the proposed activity. These alternatives, including the 'no Project' option, should be discussed in sufficient detail to make clear the reasons for preferring certain options and rejecting others.*³

It may be of consideration for the NT EPA and the proponent to:

- Require the scope of the EIS to include all pertinent project plans identified in the Notice of Intent and Final Guidelines; or
- Re-issue guidelines targeted at the assessment of a small –scale project for a limited number of years. The EIS does not include plans beyond 2 years for the transportation of iron ore under the proposed transport plan⁴ and approvals sought could be limited to such a period.

¹ Guidelines for the preparation of an EIS Sherwin Creek and Hodgson Downs Iron Ore Project (2013) Section 3.2 'Description of the proposal' p.5

² Guidelines for the preparation of an EIS Sherwin Creek and Hodgson Downs Iron Ore Project (2013) Section 4.1 'Risk Assessment Approach' p.10

³ Guidelines for the preparation of an EIS Sherwin Creek and Hodgson Downs Iron Ore Project (2013) Section 3.3 'Alternatives' p.10

⁴ Transport Plan as per the Draft EIS – to transport mined iron ore product by road along the Roper Highway and Stuart Highway from the Mine Site to Port Darwin.

Noting the above issues, it is of significant importance that environmental approvals for this project are limited to the small-scale and short timeframes investigated in this EIS, and not the much wider and longer approvals sought in the Notice of Intent and reflected in the Guidelines.

This submission will now provide detailed comments and associated recommendations on specific aspects of the Draft EIS.

2. TRANSPORT⁵

The Guidelines for the preparation of the EIS call for detailed submissions from the proponent on the transport options to be considered in relation to the bulk mining and transportation operation.⁶ Of importance, the Guidelines required the proponent to consider alternatives in relation to transportation of the bulk commodity, including:

- *Options for ore transport and export;*
- *Haul road options including the use of a single haul road for both areas or upgrade of the Roper Highway corridor.*⁷

There is no detailed consideration of haul road options in the EIS. The EIS only discusses, and endorses, a proposal to use the existing and inadequate Roper Highway.⁸ There is no consideration given by the proponent to the significantly different impacts on the public between the option of using road-trains on the existing (and clearly inadequate) Roper Highway, as opposed to the option and possible benefits of the proponent constructing a dedicated haulage road. The lack of consideration of this key issue in the EIS – particularly in light of the proponent proposing to construct such private haulage roads in their original Notice of Intent⁹ – renders the EIS inadequate in fulfilling the standards required by the Guidelines and, more generally, the standards expected by community stakeholders.

RECOMMENDATION

- Sherwin should fully investigate, document and assess all transport and haul road options, including options such as duplication of the Roper Highway or a private haul road.

Road Network Capacity

The proponent's own EIS illustrates the inadequacy of the Roper Highway for supporting the development proposed. In Appendix L, the proponent proposes safety measures for the road as a "single carriageway rural road" (per Austroads Guide to Road Designs Part 3: Geometric Design (2010)) capable of 150 vehicles per day.¹⁰ The proponent states that the "total traffic movements on the Roper Highway with trip generation from the Sherwin Iron mine site is in line with the Austroads guidance."¹¹ However, it is noted in the EIS:

- 2010 data showed an average of 70 vehicles per day; adding Sherwin's 76 movements (identified for the first two years of production) takes the total almost to the limit noted above.

⁵ Appendix L is extremely poorly paginated and referenced. As much as possible, we have sought to identify references by the header (even if crossed out) and page number at the top of the page.

⁶ Guidelines for the preparation of an EIS Sherwin Creek and Hodgson Downs Iron Ore Project (2013) pp. 6-8.

⁷ Guidelines for the preparation of an EIS Sherwin Creek and Hodgson Downs Iron Ore Project (2013) p. 10.

⁸ A very brief note exists at Chapter 2, 2.9.2 on transport options; however the discussion (which runs to half a page) only seeks to compare export facility options and does not discuss different haul road options.

⁹ Notice of Intent, Sherwin Iron, (2012), s2.3.5.7, p.23.

¹⁰ D2600.00 RP001 – Roper River Iron Ore Project – Traffic Impact Statement, p. 74.

¹¹ D2600.00 RP001 – Roper River Iron Ore Project – Traffic Impact Statement, p. 74.

- 2010 data showed vehicles movements fluctuate and in some months average up to 120 vehicles per day;¹² adding Sherwin's 76 movements (identified for the first two years of production) easily exceeds the limit above.
- The proponents conclusion quoted above clearly does not include adding other vehicles identified in its own the EIS such as the 20 vehicles per day for the AIR mine; an unknown number of supply vehicles/fuel convoys and other vehicles that access the WDR mine (presumably the same if not more than for AIR); and the increased use of the road by exploration companies emerging in the past few years (e.g Imperial Oil and Gas).

Therefore, even taking Sherwin's proposed "single carriageway rural road" safety standards – which a reasonable person would consider inaccurate in circumstances where half the traffic on the road is proposed to be iron ore road trains – the EIS identifies data showing that vehicle use will exceed such standards.

The plans proposed are of significant concern due to overloading the road network, with the risk to road network capacity identified in this EIS as "extreme".¹³ It is reasonable to suggest that the extreme inherent risk in the proposal, particularly when adding additional vehicle movements noted but not considered properly by the proponent, could create unsafe and possibly fatal driving conditions for the general public on the Roper Highway.

Further, and of immense concern to local stakeholders, the above proposal only considers an additional 76 vehicles by Sherwin, such number required for the haulage of 1,000,000t of ore per year for the first two years.¹⁴ The proponent seeks approval for mining at its Deposit C location for "an expected mine life of approximately 6 years",¹⁵ with possible expansions that could significantly extend mine life. Transporting 3,000,000t of ore, as is proposed in Phase 3 (or year 3) onwards would likely triple or at least double the number of Sherwin haul trains required. However, the proponent has no plan or proposal as to how this could safely occur.

The proponent states:

*Alternative transport arrangements are being planned and are expected to be in place by the end of the 2 year period with options including the construction of a haulage route parallel to the Roper Highway and then by train from the Mataranka or Katherine area or use of barge down the Roper River.*¹⁶

At other points in the EIS, the proponent states its belief that the Roper Highway will be significantly upgraded to a "double lane sealed surface" – but does not say by whom, when or how.¹⁷

¹² -D2600.00 RP002 – Roper River Iron Ore Project – Traffic Management Report, p.2.

¹³ Sherwin Creek Iron Ore Project Draft EIS (2013). Chapter 3, 'Risk Assessment' Section 3.8.14, p.3-79.

¹⁴ N-D2600.00 RP002 – Roper River Iron Ore Project – Traffic Management Report, p.1

¹⁵ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 1 'Introduction', pp. 1-6

¹⁶ Appendix L is very poorly formatted and it is hard to accurately describe a particular page. Appendix L, N D2600.00 RP001 – Roper River Iron Ore Project – Traffic Impact Statement

¹⁷ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 2, 'Project Description', pp. 2-33

Overall, it is inadequate to seek environmental approval for the mining and transportation of iron ore for a period of up to 6 years or more without the proponent identifying how such ore will be transported to market after year two or beyond 1.5 million tonnes per annum.

RECOMMENDATIONS

- The data and studies provided in the EIS to justify phases 1 and 2 use of the Roper Highway by haul trains are inadequate and do not demonstrate acceptable levels of risk.
- The proposed use of the Roper Highway to transport up to 1 million tonnes per annum appears of extreme risk to the public and other haulage options should be assessed.
- The proponent is required to document and assess transportation plans for ore for the whole life of the project.

The Lack of Transport Management Planning

The limited transport plans outlined in the EIS also raise significant concerns. The proponent, at various points in the EIS, refers the reader to the ‘Traffic Management Plan’ in Appendix L. Appendix L, however, is constituted by two very brief ‘Traffic Management Statements’ which do not provide requisite details – and which in turn refer the reader to the ‘Traffic Management Plan’ for further detail. For example, Appendix L notes that many of the existing bridge crossings are not designed to requisite safety standards for the haulage proposed by Sherwin: “The bridges for Strangways [sic], Sayle, Packsaddle and Fizzer Creek do not have adequate sight Refer to the Traffic Management Plan for further detail”.¹⁸ It is very problematic that a serious safety concern regarding deficient line of sight at bridges is raised and then said to be solved by a Traffic Management Plan that does not appear to be included in the EIS. Indeed, at other points in the EIS, the Traffic Management Plan is said to be something that will be negotiated at a future date with the Department of Transport.¹⁹ The proponent provides insufficient detail in identifying issues of high to extreme risks in the traffic management plan

The EIS does not provide meaningful discussion of options for ensuring the safety of the public from the proponents’ transportation project. The first of the two Traffic Impact Statements notes that the document only covers “generic issues” associated with the movement of heavy vehicles.²⁰ The discussion of traffic management issues is not detailed and there is no consideration of options for each high-risk safety problem identified. Key safety issues identified include:

- horizontal curves not wide enough to allow Sherwin’s heavy vehicles to safely drive them;
- eight single lane bridge crossings, most of which fall below sight standards required; and

¹⁸ D2600.00 RP001 – Roper River Iron Ore Project – Traffic Impact Statement, p. 32.

¹⁹ Appendix C, ‘Commitments’, p. 10

²⁰ N-D2600.00 RP002 – Roper River Iron Ore Project – Traffic Management Report, p.1

- a dangerous lack of shoulders, including headwalls 2 metres from the road preventing exit/entry to the road.²¹

There is no discussion in the document of any alternative plans to ensure safety (other than briefly recounting the proposal the proponent seeks approval for). There is no discussion about duplication of key sections of the road, or of dangerous bridges, or of creating by-passes of particularly dangerous blind-spots. It would be reasonable to expect the proponent to investigate these options – which clearly would be safer options – and expect detailed explanation of why the proponents proposal is to be preferred.

There are other issues identified but then not given any consideration by Sherwin. Fauna strikes, for example, are identified as a high residual risk. The proponent discusses safety awareness training for its drivers, but does not discuss any mitigation options such as fencing.²² There should be specific measures proposed for mitigation of higher numbers of cattle strikes. The proponent identifies “a number of unmarked tracks”, many with a lack of visibility. Such tracks are used by local members of the community, particularly traditional Aboriginal owners, to access country and the proponent provides no details about managing safety issues and access to such tracks because “no traffic was observed” on these tracks when the relevant author drove the Roper Highway.²³ Of considerable concern is the proponent providing no management strategies at all to ensure safety at the pedestrian crossing used by school-children at Jilkminggan. The NLC disagrees with the proponent’s conclusion that doubling the traffic through such crossing is “not expected to have major impact”.²⁴ The NLC believes the proponent should commit to ensuring safe crossings at Jilkminggan for school children, including consideration of a pedestrian bridge.

Appendix L also appears to be out-of-date and lacking key information which should be provided in this EIS. For example, the proponent notes that it will be conducting Bulk Sampling between June and September 2013 and that a “condition survey of the length of the Roper Highway, including shoulders”²⁵ would be completed by the end of this phase. No such survey appears to have been conducted, or if it has it is not included in the EIS. At other points in the EIS, Sherwin provides no tangible details about how and what road maintenance will occur over the life of the project, noting only that a “condition survey” will take place before commencing Phase 2 (1,000,000t per year of transportation)²⁶ and that “an asset management program with all stakeholders” will be formulated for the “management and continued function of the Roper Highway”.²⁷ Such investigations should already have occurred and their outcomes used to define a tangible road maintenance program in this EIS – it is inadequate that these proposals to generate ideas on road maintenance are presented as road maintenance strategies.

RECOMMENDATIONS

- All studies or records of road use during the Bulk Sample period should be compiled and included.

²¹ N-D2600.00 RP002 – Roper River Iron Ore Project – Traffic Management Report, p.7

²² Sherwin Creek Iron Ore Project Draft EIS (2013), Section 3.8.5

²³ D2600.00 RP001 – Roper River Iron Ore Project – Traffic Impact Statement, page 74.

²⁴ D2600.00 RP001 – Roper River Iron Ore Project – Traffic Impact Statement, page 95.

²⁵ N-D2600.00 RP002 – Roper River Iron Ore Project – Traffic Management Report, p.6.

²⁶ N-D2600.00 RP002 – Roper River Iron Ore Project – Traffic Management Report, p.8

²⁷ Appendix C, ‘Commitments’, p.11

- The proponent should identify each safety issue on the road, including bridges, lack of shoulders and blind spots and consider options to duplicate or bypass such dangerous areas.
- The proponent should consider appropriate management strategies to protect local community road users, including safe access to and from unmarked tracks and consider options for pedestrian crossings at Jilkminggan such as a pedestrian bridge.

Cumulative Impacts

Many Aboriginal communities rely solely on the Roper Highway for access to key Northern Territory regional centres on the Stuart Highway, including people from large population centres at Ngukurr, Minyerri, and Jilkminggan. The measures listed to mitigate risk associated with driver error can only address the drivers employed by the mine. The added number and size of vehicles using the road increases the likelihood of driver error manifesting catastrophic results. To establish associated road use risk and quantify statistically, comparative studies should be sourced from applicable similar road use for mining around Aboriginal communities. The statistics provided in Appendix L need to be clearer and better annotated including the number of accidents and fatal accidents on the Roper Highway, the current causal factors, any change in the number of accidents after the initiation of the bulk sample project.

Some of the proposed upgrades to the Roper Highway are listed in the Risk Assessment²⁸, however it is stated in the project description that Roper Highway upgrades are part of a separate negotiation with NT government and so do not form part of this submission.²⁹ To facilitate assessment, further information should be provided on the location of highway that will remain single lane and unimproved, the number of single lane bridges that will remain, where overtaking lanes will be constructed, and a map of the highway including these features after the proposed upgrades. Any agreements between Sherwin Iron and the Department of Transport, or Transport Management Plans put in place by the Department of Transport (whether current or future), should be included in this EIS and available for review and comment by the public and community stakeholders. There is no commercial in confidence requirement for secrecy and a significant public interest and environmental assessment necessity in doing so.

RECOMMENDATIONS

- The proponent clarifies, annotates and republishes accident statistics.
- The proponent source and examine comparative data on transformational road-use and include in the EIS.
- The Northern Territory and Sherwin publish any agreements or management plans (current or future) that authorise the use of public roads for transportation of ore.

²⁸ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 3, 'Risk Assessment', pp.77-79.

²⁹ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 2, 'Project Description', p.19.

3. HYDROLOGY AND WATER QUALITY³⁰ WATER MANAGEMENT PLAN³¹ (and GROUND WATER REPORT³²).

Monitoring

The "baseline" surface water data provided included collection from site G9035112; presumably the groundwater-fed lower reaches of Sherwin creek³³. The surface water monitoring sites proposed in the plan³⁴ should include this site or one in an equivalent downstream location to G9035112.

The map³⁵ showing groundwater monitoring bores does not show them in relation to key landforms such as the pit, stockpiles, waste dumps and tailings storage facilities. The Plan³⁶ states;

"It is likely that additional environmental monitoring bores will be required to adequately monitor potential effects of specific infrastructure and locations and these [sic] will be determined upon completion of detailed design and provided prior to commencement of mining."

More detail should be provided in the Supplement EIS, including a map of proposed monitoring bores in relation to the mining area. Commitments should reflect such details provided in the plan.

Supply Infrastructure

Despite proposing to use water captured in sumps in the open pit to alleviate demand on groundwater supplies³⁷, the proposal to capture and store water using in pit sumps during operations has not been clearly described or demonstrated to be viable. Supplementary information should demonstrate the viability of the proposed in pit sumps to effectively mitigate demand on groundwater resources, and include:

- i) discussion of implications of capturing and storing water on the structural and geochemical stability of pit walls, backfill walls and in-pit waste piles;
- ii) detailed description of the rock type of the proposed sumps, whether and what type of lining is required to limit permeability; and
- iii) specific advice on risks including slumping, contamination, impacts on groundwater, and impacts on operations.

The Supplement EIS should stipulate whether the in pit sumps are intended remain in perpetuity post mine closure or be rehabilitated.

³⁰ Sherwin Creek Iron Ore Project Draft EIS (2013), Section 3.3 'Risks to Hydrology and Water Quality'

³¹ Appendix F1, 'Water Management Plan'

³² Appendix F2, 'Ground Water Report'

³³ Appendix F1, 'Water Management Plan', pp. 8,9.

³⁴ Appendix F1, 'Water Management Plan' p.35, figure 5-1

³⁵ Appendix F1, 'Water Management Plan' p.12, figure 1-6

³⁶ Appendix F1, 'Water Management Plan' p.36

³⁷ Appendix F1, 'Water Management Plan' pp. 19, 22, 29

The Water Management Plan³⁸ states that water caught and stored in the pit “...*will be the primary source ...*” of the required 17ML/a of water for dust suppression on the Haul Road/Open Pit/ROM³⁹. This is inconsistent with the Ground Water Assessment⁴⁰ which states that the proponent intends to meet all operational water requirements using ground water, including the 17ML/a Haul Road/Open Pit Mining/ROM allocation. If a proportion of the total water requirement will be met from water stored in pit sumps, a rationalised estimate or calculated quantity should be provided and reflected in the commitments.

Demand

The water account provided in the Water Management Plan⁴¹ suggests a likely water deficit, and indicates a reliance on wet season recharge of water stored in pit sumps as a result of this deficit. This reliance carries a level of risk as rainfall can be unreliable between years, and the collection and storage of water in pit sumps has not been quantifiably identified. In order to reduce the risks associated with groundwater depletion, any approval of the proposal should be provisional upon the proponent defining adequate water resources.

The Water Management Plan⁴² should provide a rationale of the water demand estimates. It is impossible to assess the requirement estimates in relation to the anticipated water supply and proposed mitigation measures, because there is no information justifying the operational requirement estimates. For example, dust suppression accounts for almost half of the projected water demand at 17ML/a, but the EIS and Water Management Plan do not provide any information regarding Litres of water required per metre of road or the scheduling of watering activities for dust suppression purposes. The water demand estimates should include an allocation for the rehabilitation phase or justification of why an allocation is not required.

Ground water depletion

Groundwater depletion is described in the Draft EIS Risk Analysis to be of minor environmental consequence and unlikely. The medium term sustainable yields calculated for production bores SPB01-SPBO07 total 1.35L/s⁴³; the total operational water requirements are estimated to be 2.1L/s⁴⁴. While the Ground Water Assessment⁴⁵ estimates short term sustainable yield at 42.5ML/a, the medium to long term yields are estimated at 12ML/a - 26ML/a. This is less than the total operational water requirement estimate of 35ML/a⁴⁶. Given the inconsistency between the scope of the Draft EIS (a 6 year DSO operation), and the scope of the actual project envisaged (a significantly larger and longer term project the operational details of which are not included in the EIS), water supply resources need to be assessed in relation to medium to long term, rather than short term sustainable yields.

³⁸ Appendix F1, ‘Water Management Plan’ p. 19

³⁹ Appendix F1, ‘Water Management Plan’ p. 18

⁴⁰ Appendix F2, ‘Ground Water Assessment’ p. 11

⁴¹ Appendix F1, ‘Water Management Plan’ p. 22

⁴² Appendix F1, ‘Water Management Plan’ Section 2.2 ‘Water Management Infrastructure and Operation’

⁴³ Appendix F1, ‘Water Management Plan’ p. 12

⁴⁴ Appendix F1, ‘Water Management Plan’ p. 18

⁴⁵ Appendix F2, ‘Ground Water Assessment’ p. 8

⁴⁶ Appendix F1, ‘Water Management Plan’ p. 18

The estimated water requirement exceeds sustainable yields of known water resources, and the proposal to mitigation risk of depletion by in-pit capture and storage is undemonstrated. Therefore, it is unreasonable to describe the likelihood of over exploitation as unlikely. Recoveries of groundwater levels are said to be slow, constraining long term sustainable yields⁴⁷, and so the claim that depletion creates only minor and temporary environmental impact⁴⁸ needs further justification or reconsideration. Analysis of risks associated with groundwater depletion yields higher risk scores than those provided and the Risk Analysis should be amended in the Supplement EIS to reflect this.

The Groundwater Assessment⁴⁹ recommends modelling and setting operational parameters, contingency measures in case of depletion, and setting requirements for closure. The EIS⁵⁰ and associated Water Management Plan⁵¹ state that "...*Sherwin will ascertain / set operational controls for ground water exploitation (i.e. sustainable safe yield, allowable drawdown and distance to zero drawdown)*". Approval of the proposed operations should be provisional upon the identification of water resources that are equivalent to the Project's determined requirements, the setting of operational controls for ground water exploitation, and a contingency plan for response to resource depletion. This information should be described in an amended Water Management Plan and presented for public comment.

Management

The Water Management Plan⁵² states that the mine is exempt from requirements to apply for licences or permits to drill bores or to extract water. The Water Management Plan is therefore a key instrument to manage ground water exploitation, and yet it fails to provide necessary information on several aspects of the proposed water management plan (described above).

RECOMMENDATIONS

- Any approval of the proposal should be provisional upon the proponent defining water supply sufficient for the Project's determined requirements.
- Approval of the proposed operations should be contingent on the proponent setting operational controls for ground water exploitation, and defining a contingency plan for response to resource depletion. This information should be described in a completed Water Management Plan and presented for public comment.
- The Water Management Plan⁵³ should provide a rationale of the water demand estimates.
- The water demand estimates should include an allocation for the rehabilitation phase or justification of why an allocation is not required.

⁴⁷ Appendix F2, 'Ground Water Assessment' p. 7

⁴⁸ Appendix F1, 'Water Management Plan' p. 29

⁴⁹ Appendix F2, 'Ground Water Assessment' p. 7

⁵⁰ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 3 'Risk Assessment' p. 27

⁵¹ Appendix F1, 'Water Management Plan' p. 29

⁵² Appendix F1, 'Water Management Plan' Section 1.2 'Groundwater' p. 10

⁵³ Appendix F1, 'Water Management Plan' Section 2.2 'Water Management Infrastructure and Operation .

- Supplementary information should demonstrate the viability of the proposed in-pit sumps to effectively mitigate demand on groundwater resources, and include:
 - discussion of implications of capturing and storing water on the structural and geochemical stability of pit walls, backfill walls and in-pit waste piles;
 - detailed description of the rock type of the proposed sumps, whether and what type of lining is required to limit permeability; and
 - specific advice on risks including slumping, contamination, impacts on groundwater, and impacts on operations.
- The supplement should stipulate whether the in-pit sumps are intended to remain in perpetuity post mine closure or to be rehabilitated.
- If a proportion of the total water requirement will be met from water stored in-pit sumps, a rationalised estimate or calculated quantity should be provided and reflected in the commitments.
- The surface water monitoring sites proposed in the plan⁵⁴ should include this site or one in an equivalent downstream location to G9035112.
- The NLC suggests that a system of constant sampling is a more thorough approach to surface water monitoring. Continuous sampling allows for automatic alerts if trigger values are exceeded.
- Supplementary information should include a map of proposed monitoring bores in relation to the mining infrastructure and area. Commitments should reflect such details provided in the plan

4. **ACCEPTANCE OF RESIDUAL RISKS**⁵⁵

The NT EPA provided the proponent guidelines for the preparation of the EIS⁵⁶ which state:

[The EIS will] explicitly identify those members of the community expected to accept residual risks and their consequences, providing a better understanding of equity issues.

The proponents have not provided explicit identification of who is required to carry residual risks. Of the three nearby communities listed in the EIS, two (including the most populous) are indigenous communities, and both are entirely reliant on the Roper Highway for road access. Indigenous people are likely to be most affected by the mine, and perhaps likely to carry most of the residual risks and their consequences.

The stated intent of this requirement is to provide insight into equity issues, so it is reasonable to expect the proponent to include qualitative analysis of the potential implications for the regional Indigenous population in the context of equitable distribution of the costs of benefits of the proposal.

⁵⁴ Appendix F1, 'Water Management Plan' p. 35

⁵⁵ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 3 'Risk Assessment'

⁵⁶ Guidelines for the preparation of an EIS Sherwin Creek and Hodgson Downs Iron Ore Project (2013) p.11

RECOMMENDATIONS

- The proponent should meet the requirements of the Guidelines by explicitly stipulating those members of the community expected to accept (each) residual risk and its consequence.
- This discussion should include qualitative analysis of the potential implications for the regional Indigenous population in the context of equitable distribution of the costs of benefits of the proposal.

5. **CUMULATIVE IMPACTS**⁵⁷

The discussion of cumulative impacts presented in the EIS is inadequate; it is lacking detail and the relevant section in the Risks Assessment⁵⁸ is not consistent with the risk analysis presented in the rest of the EIS. The EIS proposes no measures to mitigate cumulative risks, and does not rank or score these risks.

Cumulative impacts are of concern particularly because the proposal only describes the first part of a larger project envisioned by Sherwin and, should this larger project proceed, there are likely to be significant changes to the local landscape, and broader ramifications for the region (for example demand on water resources and infrastructure networks). Further to this, three new mines in the Roper River catchment over recent years and substantial interest from the oil and gas industry suggest there is a risk of cumulative environmental impacts as a result of these projects in a relatively undeveloped region.

The Ground Water Assessment⁵⁹ calculates known resource medium to long term sustainable yields at between 12ML/a and 26ML/a; these are in excess of the required 50ML/a estimated requirement for Sherwin's proposed DSO operations⁶⁰. Assuming the proposed future BSO operations will be more water intensive (as the ore requires more intensive refinement), cover larger areas (reflective of the known BSO resource), and represent operations over a significantly longer time period, it is clear that there will be significant cumulative impacts on ground water resources from the larger Sherwin proposal alone.

RECOMMENDATIONS

- In Supplementary information the proponent should analyse cumulative risks, and present discussion in a format consistent with the rest of the EIS.
- Discussion of cumulative impacts should include information on key issues, including demand on water resources and infrastructure, regional amenity, socio economic impacts, and quantity and quality of habitat for biodiversity.

⁵⁷ Sherwin Creek Iron Ore Project Draft EIS (2013), Section 3.9.1 'Cumulative Impacts'

⁵⁸ Sherwin Creek Iron Ore Project Draft EIS (2013), Section 3.9.1 'Cumulative Impacts' p.83

⁵⁹ Appendix F2, 'Ground Water Assessment' p. 8

⁶⁰ Appendix F1, 'Water Management Plan' p. 28

- The supplement should stipulate what level of environmental assessment (EIS or other), if any, will be required before Sherwin's expansion of the operation from DSO from deposit C to BSO from other deposits.

6. COMMITMENTS⁶¹

The relevance of the Commitments table is not explained. We have assumed the table provided is intended to provide a comprehensive summary of the commitments made by the proponent in the EIS, to improve cross-referencing and readability of the document.

The Commitments table is incomplete. This submission has highlighted several commitments described in the body and appendices of the EIS that have not been included in the Commitments table. Inclusion of some commitments in this submission is not intended to inform completion of the table; we have not provided a comprehensive list of those missing. Completion of the Commitments table would enhance readability, enable improved stakeholder engagement, and facilitate efficiency in tracking of the performance of the proponent in relation to the commitments they have made throughout the EIS process.

Sections including commitments not referenced in Appendix C include Appendix K1 (the Provisional Social Impact Management Plan), K2 (The Social and Economic Impact Assessment), and K3 (The Stakeholder Consultation Report). Commitments relating to Indigenous employment⁶² are not reflected in the Commitments table. Additionally, Chapter 2 of the EIS⁶³ states that PAF material will only be disturbed in years 4-6 of the Project, and that further "site-specific characterisation, demarcation, prevention and remediation" will be undertaken in year 3. It is further stated in the EIS⁶⁴ "Where PAF materials are encountered during mining will be segregated and managed to prevent interaction with [water] particularly rainfall". These important Acid Mine Drainage (AMD) risk mitigation measures should also be included in the Commitments table.

Generally, there are inadequate commitments to ongoing liaison with regional stakeholders. Reporting to relevant regulatory agencies is often required under legislation; the proponent should include additional commitments to discretionary reporting on key issues of relevance to regional interests (examples may include environmental and health and safety incidents, weed and pest invasion, transport, infrastructure, and water resources).

The commitments on rehabilitation and waste management in the table are not comprehensive. These commitments should be detailed, quantifiable, and include specifications on when actions will occur.

RECOMMENDATIONS

- A Supplement should explain the purpose of the Commitments table and describe its intended use.

⁶¹ Appendix C 'Commitments'

⁶² Executive Summary p.8; Sherwin Creek Iron Ore Project Draft EIS (2013) Chapter 1 'Introduction' p. 8 and Chapter 3 'Risk Analysis' p.43

⁶³ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 2 'Project Description' p.2-12

⁶⁴ Sherwin Creek Iron Ore Project Draft EIS (2013), Appendix G 'Assessment of potential for Acid Mine Drainage (AMD)' p.48 of 53.

- A Supplement should include a complete table which incorporates all the commitments made by the proponents in the EIS.
- The proponent should include additional commitments to discretionary reporting to regional stakeholders on key issues.
- The commitments on rehabilitation and waste management should be detailed, quantifiable, and include specifications on when actions will occur.

7. PEST & WEED MANAGEMENT PLAN⁶⁵

Weed wash down facilities are included in the Pest and Weed Management Plan⁶⁶ and are key component of effective weed management. Weed wash down facilities (including their basic design and locations) should be included in Sherwin's commitments, along with stipulation of which vehicles are required to be washed down and when (ideally all vehicles, on entry to and exit from the site).

The Pest and Weed Management Plan and the Commitments table should include a commitment from the proponent to directly inform neighbouring land managers if new pest or weed species are identified on site, within a specified and reasonable period of time.

RECOMENDATIONS

- Weed wash down facilities (including their basic design and locations) should be included in the commitments table, along with stipulation of when vehicles are required to be washed down.
- The proponent should commit to directly informing neighbouring land managers if new pest or weed species are identified on site, within a specified and reasonable period of time.
- The Pest and Weed management plan should stipulate whether the same management regime applies during mine closure and rehabilitation.

8. REHABILITATION AND MINE CLOSURE PLAN⁶⁷

Rehabilitation Objectives⁶⁸

In a disturbed environment one of the major environmental impact mitigation issues is to control invasive weeds. The explicit controlling of weeds during closure and rehabilitation is not adequately discussed in the EIS.

The NLC regularly conducts consultations with traditional Aboriginal owners in regards to the proposed mine and rehabilitation and closure. Generally, traditional Aboriginal owners request that the final landform surface be easily traversed by foot and not be predominantly

⁶⁵ Appendix I 'Pest and Weed Management Plan'

⁶⁶ Appendix I 'Pest and Weed Management Plan' p.11

⁶⁷ Appendix I 'Rehabilitation and Closure Plan'

⁶⁸ Appendix I 'Rehabilitation and Closure Plan' Section 2.2

made up of large angular rock. The above will ensure that traditional Aboriginal owners can continue their hunting, gathering and other cultural pursuits post rehabilitation. Traditional Aboriginal owners may request some roads and tracks to remain in place, this will be determined at future consultations. The NLC welcomes the commitment by the proponent to consult with and engage local Aboriginal personnel to conduct rehabilitation works such as seed harvesting and re-vegetation⁶⁹.

Rehabilitation Zones – Sub Grade Ore Stockpile⁷⁰

The NLC has some concerns upon how successful rehabilitation will be upon subgrade stockpiles and request further information upon how this will occur. Will these stock piles be covered with waste rock or topsoil? What is the risk of metals leeching out from the subgrade ore stockpile? What is the risk of Acid Mine Drainage AMD) being generated from the stockpile?

The Project Overview states⁷¹;

Subgrade Ore Stockpile – will be battered off to a stable landform at 20° and deep ripped on contour to minimise erosion of the waste dump face and will be vegetated.

The Rehabilitation and Closure Plan⁷² broadly discusses the need for on-site research. NLC would like to see a subgrade ore stockpile revegetation trial plot with a 20° slope constructed on site within 2 years of operation. The results of the trial will inform how appropriate the proposed rehabilitation method is and whether there is a need to make design changes.

RECOMMENDATIONS

- A supplement should provide information on; i) whether subgrade stock piles will be covered with waste rock or topsoil, ii) any risk of metals leeching out from the subgrade ore stockpile, and iii) any risk of Acid Mine Drainage AMD) being generated from subgrade ore stockpiles.
- A subgrade ore stockpile revegetation trial plot with a 20° slope should be constructed on site within 2 years of operation. The results of the trial should inform how appropriate the proposed rehabilitation method is and whether there is a need to make design changes.

9. AIR EMISSIONS⁷³ and DUST REPORT⁷⁴

There are multiple grammatical errors in Appendix M which at times render it difficult to interpret.

⁶⁹ Executive Summary, p.6

⁷⁰ Appendix I 'Rehabilitation and Closure Plan' Section 2.2.3

⁷¹ Appendix I 'Rehabilitation and Closure Plan' Section 1.1

⁷² Appendix I 'Rehabilitation and Closure Plan' Section 3.10.1 'Research, investigation and trials'

⁷³ Sherwin Creek Iron Ore Project Draft EIS (2013) Section 3.2.4 'Air emissions'

⁷⁴ Appendix M 'Dust Report'.

The Risk Assessment identifies dust as a potential atmospheric contaminant which presents risk to human health⁷⁵. The EIS claims to have collected baseline data on atmospheric dust, presented this in Appendix M⁷⁶.

The monitoring conducted cannot correctly be described as “baseline” because it was collected after the initiation of bulk sampling operations, and in the sampling period there occurred “...approximately 8-15 truck movements for bulk sampling”.⁷⁷ Presumably roads have been constructed to enable truck movement and some form of excavation of a bulk sample has been undertaken, both of which have the potential to affect atmospheric dust concentrations. In tropical environments dust levels vary greatly between seasons, and rainfall varies from year to year; the Dust Report collected data in one sampling period (one month) and so the data provided is not particularly useful in analysis of change or cumulative impacts.

Analysis of ambient dust should include proper consideration and discussion of the conditions in which data collection occurred. The implications for interpretation of such data should be detailed, and if necessary alternative reference sites can be monitored. If possible, reasonable estimates of pre-mining dust levels should be included in supplementary information.

There is no information in the EIS or in Appendix M by which the reader may assess how the data collected in the monitoring exercise compares with acceptable levels or qualities of ambient dust for human safety. The Risk Assessment⁷⁸ identifies respirable crystalline silica as the key risk to human health presenting high inherent risk unless properly mitigated. The Dust Report does not explain how, or if, respirable crystalline silica is monitored. The Dust Report⁷⁹ sites monitoring according to a different Australian Standard (AS/NZ 3580.10.1:2003) then that suggested in the Risk Assessment⁸⁰ (AS2985-2004), so it is unclear how the Dust Report is of any relevance to the risk, or the proposed mitigation measures.

The Dust Report recommends “...keeping stockpiles low so wind is less likely to spread dust”⁸¹, but fails to explain how low. A supplementary report should clarify what slope and height is ideal to minimise dust in the local conditions and how these parameters are considered in the proposal.

The supplement should provide consideration of the alternative of sealing haul roads rather than watering them for dust suppression, with reference to costs and benefits on multiple counts, including:

- Limited water resources (dust suppression constitutes near 1/2 of the demand estimate provided (17 of 35 ML/a⁸²).

⁷⁵ Sherwin Creek Iron Ore Project Draft EIS (2013) Chapter 3 ‘Risk Assessment’ pp. 6,7

⁷⁶ Sherwin Creek Iron Ore Project Draft EIS (2013) Chapter 3 ‘Risk Assessment’ p.6

⁷⁷ Appendix M ‘Dust Report’ p.3

⁷⁸ Sherwin Creek Iron Ore Project Draft EIS (2013) Chapter 3 ‘Risk Assessment’ p.7

⁷⁹ Appendix M ‘Dust Report’ p.3

⁸⁰ Sherwin Creek Iron Ore Project Draft EIS (2013) Chapter 3 ‘Risk Assessment’ p.16

⁸¹ Appendix M ‘Dust Report’ p.4

⁸² Appendix F1, ‘Water Management Plan’ p.18

- The proposed use of public roads reduces the haul roads to relatively short distances.
- The haul roads pass close to staff accommodation areas and worker exposure to dust has been identified as a key risk to human health and safety.

RECOMMENDATIONS

- The proponent should provide a schedule outlining when dust suppression watering will occur and map the locations of these areas according to the schedule.
- The supplement should provide consideration of the alternative costs and benefits of sealing haul roads.
- If possible reasonable estimates of pre-mining dust levels should be included in supplementary information.
- A supplementary report should provide comparative analysis of ambient dust and human safety standards.
- Approval should be provisional upon the establishment of a dust monitoring program..
- A supplementary report should clarify based on scientific research what slope and height is ideal to minimise dust in the local conditions and should include a discussion of how these findings are considered in the final proposal.

10. SOCIAL AND ECONOMIC IMPACTS, STAKEHOLDER CONSULTATION AND CULTURAL HERITAGE⁸³ (Appendix K1, K2, K3 and O2)

Sections 3.6 and 3.7⁸⁴ of the EIS address sections 4.6 and 4.7⁸⁵ of the guidelines set down for the proponent by the NT EPA on the risks of the mine to historical cultural heritage and the socio-economic risks of the mine. There are no commitments outlined in Appendix C that pertain to anything in this section outside of following recommendations outlined in Appendix O1 (the Archaeological report).

No commitments have been listed in Appendix C by the proponent in reference to recommendations made in the appendices concerning the Provisional Social Impact Management Plan (K1) Economic & Social Impact Assessment (K2) Stakeholder Consultation Report (K3) and the Provisional Cultural Heritage management plan (O2).

Appendices K1 and O2 are listed as provisional plans yet the form that the provisions they are under is not qualified and neither is the length that the provisional plans will be in place under this plan. The EIS should be a standalone document, however the level of information provided in the EIS is inadequate for this purpose.

⁸³ Appendix K1 'Provisional Social Impact Management Plan', K2 'Economic and Social Impact Assessment', and K3 'Stakeholder Consultation Report'.

⁸⁴ Sherwin Creek Iron Ore Project Draft EIS (2013) pp. 46-73

⁸⁵ Guidelines for the preparation of an EIS Sherwin Creek & Hodgson Downs Iron Ore Project (2013) pp.18-19

There is no commitment made in appendix C to ongoing consultations with the stakeholders identified in appendix K3.

RECOMMENDATIONS

- That the proponent commit to the recommendations in the relevant sections of the EIS for the social and economic impacts, cultural management and stakeholder engagement of the mine over the entire operation period.
- That the proponent finalise management plans that will exist over the length of its operation that will handle challenges identified as well as any that were unforeseen.

11. ENVIRONMENTAL OFFSETS⁸⁶

Under chapter 4 of the EIS the Proponent has failed to demonstrate how it will develop and implement a compliant environmental offsets program at the Sherwin Creek Iron Ore Project. No specific direct environmental offsets opportunities have been identified in the EIS and the general ideas that have been presented about the offsets program are not accompanied by implementation plans, timeframes or other supporting documentation. There is instead only a general commitment given to engage with key stakeholders to develop programs and determine appropriate timeframes. There is insufficient detail provided in this EIS to allow the reader to properly understand and assess the relevance and/or effectiveness of any particular offset proposal or associated activity as described. Any offsets program that is developed once the EIS process is completed will lack transparency, with no opportunity for public review or comment.

The information about environmental offsets presented under Chapter 4 of the EIS does not address the relevant criteria as per the guidance notes in the EPA Guidelines⁸⁷. Specifically the Proponent did not identify any potential residual significant environmental impacts resulting from this Project, and has not provided any information as to whether any identified environmental impacts that could not be avoided could be considered as 'significant' under the Environment Protection Biodiversity Conservation Act 1999 (EPBC Act). Additionally the proposed offsets program does not comply with the Australian Government's Environmental Offsets Policy⁸⁸ requirement that residual significant environmental impacts be offset, with a focus on direct offsets.

There is no evidence in the EIS of any attempt to identify or quantify the Project's potential environmental impacts and offsets. The proposed offsets provided under chapter 4.3 of the EIS, 'Proposed Offset Options' being considered by The Proponent do not include any direct offsets but instead include a number of non-specific commitments under the categories of:

- Workforce Development;

⁸⁶ Sherwin Creek Iron Ore Project Draft EIS (2013), Chapter 4 'Environmental Offsets'

⁸⁷ EPA Guidelines for the preparation of an Environmental Impact Statement – Sherwin Creek and Hodgson Downs Iron Ore Project, June 2013, Chapter 6.1 'NT Policy and Guidance Notes – Environmental offsets', p.24.

⁸⁸ The Australian Federal Government Environmental Offsets Policy, October 2012, available at: <http://www.environment.gov.au/epbc/publications/environmental-offsets-policy.html>

- Business Development; and
- Community Investment.

In the EIS, the Proponent states that:

Sherwin has undertaken a comprehensive stakeholder consultation process as part of the environmental impact assessment process for the Sherwin Creek Iron Ore Project. This Initial consultation has resulted in the proposed Socio Cultural Offsets with Traditional Aboriginal owners⁸⁹.

However there is no documentation in the EIS about the mentioned consultations and only a very brief description is given regarding the proposed socio-cultural offsets. The level of detail about the proposed environmental offsets program provided under Chapter 4 of the EIS is insufficient and surprising given the Proponent's assertion that a comprehensive stakeholder consultation process has been undertaken in order to develop these offsets⁹⁰. Furthermore under section 4.4 of the EIS it is stated that the Proponent, in consultation with the Northern Territory Government, will develop an offset proposal that "Delivers [sic] lasting environmental, economic and social benefits"⁹¹, despite the fact that none of the proposed offsets programs have identified any direct environmental benefits.

This EIS fails to demonstrate how the Proponent will implement, monitor and review an environmental offsets program that is relevant and has been properly considered and includes quantifiable impacts and outcomes and should include of such programs. The Proponent have failed to identify a single quantifiable outcomes for any of its proposed offset categories included in this EIS and they have not committed to any specific pathways or timeframes for implementation and no performance criteria, against which the effectiveness of the offsets programs can be monitored and reviewed, has been included in the EIS..

RECOMMENDATIONS

The NLC recommends that the Proponent make amendments to Chapter 4 of the EIS in consideration of the following comments:

- Identify, describe and quantify (where possible) all known environmental impacts of the proposed Project that cannot be avoided, reduced or mitigated at reasonable costs, and state whether these impacts could be considered as significant under the EPBC Act.;
- Identify and describe all direct environmental offset activities, including quantifiable goals, outcomes, implementation plans, performance targets, program monitoring schedules and review timeframes/processes;
- Identify all known risks of failure of management actions and the potential environmental impacts and residual risks that such failures may incur;

⁸⁹ EIS, Chapter 4.2.1 'Public Consultation with relevant stakeholders', p.4-1

⁹⁰ See previous footnote that refers to a quote from the Draft EIS regarding 'stakeholder engagement'.

⁹¹ EIS, Chapter 4.4 'Implementation Process', p.4-3

- Supply additional and quantifiable information about activities proposed under the socio-cultural offsets program;
- Present and commit to a consultation framework and timeframe towards continued offsets program development and implementation with traditional Aboriginal owners;
- All commitments associated with environmental offsets should be incorporated into the table of Commitments under Appendix C of the EIS.

12. ASSESSMENT OF POTENTIAL FOR ACID MINE DRAINAGE (AMD)⁹²

The Proponent has undertaken steps to identify where sulphide bearing materials may be present within the Mining Lease (ML), with an appropriate focus on the proposed pit locations. It is prudent that the Proponent undertake the planned ABA testing of the areas to be directly impacted by the proposed pit and mining infrastructure development. If any additional areas are identified where Potentially Acid Forming (PAF) materials are found to be present in the ML, the Proponent should commit to developing a plan to manage all PAF materials appropriately so as to protect local aquifers and surface water catchments and to communicate any proposed amendments to the PAF materials management plan to key stakeholders, including the traditional Aboriginal owners.

The proposal to utilise locally available Non-Acid Forming (NAF) materials for the purpose of capping and isolating any areas where PAF materials have been identified within the pit has not been sufficiently tested or proven to be considered final. No supporting documentation regarding the physical characteristics of the in situ NAF materials (i.e. permeability, grain size, etc.), or evidence demonstrating the suitability of this material for proposed capping and isolating application in order to mitigate potential AMD, has been provided in the EIS.

In the absence of any evidence supporting the suitability of the Proponent's proposed AMD mitigation strategy, and considering the EPA's requirement for the EIS to "describe any feasible alternatives to carrying out the proposed activity ... to make clear the reasons for preferring certain options and rejecting others"⁹³, it is recommended that alternative industry standard AMD management options should be investigated and properly described in the Supplement EIS. Further testwork, an analysis of the various AMD mitigation options and disclosure of the costs associated with each scenario, will better assist the Proponent and the general public to properly understand the associated risks, and will assist the Proponent and the EPA to determine the most appropriate AMD mitigation tool for this Project.

The EPA Guidelines for the preparation of an EIS for this Project state that "The EIS should be a stand-alone document ... The EIS should enable interested stakeholders and the NT EPA to understand the environmental consequences of the proposed development"⁹⁴. Due to poor descriptions of the proposed AMD mitigation activities, a lack of supporting documentation

⁹² Sherwin Creek Iron Ore Project Draft EIS (2013), Appendix G 'Assessment of Potential for Acid Mine Drainage'

⁹³ EPA Guidelines for the preparation of an Environmental Impact Statement – Sherwin Creek and Hodgson Downs Iron Ore Project, June 2013, Chapter 2 'General Advice on EIS' p.3.

⁹⁴ EPA Guidelines for the preparation of an Environmental Impact Statement – Sherwin Creek and Hodgson Downs Iron Ore Project, June 2013, Chapter 3.3 'Alternatives' p.10.

and because of its failure to properly describe any of the contingent AMD mitigation options, the EIS in its current form fails in its goal of assisting the public to assess the risks of any AMD mitigation options that may be suitable for this Project and it fails to inform the reader why the preferred AMD mitigation option has been selected and other options rejected.

RECOMMENDATIONS

- In the Supplement EIS, the NLC recommends that the Proponent commit to undertaking testwork looking at the suitability of various AMD mitigation methods in order to determine the preferred and most suitable method for application at this project;
- several PAF management scenarios should be identified and described in sufficient detail in the Supplementary EIS to enable reader to understand the rationale for selecting the preferred AMD mitigation strategy; and
- all commitments made under Appendix D of the EIS should be incorporated into the table under Appendix C of the Supplement EIS, including the commitment to undertake further testwork to identify where PAF materials may be present within the mining area.
- In the Supplement EIS, the Proponent should be required to demonstrate the suitability of any material proposed to be utilised for the purpose of capping and isolating the PAF materials located within the pit by presenting a comparative feasibility assessment of a number material options. In addition to the proposed NAF materials, other materials to be included in this assessment could include locally available clays and any synthetic materials as proven to be successful for such applications.

13. ENVIRONMENTAL MANAGEMENT PLAN⁹⁵

The Sherwin Creek Iron Ore Project Environmental Management Plan (EMP) that was submitted by the Proponent as an appendix to the EIS provides insufficient detail and scope as appropriate for a project of this scale. Descriptions of the proposed mining activities and environmental management actions provided in this section of the EIS are too general in nature, alternative management plans are not adequately explored and the rationale for choosing a particular management action is generally absent throughout this section of the EIS. The EMP as presented in this EIS appears incomplete with some aspects of it still in development and yet to be adequately defined. In its current form, without significant improvements, the reader cannot properly assess the effectiveness of the EMP component of the EIS and it does not function as a stand-alone document.

Construction and operation activities and Timing and scheduling

The description of proposed construction and operation activities and development schedule provided here is very basic and does not provide sufficient detail for the reader to adequately assess the potential environmental impacts of the proposed activities. Given the lack of information provided here to describe the proposed mining and mine waste management plan

⁹⁵ Sherwin Creek Iron Ore Project Draft EIS (2013), Appendix D 'Environmental Management Plan'

and schedule, additional information that could improve this section include a pit development schedule, including mining sequences based on the pit optimisation block model that clearly show which areas of the proposed pits will be mined and when, rather than just a map showing the final pit area and proposed mining start and finish date as per the current EIS.

Additionally in order to demonstrate the feasibility of the proposed mine waste management plan further information regarding the development, scheduling and sequencing of mine waste management should also be included in this section of the EIS. Such information should as a minimum include details about the scheduling of the waste management activities, the amount (tonnage) of mine waste to be stored out-of-pit, and information about the location and size of the land required to be utilised for this activity. It should also be clearly stated whether or not the out-of-pit waste dump that will be built during initial pit development will eventually be incorporated into the in-pit waste dump or not, and if so a timeframe is required showing when this is proposed to occur. Ideally the out-of-pit waste dump should be a temporary management action and it should be located close to the pit so that it can eventually be incorporated into the in-pit waste dump.

Environmental management structure and responsibility

The Proponent's proposed Environmental Management Structure (EMS) and related management roles and responsibilities are deficient in several key areas including:

- Inadequate and incomplete definition of Environmental management roles and responsibilities for critical personnel; and
- No defined communication/management pathway for Environmental reporting between the Mine Site (Project Manager) and Sherwin Executive Management (Executive Director).

The EMS proposed in the EIS places the following three positions, Technical Director, Metallurgical Director and Financial Director, highly in the chain of command and has them positioned to intercept all management actions and communications between the Executive Director and the Project Manager at the mine site. Unfortunately no information is provided in the EIS about the individual responsibilities for any of the three mentioned Directors and therefore no indication is given as to which, if any, of these Directors will be included in the environmental management structure for this Project.

The EMS proposed in the EIS creates uncertainty about how Environmental aspects of the Project will be managed by the Company and in part due to this uncertainty it is not demonstrated in the EIS how critical feedback about environmental performance at the mine site will inform environmental policy discussion and direction when undertaken by the Sherwin Executive branch.

Reporting

The Proponent's proposed EIS relevant reporting methods and mechanism fail to demonstrate any commitment to engage with and inform key stakeholders regarding the environmental performance of the Sherwin Creek Iron Ore Project. Of key concern is the lack of any commitment in this EIS to notify key stakeholders, including traditional Aboriginal owners

and local communities, as soon as practicable with regards to environmental incidents and EMP non-conformance events, the Mine Management Plan (MMP) is not an appropriate default reporting mechanism for EMP non-conformances. Additionally the NLC notes that in the EIS NLC have not committed to provide key stakeholders with copies of their annual environmental reports.

Environmental Management Plans

There is insufficient documentation in the EIS to demonstrate that an ISO 14001:04⁹⁶ compliant environmental management system will be in place for the proposed Project. The environmental management system proposed in the EIS is ad-hoc and fails to properly explain the rationale for selecting particular management actions over alternative options. The information provided throughout this section of the EIS lacks critical information such as the scheduling of monitoring events, the setting of review dates, assigning personal responsibility and critically it often lacks contingencies that demonstrate a commitment to continual improvement.

Often the stated contingency for EMP non-compliance is only a commitment to investigate why compliance is not being achieved rather than an ISO 14001:04 compliant commitment to investigate, review and implement recommended improvements. For example for the following environmental target listed in the EMP section of the EIS ‘No increase in weed density or the number of weed species within the mining lease’⁹⁷, an important environmental aspect of the Project with significant potential for negative impacts, in the case of non-conformance the stated contingency is to “Investigate why compliance is not being achieved”, this below-standard format is repeated elsewhere throughout the EMP section of the EIS.

Many of the EMP relevant activities listed in the table under section 3.2 of Appendix D of the EIS are not properly described or otherwise lacking in critical information, for example in several instances it is written under the ‘Monitoring Column’ of the EMP table that ‘regular monitoring activities will be conducted’. The Proponent should commit to specific monitoring regimes as the current drafting of the EIS document does not allow the reader to properly assess the adequacy of the proposed environmental monitoring program.

Monitor and Review

The identified environmental monitoring tools⁹⁸ for this project should be properly described, not listed as dot point as per the current EIS, and these descriptions should include:

- Purpose of the monitoring tool;
- Association of the monitoring tool to specific environmental aspects and related environmental outcomes (targets) of the Project;
- Activities undertaken in order to implement/utilise the monitoring tool;

⁹⁶ 14001:04, International Standards Organisation (ISO), Environmental Management Systems – Requirements with Guidance for Use.

⁹⁷ EIS, Appendix D, Chapter 3.2 ‘Environmental Management Plans’, p.25, bottom row on page.

⁹⁸ EIS, Appendix D, Chapter 4.1 ‘Monitoring and measurement, p.52 monitoring tools are listed at dot points.

- Identify personnel to conduct monitoring activity; and
- Scheduling of monitoring activities and review actions.

The EIS identifies number of processes to evaluate compliance with the Project's Environmental Management System, however these evaluation processes are listed as dot points only⁹⁹, unfortunately there are no descriptions of any compliance evaluation activities and also there is no schedule of any such activities in the EIS.

The Proponent claims in the EIS that 'Sherwin measures a number of parameters against KPIs to enable it to monitor'¹⁰⁰ environmental performance at the project however there is no reference to, or description of, these parameters or KPIs in the EIS to support this statement.

Internal Audits

The Proponent states that 'formal [EMS] audit programs have been established'¹⁰¹ however no further information has been provided in the EIS about these how these audit programs will be conducted, monitored or reviewed. If the audit programs have already been established it is reasonable to expect that some information be provided about these programs in the EIS.

RECOMMENDATIONS

- The Supplement EIS should include additional information about the mine waste management plan. Such information should describe the activities involved and include the scheduling and sequencing of mine waste actions and related land-use requirements;
- The out-of-pit waste dump proposed to be built during initial pit development should eventually be incorporated into the in-pit waste dump. The Supplement EIS should describe how this will work will be conducted and it should also include the schedule of stated works;
- In the Supplement EIS, the Proponent should provide additional information about what activities will be conducted under the mentioned environmental management compliance evaluation processes.¹⁰² The Proponent should also commitment to specific timeframes for undertaking the related compliance evaluation activities;
- In the case of non-conformance with the EMP¹⁰³ the Proponent should replace general statements such as 'investigate why compliance is not being achieved' with commitments to a continual improvement process and a proper description of all activities involved;

⁹⁹ EIS, Appendix D, Chapter 4.2 'Evaluation of compliance', p.52.

¹⁰⁰ EIS, Appendix D, Chapter 4.2 'Evaluation of compliance', p.53 – first paragraph.

¹⁰¹ EIS, Appendix D, Chapter 4.6 'Internal audits', p.54.

¹⁰² EIS, Appendix D, Chapter 4.2 'Evaluation of compliance', p.52 – evaluation of compliance processes listed as dot points only – no descriptions provided or review timeframes identified.

¹⁰³ EIS, Appendix D, Chapter 3.2 'Environmental Management Plans', pp.16-45.

- Of key concern is the lack of any commitment in this EIS to notify key stakeholders, including traditional Aboriginal owners and local communities, as soon as practicable with regards to environmental incidents and EMP non-conformance events;
- Due to confidentiality concerns the MMP is not an appropriate default reporting mechanism for EMP non-conformances. As a minimum the Proponent should commit to providing key stakeholders with copies of their annual environmental reports;
- Specific environmental Key Performance Indicators (KPIs) should be identified under Appendix D, Section 4.2 'Evaluation of compliance' of the Supplement EIS and these KPIs should be linked to specific EMP targets and key environmental aspects of the Project;
- The environmental monitoring tools¹⁰⁴ for this project should be properly described in the Supplement EIS and not listed as dot points as per the current EIS. These descriptions should include:
 - Purpose of the monitoring tool;
 - Association of the monitoring tool to specific environmental aspects and related environmental outcomes (targets) of the Project;
 - Activities undertaken in order to implement/utilise the monitoring tool;
 - Identify personnel to conduct monitoring activity; and
 - Scheduling of monitoring activities and review actions.
- The EIS would be improved if all activities listed in the EMP table under Appendix D, Section 3.2 'Environmental Management Plans' of the EIS were numbered or otherwise indexed in the Supplement EIS.

¹⁰⁴ EIS, Appendix D, Chapter 4.1 'Monitoring and measurement, p.52 monitoring tools are listed at dot points.

Justine Shailes

From: Roderick Johnson <Roderick.Johnson@nt.gov.au>
Sent: Tuesday, 4 February 2014 11:04 AM
To: Roderick Johnson
Subject: Draft Environmental Impact Statement for comment - Sherwin Iron Pty Ltd - Sherwin Creek Iron Ore Project

From: Valerie Smith
Sent: Tuesday, 21 January 2014 11:15 AM
To: eia NTEPA
Subject: FW: Draft Environmental Impact Statement for comment - Sherwin Iron Pty Ltd - Sherwin Creek Iron Ore Project

The Roper Highway forms part of the Savannah Way tourism drive, which is promoted as a tri-state tourism product – see www.savannahway.com.au. As such, drive market traffic on the Roper Highway will increase over peak tourism period (i.e. the dry season) and travellers may be towing caravans, camper trailers and be unfamiliar with travelling on Territory roads and around road-trains. Road-trains travelling in convoy down the Roper Highway at 80kmph on a 3.8m wide road present a risk to tourist vehicles, and visa versa.

Whether the construction of three overtaking sections along the Roper Highway is sufficient to mitigate this risk, or if it would be preferable to advance upgrading the road to a double lane sealed road, is a question for the Department of Transport.

Valerie Smith
Director Planning and Policy

Tourism NT
Level 1, Development House
76 Esplanade, Darwin NT Australia
T +61 8 8999 3939 M +61 0 401 115 670
valerie.smith@nt.gov.au travelnt.com tourismnt.com



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