



EcOz

Environmental  
Services

# Appendix C



Sherwin Iron (NT) Pty Ltd

Sherwin Creek Iron Ore Project

Supplementary Environmental Impact Statement



2014



# Document Control Record

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This table incorporates commitments made by Sherwin Iron through the EIS (Draft EIS) and Supplementary EIS (SEIS) processes; for clarity the latter are **bolded**. The commitments are grouped by EIS component (e.g. water quality) and then impact i.e. a subgrouping within each component). There is only one change to existing commitments between the EIS and the SEIS, that being the advertise time for blasting will be 12 hours (down from 48 hours).

| Component               | Aspect/Impact      | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                 | Section in EIS/SEIS          |
|-------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Human health and safety | Food hygiene       | Food supplied by Sherwin Iron will be transported, stored and prepared in accordance with the NT Food Act and national Food Safety Standards.                                                                                                                                                                                                        | Section 3.2 of the Draft EIS |
| Human health and safety | Biological hazards | Gloves and other protective equipment will be worn by first aid personnel when treating injuries to protect against infectious diseases from bodily fluids.                                                                                                                                                                                          | Section 3.2 of the Draft EIS |
| Human health and safety | Biological hazards | Safe operating procedures will be developed for working on or near the waste water treatment facility, including the use of appropriate PPE and hygiene practices (e.g. thoroughly washing hands during and after working in these areas). Maintenance of this facility will be conducted in accordance to the manufacturer's specifications.        | Section 3.2 of the Draft EIS |
| Human health and safety | Air emissions      | Respirable crystalline silica monitoring will be routinely conducted to ensure exposure is within acceptable limits. Levels of crystalline silica will be measured in accordance with the methodology in the <i>Australian Standard Workplace Atmospheres – Method for Sampling and Gravimetric Determination of Respirable Dust AS2985-2004</i> .   | Section 3.2 of the Draft EIS |
| Human health and safety | Air emissions      | Procedures will be implemented to ensure that employees and contractors do not suffer adverse health effects in the work environment from particulates or gas/vapours, either used or generated by the mining activities. These procedures will include a dust control/monitoring program and use of respiratory protection devices where necessary. | Section 3.2 of the Draft EIS |
| Human health and safety | Air emissions      | Dust from heavy machinery will be controlled by dust suppression measures such as polymer sprays and watering of roads and work areas.                                                                                                                                                                                                               | Section 3.2 of the Draft EIS |
| Human health and safety | Noise              | Noise in the workplace can cause permanent hearing loss. Mining operations will comply with the <i>NOHSC: 1007 National Standard for Occupational Noise</i> .                                                                                                                                                                                        | Section 3.2 of the Draft EIS |
| Human health and safety | Noise              | All equipment (both fixed and mobile) will be maintained in accordance with the <i>AS1269 Occupational Noise Management Series</i> and the <i>Mining Management Act 2001</i> .                                                                                                                                                                       | Section 3.2 of the Draft EIS |
| Human health and safety | Noise              | Hearing protection will also be used when needed.                                                                                                                                                                                                                                                                                                    | Section 3.2 of the Draft EIS |
| Human health            | Hazardous          | All hazardous substances will be managed and stored in accordance with relevant                                                                                                                                                                                                                                                                      | Section 3.2 of the           |

| Component               | Aspect/Impact               | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                             | Section in EIS/SEIS          |
|-------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| and safety              | substances                  | standards: <ul style="list-style-type: none"> <li>• NOHSC: 1015 National Standard for the Storage and Handling of Workplace Dangerous Goods</li> <li>• NOHSC: 1005 National Model Regulation for the Control of Workplace Hazardous Substances</li> <li>• NOHSC: 1008 Approved Criteria for Classifying Hazardous Substances</li> <li>• Australian Standard 1940: 2004 The Storage and Handling of Flammable and Combustible Liquids.</li> </ul> | Draft EIS                    |
| Human health and safety | Hazardous substances        | A register of all approved hazardous substances will be maintained.                                                                                                                                                                                                                                                                                                                                                                              | Section 3.2 of the Draft EIS |
| Human health and safety | Hazardous substances        | Fuels will be stored and handled in accordance with the relevant standards. Diesel is the predominant fuel to be stored on-site and presents a low risk of combustion.                                                                                                                                                                                                                                                                           | Section 3.2 of the Draft EIS |
| Human health and safety | Hazardous substances        | PPE (e.g. gloves, face shields or respiratory-protection devices) and first-aid equipment (e.g. emergency showers and eye-wash stations), will be maintained and available for use                                                                                                                                                                                                                                                               | Section 3.2 of the Draft EIS |
| Human health and safety | Hazardous substances        | Awareness training will be provided to all personnel with regard to the correct handling and storage of hazardous substances and the procedures to follow in the event of a spill.                                                                                                                                                                                                                                                               | Section 3.2 of the Draft EIS |
| Human health and safety | Drinking water supply       | Where water is required for human consumption (drinking or washing) it would receive primary treatment in the form of ultra-violet treatment and reverse osmosis filtration. Raw water will be stored at the camp area in tanks prior to treatment. All potable water will need to be tested against the Australian Drinking Water Guidelines.                                                                                                   | Section 3.2 of the Draft EIS |
| Human health and safety | Pest management and disease | Where possible any constructed earthworks that will collect water (sediment traps, garbage pits) will be designed to be free draining within five days. Where these structures will hold water for more than five days, they will be steep sided, have a sloping base to one end and kept free of vegetation. Natural drainage patterns will be maintained wherever possible.                                                                    | Section 3.2 of the Draft EIS |
| Human health and safety | Pest management and disease | Artificial containers and receptacles will be managed to prevent mosquito breeding. Depending on the container this management might include:                                                                                                                                                                                                                                                                                                    | Section 3.2 of the Draft EIS |

| Component               | Aspect/Impact               | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                          | Section in EIS/SEIS          |
|-------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|                         |                             | <p>Screening of inlets</p> <p>Storage under cover</p> <p>Provided with drainage holes</p> <p>Emptied weekly</p> <p>Treated with appropriate pesticides</p> <p>Removed off site.</p>                                                                                                                                                                                                                                                           |                              |
| Human health and safety | Pest management and disease | Rehabilitation of the site will ensure that the area is contoured to be free draining with no surface depressions collecting pooled water.                                                                                                                                                                                                                                                                                                    | Section 3.2 of the Draft EIS |
| Human health and safety | Pest management and disease | Personnel will wear hats, socks, long-sleeved shirts and long pants while on the mine site. Head nets and gloves, if required, will also be worn. Where possible, personnel will avoid peak biting times, specifically at dusk. Employees, contractors and visitors will be supplied with insect repellent. The workforce will be educated on mosquito and midge health risks and mitigating measures. On-site office areas will be screened. | Section 3.2 of the Draft EIS |
| Human health and safety | Wildlife hazards            | During the staff induction process, mine personnel will be made aware of the potential wildlife hazards and the best methods to avoid negative encounters. Appropriate training for the treatment of snake bite will also be provided to all staff. First-aid facilities will be equipped to respond to incidents of this type and provide appropriate treatment.                                                                             | Section 3.2 of the Draft EIS |
| Human health and safety | Wildlife hazards            | To provide protection against snake and spider bite, PPE such as boots, trousers and long sleeves will be required on the mine site. Gloves will also be provided for use during relevant tasks.                                                                                                                                                                                                                                              | Section 3.2 of the Draft EIS |
| Human health and safety | Waste                       | Clearly labelled bins will be placed in appropriate locations to segregate and collect the waste materials generated on-site. Perishable waste will be removed from the mine site by staff on a daily basis. General and recyclable waste will be transported off-site by a licensed contractor for disposal at a licensed general waste facility.                                                                                            | Section 3.2 of the Draft EIS |
| Human health and safety | Waste                       | Regulated or hazardous wastes will be stored in accordance with relevant Australian Standards. They will be collected from site and disposed of by a licensed waste management firm.                                                                                                                                                                                                                                                          | Section 3.2 of the Draft EIS |

| Component               | Aspect/Impact    | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Section in EIS/SEIS          |
|-------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Human health and safety | Waste            | Clinical waste such as drug and alcohol testing kits will be disposed of in accordance with the <i>Remote Health Atlas</i> (NT Department Health and Families 2006). Clinical waste is also classified as hazardous waste under the <i>Dangerous Goods Act</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Section 3.2 of the Draft EIS |
| Human health and safety | Heat             | All employees and contractors will be required to wear long-sleeve shirts, trousers and hats to help reduce sun exposure. Sunscreen will also be made available to all employees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Section 3.2 of the Draft EIS |
| Human health and safety | Heat             | To mitigate the risk of heat stress, all personnel will be made aware during staff induction training of the signs and symptoms of overexposure to heat and its effects, including dehydration. Drinking water will be readily available to all staff.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Section 3.2 of the Draft EIS |
| Human health and safety | Fire             | Fire safety devices such as emergency exit lighting, smoke detector alarms, fire extinguishers and fire blankets etc. will be installed in all buildings and outdoor areas as is required by the Building Code of Australia and the NT Fire and Emergency regulations 2011.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Section 3.2 of the Draft EIS |
| Human health and safety | Alcohol and drug | Secure alcohol storage area will be constructed into the “wet mess” entertainment area and managed under the direction of the camp manager. A strict Fitness For Work (FFW) policy will be implemented and enforced. Daily alcohol screening and monthly drug screening will be undertaken to ensure compliance with the FFW policy.                                                                                                                                                                                                                                                                                                                                                                                                                                   | Section 3.2 of the Draft EIS |
| Human health and safety | Manual handling  | <p>In order to minimise the health risks training will be provided to all personnel. Advice such as that listed below will be provided:</p> <ul style="list-style-type: none"> <li>• Eliminate or minimise the degree of handling required where ever possible</li> <li>• If working with a bent back: take short breaks to straighten your back and stretch</li> <li>• If lifting repeatedly: take regular breaks, particularly in hot weather when you fatigue faster</li> <li>• If continuously sitting: stand and walk occasionally</li> <li>• If standing for long periods: occasionally sit on a high stool or a sit/stand chair</li> <li>• When you need to position a load in another direction: turn with your whole body. Do not twist your trunk</li> </ul> | Section 3.2 of the Draft EIS |



| Component               | Aspect/Impact      | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                    | Section in EIS/SEIS          |
|-------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|                         |                    | <ul style="list-style-type: none"> <li>• Store loads close to where you need them to save double handling</li> <li>• Return mechanical aids to where they should be stored so others can locate them easily and not take risks lifting heavy equipment unassisted</li> <li>• Alternate heavy jobs with light jobs</li> <li>• Use assistance to move heavy or awkward loads.</li> </ul>                  |                              |
| Human health and safety | Vehicle collisions | All vehicles will be maintained in a roadworthy condition. All mine personnel operating vehicles on-site will be trained and appropriately licensed.                                                                                                                                                                                                                                                    | Section 3.2 of the Draft EIS |
| Human health and safety | Vehicle collisions | Speed limits around the site will be imposed both for safety and to reduce the amount of dust generated.                                                                                                                                                                                                                                                                                                | Section 3.2 of the Draft EIS |
| Human health and safety | Vehicle collisions | Dust control, in the form of polymers and road watering will be implemented to improve driver visibility.                                                                                                                                                                                                                                                                                               | Section 3.2 of the Draft EIS |
| Human health and safety | Vehicle collisions | All mine vehicles will be regularly inspected and fitted with two-way radios.                                                                                                                                                                                                                                                                                                                           | Section 3.2 of the Draft EIS |
| Human health and safety | Vehicle collisions | Pedestrian access will be limited, and all staff and site visitors will be made aware of the dangers of heavy trucks and machinery operating in their surrounding environment. It is important that machinery operators are aware of any situations where there are likely to be persons on the ground in their vicinity.                                                                               | Section 3.2 of the Draft EIS |
| Human health and safety | Vehicle collisions | Risk mitigation measures employed on the Roper Highway will include: <ul style="list-style-type: none"> <li>• Upgrading of identified sections of the highway</li> <li>• Installation of vehicle activated warning signs at the approaches to single-lane bridges</li> <li>• Limiting operations to those periods when there are no restrictions on the use of the highway (~310 days/year).</li> </ul> | Section 3.2 of the Draft EIS |
| Human health and safety | Vehicle collisions | A Fatigue Management Plan will also be developed.                                                                                                                                                                                                                                                                                                                                                       | Section 3.2 of the Draft EIS |
| Human health            | Interaction with   | Implementation of standard work practices will mitigate these risks. To minimise this risk,                                                                                                                                                                                                                                                                                                             | Section 3.2 of the           |



| Component               | Aspect/Impact      | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Section in EIS/SEIS          |
|-------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| and safety              | machinery          | <p>the following strategies will be implemented:</p> <ul style="list-style-type: none"> <li>• High visibility clothing and direct radio contact when working alongside or within range of heavy machinery</li> <li>• Coordination of activities</li> <li>• Fixed plant will have appropriate safety and avoidance structures included in their design and construction, and</li> <li>• Barricades will be erected around temporary or disabled plant or machinery to reduce the risk of interaction between people and machinery.</li> </ul> | Draft EIS                    |
| Human health and safety | Lighting           | <p>To reduce the health and safety risks associated with poor lighting, the following will be installed:</p> <ul style="list-style-type: none"> <li>• Task lighting where required to complete a specific task safely e.g. in offices and in operation areas</li> <li>• Access and stair lighting</li> <li>• Emergency lighting in the Administration Building and selected staff common areas.</li> </ul>                                                                                                                                   | Section 3.2 of the Draft EIS |
| Human health and safety | Lighting           | A minimum interior lighting level of 160 lux for general work areas and 40 lux for walkways and access areas will be installed in accordance with the AS1680 Interior Lighting. Emergency lighting will be installed in accordance with the AS2293 <i>Emergency Escape Lighting and Exit Signs for Buildings</i> .                                                                                                                                                                                                                           | Section 3.2 of the Draft EIS |
| Human health and safety | Lighting           | Orange, red or yellow low pressure sodium vapour lamps will be used for exterior lighting, except where safety considerations require otherwise. Where other coloured lights are used, the light spilt will be restricted with shades (to prevent sky glow) or orientation. Pathway lights will be low to the ground and shaded where possible.                                                                                                                                                                                              | Section 3.2 of the Draft EIS |
| Human health and safety | Electrical energy  | Australian Standards (i.e. AS3000 <i>Electrical Installations</i> and AS3007 <i>Electrical Installations for Surface Mines</i> ) will be adhered to when designing, installing and maintaining electrical systems.                                                                                                                                                                                                                                                                                                                           | Section 3.2 of the Draft EIS |
| Human health            | Working at heights | Where ever possible, work will be performed at ground level. Where this is not possible,                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Section 3.2 of the           |

| Component                           | Aspect/Impact                              | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                 | Section in EIS/SEIS                          |
|-------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| and safety                          | and falling objects                        | work shall be performed from either a fixed, temporary or elevated platform. Alternatively, a person restraint system can be used. Fall protection equipment must be worn at all times and be connected to an appropriate anchor point when undertaking a task at a height. Personnel working at heights must be trained to do so.                                                                                                                   | Draft EIS                                    |
| Human health and safety             | Working at heights and falling objects     | Items falling from height can also present a safety risk. PPE that protects against objects falling from height include steel-capped boots and hard hats; these will be worn at all times while on-site. No personnel should be underneath another employee working at a height.                                                                                                                                                                     | Section 3.2 of the Draft EIS                 |
| Erosion and Sediment Control Plan   | Control devices                            | The ESCP control devices such as diversion drains, diversion bunds, catch drains, level spreaders, rock filter dams, culverts, sediment weirs, sediment basins, channelization controls, sediment fences, stockpile covers will be installed as per ESCP or as per updates in the MMP.                                                                                                                                                               | Appendix E of the Draft EIS                  |
| Erosion and Sediment Control Plan   | Preserving existing batters                | Throughout the mine lease area, there are a number of existing batters with proposed works near or adjacent to steep sections of earth. During construction, the earthmoving works will be monitored closely at these areas as to not disturb the natural batter and cause rutting that would induce future scour of the natural surfaces. Constant supervision of all interface areas will be included in the daily report and monitoring programs. | Appendix E of the Draft EIS                  |
| Erosion and Sediment Control Plan   | Sodic Soils                                | Any sodic soils encountered on site will need to be managed by the application of Gypsum. Application rates can be determined at a later stage after testing of the expected soils has been undertaken.                                                                                                                                                                                                                                              | Appendix E of the Draft EIS                  |
| <b>Erosion and sediment control</b> | <b>Erosion and sediment control design</b> | <b>An updated ESCP will be submitted prior to construction and will include further detail on ESC. Works will be carried out by a Certified Professional in Erosion Control and all hydrological design calculations will be reviewed by a suitably qualified engineer.</b>                                                                                                                                                                          | <b>Section 2.2.1 &amp; 2.2.3 of the SEIS</b> |
| Dust Monitoring Report              | Generation of dust                         | Watering of unsealed roads and uncovered stockpiles to minimise the generation of dust.                                                                                                                                                                                                                                                                                                                                                              | Appendix M of the Draft EIS                  |
| Dust                                | Generation of dust                         | Dust mitigation polymer is to be utilised at site whenever possible.                                                                                                                                                                                                                                                                                                                                                                                 | Appendix D of the Draft EIS                  |
| Dust Monitoring Report              | Stockpiles                                 | Stockpiles will be kept to a low profile so wind is less likely to spread dust.                                                                                                                                                                                                                                                                                                                                                                      | Appendix M of the Draft EIS                  |

| Component                        | Aspect/Impact                | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                   | Section in EIS/SEIS               |
|----------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Dust Management                  | Generation of dust           | Sherwin Iron commits to develop a Dust Management Plan. This plan will be submitted with the MMP.                                                                                                                                                                                                                                                                                                      | Section 2.2.7 & 2.2.9 of the SEIS |
| Dust Management                  | Generation of dust           | Roads with high traffic use and roads around the accommodation areas (as shown in red on Figure 2-16 of Chapter 2 Project Description) will be sealed with a dust mitigation polymer, and the roads into the pits (shown in grey) will be watered with a water cart. The roads closest to vegetation would therefore be covered with a polymer and reduce dust deposition onto surrounding vegetation. | Section 2.2.9 of the SEIS         |
| Dust Management                  | Soil and sediment monitoring | Sherwin Iron commit to designing and implementing a soil and sediment monitoring program to support the Dust Management Plan                                                                                                                                                                                                                                                                           | Section 2.2.9 of the SEIS         |
| Dust Management                  | Sediment laden runoff        | Sherwin will avoid using recycled waste water for dust suppression in areas where it could run into creeks                                                                                                                                                                                                                                                                                             | Section 2.2.9 of the SEIS         |
| Biting Insect Management Plan    | Water pooling                | Prevent the potential of increasing mosquito populations through appropriate water storage                                                                                                                                                                                                                                                                                                             | Appendix N of the Draft EIS       |
| Biting Insect Management Plan    | Contact                      | Reduce the potential for contact between personnel and mosquitoes                                                                                                                                                                                                                                                                                                                                      | Appendix N of the Draft EIS       |
| Biting Insect Management Plan    | Outbreaks                    | Monitor for mosquito outbreaks and respond to severe outbreaks or incidence of disease.                                                                                                                                                                                                                                                                                                                | Appendix N of the Draft EIS       |
| Archaeological Assessment Report | Buffer zones                 | A 100m conservation buffer zone will be implemented around all rock art sites recorded in the survey as well as around the stone artefact scatter, SHER13_02.                                                                                                                                                                                                                                          | Appendix O of the Draft EIS       |
| Archaeological Assessment Report | Ground disturbance           | Archaeological surveys will be conducted prior to any other ground disturbance works.                                                                                                                                                                                                                                                                                                                  | Appendix O of the Draft EIS       |
| Archaeological Assessment Report | Baseline Survey              | A baseline survey sampling representative landforms will be conducted across the Sherwin Iron leases, to address the lack of regional archaeological data and assist in the development of a regional predictive model for site location.                                                                                                                                                              | Appendix O of the Draft EIS       |

| Component                        | Aspect/Impact                 | Commitment/Safeguard                                                                                                                                                                            | Section in EIS/SEIS         |
|----------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Archaeological Assessment Report | Consultation with TO group    | The Traditional Owner group will be consulted on the mitigation of impacts on archaeological sites located in the tenement.                                                                     | Appendix O of the Draft EIS |
| Noise and Vibration Report       | Noise Management Plan         | Develop and register a Noise Management Plan with the NT EPA.                                                                                                                                   | Appendix P of the Draft EIS |
| Noise and Vibration Report       | General                       | Quieter and silenced equipment will be used where available over louder equipment.                                                                                                              | Appendix P of the Draft EIS |
| Noise and Vibration Report       | General                       | All equipment used on site will be in good condition and good working order                                                                                                                     | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Drop heights                  | As far as possible, material drop heights into or out of trucks will be minimised.                                                                                                              | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Various equipment             | All combustion engine plant, such as generators, compressors and welders will be checked to ensure they produce minimal noise with particular attention to residential grade exhaust silencers. | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Engine covers                 | All engine covers will be kept closed while equipment is operating.                                                                                                                             | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Vehicles                      | Vehicles will be kept properly serviced and fitted with appropriate mufflers.                                                                                                                   | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Exhaust brakes                | Use of exhaust brakes will be eliminated, where practicable.                                                                                                                                    | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Operating of machines         | Where practical, machines will be operated at low speed or power and will be switched off when not being used rather than left idling for prolonged periods.                                    | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Excessive noise from machines | Machines found to produce excessive noise will be removed from the site or stood down until repairs or modifications can be made.                                                               | Appendix P of the Draft EIS |
| Noise and Vibration Report       | Roads                         | Roads will be kept smooth and free of potholes and bumps                                                                                                                                        | Appendix P of the Draft EIS |

| Component                  | Aspect/Impact                                                                 | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Section in EIS/SEIS          |
|----------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Noise and Vibration Report | Awareness                                                                     | <p>All site workers will be made aware of the potential for noise impacts and encouraged to take practical and reasonable measures to minimise the impact during the course of their activities, including:</p> <ul style="list-style-type: none"> <li>• avoiding the use of loud radios</li> <li>• avoiding shouting and slamming doors</li> <li>• informing truck drivers of designated vehicle routes, parking locations and delivery hours</li> <li>• minimising reversing</li> <li>• avoiding metal to metal contact on material</li> <li>• closing engine covers while equipment is operating.</li> </ul> | Appendix P of the Draft EIS  |
| Noise and Vibration        | Blasting                                                                      | Blasting at the mine is to only take place between 7am and 7pm Monday to Saturday and 9am and 6pm on a Sunday or public holiday. Blasting activities are to be advertised at least 48 12 hours before the commencement of blasting.                                                                                                                                                                                                                                                                                                                                                                             | Appendix D of the Draft EIS  |
| Transport                  | Unsecured Loads / Destabilised vehicle, Crushed vehicle cabin, Debris on road | Iron Ore being transported from the mine site to Darwin will be secured and located in covered trailers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Section 3.8 of the Draft EIS |
| Transport                  | Poor driving Standards / Vehicle collision, Speeding, Unauthorised drivers    | Sherwin Commits to travel in convoys along the Roper Highway – with lead vehicles warning other road users.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Section 3.8 of the Draft EIS |
| Transport                  | Poor driving standards                                                        | Sherwin commits to company branding on all ore carrying vehicles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Section 3.8 of the Draft EIS |
| Transport                  | Poor driving standards                                                        | Sherwin commits to having IVMS in all road trains                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Section 3.8 of the Draft EIS |
| Transport                  | No rest breaks, long                                                          | Sherwin commits to developing a fatigue management plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Section 3.8 of the           |

| Component | Aspect/Impact                                                                     | Commitment/Safeguard                                                                                                                                                                                                      | Section in EIS/SEIS          |
|-----------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
|           | working hours,<br>inadequate rest,<br>shift cycles,<br>Inappropriate<br>nutrition |                                                                                                                                                                                                                           | Draft EIS                    |
| Transport | Vehicle noise                                                                     | Sherwin commit to schedule vehicles to reduce traffic volumes within the Mataranka and Katherine areas between 9pm and 7am, and will adhere to existing legal requirements with regard to engine and compressions braking | Section 3.8 of the Draft EIS |
| Transport | Vehicle breakdown                                                                 | Sherwin will ensure the haulage contractor has an action plan for dealing with vehicle breakdowns                                                                                                                         | Section 3.8 of the Draft EIS |
| Transport | Traffic Management Plan                                                           | Sherwin commit to develop a traffic management plan that will be agreed upon with the Department of Transport                                                                                                             | Section 3.8 of the Draft EIS |
| Transport | Fauna Strikes ,<br>Driving standards,<br>breakdown,                               | Sherwin commit to induct all new drivers, including training in route familiarisation                                                                                                                                     | Section 3.8 of the Draft EIS |
| Transport | Haulage procedures                                                                | Sherwin commit to follow the standard heavy haulage operator's procedures, including the reporting of any accidents to both the police and Sherwin Iron, while notifiable incidents will also reported to NT WorkSafe.    | Section 3.8 of the Draft EIS |
| Transport | Road maintenance<br>Poor driving<br>standards                                     | Sherwin commits to upgrading the existing intersection between the Roper Highway and the Mine Site to the approval of the Department of Transport                                                                         | Section 3.8 of the Draft EIS |
| Transport | Explosives                                                                        | Sherwin Iron commits to ensuring that they and their contractors will transport dangerous goods in compliance with the Transport of Dangerous Goods by Road and Rail Act and Regulations.                                 | Section 3.8 of the Draft EIS |
| Transport | Overweight vehicles                                                               | Sherwin Iron will install a weighbridge to ensure that all vehicles are under the legal axle weight limit                                                                                                                 | Section 3.8 of the Draft EIS |
| Transport | Road maintenance                                                                  | Sherwin will start an asset management program with all stakeholders involved in the management and continued function of the Roper Highway                                                                               | Section 3.8 of the Draft EIS |

| Component        | Aspect/Impact                                            | Commitment/Safeguard                                                                                                                                                                                                                              | Section in EIS/SEIS               |
|------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Transport        | Road maintenance                                         | Sherwin Iron will only operate road trains during the period when the Roper Highway has non restricted opening of the road.                                                                                                                       | Section 3.8 of the Draft EIS      |
| Transport        | Inadequate Sight Distance along curves, and near bridges | Sherwin commit to making road improvements and/or installing Vehicle Activated Warning signs to warn drivers of approaching traffic along the Roper Highway.                                                                                      | Section 3.8 of the Draft EIS      |
| Transport        | Culverts close to road seal                              | Sherwin propose to move culvert heads along the Roper Highway to a minimum of 2.5m from the edge of the road seal, and install 4 guideposts each side of the carriageway to highlight the location of culvert headwalls                           | Section 3.8 of the Draft EIS      |
| Transport        | Lack of overtaking opportunities                         | Sherwin will upgrade the Roper Highway in consultation with the Department of Transport                                                                                                                                                           | Section 3.8 of the Draft EIS      |
| <b>Transport</b> | <b>Road safety</b>                                       | <b>Sherwin will conduct a condition survey of the length of the Roper Highway, including shoulders, prior to commencement of any haulage as part of an increase in tonnage above 1.5Mtpa in consultation with the NT Department of Transport.</b> | <b>Section 2.2.7 of the SEIS</b>  |
| <b>Transport</b> | <b>Road safety</b>                                       | <b>The condition survey is to be undertaken at the end of the bulk sampling phase</b>                                                                                                                                                             | <b>Section 2.2.7 of the SEIS</b>  |
| <b>Transport</b> | <b>Road safety</b>                                       | <b>The MMP will contain a suite of commitments including committing Sherwin to ensure that the Transport Coordinator will implement all requirements of the highway use agreement.</b>                                                            | <b>Section 2.2.10 of the SEIS</b> |
| Pest and Weed    | Weed survey                                              | Carry out a pre-mine construction weed survey and produce a detailed map of weed infestations                                                                                                                                                     | Appendix I of the Draft EIS       |
| Pest and Weed    | Cooperation with landholders and stakeholders            | Cooperation with landholders and stakeholders in assessing pest and weed risks, developing strategies and setting priorities.                                                                                                                     | Appendix I of the Draft EIS       |
| Pest and Weed    | Weed management branch                                   | Liaison with Weed Management Branch about control methods                                                                                                                                                                                         | Appendix I of the Draft EIS       |
| Pest and Weed    | Annual surveys                                           | Annual survey of weeds.                                                                                                                                                                                                                           | Appendix I of the Draft EIS       |



| Component            | Aspect/Impact                                                  | Commitment/Safeguard                                                                                                                                      | Section in EIS/SEIS                          |
|----------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Pest and Weed        | Induction/awareness                                            | Weeds and pest issues as part of induction for all staff and raised where appropriate at daily toolbox meetings. Weed ID material produce to assist this. | Appendix I of the Draft EIS                  |
| Pest and Weed        | Training                                                       | Selected staff trained in pest and weed identification and control                                                                                        | Appendix I of the Draft EIS                  |
| Pest and Weed        | Identification                                                 | Suspect weeds collected and sent to botanist/ Weed Management Branch for identification                                                                   | Appendix I of the Draft EIS                  |
| Pest and Weed        | Disturbance minimised                                          | Limit clearing and ground disturbance to minimum area necessary, and boundaries of areas to be cleared are clearly marked                                 | Appendix I of the Draft EIS                  |
| Pest and Weed        | Plant and soil material arriving on site                       | Plant and soil material purchased from suppliers guaranteeing weed free status and inspected on arrival to site                                           | Appendix I of the Draft EIS                  |
| Pest and Weed        | Weed control                                                   | Weeds controlled within project area, and particularly around mining and rehabilitation areas                                                             | Appendix I of the Draft EIS                  |
| Pest and Weed        | Weed disposal                                                  | Weeds not disposed of in landfill, but at a designated composting site                                                                                    | Appendix I of the Draft EIS                  |
| Pest and Weed        | Fencing                                                        | Exclusion fencing erected around project area                                                                                                             | Appendix I of the Draft EIS                  |
| Pest and Weed        | Fencing                                                        | Exclusion fencing erected around and over landfill                                                                                                        | Appendix I of the Draft EIS                  |
| Pest and Weed        | Waste disposal                                                 | Putrescible wastes collected in covered bins, frequently removed to landfill and burnt as necessary                                                       | Appendix I of the Draft EIS                  |
| Pest and Weed        | Rehabilitation                                                 | Rehabilitating disturbed areas as soon as practical to reduce the amount of area prone to weed establishment.                                             | Appendix I of the Draft EIS                  |
| <b>Pest and weed</b> | <b>Communicating risk of weed or pest spread in the region</b> | <b>Sherwin commit to informing neighbours within 7 days if new pests or weeds are identified on site.</b>                                                 | <b>Section 2.2.5 &amp; 2.2.7 of the SEIS</b> |

| Component                       | Aspect/Impact                               | Commitment/Safeguard                                                                                                                                                                                                                                                                 | Section in EIS/SEIS                      |
|---------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Pest and weed                   | Spread of weeds                             | Sherwin commit to installing a wash down facility, specifically designed and located to prevent the spread of weeds, before the onset of mining.                                                                                                                                     | Section 2.2.5 of the SEIS                |
| Pest and weed                   | Weed control                                | Sherwin reaffirm their commit to carrying out annual weed control and specify that this will be done at least annually at the end of the wet season.                                                                                                                                 | Section 2.2.3, 2.2.5 & 2.2.7 of the SEIS |
| Rehabilitation and Mine Closure | Stakeholder involvement                     | Implement processes for stakeholder involvement in rehabilitation and closure planning within one year of the commencement of operations.                                                                                                                                            | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Detailed RMCP                               | Develop of a more detailed RMCP within two years of the commencement of mining. This plan will be submitted for review and approval by the consent authority.                                                                                                                        | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Updates                                     | Within a period of not less than four years prior to the completion of mining and intended mine closure, the RMCP will be updated to incorporate previous years' rehabilitation and outcomes. This plan will be again be submitted for review and approval by the consent authority. | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Rehabilitation trials                       | Rehabilitation trials will commence as early as practicable and before the end of two years from the commencement of mining                                                                                                                                                          | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Fire                                        | Fire will be excluded from rehabilitation areas for several years. The mine site will have fire fighting capacity to assist this.                                                                                                                                                    | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Conservation of topsoil                     | Conservation of topsoil and progressive rehabilitation of waste landforms, backfilled pits, and all other disturbed areas will be done as soon as practicable to the appropriate standard and recommended guidelines                                                                 | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Research and site trials                    | Research and site trials, including investigating analogue areas will be conducted to enable the rehabilitation program to be modified to reflect site-specific parameters.                                                                                                          | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Closure task register                       | A Closure Task Register will be immediately developed, to incorporate the closure criteria into the final landform design and the management of key issues.                                                                                                                          | Appendix J of the Draft EIS              |
| Rehabilitation and Mine Closure | Analysis of rehabilitation of similar sites | During the first year of operation Sherwin also commit to an analysis of previous rehabilitation of other similar sites to inform their rehabilitation strategy.                                                                                                                     | Appendix J of the Draft EIS              |

| Component                       | Aspect/Impact                        | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Section in EIS/SEIS                                 |
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| Rehabilitation and Mine Closure | Unexpected closure                   | <p>In the event of unexpected closure,</p> <ul style="list-style-type: none"> <li>An environmental audit of the site will be conducted immediately and provided to DME</li> <li>Mine access and security and will be reviewed</li> <li>Storage of chemicals and hydrocarbons will be reviewed and removed if necessary</li> <li>A programme to address incomplete rehabilitation and revegetation works will be developed</li> <li>Any contaminated material will be relocated from hardstand areas to a suitable holding facility, and any PAF material will be placed within an open pit and suitably encapsulated within an appropriate landform</li> <li>The stability of landforms, water quality and revegetation will be monitored.</li> </ul> | Appendix J of the Draft EIS                         |
| Rehab and closure               | Development of rehabilitation trials | <b>Sherwin commit to beginning rehabilitation trials during 2014. An experimental design for trials will be developed within three months of the commencement of mining. Field trials will begin during the 2014/15 wet season. The trial design will simulate soil, substrate and slope conditions likely to be encountered during future rehabilitation.</b>                                                                                                                                                                                                                                                                                                                                                                                        | <b>Section 2.2.3, 2.2.5 &amp; 2.2.7 of the SEIS</b> |
| Rehab and closure               | Waste management                     | <b>Waste management will be as per previous commitments. It is considered inappropriate to set exact timeframes for activities, however waste removal will be done in a timely manner as required to maintain a high standard of housekeeping.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Section 2.2.7 of the SEIS</b>                    |
| Rehab and closure               | Weed monitoring                      | <b>Sherwin reaffirm their commitment to annual monitoring of weeds and specify that the commitment to control declared weeds will be undertaken annually after the wet season. This applies to all areas of the lease including rehabilitation areas.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Section 2.2.7 of the SEIS</b>                    |
| Rehab and closure               | Development of closure criteria      | <b>Sherwin commit to develop closure criteria during the first year of operation.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Section 2.2.7 of the SEIS</b>                    |
| Surface water hydrology         | Impeded fish migration               | Creek crossing design (culverts) will have limited influence on flows.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Section 3.3 of the Draft EIS                        |
| Surface water                   | Alteration to natural flow paths and | Natural water flows will be maintained as far as possible and where modification is                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Section 3.3 of the                                  |

| Component                      | Aspect/Impact                                              | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Section in EIS/SEIS                       |
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| hydrology                      | patterns                                                   | necessary, resume their natural flow paths as far as possible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Draft EIS                                 |
| Surface water quality          | Impact on downstream water quality associated with erosion | Control devices such as diversion drains, diversion bunds, catch drains, level spreaders, rock filter dams, culverts, sediment weirs, sediment basins, channelization controls, sediment fences, stockpile covers will be installed as per ESCP and WMP, or as per updates in the MMP.                                                                                                                                                                                                                                                               | Appendix E & Appendix F1 of the Draft EIS |
| Surface & ground-water quality | Monitoring                                                 | Monitoring of appropriate on site, downstream and reference (un-impacted) sites will be undertaken in accordance with the program specified in the approved WMP.                                                                                                                                                                                                                                                                                                                                                                                     | Appendix F1 of the Draft EIS              |
| Surface & ground-water quality | Monitoring                                                 | Site-specific water quality trigger values will be developed when there is sufficient data available from baseline monitoring and/or upstream reference sites.                                                                                                                                                                                                                                                                                                                                                                                       | Appendix F1 of the Draft EIS              |
| Surface & ground-water quality | Over extraction of Groundwater                             | To minimise water use and therefore the risk of lowering of groundwater levels, Sherwin will implement of water saving strategies, including (but not limited to) the following: <ul style="list-style-type: none"> <li>Minimise use (e.g. education of workers in camp, use of polymers on roads to reduce requirements for dust suppression)</li> <li>Recycling of wastewater for dust suppression (i.e. sewage treatment plant)</li> <li>Re-use of rainfall/run-off captured in disturbed areas of the mine site for dust suppression.</li> </ul> | Appendix F1 of the Draft EIS              |
| Surface & ground-water quality | Over extraction of Groundwater                             | In order to identify additional groundwater resources to meet mining operational requirements, Sherwin commits to undertake geophysical exploration, bore drilling, testing and sampling. Sherwin will assess potential impacts of extraction and sustainable yields from these additional groundwater resources (i.e. potential GDE's, other users, etc).                                                                                                                                                                                           | Appendix F1 of the Draft EIS              |
| Surface & ground-water quality | Over extraction of Groundwater                             | In order to minimise the operational and environmental risks (if any) associated with depletion of groundwater resources, Sherwin will ascertain/set operational controls for ground water exploitation (i.e. sustainable safe yield, allowable drawdown and distance to zero drawdown) and monitor bore yields, groundwater level behaviour and water quality, in accordance with the Water Management Plan (Appendix F1).                                                                                                                          | Appendix F1 of the Draft EIS              |
| Surface &                      | Contamination of                                           | To minimise the risk of impacts to surface and/or groundwater quality associated with                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Appendix G of the                         |

| Component                      | Aspect/Impact                                                                              | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Section in EIS/SEIS                      |
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| ground-water quality           | downstream surface and/or groundwaters associated with acid mine drainage.                 | <p>AMD, Sherwin commits to the following:</p> <ul style="list-style-type: none"> <li>Ongoing characterisation of materials, storage and management methods.</li> <li>Demarcation and progressive excavation and implementation of immediate remediation measures such as burial, sealing and compaction to prevent oxidisation of PAF materials.</li> <li>Where PAF is exposed, sealing and compaction of the sides and base of the excavation will be undertaken before backfilling.</li> <li>Implementation of construction methods to prevent long-term PAF exposure to oxygen (e.g. sheetpiling) will be considered</li> </ul> | Draft EIS                                |
| Surface & ground-water quality | Contamination of downstream surface and/or groundwater associated with acid mine drainage. | <p><b>On-going characterisation of materials and storage and management methods.</b></p> <p><b>Storage/disposal of any encountered potentially acid forming (PAF) in purpose-designed and built encapsulation cells.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                       | Section 3.3, Appendix G of the Draft EIS |
| Surface water and groundwater  | Management of PAF                                                                          | Sherwin commits to ongoing site-specific characterisation and appropriate management of any potentially acid-forming (PAF) materials encountered during mining, in accordance with the most recent Acid Mine Drainage Management Plan. Management measures will include (but are not limited to) appropriate segregation and storage/disposal to prevent interaction with water, particularly rainfall.                                                                                                                                                                                                                            | Section 2.2.7 of the SEIS                |
| Surface water and groundwater  | Environmental monitoring bores                                                             | Sherwin commits to determining appropriate locations for additional environmental monitoring bores as part of the Mining Management Plan approval process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Section 2.2.7 of the SEIS                |
| Surface water and groundwater  | Sustainable extraction                                                                     | Sherwin commits to defining adequate sustainable ground water resources that will be appropriately managed to prevent over-exploitation and/or depletion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Section 2.2.7 of the SEIS                |
| Surface water and              | Management of potable water                                                                | Sherwin will ensure that appropriate disinfection systems for potable water are installed. Separate systems will be installed at the camp and mine site. In addition,                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Section 2.2.2 of the SEIS                |

| Component                     | Aspect/Impact                                 | Commitment/Safeguard                                                                                                                                                                                                                                                                                                                                                                     | Section in EIS/SEIS       |
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| groundwater                   |                                               | potable water at the mine site will be obtained from water bottle dispensers.                                                                                                                                                                                                                                                                                                            |                           |
| Surface water and groundwater | Waste water treatment and recycling           | Sherwin will ensure that the DoH Environmental Health Branch is consulted prior to installation of waste water treatment and recycling facilities on site.                                                                                                                                                                                                                               | Section 2.2.2 of the SEIS |
| Environmental management      | Continual review and update of relevant plans | Sherwin is committed to continual improvement through their EMS and EMP by investigating, reviewing and implementing recommended improvements for any non-compliance. The project will be further refined and defined prior to development of an MMP, during this process Sherwin will update both the EMS and the EMP and include information resulting from the EIS approvals process. | Section 2.2.7 of the SEIS |
| Environmental management      | Continual review and update of relevant plans | Sherwin is yet to develop an ISO 14001 compliant EMS but is committed to moving towards this best practice standard. Sherwin further commits to reviewing the Environmental Management System to ensure audit and performance results are assessed and recommendations incorporated into management, policy and procedures.                                                              | Section 2.2.7 of the SEIS |
| Environmental management      | Managing non-conformance                      | Sherwin will notify key stakeholders, including traditional Aboriginal owners and local communities, as soon as practicable with regards to environmental incidents and EMP non-conformance events.                                                                                                                                                                                      | Section 2.2.7 of the SEIS |
| Infrastructure design         | Fish passage                                  | Any upgrades to road infrastructure, bridges, crossings or flood ways are to comply with general principles in: Kapitzke 2010 <i>Culvert Fishway Planning and Design Guidelines</i> and Fairfull & Witheridge 2003 <i>Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> .                                                                         | Section 2.2.1 of the SEIS |
| Socio-economic                | Adaptive management and consultation          | Sherwin Iron commit to complying with and implementing the Provisional Social Impact Management Plan (Appendix K1 of the EIS), The Social and Economic Impact Assessment (Appendix K2 of the EIS) and The Stakeholder Consultation Report (Appendix K3 of the EIS)                                                                                                                       | Section 2.2.7 of the SEIS |
| Socio-economic                | Managing non-conformance                      | Sherwin will notify key stakeholders, including traditional Aboriginal owners and local communities, as soon as practicable with regards to environmental incidents and EMP non-conformance events.                                                                                                                                                                                      | Section 2.2.7 of the SEIS |