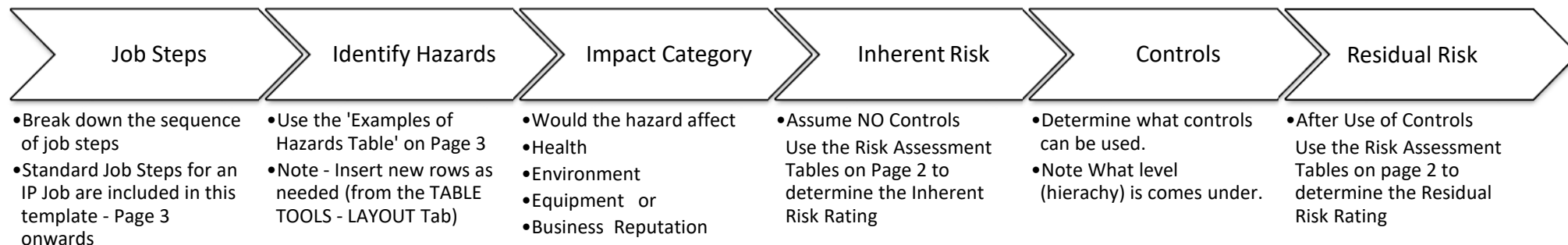
		State Job Details		DATE: 3/3/2018	
Job No: 180017		Survey Type: Pole-Dipole		Client: Sherlock Minerals	
				Location: Strahan	
List all JSA team members. <i>Do not sign this form until the JSA has been completed and everyone is in agreement.</i>		JSA TEAM Crew Member Name ↓		Signature	
		Rajab Lokiri			
		Sameh Shahin			
		Shaun Haney			
				Client / Visitor Visitor Names ↓	
				Signature	

Complete the JSA as outlined in the stages below.



RESIDUAL RISK RATING - Implications

Where the RESIDUAL RISK RATING is -

- HIGH:** _____ → - work **MUST STOP** and management (office) must be consulted.
- MODERATE:** and the hazard is new — _____ → - continue working and consult management within 48 hours.
- MODERATE:** and the hazard has been previously identified and controls are in place - use SOP & continue working.
- LOW:** _____ → - continue working with awareness.

Risk Assessment Tables - Page 2

LIKELIHOOD TABLE

Rare To Never The event may never occur or only in very exceptional circumstances	Unlikely The event may occur at some time	Possible The event could occur at some time	Expected The event will probably occur in most circumstances	Almost Certain The event will occur
<1%	1% - 10%	10% - 40%	40% - 80%	80% - 100%

CONSEQUENCE TABLE

	Insignificant	Minor	Moderate	Major	Catastrophic
Safety & Health	First Aid case -or- minor reversible health effects of no concern	Medical Treatment case -or-reversible health effect of concern, no disability	Lost time injury/illness -or-severe, reversible health effect resulting from acute, short term exposure - or-progressive chronic condition.	Single Fatality -or Permanent Disability-or-exposures resulting in irreversible health effect of concern	Multiple fatalities -or-Health effects resulting in multiple disabling illness leading to early mortality
Environment	Limited environmental impact, no regulatory reporting, minor closure delays of 1-2 years.	Minor on-site environmental impact, reportable to regulators, closure delays of 3-6 years.	Moderate environmental impacts, extends beyond site boundary, regulatory violations with fines, significant closure delays of 6-10 years.	Serious medium term environmental impacts, major regulatory violations, long term closure impacts of >10 years.	Severe long term environmental impacts, severe breach of regulations with operation suspended, closure severely impacted.
Stakeholder Relations & Reputation	No impact on stakeholder confidence in management of the company	Limited impact on stakeholder confidence in management of the company	Medium impact on stakeholder confidence in management of company	High impact on stakeholder confidence in management of company	Loss of stakeholder confidence in management of company

RISK RATING TABLE

Almost Certain	Low ₉	Moderate ₁₇	High ₂₁	High ₂₃	High ₂₅
Expected	Low ₈	Moderate ₁₂	Moderate ₁₅	High ₁₉	High ₂₄
Possible	Low ₄	Low ₇	Moderate ₁₁	High ₁₈	High ₂₂
Unlikely	Low ₂	Low ₅	Moderate ₁₀	Moderate ₁₄	High ₂₀
Rare To Never	Low ₁	Low ₃	Low ₆	Moderate ₁₃	Moderate ₁₆
	Insignificant	Minor	Moderate	Major	Catastrophic

Page 3

Examples of Hazards to Look For							
Driving To Site (Highway Good Road)	Driving (General)	Driving in the bush tracks or off-road	Driving in the bush	Manual Handling of Equipment (e.g. wheels, reels, jerries, transmitter)	Working Outdoors (Sun)	Working Outdoors (Smoking)	Walking in the bush (Eyes)
Walking in the bush (Trip, Fall)	Walking in the bush / work in general	Electrical Storms	Rain	Snakes	Insects	Digging Pits	Preparing Pits
Deploying and collecting wires	Setting up Genset or Packing up Genset. Zonge ZMG/GGT	Setting up Genset or Packing up Genset. GDD TX	Generator Noise	Powering Up Transmitter and wires to the ground (other people)	Powering Up Transmitter and wires to the ground (Crew)	Powering Up Transmitter and wires to the ground (fire)	Refuelling water pump
Camp Activities Electricity	Camp Activities Snakes	Camp Activities Fire	Camp Activities Animals	Camp Activities Stakes/Splinters/Glass	Stripping wires with a knife	Using a picket driver	Hammering Stakes into the ground
Boarding survey boat	Acquiring data on boat (boat in motion)	Building a pontoon	Cutting heat shrink off DH probe	Using helicopter			

Job Steps Sequence Table

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓ Health & Safety - H Environment - E Equipment - Q Business Reputation – B ↓ Potential Hazards Identified With Each Job Step	INHERENT RISK (before controls)			HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.		RESIDUAL RISK (after controls)		
			LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL	1. Elimination - Remove hazard completely			
							2. Substitution – Replace job step with one of a lesser hazard.			
							3. Engineering - Guarding, noise attenuation, separation.			
							4. Administration - Procedures, training, signage, ERP's.			
5. PPE - earplugs, safety glasses, gloves etc			LIKELIHOOD	CONSEQUENCE	RATING					

1	Driving To Site (Highway / Good Road)	LV accident	H Q	Possible	Catastrophic	High 22	4	Beware other traffic in area. Be patient rather than passing vehicles. Don't drive into dust. Wait for it to settle. Don't pass vehicles in dusty conditions.	Rare	Catastrophic	Mod 16
2	Manual Handling of Equipment (e.g. wheels, reels, jerries, Transmitter)	Back, leg/foot, arm/hand injuries	H	Expected	Moderate	Mod 15	4	SSP-08 i.e. 2 people to lift heavier objects e.g. wheels, reels. 3 people minimum to lift transmitter. Drop sides of tray to lift jerries. Bend knees, keep back straight, remove trip hazards, and avoid pinch points.	Unlikely	Moderate	Mod 10
3	Working outdoors (Sun)	Sunburn / Skin cancer.	H	Possible	Major	High 18	3 5	SWI-018 SSP-018 Use sunscreen, PPE – long trousers, shirts, gloves and broad-brimmed hats.	Rare	Major	Mod 13
4	Working Outdoors (Smoking)	Fire caused by smoking in a restricted area, or in an area of high fire risk	H E Q B	Possible	Major	High 18	4	Smoking is banned in areas where 1. Refuelling is being carried out. 2. In areas with thick vegetation during a high risk fire day 3. Where no smoking signage is posted	Unlikely	Major	Mod 14

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓		INHERENT RISK (before controls)			HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.		RESIDUAL RISK (after controls)			
				LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL	1. Elimination - Remove hazard completely			LIKELIHOOD	CONSEQUENCE
		2. Substitution – Replace job step with one of a lesser hazard.										
		3. Engineering - Guarding, noise attenuation, separation.										
		4. Administration - Procedures, training, signage, ERP's.										
Potential Hazards Identified With ↓ Each Job Step		↓					5. PPE - earplugs, safety glasses, gloves etc					
5	Walking in bush (Eyes)	Eye Injury	H	Possible	Mod	Mod 11	4 5	Protective eyewear. Don't rush. Pay attention Watch out for spider waves Loose rocks/surface	Unlikely	Minor	Low 5	
6	Walking in bush (trip, Fall)	Trip, fall. Ankle / knee / back injury. Due to uneven loose surface	H	Possible	Moderate	Mod 11	4 5	Don't overload. Walk to conditions Rotate tasks to reduce fatigue – if necessary. Ankle supporting boots. Watch ground for trip hazards.	Unlikely	Minor	Low 5	
7	Walking in bush / work in general	Dehydration	H	Possible	Mod	Mod 11	4	Carry water when walking Positive reinforcement via whole crew Adequate water on vehicles	Rare	Minor	Low 3	
8	Electrical Storms	Lightning strikes	H Q	Unlikely	Major	Mod 14	4	SWI-024 SSP-018	Rare	Major	Mod 13	
9	Rain	Becoming stranded Damage to tracks	H E B	Possible	Minor	Low 7	4	SSP-019 Watch weather websites Leave if major front approaching. Monitor lighting strikes on Am radio	\Rare	Minor	Low 3	

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓ Health & Safety - H Environment - E Equipment - Q Business Reputation – B Potential Hazards Identified With ↓ Each Job Step		INHERENT RISK (before controls)			HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.		RESIDUAL RISK (after controls)		
				LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL	1. Elimination - Remove hazard completely 2. Substitution – Replace job step with one of a lesser hazard. 3. Engineering - Guarding, noise attenuation, separation. 4. Administration - Procedures, training, signage, ERP's. 5. PPE - earplugs, safety glasses, gloves etc	LIKELIHOOD	CONSEQUENCE	RATING
10	Snakes	Bites	H	Possible	Major	High 18	4 5	Wear long trousers, perhaps gaiters where increased snake activity. Remote first aid training Large/small aid kits in vehicles,	Rare	Moderate	Low 6
11	Insects	Bites	H	Expected	Moderate	Mod 15	4 5	Crew aware of any allergies of other crew members 1 st aid training Appropriate clothing	Possible	Minor	Low 7
12	Digging Pits.	Back / shoulder injury Leg injury (from pick) Eye Injury	H	Possible	Mod	Mod 11	4	Correct body position Watch each other Rotate Tasks = Rest Communicate when rest / rotation is needed SSP-015 Safety Glasses	Unlikely	Mod	Mod 10
13	Preparing Pits	Back strain	H	Possible	Mod	Mod 11		Maintain Good Posture Rotate Tasks	Unlikely	Mod	Mod 10
14	Deploying and collecting wires	Electric shock from live wire or pit - crew	H	Possible	Major	High 18	4	SWI-024 (Roll-along Pole – Dipole addition) Rx operator disconnects last used pit (always complete as first activity) after moving up and then winds up wire. Radio procedures.	Rare	Major	Mod 13

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓ Health & Safety - H Environment - E Equipment - Q Business Reputation – B Potential Hazards Identified With ↓ Each Job Step	INHERENT RISK (before controls)	HIERACHY OF CONTROLS				RESIDUAL RISK (after controls)						
				1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.				LIKELIHOOD	CONSEQUENCE	RATING				
				LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL				1. Elimination - Remove hazard completely			
											2. Substitution – Replace job step with one of a lesser hazard.			
											3. Engineering - Guarding, noise attenuation, separation.			
4. Administration - Procedures, training, signage, ERP's.														
						5. PPE - earplugs, safety glasses, gloves etc								
								Always pull Tx wires from tails by insulated parts.						
15	Deploying and collecting wires where multiple lines are being read from one TX location – (Pole Dipole)	TX wires from previous line still connected, completed Dipole from previous line is still live. Potentially hazardous situation if completed line is being rehabbed	H	Possible	Major	High 18	4	All TX wires from completed line are collected prior to setting up on next line to ensure that transmission into the intended line is assured.				Unlikely	Major	Mod 14
16	Setting up Genset or Packing up Genset. Zonge ZMG/GGT	12V Electric shock from Tx end of return earth lead when Genset end is still plugged in.	H	Possible	Minor	Mod 11	4	SWI i.e. Unplug return earth lead from Genset end first, i.e. before unplugging from Tx.				Unlikely	Minor	Low 5
17	Setting up Genset or Packing up Genset. GDD TX	Back, leg/foot, arm/hand injuries	H	Possible	Moderate	Mod 11	4	SSP-08 i.e. 2 people to lift. Bend knees, keep back straight, remove trip hazards, and avoid pinch points. SWI-034 GDD TXII Transmitter				Unlikely	Moderate	Mod 10

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓		INHERENT RISK (before controls)			HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.		RESIDUAL RISK (after controls)		
				LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL	1. Elimination - Remove hazard completely			LIKELIHOOD
		2. Substitution – Replace job step with one of a lesser hazard.									
		3. Engineering - Guarding, noise attenuation, separation.									
		4. Administration - Procedures, training, signage, ERP's.									
		5. PPE - earplugs, safety glasses, gloves etc									
Potential Hazards Identified With ↓ Each Job Step		↓									
18	Generator Noise	Hearing Damage	H B	Possible	Mod	Mod 11	4 5	Hearing Protection signage must be displayed on generator Hearing protection must be worn within 10 meter radius when operating the generator Crew to operate transmitter from inside troop with door closed	Unlikely	Minor	Low 5
19	Powering Up Transmitter and wires on ground (other people)	Electric shock from live wire or pit – Other people, i.e. client, clients company employees, landowner, shooter, recreational quad-bike user/s.	H	Unlikely	Major	Mod 14	4 3 4 4 4	SWI-024 & SWI-035 Signage or block access to area. Radio contact before entering area. Informing landowners of activity. Inductions Bury wires across roads Park at pit when pits are next to the road, so that Tx operator can monitor traffic. Regularly examine condition of high-power Tx output cables to ensure integrity of insulation.	Rare	Major	Mod 13
20	Powering Up Transmitter and wires on ground (Crew)	Electric shock from live wire or pit – Crew	H	Possible	Major	High 18	4	SWI-024 Positive radio contact between team members before powering up. . Crew must remain at least 5m from any potentially live wire or pit. Clear Identification of transmitting wires Plan location of remote pit so that it is isolated from any people.	Rare	Major	Mod 13

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓ Health & Safety - H Environment - E Equipment - Q Business Reputation – B Potential Hazards Identified With ↓ Each Job Step	↓	INHERENT RISK (before controls)			TYPE OF CONTROL	HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.	RESIDUAL RISK (after controls)		
				LIKELIHOOD	CONSEQUENCE	RATING		1. Elimination - Remove hazard completely	LIKELIHOOD	CONSEQUENCE	RATING
								2. Substitution – Replace job step with one of a lesser hazard.			
								3. Engineering - Guarding, noise attenuation, separation.			
								4. Administration - Procedures, training, signage, ERP's.			
5. PPE - earplugs, safety glasses, gloves etc											
21	Powering Up Transmitter and wires on ground (Fire)	Fire hazard if bare wire exposure	H E B	Unlikely	Major	Mod 14	3 1 1	SWI-024 Isolate Joins Clear area around Tx Fuel not stored on generator Connection to 'tail' from the foil is left in the pit.	Rare	Major	Mod 13
22	Refuelling Petrol Engines	If engine has already been used, i.e. just run out of fuel, re-fuelling when hot introduces the risk of flashpoint ignition of petrol.	H E	Unlikely	Major	Mod 14	4	SWI-025 Don't re-fuel when hot. Check fuel levels before start of shift. No smoking in areas where refuelling is being carried out	Rare	Major	Mod 13
23	Camp Activities Electricity	Electric shock, Trip	H	Unlikely	Major	Mod 14	1 3	SSP-016 Cables kept out of walkways. Joins weather protected. All 240v equipment to be checked & tagged House keeping	Rare	Major	Mod 13
24	Camp Activities Snakes	Snake Bite	H	Unlikely	Major	Mod 14	5	Wear enclosed footwear around camp and (ideally) trousers. Be aware of 1 st aid kit location and ERP. 1 st aid training of crew. Report all snake sightings to Camp Admin	Rare	Major	Mod 13
25	Camp Activities Fire	Camp fire out of control.	H E Q B	Unlikely	Catastrophic	High 20	3	Fuel stored away from gen-shed. Extinguish fire when away from camp	Rare	Catastrophic	Mod 16

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓ Health & Safety - H Environment - E Equipment - Q Business Reputation – B	H E Q B ↓	INHERENT RISK (before controls)			HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.		RESIDUAL RISK (after controls)		
				LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL	1. Elimination - Remove hazard completely			
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								4. Administration - Procedures, training, signage, ERP's.			
		5. PPE - earplugs, safety glasses, gloves etc									
Potential Hazards Identified With ↓ Each Job Step								LIKELIHOOD CONSEQUENCE RATING			
26	Camp Activities Animals	Animals scavenging for food	H Q	Possible	Minor	Low 7	1 3	Food scraps burnt – or kept secured and taken to the tip on the property promptly.	Rare	Minor	Low 3
27	Camp Activities Stakes/splinters/glass	Cuts & injuries	H	Possible	Minor	Low 7	5	Clean up around camp (e.g. old glass) Wear enclosed footwear. Lighting	Rare	Minor	Low 3
28	Stripping wires with a knife	Cuts and injuries	H	Possible	Mod	Mod11	2 4 4 5	Use wire strippers when possible Do not strip wires on thigh Point blade away from yourself Use gloves	Unlikely	Minor	Low5
29	Using a picket driver.	Hand injury. Hearing damage.	H	Possible	Mod	Mod 11	5 4 4	Wear gloves & hearing protection. Correct Procedure. Handles at right angles to other stakes already in the ground. Communication – speak up and ask to rotate tasks when your body needs a rest.	Unlikely	Minor	Low 5

Breakdown of the Job Into the – JOB STEPS SEQUENCE ↓		Category of Potential IMPACT of Hazard ↓ Health & Safety - H Environment - E Equipment - Q Business Reputation – B Potential Hazards Identified With ↓ Each Job Step	INHERENT RISK (before controls)	HIERACHY OF CONTROLS 1. Is the most effective control. 1. Is the last resort – i.e only reduces the consequence.					RESIDUAL RISK (after controls)		
				LIKELIHOOD	CONSEQUENCE	RATING	TYPE OF CONTROL	1. Elimination - Remove hazard completely			
								2. Substitution – Replace job step with one of a lesser hazard.			
								3. Engineering - Guarding, noise attenuation, separation.			
								4. Administration - Procedures, training, signage, ERP's.			
						5. PPE - earplugs, safety glasses, gloves etc			LIKELIHOOD	CONSEQUENCE	RATING
30	Hammering stakes into the ground.	Hand injury. Hearing damage.	H	Possible	Mod	Mod 11	5 4 4	Wear gloves & hearing protection. Correct Procedure. Handles at right angles to other stakes already in the ground. Communication – speak up and ask to rotate tasks when your body needs a rest.	Unlikely	Minor	Low 5
31	Using helicopter (General)	helicopter accident personnel injury/death	H Q E	Possible	Catastrophic	High 22	4	Wear seat belts, Follow pilot's instructions Watch for spinning blades Don't load equipment until pilot tells it's ok Make sure pilot can see you at all times before entering/exiting aircraft	Rare	Catastrophic	Mod 16
32	Using helicopter (loadind/unloading)	Back, leg/foot, arm/hand injuries	H	Expected	Moderate	Mod 15	4	Watch for surrounding area Use sleds to get in/out Do not go anywhere near the rear of the helicopter	Unlikely	Moderate	Mod 10