APPENDIX H

Spill Management Plan

BEETALOO EXPLORATION PROJECT
SPILL MANAGEMENT PLAN

Review record

Rev	Date	Reason for issue	Consolidator	Approver
2.2	21/09/2023	Edits to Appendix A and DEPWS contacts	LP	MK
2.3	25/03/2024	Addresses regulation 10 and regulation 11 feedback from DEPWS, 29-Feb-2024	LP	MK
2.4	09/05/2024	Baker Hughes chemicals added to Appendix A	LP	MK
3.0	08/07/2024	Inclusion of SPCF	LP	MK
4.0	27/09/2024	Addresses regulation 10 feedback from DEPWS, 26-Sept-2024. Includes additional chemicals assessed under regulation 22 modifications.	LP	MK
5.0	14/10/2024	Update for inclusion of 3D seismic EMP	AC	MK
5.1	06/03/2025	Minor update for 3D seismic EMP	AC	MK

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1. Purpose

This Spill Management Plan (SMP) has been prepared to support Tamboran's Beetaloo exploration program. The SMP is a mandatory requirement prepared in accordance with the *Code of Practice for Petroleum Activities in the Northern Territory* (the Code). This SMP is designed to provide the strategy for the management of spills across Tamboran's Beetaloo exploration activities.

The SMP covers all regulated activities described in the Environment Management Plans (EMPs), currently in force under the Petroleum (Environment) Regulations 2016 (the Regulations). EMPs that are currently in force under the Regulations are available at: https://depws.nt.gov.au/onshore-gas/environment-management-plan/approved-emps.

Activities undertaken by Tamboran and its subsidiaries in the Northern Territory (NT), within its exploration permit (EP) areas (EP 76, EP 98, EP 117, EP 136, EP 143, EP 161 and EP(A) 197 (Figure 1)) include:

- civil works
- drilling and stimulating gas wells for exploration and appraisal purposes
- 2D and 3D seismic programs
- construction and operation of the temporary Sturt Plateau Compression Facility (SPCF)
- rehabilitation and routine maintenance/monitoring activities.

The SMP will reference the relevant sections within each EMP to avoid duplication. The SMP should be read in conjunction with the chemical risk assessment and operation risk assessment appended to each EMP, in accordance with section 3.4 of the Code. The chemical risk assessment is not applicable for seismic surveys.

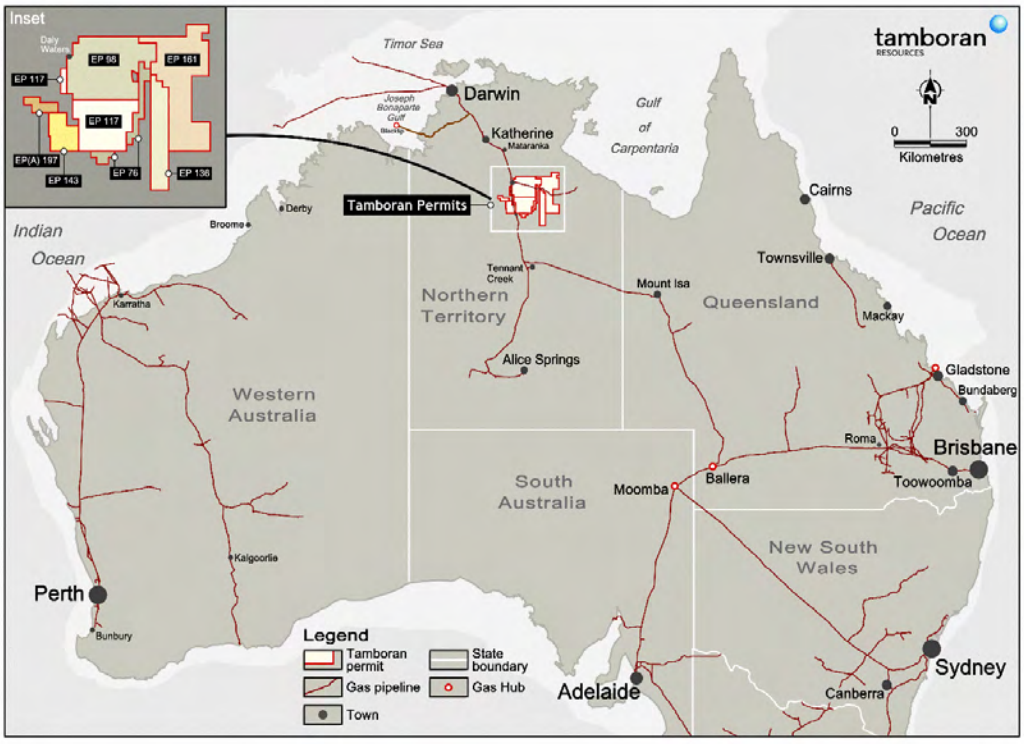

Figure 1: Location of Tamboran exploration permit areas (EPs)

2. Key legislation

Key legislation and documents consulted in the development of this plan are provided below (a full list of applicable legislation is provided in the corresponding management plans):

- **Code of Practice: Onshore Petroleum Activities in the Northern Territory (NT):** Mandatory code of practice legislating the management of chemicals and wastewater onsite, including the use of secondary containment, lined tanks and spill management plan.
- ***Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act 2010:*** Covers the transportation of goods by road in the NT. This also covers licences for vehicles and drivers carrying dangerous goods.
- ***Workplace Health and Safety (National Uniform Legislation) Act 2011***: Covers the storage and handling of chemicals on site.
- ***Waste Management and Pollution Control Act 1998:*** Covers the requirements for the transportation and disposal of waste within the NT. This includes the requirements for contractors, vehicles and facilities managing listed wastes to be licenced.

3. Chemicals and wastewater description

The chemicals and wastewater typically stored within Tamboran's exploration areas include:

- Chemicals used for drilling
- Waste drilling fluids, cuttings and muds
- Chemicals used for stimulation
- Flowback wastewater
- Completions and well suspension fluids
- Waste and wastewater streams from the SPCF
- General use chemicals such as incidental condensate and oil, diesel and fuels, general equipment maintenance chemicals (hydraulic oils, degreasers etc.)

The full list of chemicals and wastewater stored onsite, including their volume, location and hazardous status is provided in Appendix A for current EMPs. The types of chemicals used under drilling and hydraulic fracture stimulation EMPs covered by this SMP is provided in Table 1, which also identifies the relevant sections and appendices per EMP. A copy of these EMPs and appendices can be found on the Department of Land, Planning and Environment (DLPE) website[1] at: https://depws.nt.gov.au/onshore-gas/environment-management-plan/approved-emps.

The assessment of chemicals, including evaluation of the environmental hazard of the chemical additives in the hydraulic fracturing fluid systems, based on their environmental persistence, bioaccumulation and aquatic toxicity properties; evaluation of human health effects; and exposure assessment can be reviewed by accessing in the relevant hydraulic fracturing chemical risk assessment appended to each approved EMP. All chemicals and wastewater stored on site will be in accordance with cl A.8.3 of the Code.

[1] Please note recent changes in the Northern Territory Government includes the update of Department names as follows: Department of Environment, Parks and Water Security (DEPWS) is now referred to as Department of Lands, Planning and Environment (DLPE)

Table 1: Types of chemicals and wastewater relevant to each drilling and HFS EMP

EMP	Drilling chemicals and waste fluids	Stimulation chemicals	Flowback wastewater	Completion and well suspension fluids	SPCF process wastewater-drip trays and bunds	General use
NT-2050-15-MP-032 Velkerri 76 S2 EMP: • Chemical RA Appendix C • Risk assessment Appendix N	x	x	x	x	N/A	x
CDN/ID NT-2050-35-PH-0018 Amungee NW-1H (ORI7): • Section 2.1.1, Table 2, Table 3.	N/A	N/A	x	x	N/A	x
NT-2050-15-MP-039 Beetaloo W-1 EMP (ORI8): Section 3.9, Table 8.	N/A	N/A	N/A	Incidental volumes may be generated	N/A	x
NT-2050-MP-040 Kalala S1 EMP (ORI9): Section 3.8, Table 8.	N/A	N/A	N/A	Incidental volumes may be generated	N/A	x
NT-2050-15-MP-041 Beetaloo Sub-basin Multi-well EMP (ORI10): • Chemical RA Appendix E • Risk assessment Appendix M	x	x	x	x	N/A	x
NT-2050-15-MP-0088 Amungee NW Delineation Program EMP (ORI11): • Section 4.13 and Section 3.15 • Chemical RA Appendix D	x	x	x	x	N/A	x

EMP	Drilling chemicals and waste fluids	Stimulation chemicals	Flowback wastewater	Completion and well suspension fluids	SPCF process wastewater-drip trays and bunds	General use
• Risk assessment Appendix L						
TB2-HSE-MP-08 Shenandoah South E&A Program EMP (TAM1-3) • Section 3.10 and Section 3.12 • Chemical RA Appendix E and Appendix E.1 • Risk assessment Appendix M	x	x	x	x	N/A	x
TB2-HSE-MP-13 Sturt Plateau Compression Facility – Appraisal gas (TAM2-2) • Section 3.17.18 and Section 3.8 • Risk assessment Appendix K	N/A	N/A	N/A generated and managed under TAM1-3	N/A generated and managed under TAM1-3	x	x
TB2-HSE-MP-14 Shenandoah South 3D Seismic Program EMP (TAM3-2) • Section 3.8.3 • Risk assessment Appendix I	N/A	N/A	N/A	N/A	N/A	x

4. Spill failure scenarios

Potential spill scenarios associated with appraisal activities are summarised in Table 2. These scenarios include:

- spills from chemical, waste and wastewater handling, transfer and storage activities onsite
- spills from chemical, waste and wastewater during transportation - trucking and gathering
- tank, drilling sump and containment vessel overflows and structural failures

The loss of containment due to the failure of well barriers is covered under the Well Operations Management Plan (WOMP).

Table 2: Spill scenario summary table

Spill scenario	Activity duration	Mechanisms	Location	Quality[1]	Quantity	Key management controls	Monitoring	Receptors	Effectiveness of controls
Spills from chemical and waste / wastewater handling and storage activities onsite.	• Drilling – 45 days • Stimulation – 15-30 days. • Well testing – 30– 180 days. • SPCF construction and commissioning – 18 months. • SPCF operation for extended appraisal – 36 months. • Duration of seismic – 3-4 months	• Container rupture • Spill during chemical storage, handling and mixing • Runoff from drilling waste management and composting. • Contaminants in water and soil pass through the food chain and bioaccumulate.	• Chemical storage area. • Chemical, oils and waste oil storage area on the SPCF. • Drilling rig. • Stimulation spread. • Drilling sumps. • Flowback storage tanks. • Well testing equipment. • Seismic lines and storage areas.	Potentially hazardous fluids such as: • Saline and drilling fluids. • Saline flowback. • Chemicals listed in EMP. • SPCF oils, coolants, antiscalants and other chemicals. **NB:** All added drilling and hydraulic fracturing chemicals have been assessed and verified to not be toxic and persistent and bio-accumulative (see EMP chemical risk assessment).	<10,000 L	• Designated storage areas with appropriate segregation of incompatible chemicals. • Secondary containment to be deployed under high-risk spill/leak storage and handling areas. • Spill kits available. • Routine inspection of chemical stores. • Sites are manned during operations, with continuous leak detection and level monitoring at all other times. • Wastewater management plan.	• Routine inspection of chemical stores, sumps and tanks during operations. • Tank leak detection.	Retained on-site	High – use of secondary containment reduces the probability of a spill. High – controls managing the storage of chemicals and wastes are mature with secondary containment measures limiting potential receptor impacts. The scientific certainty around the effectiveness of secondary containment in preventing groundwater contamination is high and mature.
Loss of containment during transfer onsite (e.g. leakage from the SPCF, gathering lines, pipes, hoses, fittings, refuelling/maintenance of seismic equipment etc).	• Drilling – 45 days • Stimulation – 15-30 days. • Well testing – 30– 180 days. • SPCF construction and commissioning – 18 months. • SPCF operation for extended appraisal – 36 months. • Duration of wastewater transfer – 30 – 45 days. • Duration of seismic – 3-4 months	• Coupling, valve, hosing and equipment failure. • Failure of buried / aboveground gathering lines. • During the seismic survey, leaks and spills would most likely result from: o loss of containment of fuels from storage area o spill during refuelling or fuel transfer o hydraulic oil leaks from seismic survey vehicles. • Contaminants in water and soil pass through	• Chemical mixing and transfer areas on the drill rig, mixing hoppers and wastewater storages. • SPCF chemical and oil storage and transfer areas. • Gathering/wastewater lines between well pads and SPCF and wastewater tanks. • Seismic lines and storage areas.	Potentially hazardous fluids such as: • Saline and drilling fluids and flowback wastewater. • Chemicals listed in EMP chemical risk assessment. • SPCF chemicals listed in EMP and managed in accordance with safety data sheets. **NB:** All added drilling and hydraulic	<1,000 L	• Secondary containment to be deployed under high-risk spill/leak storage and handling areas • Spill kits available • Routine inspection of chemical stores • Sites are manned during operations, with continuous leak detection and level monitoring at all other times • Wastewater management plan • Hydrostatic testing of gathering lines prior to operation	• Routine inspection of all chemical handling areas, including wastewater transfer points and chemical mixing areas, seismic survey area. • Monthly inspection of buried gathering lines and weekly inspection of surface gathering lines when in operation.	Retained on-site	High – use of secondary containment reduces the probability of a spill High – use and continuous monitoring of flow and pressure meters during operations reduces the probability of a spill High – controls managing the storage of various fluids are in accordance with the requirements of the Code, which limit potential receptor impacts. The scientific certainty around the effectiveness of secondary containment and transfer in preventing groundwater

Spill scenario	Activity duration	Mechanisms	Location	Quality[1]	Quantity	Key management controls	Monitoring	Receptors	Effectiveness of controls
		the food chain and bioaccumulate.		fracturing chemicals have been assessed and verified to not be toxic and persistent and bio-accumulative (see EMP chemical risk assessment).		• Seismic survey maintenance truck fitted with spill prevention equipment. • Hydraulic fluid and fuel drums stored within portable bunding and bulk fuel stored within tankers equipped with safety features such as double skins (or temporary bunding), safety cut-off valves, top accessing etc. • Spill leak and drip trays used to address the risk of minor drips and spills associated with re-fuelling operations. • In/out volume discrepancy and pressure monitoring during transfer operations • Valve pits installed at approximately 1 km intervals so if a leak is detected, flow can be shut off and the line repaired • Gathering lines will be purged of wastewater and valves will be shut-in when not in operation			contamination is high and mature.
Spills from chemical and wastewater during transportation (off-site- including transport on unsealed roads during the wet season)	• Drilling chemical transfer—1–5 days of bulk chemical transfer generally pre-drilling • Stimulation chemical transfer 2–3 truckloads of chemicals per week for approximately 6 weeks • Wastewater disposal over 3 weeks—up to approximately 22 truck movements total over the duration • Duration of seismic – 3-4 months	• Transport spill due to road condition, flooding or another event. • Traffic accident (total or partial release). • Contaminants in water and soil pass through the food chain and bioaccumulate.	Off-site along highway or access tracks	Potentially hazardous fluids such as: • Combustible fluids (e.g. diesel). • Various chemicals as listed in EMP chemical risk assessment. • SPCF chemicals listed in EMP and managed in accordance with safety data sheets for the SPCF.	<1,000 L for transport spill <50,000 L for total loss of B- triple carrying flowback	• All transport companies to be appropriately licenced to transport chemicals and waste (*Dangerous Goods Act* and *Waste Management and Pollution Control Act*) including the requirement to detect and respond to spills • No chemical or wastewater transportation during wet season, unless a risk assessment determined the activity is safe and low risk • Transportation will not occur on tracks where the surface is not safe to allow transportation	Performance of contractors to be monitored as a part of transportation contractors	• Chemical transport between Darwin/South Australia and Queensland/ and Daly Waters • Wastewater transportation between Daly Waters and Queensland via Tennant Creek	High – The transportation of wastes and chemicals is a tightly controlled industry with mature practices designed to prevent, detect and respond to transportation spills. Transport will only be undertaken in the wet season as per the specified controls to ensure the risks are ALARP. High - Any accident is likely to be restricted to road corridors and result in "serious", short term (days-weeks) reversible impacts. The scientific certainty around the transportation of chemicals and wastes is high and mature, and well

Spill scenario	Activity duration	Mechanisms	Location	Quality[1]	Quantity	Key management controls	Monitoring	Receptors	Effectiveness of controls
				• Saline wastewater. **NB:** All added drilling and hydraulic fracturing chemicals have been assessed and verified to not be toxic and persistent and bio-accumulative (see EMP chemical risk assessment).		• Wastewater and chemical transportation will not be undertaken through flooded waterways • Driving on unsealed roads and access tracks will be avoided 24 hours following a >20 mm rainfall event • Area is remote with major urban centres to be avoided. • Wastewater management plan			understood across Australia, limiting exposure to personnel, the public and surrounding receptors.
Tank, drilling sump and containment vessel overflows and structural failures	• Duration of all activities plus ongoing wastewater storage which may be extended beyond 12-months to allow for ongoing evaporation of fluids	• Overfilling of a sump and flowback tank • Structural failure of embankment or tank wall • Contaminants in water and soil pass through the food chain and bioaccumulate	• Sumps and tanks on well pad	Potentially hazardous fluids such as: • Saline wastewater with total dissolved solids >50,000 mg/L **NB:** All added drilling and hydraulic fracturing chemicals have been assessed and verified to not be toxic and persistent and bio-accumulative (see EMP chemical risk assessment).	1L to >10,000 L	• Lease pads bunded during the storage of flowback • Enclosed tanks used during wet seasons operations • Open tanks with 1:1000 ARI freeboard • Tanks constructed to Australian Standards Routine tank and sump inspections • Drilling sump to be designed and operated to handle the drilling of multiple wells • Sump solid levels to be periodically removed from the sump between wells to maintain sump capacity • Any removed drilling muds and cuttings from the sump will be stored on an impermeable liner with a permeability of less than 6 x10^{-14} m/s- and fluid captured in the sump directed to the wastewater tank	Routine tank and sump level and structural integrity (visual) inspections	Retained on lease pad within bund	High – controls managing the storage of various fluids are in accordance with the requirements of the Code, which limit potential receptor impacts. The scientific certainty around the effectiveness of conservative freeboard as a mitigation is high and mature.

[1] Refer Table 1 for a summary of the types of chemicals used under drilling and hydraulic fracture stimulation EMPs covered by this SMP.

5. Potential receptors

The location of Tamboran's Beetaloo exploration activities is remote. A description of the environment, including environmental and cultural sensitivities, with the potential to be impacted by a spill is provided in each of the EMPs. Figure 2 illustrates the separation distance from sensitive receptors such as:

- Watercourses and drainage features/ depressions
- Communities
- Homesteads
- Heritage places
- Vegetation communities
- Protected areas
- Water bores

Maps regarding sacred sites and restricted work areas are also applicable and will be provided to work crews to ensure awareness of these features.

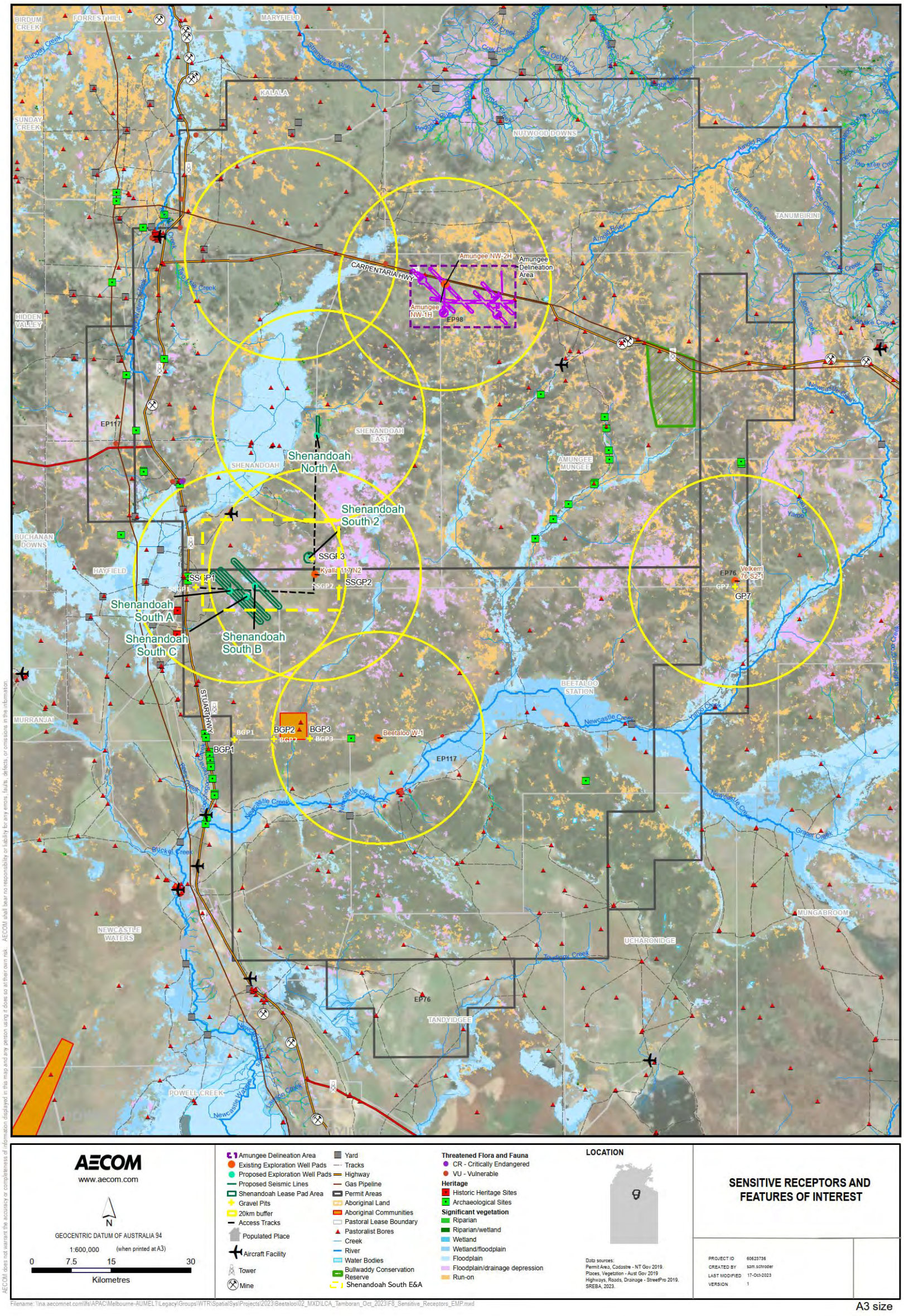

Figure 2: Location of activities and potential receptors and features of interest[2]

[2] Strategic Regional Environmental and Baseline Assessment (SREBA) 2022 mapping data has been used to draft this figure: Department of Environment, Parks and Water Security 2022. *Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin*. SREBA Data Catalogue, viewed May 2023.

6. Risk assessment

The risk of spills associated with all Tamboran activities is covered under the respective EMP for each activity.

7. Control measures

Control measures to manage spills associated with Tamboran activities are provided in the EMPs and summarised in Table 2. The key management controls include:

- Contractors are required to develop spill management procedures to comply with the requirements of this SMP.
- All chemicals, oils and waste oils to be stored within secondary containment.
- All flowback, completion fluids, chemicals, oil and fuel storage will be equipped with secondary containment (or dual liners), as per the Code.
- Drilling sumps will be lined, with enough freeboard to manage a 1:1000 Average Recurrence Interval (ARI) wet season (~1300 mm).
- Flare pits will be designed to manage a 1:1000 ARI 24-hour storm event (377 mm).
- Tanks will be designed, installed and operated as per the manufacturer's specifications and Code.
- Where flowback is being stored, the wastewater tanks shall be earthen bunded to prevent release to surrounding areas in the case of a catastrophic failure.
- The earthen bund shall be designed to hold 110% of the volume of the largest wastewater tank onsite.
- The earthen bund shall be constructed to withstand a failure event, with the bund appropriately compacted and stabilised.
- Well sites are designed and constructed to prevent spills of hazardous chemicals; this includes:
  - compacting the lease pad surface to 100 kPa to prevent infiltration.
  - provision of bunded (lined) chemical segregation areas.
- Gathering/wastewater transfer lines to have leak detection
- Monitoring to detect spills will be undertaken in accordance with Section 9.
- Procedures will be developed by contractors designed to detect, remediate and report any spills. This includes:
  - Chemical handling procedures
  - Chemical storage and handling inspection procedures
  - Spill prevention, detection and response procedures
- The transport of hydraulic fracturing chemicals and wastewater during the wet season (October to April inclusive) will be avoided, unless a risk assessment determined the activity is safe and low risk. Any necessary transportation will be undertaken in accordance with the following:
  - Transportation will not occur on tracks where the surface is not safe to allow transportation vehicles to drive upon.

  - Wastewater and chemical transportation will not be undertaken through flooded waterways.
  - The transportation of wastewater/ chemicals during rainfall events will be avoided.
  - Driving on unsealed roads and access tracks will be avoided 24 hours following a >20 mm rainfall event.
  - After a rainfall event >20 mm, or when the integrity of any unsealed road may be compromised due to prolonged rainfall, each unsealed access track proposed to be used for wastewater/ chemical transportation will be inspected to ensure the integrity of the road is sufficient to allow safe passage of the proposed transport vehicle.
  - Chemicals will not be unloaded during rainfall events.
- Effective spill clean-up material readily available at each work site and on all mobile service trucks or vehicles, where hydrocarbons and chemicals are stored and/or used.
- Inspection reports and maintenance records of secondary containment shall be kept and available for review upon request.
- Spill response mock-up drills to be completed as a part of routine emergency response training.

8. Spill response and management

The following section provides an overview of the response to spills during drilling, stimulation and well testing activities, as well as seismic program activities. Where the spill is the result of an emergency that is still active, the Beetaloo Exploration Emergency Response Plan (TBN-HSE-MP-05) will take precedence over this plan.

8.1 Rapid spill assessment

When a spill occurs, the on-site Supervisor will carry out a rapid assessment to determine the potential hazards and the type and location of emergency assistance required. This assessment shall include the following:

- Determine the physical (volume and state) and location of the spill
- Determine the appropriate spill category and type of response as per section 12.1.
- Assess the hazard of the material spilled, including any potential hazards associated with chemical mixing (such as oxidising and reducing agents)
- Determine the safety hazard to immediate response personnel and whether additional resources (such as emergency services or specialised equipment or advice) are required to manage the spill safely
- Determine spill movement, factors affecting the movement (i.e. impending weather, topography, drainage lines, seasonality etc) and spill response priorities, as per Table 3.

Table 3: Spill response priorities

Spill priority	Response considerations
People and communities	• Evacuate and muster (if deemed necessary) • Account for all people and determine missing persons • Stop unauthorised access • Provide a technical resource to the Emergency Services (if required) • Protect community (including indigenous community members) and pastoralists
Environment and sacred sites	• For emergencies that are safe to manage, onsite personnel will respond with available resources to limit the extent of the impact to the environment or a protected site • For larger incidents, or where it is unsafe for onsite personnel to respond, trained people will be mobilised to control and contain the emergency to minimise the impact to the environment or protected site
Regulators	• Notify Regulators as per incident reporting requirements
Assets	• Monitor automatic shutdown of the equipment or part thereof, or initiate manual shutdowns where it is safe to do so • Mobilise emergency services to intervene
Landholders/ leaseholders/ Native Title holders	• Notify neighbours • Notify NLC

8.2 Spill containment and clean up procedures

Generic spill containment clean-up procedures must be developed and implemented by each contractor engaged by Tamboran for significant onsite activities, aligning with the requirements of this plan. These procedures shall be adapted (where appropriate) to consider the site and chemical specific hazards associated with each spill event.

The procedures shall consider the following generic spill containment and response procedure:

- Move all people out of harm's way.
- Alert others nearby.
- Assess the situation—determine what substances are involved, the volumes, the potential receptors (people and the environment) and if additional support is required. The substance must be known prior to taking any action (refer to the safety data sheet).
- If applicable; remove any possible risk escalating factors (e.g. ignition hazards in case of flammable/combustible spills); approach from up-wind to reduce fume risks, isolate the spill source (close containment valve, similar). Ensure appropriate controls requirements are met, e.g. personal protection equipment, first aid support, etc., prior to conducting spill clean-up.
- If it is safe to do so; stop the source of the leak (if possible) and contain the spill using onsite equipment to:
    - Prevent from leaving site or entering a waterway or sensitive feature (including flood water).
    - Recover free liquid and contaminated material as soon as possible to mitigate infiltration. Material recovery should consider the benefit of recovery versus the additional impact recovery of all contaminated material could cause, as per the National Environment Protection (Assessment of Site Contamination) Measure.
- Prevent people, livestock and wildlife access to hazardous material through fencing or other barriers.
- Store contaminated material in a manner to minimise the risk of additional contamination
- Collect and retain information on the volume of extent of the spill, including photographs.
- For Level 2 spills and higher, the Project Manager shall be notified as soon as it is safe to do so, but within 2-hours.
- Project Manager to ensure appropriate external incident reporting requirements are actioned in accordance with the impact of the spill.
- For Level 2 spills and higher, Tamboran Project Manager to seek expertise as to whether additional testing and remediation is required upon completion of the initial containment and clean up. This consideration will be undertaken in in accordance with the National Environment Protection (Assessment of Site Contamination) Measure.
- Upon rectification of a reportable spill, an incident investigation shall be completed as per the Regulations. This shall include the root cause of the incident, actions taken to mitigate the impact and ongoing monitoring, and maintenance required to ensure the site is stable and non-polluting.
- Where spills have occurred in proximity to a surface water feature (such as a water course or drainage depression) ongoing monitoring of that feature may be required if impacts are reasonably expected. This includes leaks from gathering lines and transport accident. This shall be considered on a case-by-case basis and included in the incident response to DLPE Petroleum Regulation Branch.

8.3 Contaminated material disposal

Contaminated material disposal will be undertaken in consideration of the following:

- Depending on the nature of the spill (i.e. size, duration and chemical involved), contaminated material may be identified visibly during clean up (i.e. identify the extent of the wetting front) or may require in situ analysis (such as soil EC/pH testing). Where it is difficult to ascertain whether all contaminated material has been removed, additional lab analysis verification may be required (i.e. for extensive spills typically a category 3 and beyond).
- During a spill clean-up, the storage of contaminated material must be undertaken in a manner that minimises additional contamination.
- Offsite disposal must be undertaken in accordance with the *Waste Management and Pollution Control Act 1998*.
- All listed waste transportation shall be undertaken by licenced contractors, be tracked and disposed of at licenced waste management facilities.

9. Monitoring and inspections

The monitoring and inspection programs to identify spills is summarised in Table 4.

Table 4: Spill monitoring and inspections

Monitoring program	Frequency	Methodology	Purpose	Minimum volume of leak
Flowback wastewater tank and sump level monitoring (when wastewater is stored on-site)	During operations: • Daily • All other times: • Weekly during the dry season (May to September) • Daily during the wet season (October to April)	• Instrument or • Level dip/ visual assessment	Prevent the overtopping of tanks	<10 L
Tank leak detection (when flowback wastewater is stored on-site)	Continuous	Instrument	Detect the migration of fluid through primary containment into the interstitial space	<50 L
Chemical and oil storage areas (when chemical stored on-site)	During operations: Daily All other times: Weekly	Visual (a camera may be used where sites are unmanned)	Detection of leaks	<5 L
Wastewater tank structural integrity (when wastewater is stored onsite)	Weekly	Visual inspection	Detect potential structural weakness	N/A

Monitoring program	Frequency	Methodology	Purpose	Minimum volume of leak
Gathering/wastewater lines	Continuous flow and pressure monitoring during wastewater transfers of gathering lines	Instrument and visual inspection	Detection of leaks	<110 L gathering line
	Surface pipework and infrastructure: weekly during operations			<10 L surface pipework
	Buried pipework: monthly during operations			<50 L for a buried pipeline
SPCF liquid waste handling system	Monthly during operations	Instrument and visual inspection	Detection of leaks	<1 L
Field service truck and refuelling trucks during seismic program	Daily during operations Continuous during refuelling operations	Visual inspections	Detection of leaks	1-200 L

10. Roles and responsibilities

The critical roles and responsibilities set out in Table 5 are for the main members of the spill response group. This team represents the core group of resources that will lead a spill response with the support of the broader Tamboran team.

Table 5: Roles and responsibilities

Position	Role and responsibility
Project Manager/ Drilling and completions VP/ Seismic VP	Ultimately accountable for the implementation of the spill management plan (SMP). Role, or delegate, will liaise with Tamboran environment specialists to determine remediation requirements and external reporting obligations.
On-site Supervisor/ Onsite Company representative	Responsible for the initial response to a spill. This role will be delegated to the well site representative or nominated contractor in charge of a work program. Role will undertake the initial spill assessment, engage emergency services (if required) and co-ordinate immediate spill clean-up operations associations to minimise the potential impacts to people, places and the environment.
VP Environment and Permit Approvals	Report spill to regulatory authorities. Provide expertise on clean up requirements and ongoing monitoring and management requirements. Interface with government and regulatory bodies for communication and consents.
HSE Manager	Provide specialist technical advice (emergency response) to support spill management activities.

11. Waste transportation and disposal

All contractors engaged to undertake waste transportation and disposal will be required to comply with this plan. A bridging SPMP will be developed by each contractor summarising the activities to be undertaken to comply with this plan and the Code.

12. Spill reporting

12.1 Spill rating

All spills shall be reported, with volumes of spilled material/ substances recorded.

Table 6 provides a summary of the spill classification based upon the volume and location of spill. The hazards of the potential spill to people and the environment should be assessed independently, to ensure incident specific hazards are considered in the spill response. This table provides guidance as to the likely spill scenarios that may trigger the different incident reporting requirements.

When classifying spills and determining the reporting requirements, Ministerial conditions and environmental performance objectives and criteria should also be considered when determining whether the event is a recordable or reportable event.

The spill tiers include:

- **Internal Record:** Minor routine spills readily dealt with during normal operations (i.e. minor diesel spills during refuelling, hydraulic oil hose leaks etc.). Spills below 200 L and restricted to the facility or activity area. Spills contained within existing bunds below 2,500 L and low hazardous materials (i.e. sediment, grey water, and low toxicity substances) fall within this category. Clean up time is generally hours, with no residual contamination.
- **Level 1:** Spills contained within the facility or activity area and can be cleaned up without involvement of external organisations. Tier 1 spills include spills with clean up time greater than 3 hours but less than 1-day and leave no residual contamination. These spills are not trivial or routine and are therefore classified as recordable incidents as per section 12.2.
- **Level 2:** Spills that have not been completely contained within the site boundary and/or may require additional resources to clean up. These include larger spills with cleanup time greater than 1 day but less than 7 days. Level 2 spills are recordable and may be reportable depending on the actual or potential for downstream environmental impact, as defined in section 12.2. These spills may require notification under the *Waste Management and Pollution Control Act 1998.*
- **Level 3:** Severe spills that cannot be contained by the operator and requires substantial additional resources to manage the spill. Clean up time is generally greater than a week. Level 3 spills are reportable incidents.

Table 6: Spill tier levels

Receiving environment	Spill (L)		
	20-200 L	200-2,500 L	>2,500 L
Spills contained in bunds	**Internal record***		**Level 1**
Onsite *(well pad, camp pad, hardstand, road, or work area)* compacted or sealed surface**	**Internal record***	**Level 1**	**Level 2**
Offsite - areas adjacent to well pads, camp pads, roads, seismic lines where spills have moved beyond the approved activity area**	**Level 1**	**Level 2**	**Level 3**
Sensitive environmental or cultural feature (such as a waterway, drainage lines, wetland, high valued habitat and sacred site) or where the spill has, or has the potential to, cause material or serious environmental harm **	**Level 2**	**Level 3**	**Level 3**

Notes:

* Internal records in Tamboran's incident management system, with monthly reviews. For certain substances, such as flowback, there may be site specific requirements outlined in the EMP approval notice. The approvals notice should be reviewed.

** Spills of dangerous goods or wastes offsite may need to be reported under NT *Dangerous Goods Act 1998* or *Waste Management and Pollution Control Act 1998*.

12.2 Incident reporting

Incidents may require reporting under the Petroleum (Environment) Regulations and Waste Management Pollution Control Act.

12.2.1 Petroleum (Environment) Regulations incident reporting

12.2.1.1 Reportable environmental incident reporting

The Regulations define a reportable incident as an incident arising from a regulated activity that has caused, or has the potential to cause, material environmental harm or serious environmental harm as defined under the Petroleum Act.

An interest holder must notify DLPE Petroleum Regulation Branch of a reportable incident as soon as practicable but no later than two-hours after the first occurrence of the incident or after the time the interest holder becomes aware of the incident. The preferred method of notifying DLPE Petroleum Regulation Branch is email:

1. Email: Onshoregas.dlpe@nt.gov.au[3]
2. Phone: 1800 064 567 NT Environment Protection Authority (NT EPA) Pollution Hotline (caller to state it is a petroleum matter)

Any verbal report to DLPE Petroleum Regulation Branch must be followed up by a written report from the Project Manager within three days in accordance with the Regulations.

[3] Effective 20 September 2023, the preferred method of DPLE notification is email.

12.2.1.2 Recordable incidents

The Regulations define a recordable incident as an incident arising from a regulated activity that:

I. Has resulted in an environmental impact or environmental risk not specified in the current plan for the activity; or

II. Has resulted in a contravention of an environmental performance standard specified in the current plan for the activity; or

III. Is inconsistent with an environmental outcome specified in the current plan for the activity; and

IV. Is not a reportable incident.

These types of spills are typically a Level 1 type spill as defined in Table 6.

An interest holder must notify DLPE Petroleum Regulation Branch of a recordable incident as soon as practicable but no later than 15-days after the reporting period (agreed period or each 90-day period after the day on which the EMP is approved). The preferred method of notifying DLPE Petroleum Regulation Branch is email: Onshoregas.dlpe@nt.gov.au.

12.2.2 Waste Management and Pollution Control Act incident reporting

In accordance with the *Waste Management and Pollution Control Act,* where contaminants or waste is not confined within the land on which the petroleum activities are undertaken (i.e. the approved disturbance areas where the petroleum activity is occurring), Tamboran will notify the NT EPA of any incident causing or threatening to cause pollution as soon as practicable, but no less than 24 hours after becoming aware of the incident.

A notifiable incident is defined as an incident that causes, or is threatening or may threaten to cause, pollution resulting in material environmental harm or serious environmental harm.

A notification must include:

a) the incident causing or threatening to cause pollution;

b) the place where the incident occurred;

c) the date and time of the incident;

d) how the pollution has occurred, is occurring or may occur;

e) the attempts made to prevent, reduce, control, rectify or clean up the pollution or resultant environmental harm caused or threatening to be caused by the incident; and

f) the identity of the person notifying.

The notification shall be made to the NT EPA Pollution Hotline 1800 064 567 (caller to state it is a petroleum matter) and the DLPE Petroleum Regulation Branch email: Onshoregas.dlpe@nt.gov.au.

13. Acronyms and Abbreviations

Acronym / abbreviation	Meaning
km	Kilometre
kPa	kilopascal
mm	Millimetre
m/s	Metres per second
L	Litre
ARI	Average Recurrence Interval
DEPWS	Department of Environment, Parks and Water Security (previous Department name)
DLPE	Department of Lands, Planning and Environment (new Department name)
EMP(s)	Environment management plan(s)
EP	Exploration Permit
NT	Northern Territory
NT EPA	Northern Territory Environment Protection Authority
SPCF	Sturt Plateau compression facility
SMP	Spill Management Plan
SREBA	Strategic Regional Environmental and Baseline Assessment
WOMP	Well Operations Management Plan

Appendix A Chemical volumes per well and storage areas (based on maximum 3 wells per pad)

NOTE: In accordance with the Code, a chemical risk assessment has been completed on all listed chemicals, which have been verified to not be toxic and persistent and bioaccumulative.

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
Acetic acid – 60%	3,000	9,000	L	Stimulation chemical storage area	No
BE-9 Biocide	17,000	51,000	L	Stimulation chemical storage area	Yes
Caustic Soda Liquid	15,000	45,000	L	Stimulation chemical storage area	No
DCA-11001 Breaker activator	5,000	15,000	L	Stimulation chemical storage area	Yes
DCA-13002 Breaker	300	900	kg	Stimulation chemical storage area	Yes
DCA-13003 Breaker	10,000	30,000	L	Stimulation chemical storage area	Yes
DCA-16001 Clay Stabiliser	42,000	126,000	L	Stimulation chemical storage area	No
DCA-17001 Corrosion inhibiter	1,000	3,000	L	Stimulation chemical storage area	Yes
DCA-19001 Crosslinker	600	1,800	kg	Stimulation chemical storage area	Yes
DCA-19002 Crosslinker	10,000	30,000	L	Stimulation chemical storage area	Yes
DCA-23001 Friction reducer	5,000	15,000	kg	Stimulation chemical storage area	No
DCA-23003 Friction reducer	18,000	54,000	L	Stimulation chemical storage area	No
DCA-25005 Gelling agent	35,000	105,000	kg	Stimulation chemical storage area	No
DCA-30001 Scale inhibitor	15,000	45,000	L	Stimulation chemical storage area	No
DCA-32002 Surfactant	15,000	45,000	L	Stimulation chemical storage area	Yes
DCA-32014 Surfactant	200	600	L	Stimulation chemical storage area	Yes
FE-2 Buffer	200	600	kg	Stimulation chemical storage area	No
Hydrochloric acid – 32%	50,000	150,000	L	Stimulation chemical storage area	Yes
Alcohols, C11-14-iso-, C13-rich,ethoxylated- Surfactant	5,285	15,855	L	Stimulation chemical storage area	Yes

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
Sodium (C14-16) olefin sulfonate - Surfactant	4,658	13,974	L	Stimulation chemical storage area	Yes
Diisobutyl glutarate - plasticiser	627	1,881	L	Stimulation chemical storage area	No
Diisobutyl succinate - plasticiser	209	627	L	Stimulation chemical storage area	No
Diisobutyl adipate- plasticiser	179	537	L	Stimulation chemical storage area	No
Sodium thiosulphate- stabilising agent	4,763	14,289	L	Stimulation chemical storage area	No
Sodium sulphate stabilising agent	913	2,739	L	Stimulation chemical storage area	No
Sodium sulphite stabilising agent	794	2,382	L	Stimulation chemical storage area	No
Ethylene glycol- crosslinker	5,112	15,336	L	Stimulation chemical storage area	Yes
Choline Chloride- Clay stabiliser	10,301	30,903	L	Stimulation chemical storage area	No
Glutaraldehyde- biocide	14,930	44,790	L	Stimulation chemical storage area	Yes
Ammonium sulphate- breaker	4,479	13,491	L	Stimulation chemical storage area	Yes
Polyacrylamide- friction reducer	4,479	13,491	L	Stimulation chemical storage area	No
Sodium polyacrylate- gelling agent	746	2,238	L	Stimulation chemical storage area	No
Sodium bisulfite- stabiliser	149	447	L	Stimulation chemical storage area	No
Alkyl alcohol- surfactant	149	447	L	Stimulation chemical storage area	Yes
2-Propenoic acid, homopolymer, ammonium salt-biocide	149	447	L	Stimulation chemical storage area	Yes
Potassium persulfate-breaker	149	447	L	Stimulation chemical storage area	Yes
2-Ethoxy-naphthalene-surfactant	149	447	L	Stimulation chemical storage area	Yes
Sodium gluconate- stabiliser	8,576	25,728	L	Stimulation chemical storage area	No
Boric -crosslinker	4,288	12,864	L	Stimulation chemical storage area	Yes
Potassium hydroxide- pH control	10,745	32,235	L	Stimulation chemical storage area	Yes

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
Mannanase- crosslinker	2	6	L	Stimulation chemical storage area	Yes
Ammonium persulphate- breaker	7,451	22,353	L	Stimulation chemical storage area	Yes
Talc- buffer	384	1,152	L	Stimulation chemical storage area	No
Sodium bromate- breaker	50,441	151,323	L	Stimulation chemical storage area	Yes
Hepta sodium phosphonate- emulsifier	3,176	9,528	L	Stimulation chemical storage area	No
Distillates, hydrotreated light- friction reducer	54,231	162,693	L	Stimulation chemical storage area	No
Guar gum- viscosity regulator	15,141	45,423	L	Stimulation chemical storage area	No
Poly-oxyethylene nonylphenol ether- surfactant	4,466	13,398	L	Stimulation chemical storage area	Yes
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, salts with bentonite- biocide	4,466	13,398	L	Stimulation chemical storage area	Yes
1,6-Hexanediol- cross linker	447	1,341	L	Stimulation chemical storage area	Yes
Hydrochloric acid- pH control	44,715	134,145	L	Stimulation chemical storage area	Yes
N-benzyl-alkyl pyridinium chloride- pH control	28	84	L	Stimulation chemical storage area	Yes
Formic acid- corrosion inhibitor	38	114	L	Stimulation chemical storage area	Yes
Sodium erythorbate- scaler prohibitor	334	1,002	L	Stimulation chemical storage area	No
Citric acid- pH control	15,878	47,634	L	Stimulation chemical storage area	No
Acetic acid- pH control	15,878	47,634	L	Stimulation chemical storage area	No
Isopropanol- clay management	83	249	L	Stimulation chemical storage area	Yes
Ethoxylated C12-C16 alcohol - surfactant	57	171	L	Stimulation chemical storage area	Yes
Ethoxylated decanol - surfactant	19	57	L	Stimulation chemical storage area	Yes
Cinnamaldehyde- biocide	57	171	L	Stimulation chemical storage area	Yes

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
Ethoxylated tallow alkyl amine - surfactant	9	27	L	Stimulation chemical storage area	Yes
Methanol- corrosion inhibitor	2	6	L	Stimulation chemical storage area	Yes
Polyacrylamide - friction reducer	49,093	147,279	L	Stimulation chemical storage area	No
Polyethylene glycol trimethylnonyl ether - clay manager	87	261	L	Stimulation chemical storage area	Yes
Water in additive- stabiliser	66,804	200,412	L	Stimulation chemical storage area	No
Potassium sorbate food grade- corrosion inhibitor	14	42	L	Stimulation chemical storage area	No
Mannanase (Mannan endo-1,4-beta-mannosidase)- cross linker	2	6	L	Stimulation chemical storage area	Yes
Nonoxynol-9- surfactant	9	27	L	Stimulation chemical storage area	Yes
2-Ethylhexanol PO/EO polymer- stabiliser	9	27	L	Stimulation chemical storage area	No
Corn oil- friction reducer	662	1,986	L	Stimulation chemical storage area	No
Sodium chloride	15,000	45,000	kg	Completion chemical storage area	No
ALDACIDE G	500	1,500	L	Completion chemical storage area	Yes
OXYGON	100	300	kg	Completion chemical storage area	No
BARACOR 100	2,000	6,000	L	Completion chemical storage area	Yes
Sodium Hypochlorite 10–30%	10,000	30,000	L	Completion chemical storage area	Yes
CON-DET	50	150	kg	Drilling chemical storage area	No
SAPP	50	150	kg	Drilling chemical storage area	No
Bentonite	3,000	9,000	kg	Drilling chemical storage area	No
Caustic soda	1,400	4,200	kg	Drilling chemical storage area	No
EZ MUD DP or EZ MUD Liquid	2,000	6,000	kg	Drilling chemical storage area	No
ALDACIDE G	336	1008	kg	Drilling chemical storage area	Yes
STOPPIT	1,000	3,000	kg	Drilling chemical storage area	No
Soda ash	350	1050	kg	Drilling chemical storage area	Yes
BARACOR 100	250	750	kg	Drilling chemical storage area	Yes
Sodium chloride (flossy salt)	96,000	288,000	kg	Drilling chemical storage area	No

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
Barite	500	1,500	kg	Drilling chemical storage area	No
BARACARB	500	1,500	kg	Drilling chemical storage area	Yes
Citric acid	500	1,500	kg	Drilling chemical storage area	Yes
BARADEFOAM HP	500	1,500	kg	Drilling chemical storage area	No
Sodium Bicarbonate	500	1,500	kg	Drilling chemical storage area	No
PERFORMATROL	500	1,500	kg	Drilling chemical storage area	Yes
SOURSCAV	500	1,500	kg	Drilling chemical storage area	No
DRIL-N-SLIDE	500	1,500	kg	Drilling chemical storage area	No
STEELSEAL	500	1,500	kg	Drilling chemical storage area	Yes
BARAZAN D or BARAZAN D Plus	4,150	12,450	kg	Drilling chemical storage area	No
PAC L	2,300	6,900	kg	Drilling chemical storage area	Yes
Potassium chloride	22,500	67,500	kg	Drilling chemical storage area	No
QUIK-FREE	500	1,500	kg	Drilling chemical storage area	No
BAROFIBRE, BAROFIBRE Superfine and BAROFIBRE COARSE	500	1,500	kg	Drilling chemical storage area	No
BaraBlend-657	500	1,500	kg	Drilling chemical storage area	Yes
N-DRIL HT Plus	500	1,500	kg	Drilling chemical storage area	Yes
DEXTRID LTE	4,600	13,800	kg	Drilling chemical storage area	No
BARABUF	500	1,500	kg	Drilling chemical storage area	No
BDF 933 or BaraLube W-933	864	2,592	kg	Drilling chemical storage area	Yes
BAROLIFT	500	1,500	kg	Drilling chemical storage area	No
OXYGON	500	1,500	kg	Drilling chemical storage area	No
ENVIRO-THIN	500	1,500	kg	Drilling chemical storage area	No
Lime	500	1,500	kg	Drilling chemical storage area	Yes
Calcium chloride	37,000	111,000	kg	Drilling chemical storage area	Yes
Sodium bromide	8,610	24,480	kg	Drilling chemical storage area	Yes
Evolube TR	14,500	43,500	L	Drilling chemical storage area	Yes
Radiagreen EME	4,800	14,400	L	Drilling chemical storage area	Yes
Radiagreen EBL	4,800	14,400	L	Drilling chemical storage area	Yes
Polydrill	7,500	22,500	kg	Drilling chemical storage area	Yes
Alpine spotting beads	1,000	3,000	kg	Drilling chemical storage area	Yes
Barite- weighting agent	354,000	1,062,000	kg	Drilling chemical storage area	No
Bio-Paq HT filtration control	1,134	3,402	kg	Drilling chemical storage area	Yes
Brine-Pac XTS corrosion inhibitor	3,400	10,200	L	Drilling chemical storage area	Yes
Calcium chloride -salinity	180,000	540,000	kg	Drilling chemical storage area	Yes
CF Desco deflocculant	2,270	6,810	kg	Drilling chemical storage area	Yes

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
Chek-Loss fibrous LCM	1,360	4,080	kg	Drilling chemical storage area	No
Citric acid pH control	1,360	4,080	kg	Drilling chemical storage area	No
Ecco-Temp HT extender	8,000	24,000	L	Drilling chemical storage area	Yes
Flowzan viscosifier	5,000	15,000	kg	Drilling chemical storage area	No
Mil-Lime (calcium hydroxide alkalinity)	1,361	4,080	L	Drilling chemical storage area	No
Magnesium oxide pH buffer	7,500	22,500	kg	Drilling chemical storage area	No
Mil-bio SEA 98 biocide	1,800	5,400	L	Drilling chemical storage area	Yes
Mil-carb LCM / bridging	5,000	15,000	kg	Drilling chemical storage area	No
Milstarch filtration control	5,000	15,000	kg	Drilling chemical storage area	No
Navi-Lube lubricant	16,650	49,950	L	Drilling chemical storage area	Yes
New-Drill Plus shale stabiliser	1,000	3,000	kg	Drilling chemical storage area	No
Noxygen XT oxygen scavenger	884	2,652	kg	Drilling chemical storage area	No
Ova Col 110 HC cloud point glycol	13,000	39,000	kg	Drilling chemical storage area	Yes
Potassium chloride salt / shale stabiliser	41,000	123,000	kg	Drilling chemical storage area	Yes
Potassium hydroxide pH source	1,250	3,750	kg	Drilling chemical storage area	Yes
Pyro-Trol II HT filtration control	25	75	kg	Drilling chemical storage area	No
Pyro-Vis II HT viscosifier	1,400	4,200	kg	Drilling chemical storage area	Yes
Soda ash pH and hardness control	1,000	3,000	kg	Drilling chemical storage area	Yes
Sodium bicarbonate pH and hardness control	1,000	3,000	kg	Drilling chemical storage area	No
Sodium chloride salt	54,400	163,200	kg	Drilling chemical storage area	No
TEQ-Lube II	28,800	86,400	kg	Drilling chemical storage area	Yes
New-Thin – polymeric thinner	4,680	14,040	kg	Drilling chemical storage area	Yes
LC-Lube – lubricant (graphite)	9,090	27,270	Kg	Drilling chemical storage area	No
W.O. defoam defoamer	600	1,800	L	Drilling chemical storage area	Yes
Xan-Plex D viscosifier	3,000	9,000	kg	Drilling chemical storage area	No
TEQ-LUBE II - lubricant (25322-6-3)	14,400	43,200	kg	Drilling chemical storage area	Yes
TEQ-LUBE II - lubricant (39464-69-2)	14,400	43,200	kg	Drilling chemical storage area	Yes
NEW-THIN - Polymeric thinner	4,680	14,040	kg	Drilling chemical storage area	No
LC-LUBE - lubricant (graphite)	9,090	27,270	kg	Drilling chemical storage area	No
MAX-GUARD EA	26,000	78,000	L	Drilling chemical storage area	Yes
MAX-GUARD PLUS	26,000	78,000	L	Drilling chemical storage area	Yes
MAX-GUARD PLUS A	26,000	78,000	L	Drilling chemical storage area	Yes

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
SARALINE 185V	18,603	55,809	kg	Drilling chemical storage area	Yes
General operation chemicals					
Diesel	250	750	KL	Diesel storage tanks	Yes
Hydraulic oil	1,000	3,000	L	Workshop	Yes
Engine oil	1,000	3,000	L	Workshop	Yes
Degreasers	100	300	L	Workshop	Yes
Waste drilling fluids	2,500	7,500	m^3	Drilling mud sump	Yes
Completion fluids	1.4	4.2	ML	Drilling mud sump	No
Condensate	10	10	KL	Drilling chemical storage area	Yes
Flowback	~10.8 ML per well		ML	Flowback tanks	Yes
Lubricants	-	6,600	L/pa	SPCF chemical storage	Yes
Triethylene glycol	-	150,000	L/pa	SPCF chemical storage	Yes
Methanol	-	36,000	L/pa	SPCF chemical storage	Yes
Corrosion inhibitor	-	9,000	L/pa	SPCF chemical storage	Yes
H_2S scavenger	-	160,000	L/pa	SPCF chemical storage	Yes
Biocide	-	2,000	L/pa	SPCF chemical storage	Yes
Bulk diesel	-	50,000	L/pa	SPCF chemical storage	Yes
Engine coolants	-	25,000	L/pa	SPCF chemical storage	Yes
Hydraulic oil	-	25,000	L/pa	SPCF chemical storage	Yes
Engine oil	-	10,000	L/pa	SPCF chemical storage	Yes
Greases, solvent, paints, solvents	-	100	L/pa	SPCF chemical storage	Yes
Chemical inhibitors	-	5,000	L/pa	SPCF chemical storage	Yes
Condensate (trace levels)	-	<160	L/pa	SPCF chemical storage	Yes
Proppants*					
100 mesh sand	91,000	273,000	kg	Stimulation chemical storage area	No
Quartz or organophilic phyllosilicate- proppant	1,084	3,252	L	Stimulation chemical storage area	No
40/70 sand	1,650,000	4,950,000	kg	Stimulation chemical storage area	No
30/50 sand	610,000	1,830,000	kg	Stimulation chemical storage area	No
Silicon dioxide (quartz/sand) 100% Sand	4,757,614	14,272,842	kg	Stimulation chemical storage area	No
Silicon dioxide (quartz/sand) 40/70	5,435,287	16,305,860	kg	Stimulation chemical storage area	No

Material name	Typical volume	Maximum volume	Unit	Storage area	Hazardous (Y/N)
* Proppants are sand which is inert. They do not require special chemical bunding but are co-located in the stimulation chemical storage area, within the well pad bund. Residual proppant from a stimulation campaign is often used to assist with chemical spills on the well pad, where contaminated spill material is removed.					
Cleaning chemicals and spill response					
Soda ash – sodium carbonate	3,750	11,250	kg	Stimulation chemical storage area - spill response for acid spills	Yes
Flush fluid - distillates (petroleum), hydrotreated	1,500	4,500	L	Stimulation chemical storage area - Equipment cleaning	Yes

APPENDIX I

Environmental Risk Assessment

Ref	Environmental Factor	Risk scenario description	Risk Source	Code of Practice	Unmitigated			Risk Mitigation Measures			Residual			ALARP Criteria Achieved?	Residual Risk ALARP and Acceptable Statement	Acceptable Criteria Achieved?	Scientific Uncertainty Ranking
					Consequence	Likelihood	Risk Rating	Prevent	Detect	Recover	Consequence	Likelihood	Risk Rating				
LAND																	
1	Landforms	Loss in long-term soil productivity and viability through soil destabilisation, increased risk of erosion and sedimentation, compaction and dust.	Seismic line preparation and survey execution with vehicles and machinary (i.e. small dozer/positrak).	A.3.4 Erosion and sediment control and hydrology	1	5	M	• Pre-determination of no go and avoidance areas using high resolution imagery prior to commencement (Elimination). • Selective clearing of seismic lines with blade up and minimising overworking of seismic lines to reduce topsoil erosion (Engineering) • Erosion and Sediment Control Plan in place and maintained in functioning condition (Engineering). • Vegetation pushed up during seimic line preparation will be placed back over lines immediately after seismic recording (Engineering). • Preparation of seismic lines will minimise the removal of vegetation, rootstock, topsoil and seed bank, reducing the risk of erosion and increasing the rate of vegetation recovery (Engineering). • Traversing sensitive vegetation communities (drainage lines / drainage depressions / sinkholes) and areas with low heritage constraints on foot (Elimination). • Clearing of slopes >2% will be avoided. • From landscape view, overall disturbance area is small (with no more than 0.18% of the Shenandoah South E&A area impacted (Elimination). • Separation distance from Jingaloo and Lily Hole community living areas is 25 to 65 km from activity area (Elimination). •No vehicle activity in waterlogged or saturated areas (Elimination)	• Rehabilitation monitoring to assess soil productivity impacts (Administration). • Spatial data before and after to confirm stayed within survey parameters and inform rehabilitation success (Administration).	• Additional inputs may be required to further stabilise soils and vegetation based on results of the rehabilitation monitoring (Engineering).	1	3	L	Yes	• A minor loss of productivity is anticipated in the earlier stages of rehabilitation of the disturbed areas of the seismic lines, returning back to pre-disturbed state within ~10 years. This will be accelerated through light ripping (if required) and the placement of vegetation over cleared areas of seismic lines immediately after data recording. Regeneration will be monitored as per the rehabilitation plan. • The erosion and sediment release from cleared areas is a well documented impact. The consequences of sediment releases are likely to be minor, a function of the low risk nature of the site soils types, design of seismic program and ongoing inspection and maintenance programs. • The likelihood of these minor locally restricted releases of sediment is considered unlikely (<30 % probability).	Yes	Low
2	Terrestrial environmental quality	Field servicing of seismic vehicles and equipment resulting in spill or leak to soils. Storage of fuel, oils or lubricants required for seismic survey at designated area.	Spills/leaks from the handling and storage of fuels during the activity, including hydraulic leaks from seismic survey vehicles, spills during refuelling or fuel transfer.	A.3.8 Containment of contaminants C.7.2 Spill Management Plan	1	4	M	• All fuels and equipment, and high risk spill handling areas are to have secondary containment. • Chemicals to be transported in accordance with the Australian Dangerous Goods Code and NT Dangerous Goods Act by licencsed contractors. • No chemical transportation during wet season, unless a risk assessment determined the activity is safe and low risk. • Area is remote with major urban areas to be avoided during the transportation of dangerous goods and wastes in accordance with the NT Dangerous Goods Act. • All vehicles mechanically maintained and free of oil leaks. • Portable storage bunding and spill kits on hand during seismic survey.	• Daily inspections during seismic acquisition to identify and respond to any potential leaks or loss of containment. • Daily vehicle inspections during seismic acquisition to identify and respond to any potential leaks from equipment.	• Spills and leaks to be cleaned up and rectified immediately (Engineering). • Any contamination event to be characterised and have remediation plans developed and executed in accordance with the process outlined in schedule A of the National Environmental Protection (Assessment of site Contamination) Measures (Engineering).	1	3	L	Yes	• The storage, handling and management of chemicals is a standard activity that is managed through a mature regulatory setting. • The COP further reduces the likelihood and consequence of chemical spills and contamination, through the mandated use of secondary containment, a spill management plan and groundwater monitoring. • A spill event is likely to result in low, short term reversible impacts restricted to the existing location on the seismic line. • The likelihood is reduced down to unlikely (<30% probability of occurring) based on controls in place including secondary containment, rapid spill detection, use of spill kits and rehabilitation requirements.	Yes	Low
3	Terrestrial ecosystems	Transport of weeds or other exotic species and plant diseases between regions through Transport operations that may compromise ecological integrity and impact pastoral and cultural activities in the area.	Introduction and spread of weeds in the area.	A.3.6 Weed management	2	3	M	• Implement the Tamboran Beetaloo Sub-basin Weed Management Plan (Appendix D) (Administration). • All equipment and vehicles to be washed-down and to have a Biosecurity Declaration Certificate prior to access to site (Elimination). • Areas of proposed exploration have been surveyed and are deemed to have low weed abundance (Elimination). • Activity will be restricted to defined seismic lines and camp sites (Elimination). • Vegetation pushed during seimic line preparation will be placed back over cleared areas immediately after seismic recording (Engineering). • Preparation of seismic lines will minimise the removal of vegetation, rootstock, topsoil and seed bank, increasing the rate of vegetation recovery (Engineering).	• 6 monthly monitoring implemented around infrastructure to detect the spread/ introduction of weed species (Administration). • Tamboran assurance activities to target equipment wash-down certificates to ensure standards are being met (Administration).	• Where weed outbreaks are identified associated with Tamboran's activities, infestations will be treated in accordance with the Weed Management Plan (Elimination) • Corrective actions implemented where ongoing biosecurity breaches are identified.	2	3	M	Yes	• The area in the vicinity sites is free of weeds. • Weeds are present across the broader property. • Any introduction of weeds is likely to result in localised impact, with weed management requirements likely to reduce the consequence down to moderate, short term. • Due to the inherent nature of weed prevention the risk likelihood is considered unlikely, with a probability less than <30%.	Yes	Low
4		The creation of seismic lines across the landscape may impact on native habitat, including potential listed threatened ecological communities and species.	Poor rehabilitation of the seismic lines reduces regional habitat and promotes weed invasions, soil and erosion instability.	A.3.9 Rehabilitation	1	4	M	• A site specific Rehabilitation Plan has been developed and will be implemented progressively (Engineering) • Vegetation pushed during seimic line preparation will be placed back over cleared areas immediately after seismic recording (Engineering). • 3D seismic program to prioritises the avoidance of vegetation clearing by locating source lines that avoid large trees and dense vegetation areas and using low impact energy sources (Engineering/Elimination). • Preparation of seismic lines will minimise the removal of vegetation, rootstock, topsoil and seed bank, reducing the risk of erosion and increasing the rate of vegetation recovery (Engineering). • 3D seismic survey maximum clearing footprint is less than 50 ha, which represents <0.023% of the total EP98 and EP117 area (Engineering). • Area has limited development with no widespread land clearing or other pressures from agriculture or other users (Elimination). • Petroleum activity is limited in scale and will not material decrease availability of habitat across the region (Elimination). • Strategic Regional Environmental Baseline Assessment (SREBA) completed to collected baseline environmental data, with Environmental Impact Assessments completed to address cumulative impacts from industry (Administration/ Engineering/ Elimination).	• Rehabilitation monitoring to be undertaken to track rehabilitation progress (Administration)	• Maintenance will be undertaken periodically to fix any defects (Engineering)	1	3	M	Yes	• Risks associated with rehabilitation are well known. • Knowledge of rehabilitation within the Beetaloo Basin has been gained, based on previous seismic line rehabilitation programs. • Strategic Regional Environmental Baseline Assessment (SREBA) and baseline land condition assessment report has not indicated the 3D seismic program will have a significant impact on listed threatened vegetation communities or species.	Yes	Low
5		The exploration program may increase the risk of accidental bushfires and change the fire regime including: • Increased incidence and intensity of bushfires that can lead to vegetation degradation and habitat modification. • Bullwaddy and Lancewood communities are fire sensitive. Inappropriate fire regimes may result in a community succession from Bullwaddy through Lancewood to a Eucalypt dominated open woodland (PWCNT, 2005).	Accidental ignition of fire during seimic acquisiation, use of explosives and general access.	A.3.4 Erosion and sediment control and hydrology A.3.7 Fire management	3	2	M	• Bushfire management plan implemented to prevent and respond to bushfires - including establishment of communication and fire response protocols with pastoralists (Administration). • Bushfire awareness included in site inductions (Administration). • Designated smoking areas on-site (Elimination). • Firefighting equipment to be available to deal with fires (Engineering). • Vehicles to be equipped with fire extinguishers (Engineering). • Fire response to be implemented during seismic program, with spotters and fire trailers utilised to put out spot fires during work (Administration/Engineering). • Activities will comply with landholder and regional bushfire management plans (Elimination). • Area in the vicinity of the seismic activity have had recent (within 1-2 years) fire activity, reducing the fuel load (Elimination).	• Annual fire preparedness assurance activities completed where activities are proposed during high fire risk periods (Administration). • Daily monitoring of bushfires in the region during periods of high fire danger (Administration). • Annual fire frequency mapping using the Northern Australia Fire Information fire history database (Administration).	• Fire hazard reduction strategies (such as back burning) to be implemented to reduce the risk of fire ignition/ impact as required (Elimination) • Where a bushfire is started and cannot be controlled, Tamboran to engage with pastoralist to coordinate response activities.	3	2	M	Yes	• Fire is a common occurrence within the Barkly Region. A fire is likely to have a serious impact, with moderate term reversible impacts (years). • With the appropriate controls, such as separation distances, firebreaks, and adherence to total fire bans, the likelihood of causing a fire from 3D seismic program is anticipated to be highly unlikely, with a predicted occurrence of <10%	Yes	Low
6		Impact to listed threatened habitats and listed threatened flora and fauna including any ground dwelling or borrowing), as well as non-listed fauna and livestock through vehicle, machinery and seismic charge detonation creating noise and vibration impacts during 3D seismic acquisition .	Activity (vehicle and machinery and seismic charge detonation) noise and vibration during seismic acquisition.	A.3.1 Site selection and planning A.3.3 Noise	1	1	L	• Seismic lines avoid areas of high conservation value as a priority (Elimination). • Areas are not considered high conservation value, are not threatened/endangered and not fragmented, with impacts unlikely to result in significant disturbance to threatened/endangered species. (Elimination) • Impacts likely to be temporal, with fauna able to move to adjacent areas to escape impacts (Elimination). • Avoid seismic lines in water courses (unless co-located with an access track). • Avoid vegetation clearing as much as practicable. • In open woodlands, limit clearing to grasses and shrubs (Avoidance). • During seismic surveys, detonations will not occur when cattle are in proximity (Elimination). • Seisimc charge is a controlled action in accordance with Australian Standards, the charge is located 10-15 m below the ground surface outside of the activivе zones for borrowing fauna (Elimination) • Seismic	• Anecdotal evidence from pastoralists and Traditional Owners (Administration) • Impacts are likely to be temporal, with detection extremely difficult.	• Where impacts are identified, practices will be reviewed and modified to reduce impact on fauna (Administration/Engineering)	1	3	L	Yes	• Fauna may be disturbed through transport movements along access tracks and seismic lines. The consequence of activity nuisance is anticipated to be minor, with localised, short term impacts to areas immediately adjacent to access tracks. The likelihood of the risk is reduced through the isolated location (lack of sensitive receptors), regionally extensive vegetation communities (good outside refuge away from access tracks, seismic activity and limited transport movements during the evenings. The impact to fauna is considered highly unlikely given the ability of fauna to move to other areas of refuge away from seismic activities and ongoing engagement with pastoralists re cattle.	Yes	Low
7		Impact to listed threatened habitats and listed threatened flora and fauna, including non-listed fauna and livestock through exploration activities.	Vehicle and machinery collisions with fauna during civil and maintenance activities – fauna mortality results in a localised impact to listed threatened species	A.3.5 Biodiversity protection	1	5	M	• Vegetation clearing of seismic lines to be conducted with visual checks to identify fauna/fauna habitat during clearing • Vehicle speeds during seismic acquisition limited to <60 km/hr and mostly ocrruring at walking pace (Administration) • Vehicle movements to avoid driving at night (Elimination) • Fauna collisions observed during the existing activities have been minimal, with collision restricted to several wallabies along access track (Elimination)	• Fauna mortality data is collected as part of Origin's incident and observation management procedures (Administration)	• Where ongoing fauna collisions are reported, additional controls shall be investigated, such as reduced speed limits in high risk areas will be implemented (Administration)	1	3	L	Yes	• Fauna collisions with vehicles are a commonly associated with roads. • It is anticipated that a small number of fauna collisions will be experienced during the activity (1-2 animals per month), with minor, short term, reversible impacts to local fauna species. • The likelihood of causing a localised decline in common or listed threatened species abundance is considered remote.	Yes	Low
8		Cumulative impacts on terrestrial ecology.	Impacts from exploration activities and existing agricultural activities results in impacts to vegetation communities, fragmentation and poses a threat to protected flora and fauna.	A.3.1 Site selection and planning A.3.5 Biodiversity Protection A3.6 Weed management A.3.7 Fire management A.3.9 Rehabilitation	2	1	L	• 3D seismic survey maximum clearing footprint is less than 56-76 ha, which represents <0.024% of the total EP98 and EP117 area (Engineering) • Area has limited development with no widespread land clearing or other pressures from agriculture or other users. (Elimination) • Petroleum activity is limited in scale and will not material decrease availability of habitat across the region (Elimination) • Strategic Regional Environmental Baseline Assessment (SREBA) completed to collected baseline environmental data, with Environmental Impact Assessments completed to address cumulative impacts from industry (Administration/ Engineering/ Elimination) • 3D seismic program to prioritises the avoidance of vegetation clearing by locating source lines that avoid large trees and dense vegetation areas and using low impact energy sources (Engineering/Elimination). • Pest species controls to be implemented to discourage attraction to the exploration areas, in particular camp operations where there is a high potential for food waste to be encountered and minimise creation of tracks to reduce creation of cooridors that pest species (i.e. feral cats) use for hunting.	• N/A - No increased risk to cumulative regional impacts.	N/A.	2	1	L	Yes	• The region has low land clearing pressure with no applications for large scale land clearing present. The level of disturbance proposed is small, with field ecological scouting confirming ecological communities present and no significant impacts to listed threated ecological communities or species (flora and fauna).	Yes	Low

Ref	Environmental Factor	Risk scenario description	Risk Source	Code of Practice	Unmitigated			Risk Mitigation Measures			Residual			ALARP Criteria Achieved?	Residual Risk ALARP and Acceptable Statement	Acceptable Criteria Achieved?	Scientific Uncertainty Ranking
					Consequence	Likelihood	Risk Rating	Prevent	Detect	Recover	Consequence	Likelihood	Risk Rating				
WATER																	
9	**Hydrological processes**	Unsustainable groundwater extraction impacts landholders and groundwater dependent ecosystems.	Extraction of groundwater for delivery of the 3D seismic program including camp potable water supply, dust suppression and fire mitigation.	B.4.2 Aquifer Protection B.4.17 Groundwater monitoring	**1**	**2**	**L**	• Groundwater extraction for 3D seismic activities is low with estimate of 1.5 ML required (Elimination). • All groundwater take is licenced in accordance with NT Water Act under Water Extraction Licence (WEL) GRF10285 (Administration). • Drawdown from activity and other users assessed by DEPWS as a part of WEL; impacts to closest receptor not anticipated (Administration/ Elimination). • Karst system is under allocated, with sufficient available capacity to support proposed groundwater extraction requirements (Elimination). • Closest pastoral bore is ~4 km from seismic survey area (Elimination).	• Continuous flow meters used to monitor take and water balance to ensure compliance with WEL (Administration). • Groundwater monitoring completed to identify impacts associated with water extraction (Engineering).	• Groundwater extraction to cease where sustained drawdown post pumping exceeds 1 m (Administration).	**2**	**1**	**L**	Yes	• The extraction of groundwater for the proposed exploration activities will be under Tamboran's current Water Extraction Licence (GRF10285) which was granted under the NT Water Act followign assessment of current and future water take levels. • Based on the assessment, the NT Water Controller determined that the extraction rate would not impact upon adjacent users. • The risk consequence is determined to be "low" given any impact is likely to result in isolated examples of community concern from pastoralist and broader community. • The likelihood of such a consequence from occurring is considered remote (probability <1%) due to the proposed water take for the 3D seismic program is 0.33% of the overal annual extraction limts, the quantity and quality of the Cambrian limestone aquifer, the separation distance from surrounding users and the general under utilisation of the targetted aquifer.	Yes	11
10		Cumulative impacts on groundwater quantity.	Risk that groundwater take from exploration activities and surrounding land users could exceed the natural recharge rate of the Basin, noting that the estimated groundwater take for 3D seismic survey is maximum of 1.5 ML with primary use for potable water, dust suppression and bushfire management.	B.4.2 Aquifer Protection Water extraction licence under the NT Water Act	**2**	**1**	**L**	• Groundwater extraction volumes to be monitored and kept below WEL (Elimination). • Groundwater extraction assessments include an estimate of current extraction levels at a regional scale. • No intensive users of groundwater within the region, with stock and domestic being the primary use for the aquifer (Elimination). • Cumulative impacts considered in the water extraction licence granted to Tamboran under the NT Water Act (Elimination). • Strategic Regional Environmental Baseline Assessment (SREBA) completed to collected baseline environmental data, with Environmental Impact Assessments completed to address cumulative impacts from industry (Administration/ Engineering/ Elimination).	• Continuous flow meters used to monitor take and water balance to ensure compliance with WEL (Administration). • Groundwater monitoring of extraction bores will detect localised groundwater depressurisation before regional impacts occur (Engineering).	• Where sustained groundwater depletion is observed in regional aquifers, alternative water supplies may be required, such as deeper aquifers with limited extraction (Elimination) • Water Act make good provisions to ensure any impacts on users from exploration activities are "made good" (Administration).	**2**	**1**	**L**	Yes	• The regional understanding of the CLA is sufficient to understand the risks associated with groundwater extraction. • The absence of users and small exploration take reduces the uncertainty of the activity. • This risk has been assessed as a part of the WEL application and approval. • Due to the lack of receptors, the consequence is considered minor (i.e. 1 user within 4km and only 1.5ML water take required) and likelihood remote (probability less than 1%)	Yes	Low
11		Seismic survey activities impact on nearby surface water systems (i.e. ephemeral wetlands, intermittent streams, sinkholes) and groundwater dependent ecosystems	Seismic line preparation and access to the area may alter natural surface water flows, creating scouring, ponding and or erosion such as sheet flow across the 3D seismic area during monsoon rains. This in turn could increase flow causing erosion of seismic lines if Erosion and Sediment Control Plan not effectively implemented or tracks stabilised post rehabiliation.	A.3.1 Site selection and planning A.3.4 Erosion and sediment control and hydrology	**2**	**4**	**M**	• No surface water take is permitted. • The 3D seismic activities to be completed in a manner that does not cause a: - material change to the shape of a waterway, - material change to the volume, speed or direction of flow or likely flow of water in or into a waterway, or - alteration to the stability of the bed or banks of a waterway, including by removal of vegetation (Elimination/Administration). • Light vehicle or on foot to be used only in areas identified as sensitive such as intermittant stream, drainage depressions/sinkholes as per buffer zones described in the NT Land Clearing Guidelines (2024) and section 3.7.8 Table 23 of the 3D Seimsic EMP (Administration/Engineering). • 3D seismic survey to be conducted in dry season or when chance or rain is low (Elimination). • Separation distance from Jingaloo and Lily Hole community living areas is 25 to 65 km from activity area (Elimination).	• Ongoing monitoring of intermittant stream or drainage areas intersected by seismic program prior to, during and at completion of rehabilitation, including photo monitoring (Administration).	• Where disturbance unavoidable, reinstate original topography of any intermittant stream or drainage area bed following seismic acquisition (Engineering).	**2**	**2**	**L**	Yes	• Floodplains and drainage depressions occur within the SS 3D seismic program area but are not considered to be high value wetlands, however they do have important ecological values for the local flora and fauna. • The floodplains, drainage depressions and run-on areas that occur within the program area are generally not considered sensitive to impacts from adjacent land use due to the relatively large spatial extent (DEPWS 2022). • Tamboran seismic exploration activities will be conducted to minimise the extent and duration of any disturbances on significant vegetation communities. Specifically, clearing will be minimised to the greatest extent practicable for the key habitat features (i.e. large habitat trees with hollows). • In accordance with the NT Water Act 1992 and associated Interference with a Waterway Guideline (June 2023), it is considered that the seismic program would not cause a material change or alteration to the waterway and a permit would not be required. The potential to impact on Jingaloo or Lily Hole community living area is negligible due to the large separation distance of the communities to the activity area (>25 km). • The likelihood of such a consequence from occurring is considered moderate (Highly unlikely <10% likelihood) due to the relatively large spatial extent of the wetlands which means they are not considered sensitive to impacts.	Yes	Low
12		Cumulative impacts on surface water quantity.	Seismic activities in addition to existing surrounding land use (agriculture) reduces surface water quality.	A.3.1 Site selection and planning A.3.4 Erosion and sediment control and hydrology	**2**	**1**	**L**	• Area has limited development with no widespread land clearing pressures from agriculture or other users likely to reduce water quality (Elimination). • No surface water take or wastewater releases permitted (Elimination). • Strategic Regional Environmental Baseline Assessment (SREBA) completed to collected baseline environmental data, with Environmental Impact Assessments completed to address cumulative impacts from industry (Administration/ Engineering/ Elimination) • 3D seismic survey to be conducted in dry season or when chance or rain is low. • Tread lightly approach described in 3D seismic EMP avoids use of heavy vehicles, including access via foot in the sensitive vegetation communities (i.e. wetlands)	• Rehabilitation monitoring to be undertaken to track rehabilitation progress (Administration)	• Maintenance will be undertaken where rehabilitation monitoring indicates not meeting the success criteria (Engineering)	**2**	**1**	**L**	Yes	• The region is underdeveloped with the activity located away from major flow pathways with limited topographic variation.. The activity is of a small size and unlikely to result in any material increase in sediment loads to surface waters.	Yes	Low
13	**Inland water environmental quality**	Groundwater contamination - Field servicing of seismic vehicles and equipment resulting in spill or leak. Storage of petrol, oils or lubricants required for seismic survey at designated area.	Spills/leaks from the handling of fuels, oils and lubricants during the activity,including hydraulic leaks from seismic survey vehicles, spills during refuelling or fuel transfer impacting groundwater quality.	A.3.1 Site selection and planning A.3.8 Containment of contaminants B.4.2 Aquifer Protection B.4.17 Groundwater monitoring C.7.2 Spill Management Plan	**1**	**1**	**L**	• All fuels and equipment, and high risk spill handling areas are to have secondary containment. • Chemicals to be transported in accordance with the Australian Dangerous Goods Code and NT Dangerous Goods Act by licencsed contractors. • No chemical transportation during wet season, unless a risk assessment determined the activity is safe and low risk. • Area is remote with major urban areas to be avoided during the transportation of dangerous goods and wastes in accordance with the NT Dangerous Goods Act. • The type and quantity of chemicals required for seismic surveys means that the is a low chance of a significant contaminant incident that may cause material environmental harm. • All vehicles mechanically maintained and free of oil leaks. • Portable storage bunding and spill kits on hand during seismic program.	• Routine maintenance of seismic survey vehicles and equipment prior to mobilising to site. • Daily inspections during seismic acquisition to identify and respond to any potential leaks or loss of containment.	• Spills and leaks to be cleaned up and rectified immediately. • Any contamination event to be characterised and have remediation plans developed and executed in accordance with the process outlined in schedule A of the National Environmental Protection (Assessment of site Contamination) Measures (Engineering).	**1**	**1**	**L**	Yes	• The storage, handling and management of chemicals is a standard activity that is managed through a mature regulatory setting. The COP further reduces the likelihood and consequence of chemical spills and contamination, through the mandated use of secondary containment and a spill management plan. • A spill event is likely to result in low, short term reversible impacts restricted to the existing location on the seismic line. The likelihood is further reduced down to highly unlikely (<1% probability of occurring) based on the use of secondary containment, rapid spill detection, use of spill kits and rehabilitation requirements and the depth to groundwater.	Yes	Low
14		Surface water contamination - Field servicing of seismic vehicles and equipment resulting in spill or leak. Storage of petrol, oils or lubricants required for seismic survey at designated area.	Spills/leaks from the handling of fuels, oils and lubricants during the activity,including hydraulic leaks from seismic survey vehicles, spills during refuelling or fuel transfer impacting surface water quality. Waste water disposal.	A.3.1 Site selection and planning A.3.4 Erosion and sediment control and hydrology A.3.8 Containment of contaminants C.7.2 Spill Management Plan	**2**	**4**	**M**	• No wastewater release to surface water permitted. • All vehicles mechanically maintained and free of oil leaks. • All fuels and equipment, and high risk spill handling areas are to have secondary containment. • Portable storage bunding and spill kits on hand during seismic program. • Chemicals to be transported in accordance with the Australian Dangerous Goods Code and NT Dangerous Goods Act by licencsed contractors. • No chemical transportation during wet season, unless a risk assessment determined the activity is safe and low risk. • Area is remote with major urban areas to be avoided during the transportation of dangerous goods and wastes in accordance with the NT Dangerous Goods Act. • The type and quantity of chemicals required for seismic surveys means that the is a low chance of a significant contaminant incident that may cause material environmental harm.	• Routine maintenance of seismic survey vehicles and equipment prior to mobilising to site. • Daily inspections during seismic acquisition to identify and respond to any potential leaks or loss of containment.	• Spills and leaks to be cleaned up and rectified immediately. • Any contamination event to be characterised and have remediation plans developed and executed in accordance with the process outlined in schedule A of the National Environmental Protection (Assessment of site Contamination) Measures (Engineering).	**2**	**2**	**L**	Yes	• The storage, handling and management of chemicals is a standard activity that is managed through a mature regulatory setting. The COP further reduces the likelihood and consequence of chemical spills and contamination, through the mandated use of secondary containment and a spill management plan. • A spill event is likely to result in low, short term reversible impacts restricted to the existing location on the seismic line. The likelihood is further reduced down to highly unlikely (<10% probability of occurring) based on the use of secondary containment, rapid spill detection, use of spill kits and rehabilitation requirements.	Yes	Low
15	**Aquatic ecosystems**	Damage to the ephemeral wetlands, which are considered sensitive vegetation areas in the 3D seismic area, from seismic line preparation, data acquisition and rehabilitation, altering aquatic ecosystems. Noting: One non-perennial stream (Stream Order 1) associated with Newcastle Creek passes through the northern section of the Shenandoah South E&A program area and intersects the 3D seismic line 1 through to line 12. The intermittent stream would flow for only a short period of the wet season, with waterholes potentially forming at the beginning of the dry season. It is anticipated that low to no water will be across the permit area with the 3D seismic program planned to occur before the onset of rainfall.	Seismic line preparation and access to the area may alter the aquatic ecosystems if Erosion and Sediment Control Plans are not effectively implemented or seismic lines are not appropriately stabilised post rehabilitation.	A.3.1 Site selection and planning A.3.4 Erosion and sediment control and hydrology	**2**	**1**	**L**	• Area has limited development with no widespread land clearing pressures from agriculture or other users likely to reduce water quality. (Elimination) • No surface water take or wastewater releases permitted. (Elimination) • Strategic Regional Environmental Baseline Assessment (SREBA) completed to collected baseline environmental data, with Environmental Impact Assessments completed to address cumulative impacts from industry (Administration/ Engineering/ Elimination). • 3D seismic survey to be conducted in dry season or when change or rain is low. • Tread lightly approach described in 3D seismic EMP avoids use of heavy vehicles, including access via foot in the sensitive vegetation communities (i.e. wetlands). • No heavy vehicles to enter streams, drainage depressions or sinkholes. • Crossings of waterways will be as close as practicable to right angles	• Rehabilitation monitoring to be undertaken to track rehabilitation progress (Administration).	• Maintenance will be undertaken where rehabilitation monitoring indicates not meeting the success criteria (Engineering).	**1**	**1**	**L**	Yes	Wetlands in the SS 3D seismic program area are considered low value wetlands because: • the area does not have any permanent waterbodies • the area only intermittently flows during a good wet season • the area is only a small part of the much larger wetland system of the Newcastle Creek Catchment which has a large diversity of habitat for native plants and animals • the area is not part of the Directory of Important Wetlands in Australia (DIWA) nor is it listed as a RAMSAR site. Lake Woods described as a major quasi-permanent surface water body and is listed on the NT Government Sites of Conservation Significance and on the Directory of Important Wetlands in Australia (DIWA: NT013 Lake Woods) (DEPWS, 2022a) is located 80 km south west of the activity area. All known and moderate potential GDE locations are at distances >20 km from the vicinity of the proposed 3D seismic activity. It is highly unlikely (<10%) the size and duration of the SS 3D seismic program will result in a Moderate consequence to aquatic ecosystems with impact further reduced through implementation of mitigations.	Yes	Low

Ref	Environmental Factor	Risk scenario description	Risk Source	Code of Practice	Unmitigated			Risk Mitigation Measures			Residual			ALARP Criteria Achieved?	Residual Risk ALARP and Acceptable Statement	Acceptable Criteria Achieved?	Scientific Uncertainty Ranking
					Consequence	Likelihood	Risk Rating	Prevent	Detect	Recover	Consequence	Likelihood	Risk Rating				
AIR																	
16	Air Quality - protect the quality and minimise emissions and their impact	Potential for an increase in dust during site preparation (clearing of seismic lines, traversing unseald access tracks)	Dust generation as result of line preparation and vehicle movement for seismic survey impacting on sensitive receptors including Tamboran workers and contractors, pastoralist and impact on health of surrounding vegetation.	A.3.1 Site selection and planning	2	3	M	• No sensitive receptors within 4 km (Elimination) • Ensure dust minimisation and suppression requirements are communicated to personnel including contractors (Administration). • If dust levels are high consider use a water truck to manage dust emissions (Engineering). • Stay within seismic line boundaries and to designated speed limits. • Minimise vehicle movements by bussing in seismic personnel (Administration). • Rehabilitate the ground surface as soon as practicable following disturbance (Engineering). • Uniformly re-spread previously removed vegetation and topsoil over disturbed area to assist with rehabilitation process through agencies of increased infiltration and return of seed-bearing topsoil (Engineering).	• Routine site inspections and assurance undertaken to ensure dust is minimised during activities (Engineering).	• Increase use of dust supression methods including water cart and reduced speed travelling across high risk soils (Engineering).	2	2	L	Yes	• Impacts to sensitive receptors are not anticipated, with the closest human receptor over 4 km away. • Excessive dust deposited onto plant foliage can reduce the photosynthetic performance (photosynthesis, stomata conductance, transpiration etc.), thus reducing overall health and plant growth (Hirano 1995). Although likely impacts from the temporary covering of the vegetation will highly unlikely result in more than a minor consequence due to the wetseason washing off any build up of dust and use of water trucks during exploration. • The potential consequence from E&A activities is predicted to be moderate. • The likelihood is a function of source (lack of) and separation distance between receptors. The likelihood of a sensitive receptor being exposed to emissions from E&A activities above the NEPM guidelines are highly unlikely (<10%).	Yes	Low
17	Atmospheric processes: GHG emissions	Unsustainable Greenhouse Gas emissions from the activity.	Combustion of diesel for exploration activities and clearing of vegetation for seismic line preparation	A.3.1 Site selection and planning	2	1	L	• Australian emission standards for equipment ensures minimum operating efficiency (Engineering). • All equipment to be maintained in accordance with the manufacturer's recommendations (Engineering). • No sensitive receptors within 4 km (Elimination). • Avoid clearing of vegetation to greatest extent possible, noting that the level of clearing is small (50 ha) (Elimination).	• Equipment condition and maintenance to be built into contract (Administration). • Routine site inspections and assurance undertaken to ensure equipment is maintained and operated as per manufacturers requirements (Engineering).	• All equipment defects identified by site inspection and assurances to be rectified promptly (Engineering).	2	1	L	Yes	• The risks associated with Greenhouse Gas generation through diesel combustion are well documented in literature and domestic/international greenhouse policy (such as NGERS and IPCC). • The consequences of GHG generation from 3D seismic exploration activities is low, with less than 1% of the NT emissions generated. The likelihood of the level of GHG production being unsustainable is considered remote, with a probability less than 1%.	Yes	Low
PEOPLE																	
18	Community and economy	Loss of visual amenity, experience and sense of place for landholder, community members and tourists.	Industrialisation of landscape.	A.3.1 Site selection and planning	2	3	M	• Seismic acquisition only occurs during daylight hours (Elimination) • Site is located away from sensitive receptors and not clearly visible (Elimination) • Level of vegetation clearing proposed for seismic lines is small (50 ha), although scarring on the landscape from seismic vehicles will be temporarily visible in aerial images of the area while under rehabilitation (Engineering) • Progressive rehabilitation immediately after data acquisition using the vegetation pushed to the side of the seisimc lines back over the lines (Engineering) • Existing Access tracks and camps used to minimise impact on local accommodation and tourism.	• Ongoing community engagement to monitor performance and identify potential impacts from activity on local amenity.	• Implement the rehabilitation plan (Appendix G) following completion of seismic acquisition and conduct ongoing monitoring and where required maintenance to achieve final rehabilitation goals (Engineering).	2	1	L	Yes	• The proposed exploration activities are located away from major transport routes, homesteads and communities. • The consequences of activities may result in minor changes in to aesthetics through visibility of exploration activities (i.e. presence of workers and vehicles, scarring of the landscape while rehabilitates). • The probability that the activity will result in an industrialisation of the landscape is considered highly unlikely , with a probability less than 10%.	Yes	Low
19		Increased noise and vibration emissions during line preparation and data acquistion (i.e. seismic charges) inpacting on nearby infrastructure and pastoralist.	Noise and vibration emissions from activities, including use of Accelerated Weight Drop and/or Seisimc charges.	A.3.1 Site selection and planning A.3.3 Noise	2	3	M	• The 3D seismic program will primarily use "low impact" energy sources: accelerated weight drop (AWD) and seismic charges which uses dynamite (Engineering). • Noise and vibration impacts will not reach sensitive receptors (Elimination). • 3D Seismic survey is located 4-28 km from pastoralist homestead depending were located in the program area (Hayfield). • Pastoralist informed of activity and potential noise emissions, and have requested additional buffer from homestead (Administration). • Seismic charges will be offset from sensitive sights and infrastructure. Offsetting distances are guided by Australian Standards. • When detonation occurs all personnel under the instruction of the shot firer are to observe safe set back distances (20 to 25 m). A short sharp thud will be heard, and potential small level of vibration felt within 1-2 km of charge going off.	• Ongoing pastoralist engagement to monitor performance and identify potential impacts from activity on local amenity. (Administration)	• Complaints regarding noise emissions will be dealt through Tamboran's complaint resolution process (Administration).	2	1	L	Yes	• The remote location and separation distances between receptors is likely to result in "minor" noise impacts. • The likelihood of impacts is a function of separation distance and is therefore predicted to be remote, with a probability less than 1%.	Yes	Low
20		Disruption of agricultural operations - vibration is of less intensity than a cattle truck crossing a cattle grid. As discussed above, a short sharp thud will be heard, and potential small level of vibration felt within 1 -2km of charge going off; however, with cattle being mustered away from the activity, this should not result in any significant impact	Ongoing access, traffic, helicopter movements for rehabilitation monitoring etc.	A.3.1 Site selection and planning A.3.3 Noise	1	3	L	• All activities require engagement with pastoralists (Administration) • Engagement will be undertaken in accordance with NT Petroleum (Environment) Regulations (Administration) • Traffic impact assessment completed assessing the increased traffic levels as negligible: reflective of limited size and scope of the activity (e.g. 4 vehicles/day for up to 120 days). • • Helicopter movements to be restricted in consultation with landholder to identify if any mustering activities are occurring (Administration/Elimination). • Helicopter movements to be undertaken in consultation with leaseholder to avoid impacts to livestock, cattle yards, watering points, homesteads and other sensitive areas as advised by leaseholder. (Elimination).	• Ongoing pastoralist engagement to monitor performance and identify potential impacts from activity on local amenity (Administration).	• Complaints regarding Tamboran's activities will be dealt through Tamboran's complaint resolution process (Administration). • Where complaints are received, Tamboran will investigate if additional controls are needed and implement to address the complaints (Administration/Engineering).	1	3	L	Yes	• Tamboran personnel have extensive experience in co-existing its activities with agricultural users. Over 5 decades of seismic operations in pastoral Australia, there has been no reported impacts on cattle being stressed as result of the activity (pers comms. John Hughes. AECOM, 2020). • Consultation with pastoralists is undertaken to ensure impacts on their activities are mitigated. These impacts are addressed in the compensation agreements and access guidelines. • It is noted that there is an impact on stakeholder in regards to working with proponents to plan E&A activities. This is unavoidable and required to ensure the activities can be designed to accommodate the activities of both parties. • Consequences are anticipated to be minor for 3D seismic activities, with the likelihood unlikely. The likelihood is reduced through compensation agreements which consider the pastoralist time when negotiating agreements.	Yes	Low
21		Cumulative impacts on amenity.	Exploration activities can reduce amenity (visual, noise and lighting) through additional landscape modification, dust, noise, light and traffic.	A.3.1 Site selection and planning	1	1	L	• 3D Seismic activities are located in a remote/rural landscape, away from sensitive receptors (Elimination) • Rehabiliation commence as soon as possible after activity and or within first 12 months (Engineering) • Low level of development activity within the region, with activity unlikely to cause declines in amenity. (Elimination)	• Community complaints regarding nuisance (including dust, traffic etc.) to be used to detect cumulative impacts (Administration)	• Complaints are to be investigated and additional controls implemented where appropriate. (Administration/ engineering)	1	1	L	Yes	• The region is underdeveloped with the activity located away from major transportation routes, homesteads and communities. • The activity is of short duration, relatively small clearing footprint and unlikely to result in any loss of amenity. • Any loss of amenity is therefore likely to be minor, with a likelihood of highly unlikely (lower than 1%).	Yes	Low
22	Cultural and Heritage	Damage/disturbance/loss of sacred site, culturally sensitive area or artefacts and a decline in environmental value of area used for hunting, foraging and enjoyment.	Sacred sites, culturally sensitive areas and artefacts disturbed directly by seismic activities.	A.3.1 Site selection and planning	3	2	L	• Exploration Agreements with determined Traditional Owners covering all proposed exploration activities (Administration). • All areas of the proposed activity to be cleared by NLC (Elimination). • AAPA certificates for proposed work program have been granted identifying no restricted work areas (RWA) or sacred sites in 3D seismic area (Elimination). • Areas of cultural heritage (artefacts) will be avoided during the activity as per buffers described in Section 3.7.8 Table 23 of the 3D Seismic EMP (Elimination). • Light vehicle or on foot to be used only in areas identified as sensitive such as areas identified as culturally senisitve including (locations of high potential for cultural heritage sites and artefacts) as per buffer zones described in the NT Land Clearing Guidelines (2024) and section 3.7.8 Table 23 of the 3D Seimsic EMP (Administration/Engineering). • Implementation of the unexpected finds protocol (Administration). • Employment of cultural managers, faciliated by NLC, to be on location.	• Tamboran completes 6 monthly assurance programs to confirm access to sacred sites and other identified cultural heritage areas have not occurred.	• N/A - no access to sacred sites anticipated and avoidance of cultural heritage artefacts and sensitive areas. (Elimination)	3	1	L	Yes	• All sites of the proposed activity have received Traditional Owner clearance via the NLC. • AAPA certificates obtained with no sacred sites or RWA identified in the 3D Seismic Area. • Detailed cultural heritage assessment completed by AECOM (Appendix B) identifying culturally sensitive areas and artefacts that will be avoided. • The remote location of the activity, lack of sacred sites in the vicinity of the 3D seismic area and contractual requirements prohibiting access to culturally sensitive areas reduce the likelihood down to "remote", with a probability lower than 1%.	Yes	Low
23		Inappropriate access to sacred sites or culturally significant places.	Personnel unauthorised access to sacred site.	A.3.1 Site selection and planning	3	2	M	• Restricted work areas are not located in close proximity to exploirational activities (Elimination) • All staff to be inducted covering restricted work areas and cultural heritage (Administration) • Access off lease not permitted. (Elimination)	•Tamboran completes 6 monthly assurance programs to confirm access to sacred sites has not occurred.	• N/A- no access to sacred sites anticipated. (Elimination)	3	1	L	Yes	• All sites of the proposed activity have received Traditional Owner clearance via the NLC. • AAPA certificates obtained with no sacred sites or RWA identified in the 3D Seismic Area. • Seismic exploration won't occur within, or close to, RWAs making it highly unlikely that these areas will be impacted. • The remote location of the activity, lack of sacred sites in the vicinity of the 3D seismic area and contractual requirements prohibiting access to culturally sensitive areas reduce the likelihood down to "remote", with a probability lower than 1%.	Yes	Low
24		The 3D seismic program may increase the risk of accidental bushfires and change the fire regime impacting on cultural heritage sites.	Accidental ignition during seismic activities impacting on sacred sites, culturally sensitive areas and artefacts.	A 3.7 Fire management	3	2	M	• Bushfire management plan implemented to prevent and respond to bushfires - including establishment of communication and fire response protocols with pastoralists and Bushfires NT (Administration) • Bushfire awareness included in site inductions. (Administration) • Designated smoking areas on-site (Elimination) • Firefighting equipment to be available to deal with fires (Engineering). • Vehicles to be equipped with fire extinguishers (Engineering). • Fire response to be implemented during seismic program, with spotters and fire trailers utilised to put out spot fires during work (Engineering). • Activities will comply with landholder and regional bushfire management plans (Elimination).	• Annual fire preparedness assurance activities completed where activities are proposed during high fire risk periods (Administration) • Daily monitoring of bushfires in the region during periods of high fire danger (Administration) • Annual fire frequency mapping using the Northern Australia Fire Information fire history database (Administration)	• Fire hazard reduction strategies (such as back burning) to be implemented to reduce the risk of fire ignition/ impact as required (Elimination) • Where a bushfire is started and cannot be controlled, Tamboran to engage with pastoralist to coordinate response activities (Administration).	3	2	M	Yes	• Fire is a common occurrence within the Barkly Region. • Low intensity fire events greater than 2 years at most assessed sites in the 3D seismic area. Fire data was acquired from the North Australian Fire Information (NAFI) site and queried for the Shenandoah South 3D seismic program area. Ten-year fire data (2014 to 2024) shows area has been burnt between one and four times in the past 10 years, with sections of the north remaining unburnt, and parts in the south-east burnt five times. • A fire caused by Tamboran activities have potential to have a serious impact, with moderate term reversible impacts (years) within survey area, but also potential to move out of the seismic survey area. • With the appropriate controls, such as having a fire tender on site during seismic line preparation, acquistion and rehabilitation, adherence to total fire bans, the likelihood of causing a fire from 3D seismic survey it is anticipated to be highly unlikely, with a predicted occurrence of <10%.	Yes	Low

Ref	Environmental Factor	Risk scenario description	Risk Source	Code of Practice	Unmitigated			Risk Mitigation Measures			Residual			ALARP Criteria Achieved?	Residual Risk ALARP and Acceptable Statement	Acceptable Criteria Achieved?	Scientific Uncertainty Ranking
					Consequence	Likelihood	Risk Rating	Prevent	Detect	Recover	Consequence	Likelihood	Risk Rating				
25	Human Health	Safety hazard to pastoralists, community and tourists from increased traffic levels	Increased risk of vehicle accident	A.3.1 Site selection and Planning	3	3	M	• Traffic impact assessment completed, with traffic levels are anticipated to be small (Elimination) • Alcohol and drug policy implemented with zero tolerance (0.00% BAC and no illicit substances) (Elimination) • Workers are flown in and out of Daly waters from Darwin. Busses are used to limit vehicle transport movements between the Daly Waters airport and remote camps- there is limited Drive In/Drive Out workers into the Beetaloo- except where local or regional contractors are utilised (Elimination). • The camp is located away from major roads with vehicle movements between camp and seismic exploration area (Elimination). • All drivers travelling along existing pastoral access tracks to site must adhere to the sign posted speed limits, as well as slow down and/or stop when approaching vehicles parked on access tracks to confirm safe to pass. • Stuart Highway intersection design approved by DIPL with appreciate line of site provided for vehicles to identify turning vehicles (Engineering).	• Ongoing community engagement to monitor performance and identify potential impacts from activity on local amenity (Administration).	• Complaints regarding Tamboran's activities will be dealt through Tamboran's complaint resolution process. • Where valid complaints are received, additional controls will be implemented to address community complaint (Administration)	3	1	L	Yes	• 3D seismic activities will increase traffic levels up to 4-8 vehicles per day during the peak period. • This traffic volume is well below the level of service for the Stuart Highway, which is estimated to be above 398 vehicles per day. • Accidents from turning into the Kyalla access track or from general vehicle accidents are anticipated to have a serious consequence, with an injury to community members/ tourist requiring hospitalisation. • Given Operators in the Beetaloo Basin have completed 100,000's of heavy vehicle movements each year with serious incidents extremely rare, smaller volume of traffic required for Beetaloo, the lack of road users, traffic management plan for the access track turn in, Zero tolerance for alcohol and drugs and use of trained drivers, the likelihood is considered Remote, with a probability less than 1%.	Yes	Low
26		Unexploded ordinance impacts future pastoralist and native title holder activity	NA		2	2	L	• The seismic charges are installed between 15-20m below ground with no interaction with community members, pastoralists or native title holders. • All activities require engagement with pastoralists (Administration) • Activities are located away from the main pastoralist areas, with low likelihood of activity occurring in the region over the foreseeable future. • Should a seismic charge misfire, then a second charge will be detonated within 2 m to instigate a sympathetic detonation or at least damage the explosive to speed up the bioremediation process. • The explosives are manufactured with freeze dried microorganisms which are activated when wet.These are likely to be activated in the wet season and will result in the bioremediation of any unexploded ordinance reducing the future hazard. • Where sympathetic detonation not be confirmed, a steel marker shall be erected to identify the locatoon of the potentially undetonated charge. • Records of suspended undetonated charges to be provided to pastoralists and DLPE.	• Records of misfires and the success of sympathetic detonations will be retained (Administration).	• Should excessive misfires be recorded, the program will be stopped to review the root cause and implement corrective actions.	1	1	L	Yes	The use of explosive charged for seismic activities is a standard practice and is considered best practice in jurisdictions such as NZ to minimise land disturbance . The risk of unexploded ordinance to the safety of the community is considered low based on the consequence being minor and likelihood being remote.this is driven by the location of the dynamite (10-15m below ground level, the lack of future activity in the area, the use of sympathetic discharge and the microbial degradation of the explosive.	Yes	Low
27		Cumulative impact on traffic on public roads due to exploration activities.	Exploration activities can result in an increase of traffic on public roads (i.e. Stuart Highway).	A..3.1 Site selection and planning	1	2	L	• Stuart Highway intersection design approved by DIPL with appreciate line of site provided for vehicles to identify turning vehicles (Engineering). • Traffic volumes for seismic program are anticipated to be small (<4 vehicles/day) and well below existing industries in the area (Elimination). • Personnel will be housed at one of the existing Tamboran Camps (Elimination). • Journey Management Plans in place for travelling along public roads (Administration).	• Community complaints regarding increase traffic on Stuart Highway used to detect cumulative impacts (Administration)	• Complaints are to be investigated and additional controls implemented where appropriate. (Administration/ engineering)	1	2	L	Yes	• The region is underdeveloped with the activity located away from major transportation routes, homesteads and communities. • The activity is of a small size and unlikely to result in any loss of amenity. Any loss of amenity is therefore likely to be minor, with a likelihood of highly unlikely (<10%).	Yes	Low

APPENDIX J

Stakeholder Engagement

Part A - Stakeholder Engagement Log Summary

Date	Originator of communication		Company and person of contact		Contact type	Summary of contact	Does it trigger merit review?	A statement of the interest holder's response to stakeholder	Change to EMP required?	Details of changes the interest holder has made as a resulting from stakeholder engagement	Attach to EMP S/H log	Exploration permit area				Notes
					9 (1) f	9(1)c	9 (1)d	9 (1) e	Yes/No	9 (1)g		Kyalla 117	Amungee 98	Velkerri 76	S/Pea 136	
13-Oct-23	Terrabos/ Tamboran	[redacted]	Hayfield-Shenandoah	[redacted]	Email	Revised Pastoralist Engagement Pack in relation to proposed drilling operations for 2024/25, including 2 new E&A wells on the existing Kyalla site, increasing the lease pad within the current fenced area; and a new pad (Shenandoah S2) and 4 new &EA wells.	No	N/A	No	These sites and regulated activities have been included in the EMP.	Yes					
26-Oct-23	Tamboran	[redacted]	NLC		Email	Presentation material for the on country meeting with Native Title holders. Including overview of the Beetaloo project, 2023/ 2024 activities, overview of regulated activities, groundwater discussions and proposed sacred site clearances.	No	N/A	No	N/A	Yes	X	X			
27-Oct-23	NLC	[redacted]	Tamboran	[redacted]	Email	Requested amendments to slide pack for work program meeting.	No	Refer Tamboran response of 30/10/2023, confirming amendments to slide pack	No	N/A	Yes					
30-Oct-23	Tamboran	[redacted]	[redacted]		Email	Confirmation that Tamboran would make the necessary amendements to the 2023 Work program slide pack.	No	N/A	No	N/A	Yes					
31-Oct-23	Hayfield- Shenandoah	[redacted]	Terrabos/ Tamboran	D Armstrong	Email	[redacted] sought additional information on the stakeholder engagement pack provided by Tamboran.	No	N/A	No	N/A	No	X	X			
01-Nov-23	Tamboran	[redacted]	NLC and traditional owner representatives		In person	On country meeting to discuss the 2023 and 2024 work program. Included discussion on proposed 2024 work program, sacred site clearances and water resources of the Beetaloo Basin.	No	N/A	No	N/A	No	X	X			
03-Nov-23	Tamboran	[redacted]	NLC	[redacted]	Email	Submitted the 2024 work program report, which included information on the location and description of proposed regulated activities. This information was consistent with information provided to the NLC in February 2023 covering the location, description and potential impacts of exploration activities.	No	N/A	No	N/A	Yes	X	X			
06-Nov-23	Tamboran	[redacted]	NLC	[redacted]	Email	Shapefiles for the draft 2024 work program report.	No	N/A	No	No	Yes					
11-Nov-23	Terrabos/ Tamboran	[redacted]	Hayfield- Shenandoah	[redacted]	Email	Tamboran responded to questions regarding the proposed future scope. Tamboran provided detailed responses to Hayfield-Shenandoah RFI ongoing stakeholder engagement commitments, including commitment to ongoing stakeholder engagement and working with pastoralist to avoid impacts to cattle.	No	N/A	No	N/A	Yes	X	X			
15-Nov-23	Hayfield- Shenandoah	[redacted]	Terrabos/ Tamboran	[redacted]	Email	[redacted] sought additional information regarding the proposed future scope and the involvement / engagement of Hayfield-Shenandoah with future program planning, including additiona information on the WEL submission, aquifers and washdown bays.	No	N/A	No	N/A	Yes	X	X			
16-Nov-23	Terrabos / Tamboran	[redacted]	Hayfield-Shenandoah	[redacted]	Email	Responses to queries by [redacted] regarding future program planning, including additional information on the WEL submission, aquifers and washdown bays.	No	N/A	No	N/A	Yes	X	X			
20-Feb-24	Tamboran	[redacted]	NLC	[redacted]	Email	Updated 2024 work program and sacred site clearance request, including the spatial file for the Subject land 2 extension.	No	N/A	No	N/A	Yes					
23-Feb-24	NLC	[redacted]	Tamboran	[redacted]	Email	Acknowledgement by NLC of updated 2024 work program.Request for spatial data and shapefiles.	No	N/A	No	N/A	Yes					
06-Mar-24	Tamboran	[redacted]	NLC	[redacted]	Email	Presentation for the 2024 Work Program meeting, scheduled for March 2024: • update the Native Title Holders on the outcomes of the exploration to date • consultation in respect of the 2024 Work Program • update on the Shenandoah South E&A Progam EMP (TAM1) - including location, sumamry activities and overview of key aspects. • Tamboran's new sacred site clearance request covering 2024 clearances.	No	N/A	No	N/A	Yes	X	X			
14-Mar-24	Tamboran	NLC	Tamboran	[redacted]	Email	Email correspondence from NLC providing commentary on 2024 work program meeting slides. Correspondence included Presentation on EMP scope that was delivered to NTH in February 2024 summarising the location of the activty and description.	No	N/A	No	N/A	Yes	X	X			
14-Mar-24	Tamboran	[redacted]	NLC	[redacted]	Email	Acknowledgement of NLC feedback. Preparation a second presentation incorporating NLC's comments, and trusting that the more detailed presentation provided to the NLC will remain helpful in the NLC's ongoing consultation with Traditional Owners.	No	N/A	No	N/A	Yes	X	X			
10-Apr-24 **10-Apr-24**	NLC Tamboran	[redacted]	Tamboran NLC	[redacted]	Email Email	Follow-up to discuss QLD site visit to Roma and gas compression facilities.	No	Acknowledged; meeting arrangements pending.	No	N/A	Yes					
12-Apr-24	Tamboran	[redacted]	NLC	[redacted]	Email	Updated work program packs from [redacted] with zip folder with Mataranka and Katherine presentations	No	N/A	No	N/A	Yes					
19-Apr-24	NLC	[redacted]	Tamboran	[redacted]	Email	NLC response to Tamboran slides (for presentations in Mataranka and Katherine)	Yes	NLC requested Tamboran to respect comms protocols and avoid changing ppts without NLC knowledge in the last minte - its important to mention that Tamboran did this to accomodate NLC requests with less than 2 days prior to the meeting.	No	N/A	Yes					
22-Apr-24	Tamboran	[redacted]	NLC	[redacted]	In person meeting	Presentation to Native Title Holders and Traditional Owners in Mataranka regarding Work Program Meeting: • Talk through what exploration activity has occurred on the Exploration Permits throughout 2023 • Talk through the results of 2023 Exploration Activity • Provide an overview of the exploration activity planned for 2024 • Provide an overview of the new 2024 EMP's	No	N/A	No	N/A	No					
23-Apr-24	Tamboran	[redacted]	NLC	[redacted]	In person meeting	Presentation to Native Title Holders and Traditional Owners in Katherine regarding Tamboran Beetaloo Joint Venture Project Work Program and Appraisal Gas Information Meeting: • Talk through what exploration activity has occurred on the Exploration Permits throughout 2023 • Talk through the results of 2023 Exploration Activity • Provide an overview of the exploration activity planned for 2024 • Provide an overview of the new 2024 EMP's • Talk about appraisal gas sale • Talk about future Government approvals, including cultural heritage clearances that will require consideration from Native Title Holders	No	N/A	No	N/A	No					
02-May-24	Terrabos / Tamboran	[redacted]	Hayfield-Shenandoah	[redacted]	Email	Information and PPT on the SPCF, 3D seismic and water extraction licence.	No	N/A	No	N/A	Yes					
08-May-24	Tamboran	[redacted]	NLC	[redacted]	In person meeting all and EBC online	BUG presentation and negotiation meeting. All families present. BUG presentation by Tamboran and questions made by NLC and NTHs. NTHs made following points in opening the meeting: • Protection of sacred sites, dreaming water and country • NTHs will fight for their land because land is important for our people • Trust and honesty in these discussions will go a long way - otherwise the tables will turn quickly. • Work together and collaborate with Tamboran in and be treated in an equal manner. Tamboran noted that we acknowledge and respect NTHs connection to and responsibility for caring for country. Tamboran noted the importance of protecting and respecting country, water and land. Meeting included presentaqtion/discussion regarding the following topics: • JNWG Rules and JNWG Chair • Negotiation Schedule • BUG Presentation	No	N/A	No	N/A	Yes - PPT					

Date	Originator of communication		Company and person of contact		Contact type	Summary of contact	Does it trigger merit review?	A statement of the interest holder's response to stakeholder	Change to EMP required?	Details of changes the interest holder has made as a resulting from stakeholder engagement	Attach to EMP S/H log	Exploration permit area				Notes
					9 (1) f	9(1)c	9 (1)d	9 (1) e	Yes/No	9 (1)g		Kyalla 117	Amungee 98	Velkerri 76	S/Pea 136	
09-May-24	Tamboran	[redacted]	NLC	[redacted]	In person meeting	Presentation to Native Title Holders and Traditional Owners in Elliott regarding Tamboran Beetaloo Joint Venture Project Work Program and Appraisal Gas Information Meeting to discuss 2024 Work Program, including EMP, WEL, Appraisal Gas works and exploration activity: • Talk through what exploration activity has occurred on the Exploration Permits throughout 2023 • Talk through the results of 2023 Exploration Activity • Provide an overview of the exploration activity planned for 2024 • Provide an overview of the new 2024 EMPs • Talk about appraisal gas sale • Provided a detailed description of each regulated activity, risks and controls. • Talk about future Government approvals, including cultural heritage clearances that will require consideration from Native Title Holders TOs overall were keen on progressing with ILUA and approvals. There was lots of interest regardin gthe jobs and the protection of the country. TOs mentioned in several occasions they want to work together (collaborate) with Tamboran anmd be treated equally. The main questions they asked were: • Management of wastewater and confirmation wastewater was to be removed from site. • Management of drilling waste and mix-bury-cover. Native Title Holders requested addition information to be provided prior to disposal, including the risk asssessment. • Clarification regarding the Commonwealth water trigger thresholds and assessment of Tamboran's regulated activities.	No	N/A	No	N/A	Yes - PPT					
16-May-24	Tamboran	[redacted]	NLC	[redacted]	Email	Email from Matt about Subject land 2 extensions- AAPA authority certificate application confirming certificate submission indicating items that have been modified	No	N/A	No	N/A						
17-May-24	Terrabos / Tamboran	[redacted]	Hayfield-Shenandoah	[redacted]	Email	Stakeholder engagement pack covering appraisal gas sale.	No	N/A	No	N/A	Yes					
26-30 May	Tamboran	[redacted]	NLC and NTHs	[redacted]	Site Visit	QLD site visit with 4 Tamboran staff, 4 NLC and 13 NTHs to Origin Energy Reedy Creek and Spring Gully Assessts in teh Maranoa Region with stay at Roma township. NTHs: [redacted]	No	N/A	No	N/A	No					
03-Jun-24	Hayfield-Shenandoah	[redacted]	Terrabos / Tamboran	[redacted]	Email	Responses from [redacted], which were addessed by Tamboran on 12 June 2024.	No	Seismic area not to be within 7 km of homestead, Tamboran happy to accommodate exclusion zone and requested 5 km buffer. Suggested attend during 2D test lines to see the low impact nature of program. Weeds management a priority.	No	N/A	Yes					
12-Jun-24	Terrabos / Tamboran	[redacted]	Hayfield-Shenandoah	[redacted]	Email	Response to stakeholder's queries relating to the SPCF mercury recovery unit, designed to reduce the risk of corrosion within infrastructure and the gas pipelines.	No	See previous entry on 03/07/2024.	No	N/A	Yes					
01-Jul-24	Tamboran	[redacted]	Chairman BUG JNWG	[redacted]	Face to face meeting (Faron online)	Information session with BUG JNWG Chairman [redacted] to brief him about the project, the BUG, the relationship with NLC and the coming negotiation for the Appraisal Gas Agreement. Meeting held at Tamboran's Darwin Office.	No	N/A	No	N/A	No					
4-Jul-24	Tamboran	[redacted]	APN Pty Ltd - Hayfield Station	[redacted]	Face to face meeting	Discussion of all current operations including civils and drilling wells at SS2 site, what's happening with SS1 site 3D seismic, the construction and operations of the compression facility (SPCF) and what the future will look like. The meeting went very well and Dyers stated it was very informative and great to go over again what is happening. They are happy with Tamboran and keen to see success.	No	N/A	No	N/A	No					
23-Jul-24	Tamboran	[redacted]	NLC	[redacted]	Email	Email from [redacted] requesting NLC to indicate if they can meet next week to touch base on Authority Certificates, EMP, PDs, potential meeting date and anything else the NLC may like to discuss.										
1-Aug-24	NLC	[redacted]	Tamboran	[redacted]	Mobile	[redacted] received a call from NLC with an update in teh flollowing topics: Authority Certificates - [redacted] (Anthro) is back and working on these this week. EMP - NLC have a couple of questions they will provide in writing and discuss at the forthcoming meeting. Regular Project Meetings - agreed to fortnightly cadence and I will send an invite for Tuesday afternoon next week and set it as a recurring meeting. Position Descriptions will be handed out by Elliott Staff next week and then a short list of potential applicants handed to [redacted]										
6-Aug-24	Tamboran	[redacted]	NLC	[redacted]	Online meeting	First of the ongoing fortnightly Project meetings with NLC. Agenda: -Authority Certificate Status -EMP -Position Descriptions -Next JNWG meeting date -Other topics										
16-Sep-24	Tamboran	[redacted]	NLC	[redacted]	Email	Email from [redacted] and response from [redacted] regarding tomorrow's meeting agenda items and response form [redacted]: -Status of Authority Certificates -Feedback on the EMP -Status of Joint Negotiation Working Group Rules and Protocol -Potential JNWG Meeting date + NLC letter -Update on Recruitment - use of Elliott Office (24-26th Sept) -Tamboran EP 136 and 143 Annual Reporting Obligations -Timing of response on NTH's counteroffer; -Timing of response on Agreement; -Impact of scientific review into impacts of fracking on water in the Beetaloo Basin -Timing for further meetings this year; -Timing of next Work Program meeting.										
17-Sep-24	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Ongoing fortnightly Logistics Meeting: Agenda items discussed (meeting notes available): Status of Authority Certificates Feedback on the EMP Status of Joint Negotiation Working Group Rules and Protocol Potential JNWG Meeting date + NLC letter Update on Recruitment - use of Elliott Office (24-26th Sept) Tamboran EP 136 and 143 Annual Reporting Obligations Timing of response on NTH's counteroffer; Timing of response on Agreement; Impact of scientific review into impacts of fracking on water in the Beetaloo Basin (what changes does this mean for the project and project timing, what information has Tamboran received from the Minister regarding the process, etc); Timing for further meetings this year; Timing of next Work Program meeting.										
7-Oct-24	Tamboran	[redacted]	NLC	[redacted]	Email	Email form [redacted] to [redacted] with proposed agenda items for ongoing logistics meeting with NLC on 8 October: -AAPA Certificates -Update on EMP (if needed) -JNWG Rules and Protocol - waiting on feedback from Ashurst/NLC -JNWG Meeting date for presentation of Tamboran counter-offer, week of 28th October										

Date	Originator of communication		Company and person of contact		Contact type	Summary of contact	Does it trigger merit review?	A statement of the interest holder's response to stakeholder	Change to EMP required?	Details of changes the interest holder has made as a resulting from stakeholder engagement	Attach to EMP S/H log	Exploration permit area				Notes
					9 (1) f	9(1)c	9 (1)d	9 (1) e	Yes/No	9 (1)g		Kyalla 117	Amungee 98	Velkerri 76	S/Pea 136	
						-Update on recruitment -Follow up on Sweetpea Annual Report and Exploration Payments Spreadsheet (in case there are potential comments) -Any other matters from NLC										
22-Oct-24	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Ongoing Logistics meeting with NLC. Agenda (meeting notes available): Recruitment update RFP Labor Hire process update JNWG Meeting and authorisation timeframes Appraisal Gas Agreement Drafting Negotiation Protocol Extension JNWG Protocol AAPA Certificate SPCF EMP Seismic EMP 2025 Meeting Schedule and Budget Follow up on Sweetpea Annual Report and Exploration Payments Spreadsheet										
5-Nov-24	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Ongoing Logistics meeting with NLC. Agenda (meeting notes available): -Outstanding Actions from previous meeting -TBN Presentation material for NTH Meeting -Ashurst/KWM meeting actions -Agreement next steps and timeframes -SIA ToR update -Recruitment and Labour Hire update -Follow up on Sweetpea Annual Report and Exploration Payments Spreadsheet -Seismic EMP										
12-Dec-24	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Meeting Agenda (Meeting notes available): -Authorisation Meeting - next steps -EMP briefing (if needed) and BUG application -Christmas leave										
17-Dec-24	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Meeting Agenda (Meeting notes a[redacted] -Anthropologist reports - [redacted] -2025 Meetings Letter - Emily -Seismic EMP briefing and BUG application – [redacted]										
16-Jan-25	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Meeting Agenda (Meeting notes available): -Appraisal Gas Agreement - finalisation and execution process -JNWG and Negotiation Protocol -2025 Meeting Schedule and Budget -Work Program Meeting -ILUA Meeting -Seismic EMP										
4-Feb-25	Tamboran	[redacted]	NLC	[redacted]	Online meeting Ongoing fortnightly Logistics Meeting	Meeting Agenda (Meeting notes available): 1. Update on Appraisal Gas Agreement finalisation 2. Update on JNWG and Negotiation Protocols 3. 2025 Work Program Meeting 4. ILUA Meeting 5. Social Impact Assessment ToR 6. Environmental approvals update 7. Aboriginal employment update 8. Other business										
12-Feb-25	NLC	[redacted]	Tamboran	[redacted]	Email and Letter	Email from [redacted] with Letter with comments regarding Shenandoah South 3D Seismic EMP sent on 24 October 2024 by Tamboran.										

PART B Stakeholder summary of information provided and the relevant sections of the Petroleum (Environment) Regulations 2016

Section 7(2)(a)	Stakeholder	Document and content	Date provided
(i) “the regulated activity the interest holder proposes to carry out”	Pastoralist	Stakeholder engagement pack: - **Detailed description of the Regulated Activities** covered in the EMP. - Face-to-face-meetings - Presentations	13-Oct-23 11-Nov-23 15-Nov-23 16-Nov-23 02-May-24 17-May-24 12-Jun-24 04-Jul-24
	NLC/traditional owners	- Annual on country meetings - Story boards - Annual work program communications - Face-to-face meetings - Work clearance requests - Condition of work reporting	Refer table, Part A
(ii) “the location (or locations) where it is proposed to carry out the activity”	Pastoralist	Stakeholder engagement pack: - **Location of the Regulated Activities** covered in the EMP. - Face-to-face-meetings - Presentations	13-Oct-23 11-Nov-23 15-Nov-23 16-Nov-23 02-May-24 17-May-24 12-Jun-24 04-Jul-24
	NLC/traditional owners	- Annual on country meetings - Story boards - Annual work program communications - Face-to-face meetings - Work clearance requests - Condition of work reporting	Refer table, Part A
(iii) "the anticipated environmental impacts and environmental risks of the activity" AND (iv) "the proposed environmental outcomes in relation to the activity"	Pastoralist	Stakeholder engagement pack: - **Environmental outcomes, impacts and risks** associated with the activities covered by the EMP. - Face-to-face-meetings - Presentations	13-Oct-23 11-Nov-23 15-Nov-23 16-Nov-23 02-May-24 17-May-24 12-Jun-24 04-Jul-24
	NLC/traditional owners	- Annual on country meetings - Story boards - Annual work program communications - Face-to-face meetings - Work clearance requests - Condition of work reporting	Refer table, Part A
(v) "the possible consequences of carrying out the activity to the stakeholder's rights or activities"	Pastoralist	Stakeholder engagement pack: - **Consequences for stakeholder’s rights or activities** associated with the activities covered by the EMP. - Face-to-face-meetings - Presentations	13-Oct-23 11-Nov-23 15-Nov-23 16-Nov-23 02-May-24 17-May-24 12-Jun-24 04-Jul-24
	NLC/traditional owners	- Annual on country meetings - Story boards - Annual work program communications - Face-to-face meetings - Work clearance requests - Condition of work reporting	Refer table, Part A

APPENDIX K

Emergency Response Plan

Beetaloo Basin

Emergency Response Plan

TAMBORAN RESOURCES LIMITED INTEGRATED MANAGEMENT SYSTEM		
DOCUMENT TITLE:	Emergency Response Plan	
DOCUMENT NO:	TBN-HSE-MP-05	REVISION NO: 4
DOCUMENT CUSTODIAN:	HSE Manager	REVISION DATE: 22/10/2024

Revision

Rev. No	Revised By	Justification	Date
2	G Bertini	Minor wording changes, update to contact details and site locations	16/11/2023
3	G Bertini	Minor wording changes, update to contact details emergency response mapping and inclusion of wastewater loss of containment response actions	15/03/2024
4	A Court	Minor update for 3D seismic program	22/10/2024

Document Approval

Responsibility	Approver
Owner of the Emergency Management Plan	[redacted] VP Drilling and Completions

Abbreviations

Abbreviations and acronyms used within this document:

Abbreviation	Definition
AAR	After Action Review
BMP	Bushfire management plan
CMT	Crisis Management Team
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
DMO	Duty Medical Officer
EAP	Employee Assistance Program
EMT	Emergency Management Team
EMT-L	Emergency Management Team Leader
ERN	Emergency Response Notification
ERT	Emergency Response Team
EPT	Extended production testing
ERP	Emergency Response Plan (this document)
ERIP	Emergency Response Interface Plan
ERT	Emergency Response Team
GPS	Global Positioning System
HSEMS	Health and safety management system
HLSO	Helicopter Landing Site Officer
OSC	On-Scene Commander
MAE	Major Accident Event
PPRR	Prevent Prepare Respond Recover
SEMT-L	Site Emergency Management Team Leader
SIMOPS	Simultaneaous Operations
SIF	Serious injury or fatality
SITREP	Situation Report
SMP	Spill Management Plan
TPC	Third party contractor
VP	Vice President

Table of Contents

1 Introduction

1.1 Purpose

This ERP is designed to guide the On-Scene Commander (OSC) and Site Emergency Team to respond effectively to a site level emergency and then return the site to normal operations.

The plan will:

- Briefly describe the Tamboran emergency response structure
- Explain the notification and escalation pathway
- Identify key personnel and their role in an emergency scenario
- Describe information about the site including:
    - Site location/s and geographic area
    - Emergency equipment and medical resources available
    - Exclusion zones (if applicable)
- Identify the tools for use during an emergency.

Support for the Emergency Management Team is provided through the Tamboran Crisis Management Plan (TRL-HSE-PL-03).

1.2 Scope

This emergency response plan encompasses all Tamboran's activities within the Beetaloo Basin. The plan applies to all employees, contractors, and visitors and includes (but is not limited to) the following activities:

- All regulated activities approved under the environment management plans (EMPs) and legislated under Regulation 5 of the Petroleum (Environment) Regulations 2016
- Transport to and from work areas (excluding chartered flights to and from Daly Waters)
- Field scouting (environmental, cultural heritage, constructability etc)
- Groundwater bore construction, monitoring and sampling
- Site inspections and well-head maintenance

Where site operations are under the HSEMS of a Lead Contractor then bridging arrangements and interfaces will be agreed to and documented.

Out of scope:

- Charter flights and commercial flights to and from Daly Waters and Darwin
- Logistics and freight haulage from depots to Daly Waters laydown
- Accommodation in commercial establishments (hotels etc)

1.3 Compliance with Legislation

This plan meets the requirements as identified by legislation for emergency response plans including:

- Work Health and Safety (National Uniform Legislation) Act 2011
- Work Health and Safety (National Uniform Legislation) Regulations 2011
- Petroleum Act 1984
- Petroleum Regulations 2020
- Petroleum (Environment) Regulations 2016
- Code of Practice for Petroleum Activities in the Northern Territory 2019
- Bushfire Management Act 2016
- Bushfire Management (General) Regulations 2018
- Dangerous Goods Act 1998
- Dangerous Goods Regulations 1985

- Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Act and Regulations
- Waste Management and Pollution Control Act 2016
- Northern Territory Contaminated Land Guideline (June 2017)

1.4 Operator Details

Tamboran Resources Ltd (Tamboran)
100 Barangaroo Avenue
Barangaroo NSW 2000

1.5 Beetaloo Basin Location

The Beetaloo Basin is located approximately 700 km south of Darwin with operational activity being undertaken in 4 permit areas (EP76, 98, 117 and 136) as per Figure 1 below.

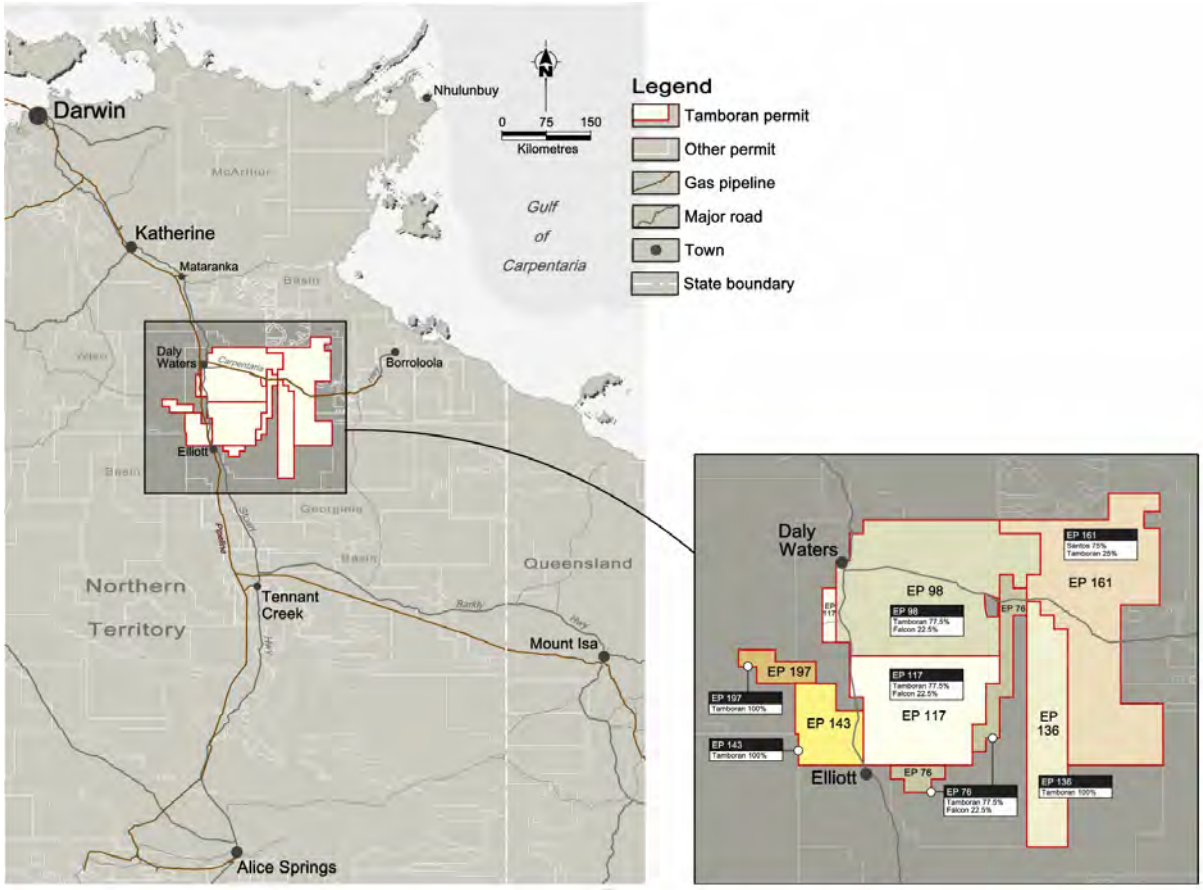

Figure 1. Beetaloo Basin permit areas

2 Emergency Management Structure

The overall Emergency Management structure is three-tiered as shown in Figure 2 with:

- An Emergency Response Team (ERT) on site. This will be led by a Tamboran Representative and supported by specialist contractors and local emergency services.
- An office-based Emergency Management Team (EMT) lead by Tamboran VP Drilling and Completions.
- The Tamboran Crisis Management Team (CMT) is led by the Tamboran COO.

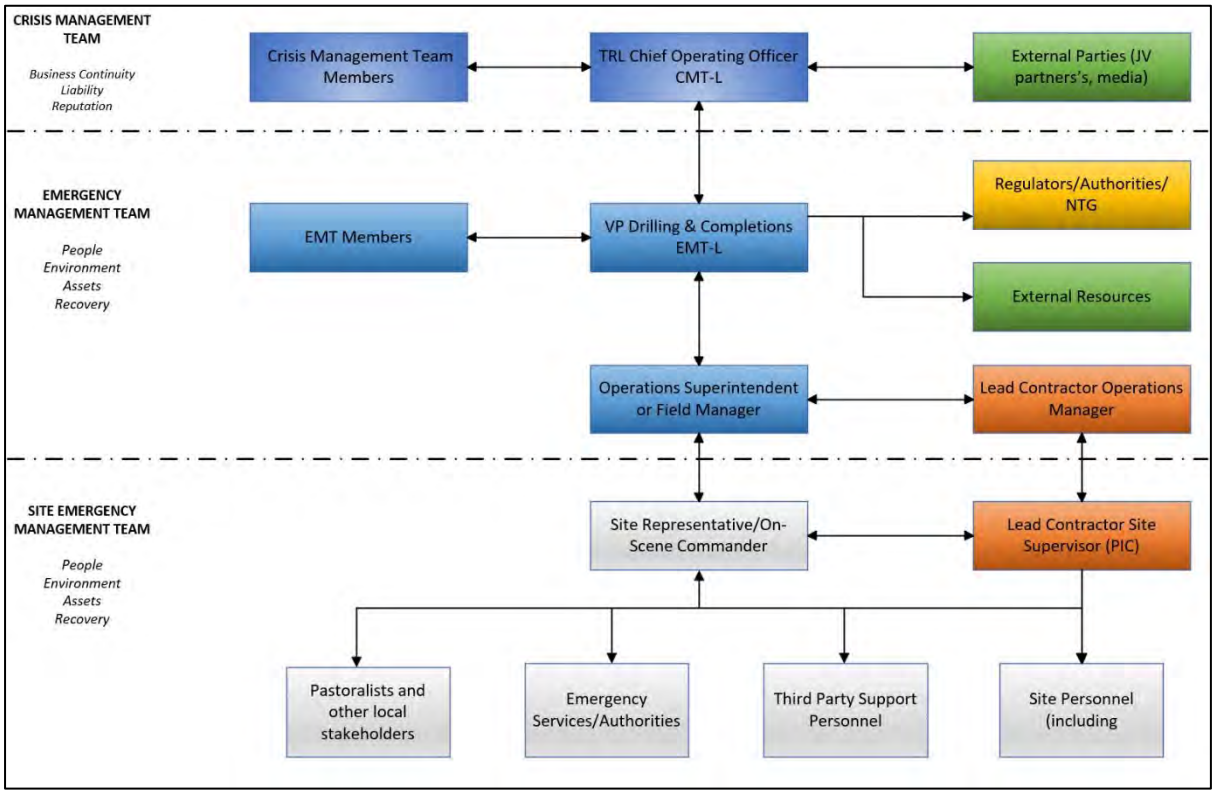

Figure 2. Emergency Management Structure

2.1 Emergency Response Philosophy

The site emergency response team will have the ability to provide a basic response to incipient fires, spills and medical emergencies to preserve life and reduce the impact to people, community, environment, and assets.

Where increased response capability to mitigate the consequences of incident types such as loss of well control or bushfire, specialist contractors (including emergency services) will be engaged to undertake the response.

3 Emergency Management

3.1 Definition of a Site Emergency

An emergency is defined as an unplanned event which requires a response to normalize an activity that has resulted in:

- Injury to an individual or group of people
- A near miss with SIF potential
- Loss of control of any health, safety environment or community related incident
- Uncontrolled release of a substance to air, land, or water
- Loss of reputation or business continuity
- Loss or damage to equipment or assets
- The potential for any of the above

3.2 Emergency Response Plan Activation

This Site Emergency Response Plan (SERP) should be activated for emergencies that cause or have the potential to cause SERIOUS or greater consequences. Consequence classification is based on Tamboran's Risk Matrix.

The Site Emergency Management Team Lead (SEMT-L) or On Scene Commander (OSC) has the authority to activate this SERP. Escalation to the Emergency Management Team Lead (EMT-L) must occur so that activation of the EMT can be considered and stood up if required.

Figure 3 below describes activation pathway for the SERT.

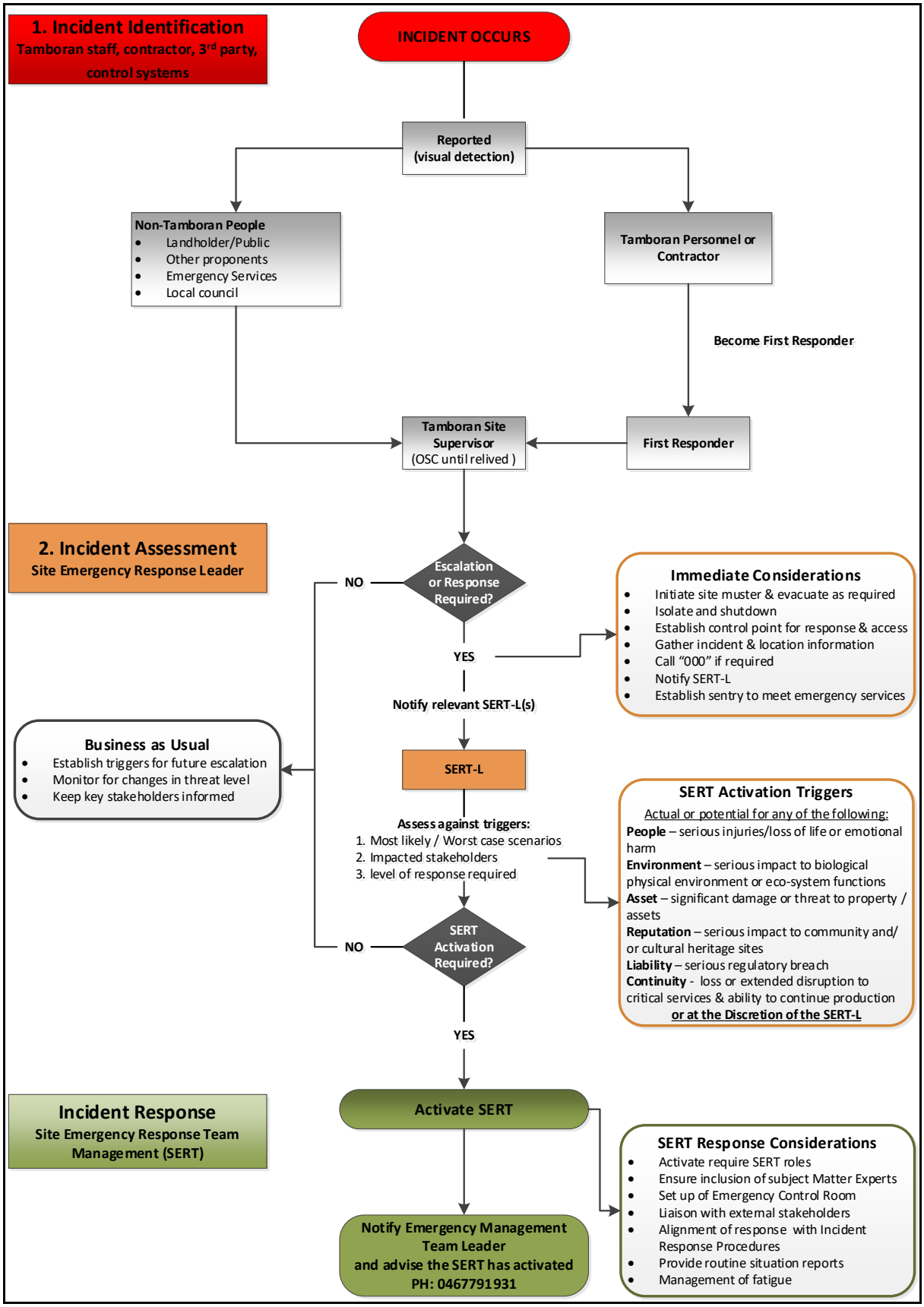

Figure 3. Identification and Escalation

Triggers for Activation			
People	Serious injury/illness or worse to any person		☐
Environment	Moderate effects on biological physical environment and serious short-term effect to eco-system functions		☐
Asset	Serious damage or loss to production, property and/or infrastructure		☐
Reputation	Serious impact to community or cultural heritage		☐
Liability	Serious breach of law or regulation		☐
1 – Isolate and Evacuate			
Muster	Account for all personnel (upwind) whilst assessing the situation		☐
Isolate	Either through Emergency Shutdown Devices (ESD's) or remotely		☐
Evacuate	If required evacuate to designated evacuation points either upwind or at a safe distance as determined by event type or respective response guideline		☐
Control	Establish control points to coordinate response and restrict access		☐
Meeting Points	Nominate pre-determined emergency services meeting points near known landmarks or road intersections and establish personnel to meet emergency services upon their arrival		☐
2 – Communicate and Escalate			
Confirm	Confirm details of the emergency (type of emergency, injuries, contained oruncontained etc.) and response required.		☐
Activate	Activate SERT, EMT and CMT, contact Emergency Services and communicate with other Stakeholders		☐
Escalate	Consider likely impacts		☐
Impacts (actual & potential)	Most likely	What is realistically likely to happen and who / what is impacted?	☐
	Worst case	How bad could it really get and then who / what is impacted?	
3 – Respond			
• Continually reassess situation		• Appoint OSC	☐
• Designate communication channels		• Establish exclusion zones	☐
• Activate appropriate resources		• Develop SMEACS briefing	☐
• Apply Incident Response Guidelines		• Provide regular updates	☐
4 – Response Management			
Personnel	Appropriate personnel in the ERT, CMT and from outside resources		☐
Resources	Appropriate resources available to manage the incident		☐
Tools	Appropriate tools available for the ERT, CMT, OSC and other responders		☐

Table 1. ERP activation and actions

3.3 Emergency Scenario Guides

The Emergency Scenario Guides provide an easy to understand, detailed response to the below identified emergency situations. The guides define the key roles and responsibilities to ensure essential response actions are undertaken and should be used in conjunction with this plan.

Category	Response Procedures
FIRE	▪ Bushfire
PERSONAL SAFETY	▪ Medical Emergency ▪ Vehicle Accident ▪ Missing Overdue worker ▪ Lone Worker ▪ Snakebite
ENVIRONMENT	▪ Environment Related Incident (earthquake/cyclone) ▪ Environment – Weather Related Incident – ▪ Loss of containment or spill ▪ Flood
HAZMAT	▪ Hazardous chemicals ▪ Loss of well control (level 1 or 2)
SECURITY	▪ Protest / Trespass ▪ Bomb Threat ▪ Armed Intruder ▪ Lockdown

3.3.1 Spill Response and Loss of Containment

The Beetaloo Spill Management Plan (TB2-HSE-MP-09) provides specific information on how to manage and handle spill response within the Beetaloo Asset (including spills located off tenure). This document should be referenced for all emergency spill response scenarios.

Refer to Appendix E for additional guidance steps and considerations in the event of a loss of containment from wastewater storage.

3.3.2 Chemical Response

The Chemical Response guidelines (CDN 4411922) provide specific information for specific chemicals that are used on Tamboran sites. The guidelines provide information on:

- PPE requirements
- Chemical details and description
- First aid requirements
- Evacuation considerations
- Fire and spill management

Additionally, a Chemical Risk Assessment was completed for activities. The fluid systems reviewed were:

- Hydraulic fracture stimulation fluids;
- Hydraulic fracture chemical tracers; and
- Drilling fluids

As part of the Chemical Risk Assessment a hazard assessment was undertaken with the evaluation of the environmental hazard of the chemical additives in the hydraulic fracturing fluid systems, based on their environmental persistence, bioaccumulation, and aquatic toxicity properties. Also included was an evaluation of human health effects (i.e. genotoxicity, carcinogenicity, reproductive toxicity, oral toxicity, inhalation toxicity, dermal toxicity, chronic repeated dose toxicity).

A hard copy emergency manifest, identifying notifiable quantities of hazardous substances, must be in the emergency box located at the muster point of all field locations.

3.3.3 Bushfire

Specific wellsite and activity specific Bushfire Managements Plans (BMPs) have been prepared. A copy of the relevant bushfire management plan is found on site and is easily accessible for all personnel.

The below tools should be utilized by site personnel for additional support and guidance during bushfire season (Northern Territory runs from April – November) can provide technical advice in developing bushfire management processes and emergency planning during the fire season.

- https://www.pfes.nt.gov.au/incidentmap
- NAFI (firenorth.org.au)

3.3.4 Security

In addition to the ER response guide, the Tamboran Beetaloo Basin Security Plan (TBN-OPS-MP-01) should be enacted and supports a response to security scenarios.

3.3.5 Aviation

Daly Waters Airstrip

Daly Waters Airstrip is used for undertaking medical retrievals by Care Flight and The Royal Flying Doctors. Tamboran has supplied a set of emergency landing lights which must be deployed for night landings. These lights are for use by Tamboran and the Daly Waters community and are stored within the Tamboran storage shed at Daly Waters. Contact the Tamboran Field Manager for deployment or access to the lighting. See Appendix J for Daly Waters Emergency Landing Lights Layout.

Helicopter Landing Site Officer (HLSO)

If a helicopter is required for an emergency a designated trained Helicopter Landing Site Officer (HLSO) should be sourced (where available) to support ground activities. It is the responsibility of the HLSO to ensure that they are familiar with the landing locations.

Purpose built helicopter landing pads are located at Amungee NW, Velkerri 76 and Kyalla 117. Landing site coordinates are identified in Appendix D and in the Emergency Response Notification (ERN) document that is prefilled by the Tamboran Operating Company Representative when moving to a new well location or if conducting a campaign then nominated in the campaign specific bridging document.

3.3.6 Medical Emergency

First Responders must notify the OSC and in turn the SEMT-L if they call Emergency Services. Once notified, the OSC is responsible for all communications back to the SEMT.

In the event of a medical emergency, the medical clinician, and first aiders (if requested to assist) will commence immediate treatment.

Due to the remoteness of the Beetaloo Basin, there may be a delay to external medical resources responding should they be required therefore life-threatening injury/illness should be escalated without delay.

To initiate external medevac support for priority 1 and 2 patients:

- The onsite medical clinician is to contact emergency services by calling the St John on call Duty Medical Officer on 08 8999 8666 or using 000
- External medical resources will be arranged by the DMO and deployed. Providers include Care Flight, St Johns Ambulance (from Katherine) and Royal Flying Doctor Service.
- At the first available opportunity, the Aspen Duty Medical Officer will also be contacted by the medical clinician and informed of the incident, the patient's condition, and current treatment / medivac plan.

Depending on the situation, the Aspen Duty Medical Officer will assist with telehealth advice in consultation with the Care Flight and Top End Health Services Duty Medical Officers.

Priority 1 – Life threatening / time critical

Priority 2 – Urgent (early surgical intervention required)

Priority 3 - Serious but not time critical (e.g, severe abdominal pain without compromise)

For Priority 3 patients alternate medivac options may be available to the medical clinician and these need to be considered on a case-by-case basis in consultation with the NT Duty Medical Officers and Tamboran site leadership team.

Priority 4 (illness/injury that can be treated onsite with capability and resources available) the medical clinician will commence treatment and will contact the Aspen Duty Medical Officer as required to discuss treatment strategies.

3.4 Contractor Scenarios

If an incident occurs, the Tamboran Representative will become the On-Scene-Commander (OSC) and liaise with the associated contractor. If an emergency event exceeds the contractor's capability, ie loss of well control, then Tamboran will assume control of the incident and delegate management as required.

When working under their own HSEMS, it will be the responsibility of the Contractor to provide an initial emergency response and co-ordinate the emergency event. If a Tamboran employee is involved in an emergency event at a site under the control of a contractor, it is expected that the Tamboran employee will conform to the contractor's response requirements and support the contractor if willing and competent to do so.

3.5 Major Accident Event

A Major Accident Event is an uncontrolled incident, including fire, explosion, or release of dangerous substance with the potential to lead to multiple fatalities or major environmental damage (potential for critical or catastrophic consequence as per Tamboran Risk Matrix).

A loss of well control is considered a Major Accident Event (MAE) which, while rare, requires additional controls and engineering assessments to mitigate potential consequences.

See Appendix E for details on well control incidents and classification.

4 Roles and Responsibilities

The following roles and responsibilities are essential to ensure effective communication when responding to emergency events.

- First Responder (FR), located at the incident scene and may be a Contractor
- On Scene Commander (OSC) located at the incident scene
- Site Emergency Management Team Leader (SEMT-L)

Individuals may undertake multiple roles depending on the nature of the emergency, its duration and complexity. The functional roles that will assist the EMT-L are listed below and known as the Emergency Management Team (EMT).

- Operations
- Planning
- Logistics
- Log Keeper

Additional roles such as technical engineering, travel and accommodation services may support the CMT depending on the type of incident.

If the EMT-L is unable to undertake their responsibilities a competent alternate or delegate must be appointed to ensure the EMT continues to function.

SERT Roles	Responsibilities
Work parties (including contractors) /First Responder	▪ Respond to the situation as per the contractor's emergency response plan. ▪ Actively participate in the risk management process to assist in the development of emergency action plans; ▪ Check notice boards for any recent updates to information; ▪ Maintain a high level of awareness of actions to be taken in the event of an emergency. ▪ Follow instructions from Emergency Controller, Emergency Services personnel, First Aiders, and other designated emergency personnel as appropriate; and ▪ Prior to commencing any work or entering a work area, sign onto JSEA for associated activity
First Aiders	▪ Ensure first aid competencies (minimum Apply First Aid and CPR) are maintained ▪ Provide first aid treatment or assessment as needed whilst working within their skill level ▪ Determine need for medical assistance and provide information to medical personnel or emergency services as required ▪ Ensure that first aid kits are maintained, complete and items are in-date; and ▪ Ensure that all treatments provided, regardless of the type or complexities are recorded
Paramedic/Remote Area Nurse	▪ Be familiar with current work groups and work locations within Beetaloo Basin ▪ Provide emergency health care on site (12hr workday and on call 24/7) ▪ Ensure that medical response emergency equipment (including medications and ambulance) is fit for purpose, in date and in good working order. ▪ Liaise with external medical emergency services (Care Flight, St Johns etc)
Tamboran On Scene Commander	▪ Manage first response at site level. During first response, ensure safety of other personnel and ensure that the emergency is communicated effectively to the required people. ▪ Act as Site Emergency Management Team Leader (SEMT-L) ▪ Nominate personnel to act in support roles (log keeper, logistics) ▪ Escalate to Emergency Services, if required. ▪ Ensure that emergency action plans are discussed regularly at pre-start meetings, so that all persons under their control are aware of emergency procedures. ▪ Ensure that emergency equipment is maintained in good working order (complete, clean and available for immediate use)
Site personnel	▪ Be familiar with individual work sites including muster points and evacuation routes ▪ Be familiar with this plan and the steps required to implement the plan ▪ Keep themselves and others safe from danger during an emergency
EMT Roles	**Responsibilities**
Emergency Management Team (lead by VP Drilling and Completions)	▪ Ensure adequate personnel and resources are available to manage and support an emergency ▪ Nominate personnel to act in support roles (log keeper, logistics etc) ▪ Provide technical support and advice. ▪ Co-ordinate with other Operators for use of Well Control package ▪ Support field team with emergency service direction/calls as requested ▪ Escalate and communicate with Crisis Management Team if required. See Crisis Management Plan for defined roles and responsibilities.

Table 2. Roles and Responsibilities

4.1 Toolkit and Supporting Resources

The below forms and checklists provide a detailed overview of the additional administrative tools to be utilized by emergency team.

Operations Checklist	TBN-HSE-FRM-02
Planning Checklist	TBN-HSE-FRM-03
Logistics Checklist	TBN-HSE-FRM-04
Administration/Log Keeper Checklist	TBN-HSE-FRM-05
Situation Report Form (SITREP)	TBN-HSE-FRM-06

4.1.1 Emergency Response Equipment

The below emergency response equipment is always available on operational sites.

Equipment	Location
Remote Area Nurse/Paramedic and Ambulance	On active drilling, completions, stim, EPT and active construction sites.
Medical clinic	Based within the camp accommodation and supports the above activities. Used to provide basic primary health care and emergency medical care
Front end loader	Operational D&C sites
Trash pumps (including hoses)	Operational D&C sites Daly Waters (contingency and for transport/use at unmanned sites as required)
Fire extinguisher/s	Tamboran vehicles Site offices and camp (when established)
Spill kits (oil/fuel and general purpose)	Spill kits are strategically located at active drilling, completions, stim, EPT and active construction sites. Size of kits is dependent on type and duration of activity and are provided by the contractor
Water cart	Available on-site during high-risk fire danger and utilized for dust suppression in first instance
First aid kits	Tamboran vehicle Site office (where established)

5 Emergency Management and Control

After an emergency is detected, the following management stages will be used to control and contain the incident and return to business as usual.

- Raise the alarm
- Isolate and secure
- Communicate and escalate
- Respond and recover

5.1 Raise the alarm

One or more of the following methods can be used to raise the alarm:

- in person
- radio (UHF, VHF etc)

- phone (mobile, satellite or landline)
- emergency alarm/siren
- Leak detection alerts at unmanned locations

5.2 Isolate and evacuate

Stop all work and make sure the worksite is safe:

- secure the well, or impacted area
- stop vehicle and mobile plant operations

If you need to abandon vehicles and mobile plant:

- pull over and park in a safe area
- ensure access and egress to the site is not impeded
- switch off and leave the keys in the ignition

Plan a safe route to the muster point and avoid movement through unsafe areas:

- account for all people
- standby at the muster point until instructed to evacuate

5.3 Communicate and escalate

- Gather information – where is the emergency, what has happened, who is affected, is anyone missing, where are the safe areas etc
- Advise and update the Tamboran Supervisor
- Call Emergency Services (Police, Ambulance, Fire) if required
- Identify meeting points for responders (Medical Providers, ERT etc) and Emergency Services
- EMT and/or CMT to be activated if required

5.4 Respond and recover

- Apply first aid to injured people (if safe to do so)
- Consider Simultaneous Operations (SIMOPS), advise nearby work groups
- Assist Emergency Services
- Follow response procedures. Take into consideration emergency scenarios (ie loss of containment) that have occurred at an unmanned location.
- Secure the scene if Regulator involvement is required. This should include physical barricading (flagging, rope etc) to ensure equipment is not interfered with.
- Initiate incident investigation
- Conduct after action review of the emergency response effort and assign corrective actions

6 Other Considerations

6.1 Meeting Emergency Services

Where Emergency Services such as Ambulance, Police and Fire are dispatched by road or air, a Tamboran employee or contractor representative will meet the Emergency Service at a designated location and guide them to the incident site.

Designated location - Hi-Way Inn (cnr Stuart and Carpentaria Highways, Daly Waters)

Additional meeting points may be required and will be identified and communicated on call out. These will be dependent on the type of emergency, access availability and exclusion zones.

To enable an effective response, a detailed annual work program is provided to NT Police, Fire & Emergency Services. At the beginning of each campaign of work, a copy of the worksite ERN (emergency response notification) shall be provided to Emergency Services in Mataranka and Katherine. This ERN provides site specific details, GPS co-ordinates, directions to site and contact phone numbers. This will enable emergency services to be familiar with the work location prior.

6.2 Hazard Awareness

All personnel arriving at the incident site must be made aware of:

- Hazards present because of the incident (fire, heat radiation, flooding/water, chemical exposure etc)
- Hazardous areas and exclusion zones
- Safe locations and muster points
- Additional PPE (if required)

6.3 Shift Changeover

Shift changeovers are required for continuity of emergency management. The EMT-L is responsible for changeover of personnel involved in the emergency. Effective changeover will be achieved by:

- Staggering changeover times
- Avoiding changeovers during critical periods
- Having changeovers in daylight, where possible
- Briefing incoming personnel

7 Termination of Emergency

The emergency can be considered over when:

- Emergency services have declared the emergency over and have returned control of the site back to Tamboran.
- The emergency team has returned the site to a safe condition
- All personnel are accounted for
- Injured/ill personnel have been stabilized and/or evacuated
- Environmental controls are in place

8 Recovery and Post Emergency Actions

8.1 After Action Review

After Action Review (AAR) is to be held after each emergency. This process is designed to discuss strengths and weaknesses and necessary improvements for this plan and related procedures. All actions arising from the review shall be entered into Tamboran's Risk and Compliance Management System and tracked through to completion and closure.

8.2 Incident Investigation

Incident investigations should be undertaken in accordance with Tamboran's Incident Investigation processes with the following steps being considered:

- Securing the incident site and restricting access until investigators (both internal and external) have completed their work and handed back control of the site.
- Gathering of evidence that may assist the investigation (list of personnel involved, response logs, situation boards, photographs etc)

8.3 Recovery Actions

Prior to resuming work, develop a recovery plan that considers the following:

- Check plant and equipment for structural, physical, and electrical/instrumentation integrity
- Ensure all active detection and protection systems are restored
- Replenish emergency response equipment as required
- Replace or return third-party emergency equipment

In addition, consider the following points:

- People who were involved may require counselling, depending on the nature of the incident
- People should be debriefed with all relevant information captured for a "lessons learnt"
- Conduct a toolbox talk on specific start up activities before restarting work
- Consider the potential for loss of confidence or potential IR issues following the incident or the response to that incident
- Emergency response plans and training may need to be revised before resuming the work activity

8.4 Clean Up

Post incident clean up should be done using the following guidelines:

- Conduct initial site inspection to identify extent of equipment and/or plant damage
- Assess potential decontamination requirements (removal of chemicals/foam/oil/contaminated soil)
- Store all contaminated material in proper containers pending offsite disposal by licensed hazardous waste contractors
- Assess damage or potential damage to surrounding environment. This may include conducting soil testing of contaminated area/s to inform site remediation requirements.
- Repair and/or replace damaged equipment/plant
- Inspect and test affected equipment

9 Training and Capability

All personnel must be given specific training on how to respond to an emergency, fulfill their role in the site ERT and use of emergency equipment available.

Training may be in the form of:

- External or internal competency-based training
- Emergency response drills (both practical and desktop exercises)

9.1 Exercises

Emergency response exercises will be conducted monthly as per the schedule below. This schedule should be dynamic and align with the current operations, type and level of risk that exists on site.

Exercises must involve escalation and activation of the Emergency Management Team (EMT) and Crisis Management Team (CMT) as indicated on schedule below.

	JAN	FEB	MAR	APR	MAY	JUN
Primary	HAZMAT	Structural failure	Environment	Personnel safety – medical emergency	Fire	Personnel safety
Secondary	Flood	Personnel safety	HAZMAT	Personnel safety	Personal safety	Personnel safety

	JUL	AUG	SEP	OCT	NOV	DEC
Primary	Personnel safety	Fire	Environment – oil/chemical spill	Personal safety – medical emergency	Flood	Structural failure
Secondary	Security - protest	Personal safety	HAZMAT	Security	Personal safety	Environment - loss containment

Table 3. Emergency response exercise schedule. Note white shading indicates inclusion of EMT and CMT in the exercise

It is recommended that a Level 3 loss of containment event be simulated yearly as a minimum to test the Emergency Management structure (EMT, CMT) in line with the requirements set out in this ERP. Scenarios should progress from level 1 to level 3 (blowout stage) to ensure that all Emergency Management leaders are provided with an opportunity to participate.

In addition, the drills should include the primary well control contractor and support contractors to test their state of readiness. The aim of the exercise is to simulate the loss containment event, test personnel's response to the event, test the mobilisation and function of the Emergency Management structures, and test the mobilisation of the contractors required to respond to the well control event.

Any lessons learned from the exercise should be incorporated when appropriate to continually improve Tamboran's response to such an event.

10 Stakeholder Management

10.1 Pastoralists

Contact with Pastoralists can be initiated by the SEMT-L in urgent circumstances (i.e. bushfire threat) however, the Landholder Relations Advisor should be used in the first instance. See Appendix C for contact details.

10.2 Next of Kin

In the event of a death, serious injury or other emergency, involving Tamboran personnel, advice to relatives about the condition of a person or about the incident will be coordinated by Human Resources through the Crisis Management Team.

During or after an emergency, the SEMT-L will refer any queries or concerns from relatives to Human Resources. HR may also activate Employee Assistance Program (EAP) providers to support site personnel or relatives affected by an incident.

Principal Contractors and Contractor companies are responsible for management of next of kin communication in consultation with Police services, and EAP management in accordance with their emergency response plans and relevant State obligations.

10.3 Dealing with Media Enquires

During an emergency event, media attention may occur at the affected site. If personnel receive an enquiry from a journalist or reporter, whether in person or by phone and are asked about Tamboran, they should say:

"I am not able to comment. If you give me your name and telephone number I will organize for the most appropriate person to call you."

Always ask for:

- the journalist / reporter's name.
- publication / media outlet.
- contact phone number and/or email.

It is important to remember that there is no such thing as "off the record". Even if you are speaking informally, you may be quoted at any time.

The EMT-L will advise the CMT-L of any media contact or enquiry.

11 Review and Update

The ERP will be reviewed and updated as necessary in response to one or more of the following:

- annually
- when major changes have occurred, which may affect the response coordination or capabilities.
- following routine testing of the plan
- after an actual emergency

During the review, the following aspects are to be considered:

- lessons learned from an emergency
- changes in legal requirements
- improvements to effectiveness in terms of response strategy, management, and communication
- developments in the latest techniques and technology in handling an emergency.
- changes to, or movement of people within the organization
- changes to contact numbers of internal and external organizations
- revisions to existing or availability of emergency management tools and equipment, resource suppliers or contractors

12 Associated Documents

Document	Document Reference
Beetaloo Basin Spill Management Plan	TB2-HSE-MP-09
Tamboran Resources Crisis Management Plan	TRL-HSE-PL-03
Emergency Scenario Guides	NA
After Action Review	TBN-HSE-FRM-07
Chemical Response Guidelines	CDN-4411944
Tamboran Risk Toolkit	NA
Bushfire Management Plan – Shenandoah S2 (Rev 1)	NA
Bushfire Management Plan – Kyalla 117 N2 (Rev 1)	NA
Bushfire Management Plan – Amungee NW (Rev 3)	NA
Bushfire Management Plan - Beetaloo W1 (Rev 1)	NA
Bushfire Management Plan – Maverick 1 (Rev 1)	NA
Bushfire Management Plan – Velkerri 76 S2 (Rev 1)	NA
Bushfire Management Plan – Kalala (Rev 1)	NA
Bushfire Management Plan – Shenandoah South 3D Seismic Survey (Rev 1)	NA

Appendix A. Contact List (Tamboran)

Tamboran Contacts		
Role	**Name**	**Primary contact details**
Field Manager	[redacted]	[redacted]
Drilling Superintendent	[redacted]	[redacted]
Tamboran Field HSE	[redacted]	[redacted]
VP Drilling & Completions	[redacted]	[redacted]
HSE Manager	[redacted]	[redacted]
Environment and Approvals Manager	[redacted]	[redacted]
Logistics Superintendent	[redacted]	[redacted]
Senior Counsel	[redacted]	[redacted]
Landholder Relations	[redacted]	[redacted]
Human Resources	[redacted]	[redacted]

Appendix B. Contact List (External Agencies)

External Agencies		
Role	**Name**	**Primary**
Emergency Services	Police, Fire, Ambulance	000 (or 112 from mobile)
St Johns Duty Medical Officer	N/A	(08) 8999 8666
Hospital	Katherine Hospital Kintore Clinic Katherine	(08) 8973 9211 (08) 8972 1677
McArthur River Mine Medical Resource	N/A	1800 211 573
Bushfires NT	Fire control officer	Katherine (08) 8973 8871 Darwin (08) 8922 0844
Volunteer Bushfire Brigade	N/A	(08) 8975 9936
Emergency helicopter operations	HM Air Services	(08) 8975 0777 OR 0413 002 407
Regional Shire Council	Roper Gulf Shire	(08) 8972 9000 OR (08) 8977 2300 (Mataranka Office)
Regional Shire Council	Barkley Shire	(08) 8962 0000 OR 0448 071 878 (after hours emergency)
Police (non-emergency)	Police Link	131 444 Elliott – (08) 8969 2010 Katherine – (08) 8973 8000
Poisons Information Centre	N/A	13 11 26
Bureau of Meteorology	Cyclone Warnings Forecasts & Warnings	1300 659 211 (08) 8920 3826
NT DITT Petroleum Operations	N/A	+61 1300 935 250
NT DEPWS	N/A	1800 064 567 (NT EPA Pollution Hotline – caller to state it's a petroleum matter) onshoregas.depws@nt.gov.au
NT EPA Pollution Hotline	N/A	1800 064 567 (as above)
NT WorkSafe	N/A	1800 019 115 ntworksafe@nt.gov.au
National Land Council (NLC)	N/A	(08) 8920 5100 (business hours only)
Well Control and Prevention	Wild Well Control Inc.	+1 281 784 4700

Appendix C. Contact List (Pastoralists)

Property Name	Contact Name	Phone
Amungee Mungee	[redacted]	[redacted]
Beetaloo Station	[redacted]	[redacted]
Sturt Plains Hayfield/Shenandoah	[redacted]	[redacted]
Hidden Valley	[redacted]	[redacted]
Kalala	[redacted]	[redacted]
Newcastle Waters	[redacted]	[redacted]
Nutwood Downs	[redacted]	[redacted]
Tanumbirini Station	[redacted]	[redacted]

Appendix D. Site Location Specifics

PERMIT AREA	EP98
Well Pad	**Kalala South**
Associated water bore	N/A
Well location	-16° 17' 37.7" S / 133° 36' 44.3" E -16.2941, 133.6124 (GDA94) E: 351740, N: 8198023 (MGA Zone 53)
Nearest town by vehicle	Daly Waters
Nearest major road	Carpentaria Highway
Nearest airstrip by vehicle	Daly Waters: 25 min/25 km OR Elliott: 2hrs / 165 km
Nearest hospital by vehicle	Katherine Hospital (299 km)
Well Pad	**Amungee NW-1H**
Associated water bore	VEL 98 N1 CMB-G (RN40894)
Well location	**Amungee NW-1H** -16°20'51.034"S / 133°53'4.403"E -16.34751, 133.8846 (GDA94) E: 380859, N: 8192292 (MGA Zone 53) **Amungee NW-2H** -16 22' 4.513"S / 133 58' 6.56"E 389833.037, 8190103.376
Helicopter landing pad	**-16.34298, 133.88520 (GDA94)**
Nearest town by vehicle	Daly Waters
Nearest major road	Carpentaria Highway
Nearest airstrip by vehicle	Daly Waters: 1hr /61 km OR Elliott 2.5hrs /202 km
Nearest hospital by vehicle	Katherine Hospital (329 km)
PERMIT AREA	**EP76**
Well Pad	**Velkerri 76 S2**
Associated water bore	VEL76-S2CMB-AL (RN41133) VEL76-S2CMB-G (RN41134) VEL98-N1 CMB (RN040894)
Well location	-16°51' 20.13"S; 134°23' 39.85"E -16.85571, 134.3939 (GDA94) E: 435432, N: 8136301 (MGA Zone 53)
Helicopter Landing Pad	16.856275S 134.395751 E Zone 53K
Nearest town by vehicle	Daly Waters
Nearest major road	Stuart Highway
Nearest airstrip by vehicle	Daly Waters: 2.5 hr /190 km OR Elliott: 3.0 hr /198 km
Nearest hospital by vehicle	Katherine Hospital (442 km)

Permit Area	EP117
Well Pad	**Kyalla 117 N2**
Associated water bore	KYA117-N2 CMB (RN40895) KYA117-N2 CMB (RN40896) KYA117-N2 CMB-G (RN41132) KYA117-N2 IMB-AL(R041137) KYA117-N2 IMB-G (RN041136)
Well location	**Kyalla 117** -16°50’ 29.01”S; 133°39’ 0.16”E -16.84141, 133.6501 (GDA94) E: 356183, N: 8137492 (MGA Zone 53) **Shenandoah South 1** E: 356183, N: 8137492 (MGA Zone 53) -16.84141, 133.6501 (GDA94)
Helicopter Landing Pad	16.836500 S 133.658333 E Zone 53 K
Nearest town by vehicle	Daly Waters
Nearest major road	Stuart Highway
Nearest airstrip by vehicle	Daly Waters: 1 hr /92 km OR Elliott: 1.5 hr /117 km
Nearest hospital by vehicle	Katherine Hospital (365 km)
Exploration well	**Shenandoah South 2**
Location	E: 355291; N: 8140676 (MGA Zone 53)
Nearest town by vehicle	Daly Waters
Nearest major road	Stuart Highway
Nearest airstrip by vehicle	Daly Waters: 1hr 10 mins (73 km)
Nearest hospital by vehicle	Katherine Hospital (367 km)
Exploration well pad	**Beetaloo West-1**
Well location	-17° 7’13.82”S / 133°45’43.63”E -17.12051, 133.7621 (GDA94) E: 368312, N: 8106689 (MGA Zone 53)
Nearest town by vehicle	Stuart Highway
Nearest major road	Elliot: 1hr 20mins (95kms)
Nearest airstrip by vehicle	Katherine (399kms)
Nearest hospital by vehicle	Elliot

Permit Area	EP136
Exploration well pad	**Maverick 1**
Well location	146° 30’ 53.93” E / 16° 31’ 5.47” S
Nearest town by vehicle	Daly Waters
Nearest major road	Carpentaria Highway
Nearest airstrip by vehicle	Daly Waters 1hr 30mins (130kms)
Nearest hospital by vehicle	Katherine (400kms)

Permit Area	EP117 – PROPOSED LOCATIONS
Exploration well pad	**Shenandoah North A**
Well location	E: 356687, N: 8163762 (MGA Zone 53)
Nearest town by vehicle	Daly Waters
Nearest major road	Daly Waters 1hr 20 mins (83 km)
Nearest airstrip/s by vehicle	Katherine Hospital (377 km)
Nearest hospital by vehicle	Stuart Highway
Exploration well pad	**Shenandoah South B (PROPOSED)**
Well location	E: 345035; N: 8135464 (MGA Zone 53)
Nearest town by vehicle	Daly Waters
Nearest major road	Stuart Highway
Nearest airstrip/s by vehicle	Daly Waters: 1.5 hr /81 km OR Elliott: 1.5 hr /117 km
Nearest hospital by vehicle	Katherine Hospital (354 km)
Exploration well pad	**Shenandoah South C (PROPOSED)**
Well location	E: 343471; N: 8133330 (MGA Zone 53)
Nearest town by vehicle	Daly Waters
Nearest major road	Stuart Highway
Nearest airstrip by vehicle	Daly Waters: 1.5 hr/86 km OR Elliott: 1.5 hr /117 km
Nearest hospital by vehicle	Katherine Hospital (359 km)

Appendix E. Loss of Containment (Wastewater)

In the event of a loss of containment from any wastewater storage, the following guide will be used to ensure the appropriate steps are implemented to minimise environmental harm. All actions are to be undertaken as a part of the steps outlined in section 5 of this plan and the Spill Management Plan

1. Loss of containment detected	
Type of infrastructure involved: ▪ Enclosed tank ▪ C-ring ▪ Flex-pond ▪ Drilling sump ▪ Gathering line	How has the loss of containment been detected? ▪ Routine inspection ▪ Remote telemetry/alarm
2. Review site location and determine response timeframe	
Where has the loss of containment occurred: ▪ Operational site ▪ Unmanned site	Operational site: ▪ Commence rapid spill assessment in accordance with SMP and actions below. ▪ Progress with site assessment and clean up in accordance with the SMP and actions below. Unmanned site: ▪ Tamboran Representative must review data immediately to determine level of response. A site inspection must be undertaken as soon as possible to investigate if a serious loss of containment is suspected. Weather (ie flooding) and access must be considered with alternative transport arrangements (helicopter) implemented to facilitate site assessment. ▪ Commence rapid spill assessment in accordance with SMP and actions below. ▪ Progress with site assessment and clean up in accordance with the SMP and actions below.

3. Actions

1. Confirm lease perimeter bund is intact and that wastewater hasn't left the site.
2. Inspect the storage infrastructure and identify exact location and cause of leak.
3. Determine whether further loss can be prevented. Consider:
    - Closing or replacing valves
    - Transfer of fluid to alternate storage (if available)
    - Emergency earthworks using equipment available on site
4. Determine extent of contamination
    - Estimate volume of the release
    - Undertake field test of water quality (pH and EC)
5. Recovery response actions. For ponding and spilled wastewater, actions need to be planned with weather conditions and site access in mind, especially during periods of high rainfall (wet season) and constraints such as road closures. Equipment needed to recover fluid:
    - Vacuum truck
    - Trash pumps and hoses
    - Front end loader
    - Mobilisation of earthmoving equipment may need to be considered.

Appendix F. Well Control (Incident Classification)

Three levels of well control event have been defined and are mirrored in the Well Control Standard (TBN-D&C-TS-01). If a well control Incident exceeds level 1 and 2, the Tamboran Operating Company Representative (OCR) will activate the Site ERT and notify the EMT-L.

The involvement of a contracted third-party specialist to handle the well control integrity event may also be required.
The specific response plan is detailed in the Tamboran Well Control Standard (TBN-D&C-TS-01)
The following information is guidance on different levels of well control. Additionally, Appendix G4 provides a basic overview of how Well Control events are managed.

Each level defines the level of escalation required including potential mobilisation of the Well Control contractor.

Level 1 (uncomplicated kick or lowrisk production / well integrity event)	**Level 2** (a kick with some complications or low – moderate risk well integrity event)	**Level 3** (complete loss of well control or moderate – high risk well integrity event)
These are events that commonly occur during drilling and workover operations, or. Low risk well integrity events during the production phase. Emergency interfacing is limited due to pressure and flow containment. Personnel and equipment are not threatened, and there are no injuries or fire involved. These events can be handled using resources and procedures available on-site (or readily mobilised in the case of a well integrity event). The situation is immediately managed by the Driller who will keep the rig manager informed of the situation. Caution: Level 1 incidents can escalate quickly to a more serious and threatening level if not handled properly.	A Level 2 event can be defined asan abnormal well control event during drilling and workover operations involving some sort of complication in which: ▪ Well control has NOT been lost at the surface ▪ Resources beyond the normal capabilities of therig crew or production operations staff may be required ▪ Outside well control consultation, materials, equipment, or personnel may be required Includes low – moderate risk production events (e.g. noticeable leak or significant annular pressure). There are no injuries or fires associated with this incident level since control has not been totally lost. The situation is typically managed by the Rig with the OSC liaising. The EMT is on standby but not activated. The incident is generally not sufficiently threatening to activate the CMT.	A Level 3 emergency denotes a complete loss of well control at surface during drilling and workover operations with no opportunity to restore it using all the resources available on-site. Includes moderate – high risk wellintegrity events during the production phase. Level 3 Incidents require the EMT to activate including notification to the CMT to effectively deal with the situation. External Well Control support (i.e. Boots & Coots, Wild Well Control, Cudd, etc.) must be activated upon confirming that the well is outof control at surface and measuresmust be immediately taken to protect people, the environment and material assets. These emergencies, although serious at the outset, have the potential to escalate further during control attempts. Such escalation may cause serious structural damage or total loss of the facility,rig, BOP stack and wellhead due to explosion, fire, loss of buoyancy or location subsidence.

Well Control Incident Level 1 – Uncomplicated Kick	
Situation managed by:	OCR in consultation with Drilling Superintendent, Drilling/Completion Engineer
Support:	Usually none required
Communication:	OCR or Drilling Superintendent to liaise with Brisbane based engineering team as required
Example situation:	Influx while drilling

Well Control Incident Level 2 – Kick with Complication	
Situation managed by:	OCR in consultation with Drilling Superintendent, Drilling/Completion Engineer SERT on standby
Support:	Technical team as required Well control specialist as required
Communication:	Drilling Superintendent to liaise with Technical Team
Example situation:	▪ Severe lost circulation combined with influx into wellbore ▪ Kick taken with pipe out of hole ▪ Leak or mechanical failure of well control equipment ▪ Gain and loss situations ▪ Plugged work string ▪ Influx taken while running casing or pumping cement ▪ Loss of casing shoe integrity ▪ Any complication experienced during live well operations

Well Control Incident Level 3 – Loss of Containment	
Situation managed by:	Onsite: SERT Office: Crisis Management Team
Support:	Technical Team to support SERT and CMT as required Well control specialist onsite and in office as required
Communication:	ERT-L to liaise with CMT-L Support functions to report to ERT-L or CEMT-L as required
Example situation:	▪ Severe lost circulation combined with influx into wellbore ▪ Kick taken with pipe out of hole ▪ Leak or mechanical failure of well control equipment ▪ Gain and loss situations ▪ Plugged work string ▪ Influx taken while running casing or pumping cement ▪ Loss of casing shoe integrity ▪ Any complication experienced during live well operations

Response to Level 3 Well Control Event

Personnel safety shall always be the highest priority in a well control event. Untrained personnel should never attempt to conduct well intervention activities due to the extreme risk for significant injury, fatality, or event escalation.

The primary focus immediately following a Level 3 well control event should consist of rig evacuation and care for injured parties. During drilling/completion operations the rig contractor's evacuation procedures shall be the prevailing document(s). The senior contractor representative (Rig Manager) shall serve as the On Scene Commander (OSC) during evacuation and search and rescue operations.

Upon completion and confirmation of a full muster, the Rig Manager shall be relieved of OSC duties by the Tamboran OCR.

Initial actions shall include, but are not limited to:

- Evacuate and make sure all personnel are safe and accounted for
- Isolate the area and restrict access
- Notify applicable groups (including well control specialists if required)
- Conduct initial assessments

In the event of a well control event, factually correct information is essential to aid in decision making. Once the site has been secured, personnel accounted for and appropriate notifications made, information should be gathered which aids the response to the incident. Appendix C8 & C9 include templates to aid in gathering the information necessary in such an event.

Once the site has been secured, some hazards and potential solutions are outlined in Appendix C10. Information in this Appendix should be used to identify the site-specific issues relevant to the event and mobilise services and materials that may be required to respond.

Contractor Mobilisation

The well control contractor is Wild Well Control. Tamboran VP, Drilling and Completions must authorise the mobilisation.

[redacted]
Wild Well Control Inc.
2202 Oil Centre Court, Houston, Texas 77073
[redacted]
[redacted]

Appendix G. Well Control (Documentation and Information Gathering)

Initial information to be obtained following an incident:

Question	Answer
Are there any injuries and is immediate assistance required for evacuation of personnel?	
What assistance is currently underway for injured personnel?	
Has the rig been evacuated?	
What are the weather conditions?	
Has the location been secured?	
When were applicable contingency plans put into effect?	
Status of the emergency:	
Is there a fire? If not, should ignition be considered.	
Is there any pollution?	
Can source of pollution be stopped?	
Are toxic gases present?	
What is the condition of the drilling/workover rig?	
Should rig, or can rig, be moved off location?	
Are the BOP's operable?	
Status of the well	
Is the wellhead/tree intact?	
Pressure readings (annulus and drill pipe)?	
Previous casing size and depth?	
What is the well depth?	
Mud weight?	
Where is the drill pipe/tubing?	
Is an attempt to shut in the well feasible if not already done?	

Appendix H. Well Control (Call in Documentation)

Date and time of incident:		Location:	
Contact name:		Contact number:	
Rig:		WC Incident Level:	

Injured parties:			
	Name	Company	Type of Injury
1.			
2.			
3.			
4.			

Brief Summary (facts only):

What has been done so far to secure the site:

Who has been contacted so far:

Government/Regulatory Bodies Notified and Media Coverage:

Initial well conditions			
Shut In Drill pipe pressure (psi):		Shut In Casing pressure (psi):	
Pit gain volume (bbl):		Mud weight (ppg):	
Well depth (m MDRT): (m TVDRT if required)		Casing shoe depth (m MDRT): (m TVDRT if required)	
Last casing size (in):		Last FIT/LOT (ppg):	
Hole size (in):		Bit depth (m MDRT): (m TVDRT if required)	
Float in drill string: Ported?		If yes, drill pipe pressure to open float (psi):	
Operation in progress at time of kick:			
Actions since time of kick:			
Current conditions (if different from initial conditions reported above):			
Shut In Drill pipe pressure (psi):		Shut In Casing pressure (psi):	
BOPs closed (Y/N):			
Current operation and plans:			

Appendix I. Well Control (Hazards and Control Considerations)

Hazard	Services/Materials	Task
Security		
Visitors entering site	Self-powered site office with toilet and fridge.	Secure entry to site (ie lock gate) Contact security contractor to mobilise personnel/equipment as required
Lack of communication	Digital radios	Supply digital radios for working party
Visibility at night	Light plants	Contact primary contractor to mobilise equipment as required
Landowner not informed of situation	N/A	Contact made through Beetaloo Field Manager or Landholder Relationship Advisor
People		
Fatigue	Additional SERT personnel	Ensure sufficient personnel at site location to man SERT 24hrs
Lease Preparation		
Fire – overgrown with grass	Slasher	Contact primary contractor to mobilise equipment as required
Uneven ground	Grader	Contact primary contractor to mobilise equipment as required Seek approval and blade fire break if safe to do so
Removal ground soil	Excavator	Contact primary contractor to mobilise equipment as required
Ignition	N/A	Ensure any possibly ignition sources presentare removed/disabled if safe to do so
Movement around well	Bobcat & Backhoe	Contact primary contractor to mobilise equipment Tentatively confirm work to remove fence around well pending well controls specialistadvice upon arrival
Water used in well kill operations causing contamination	Bobcat and/or backhoe	Consider if application(s) of permits required to construct any in earth holding basin or water recovery trenches Contact primary contractor to mobiliseequipment as required
Housekeeping – equipment on well pad / lease	Crane/Forklift Truck	Contact primary contractor to mobilise equipment Clear lease to allow access to wellhead, if safe to do so, considering equipment which may be required to resolve the loss of containment.
Loss of containment effecting nearby wells	Operations coordination	If other wells are nearby (ie on production pad), check wells are secure and check annulion wells to ensure pressures have not significantly changed

Water		
Insufficient water to respond to event – fire control and well kill	Water	Confirm an adequate water source close by
Inability to deliver sufficient water to site	Water trucks	Determine volume of water required for event. See below for method to estimate water requirements Contact primary contractor to mobilise equipment as required
Inability to pump water required	Water pump(s) w/- suction & discharge hose	Contact primary contractor to mobilise equipment as required
Inability to store sufficient water at site	Onsite fluid storage tanks	Determine volume of water required for event.Contact primary contractor to mobilise equipment as required
Logistics		
Inability to move heavy equipment around well	100 t crane(s)	Contact primary contractor to mobilise equipment as required
Delay due to lack of road transport	Road transport	Contact primary contractor to mobilise equipment as required Sufficient road transport available to move required equipment (may need 24hr coverage)
Wellbore Fluids		
Gas	SCUF vent tank with generator to run same	Contact primary contractor to mobiliseequipment as required
Return fluids	Storage tank	Contact primary contractor to mobiliseequipment as required
Storage tank overflow	Vac trucks to remove fluid	Contact primary contractor to mobiliseequipment as required
Well Kill/Isolation		
Inability to kill well	Mud or cementing pump with sufficient hard lines	Contact primary contractor to mobilise equipment as required
Inability to kill well	Fluid Storage/Mud Tank(s) with sufficient hard lines	Contact primary contractor to mobilise equipment as required
Hydrocarbon zone isolation	Cement unit, cement, additives and associated equipment	Contact primary contractor to mobilise equipment as required
Wellhead Equipment		
Isolation of well before side outlet valve removal	VR plug lubricator	Contact primary contractor to mobilise equipment as required
Specialised Services		
Unable to fabricate equipment	Machine shop	Contact primary contractor to mobilise equipment as required
Removal of equipment/fabrication	Welding services	Contact primary contractor to mobilise equipment as required
HSE		
HSE – hydrocarbon spill, uncontrolled release of well fluids into the air	Evaluate if any specialistservices are required (ie air sampling, radiation, noise)	Contact primary contractor to mobiliseequipment as required

Appendix J. Well Control (Water Requirements)

Surface intervention of a blowout requires massive volumes of water. Well Control specialists will determine pumping, volume of water required onsite and ongoing water requirements.

If water cannot be stored in ground pits, or surface ponds, water shall be stored on location utilizing multiple manifolded 450-barrel portable frac tank containers. Combined storage capacity up to 2,000,000 million gallons may be required (subject to confirmation). Tamboran shall consider the requirements for application(s) of any permits required to construct any in earth holding basin or water recovery trenches. It is critical to the safety of the well control crews and ultimate success of the well control mitigation that water supply remain uninterrupted. Water from the storage tanks will be piped to the fire pump(s) and distributed to fire monitor stands and hand lines as deemed appropriate by the well control specialist.

Water volume requirements vary from one blowout to another. For example, only one pump would be required for a minor fire (with backup pump circulating water as a redundant system) for a minor fire, whereas two or more pumps would be required for a major rig fire, thus doubling the water volume required. Typically, a benchmark of 2,000,000 gallons per day (48,000 bbls per day) is used in the Well Control Contingency Plan (WCCP) calculations.

A well on fire requires a tremendous volume of water. For example, the following calculations show how a fast 1,000,000-gallon (24,000 bbls) pit would be emptied using various capacity fire pumps:

- 1,000,000 gallons/(4,000 gpm + 4,000 gpm) = 125 minutes

Beetaloo Basin wells are typically supported by up to 2 x water bores located on the lease pad, each capable of supplying up to 20 lts./sec., or 72m3 per hour.

Water Supply Calculations – Using Tankers Only

Before mobilising water storage tanks and water to site, liaise with Boots and Coots to determine likely water requirements. Below are sample calculations only based on a worst-case scenario.

The following calculations give the number of tanker loads needed to replenish the pit with water:

- 1m3= 6.29 bbls
- 24m3 tanker capacity x 6.29 bbls/m3=150 bbls
- 24,000 bbls/150 bbls per load = 160 tanker loads

The following calculation factors in a water recovery rate of 30%:

- 160 tanker loads x (1.0-.3) = 112 tanker loads.

Using the two minimum 4,000 gpm fire pumps, it would require 61 tanker loads per hour to maintain operations.

With a remote pit containing an additional 1,000,000-gallon capacity for a total of a 2,000,000 gallon capacity (48,000 bbls), operations could be maintained for four (4) hours using two 4,000 gpm pumps. The flowing calculations give tanker load totals for 10 hours of wintertime daylight operations:

- (10 hours operations) – (4 hours water supply on hand) = 6 hours additional water supply
- (6 hours) x (61 tanker loads per hour) = 366 tanker loads
- (366 tanker loads) / (10 hours) = 37 tanker loads per hour

37 tanker loads per hour, although cumbersome, is far more manageable than 61 tanker loads per hour. However, using the above calculation, at the end of 10 hours the pits will be dry. The following calculation gives the tanker loads per hour to overnight replenish the 2,000,000 gallons (48,000 bbls):

- 48,000 bbls / 150 per load = 320 tanker loads
- 24 hours – 10 hours daylight operations = 14 hours to refill pits
- 320 tanker loads / 14 hours = 23 tanker loads per hour overnight

Appendix K. Daly Waters Runway Lighting Plan

Daly Waters Aerodrome
Emergency Landing Lights Layout Procedure

Purpose

This procedure describes how to layout the Eflare night landing lights for the safe arrival and departure of emergency aeroplanes such as Careflight and RFDS in under 60 minutes from the time of activation.

Scope

The Daly Waters community and any other stakeholders who may be able to assist in the lay out emergency landing lights in the event of an emergency.

Minimum Resources

Vehicles - to have UHF, amber flashing light / hazard lights and headlights on.

Personnel - to have torch, hi vis and reflective personal protective equipment.

Communications - UHF channel 16 is being monitored by all personnel in the aerodrome.

Key contacts

NT Careflight Operations
1300 650 654 or 0417 826 336

RFDS Alice Springs

For 24-hour medical and emergency assistance call:

NT (Central Australia) - 1800 733 768

HF Radio (4010kHz, 6890kHz or 8165kHz)

Satellite Telephone: 08 8648 9555 or +61 1800 733 772

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Activation from Emergency Services → **CONFIRM** who is in charge (for Origin this is the On Scene Commander) → **CONFIRM** the arrival time of the a/c and CTAF freq (126.7) → **ACTIVATE** other personnel to assist (refer to Daly Waters Aerodrome Plan for contact numbers) → **COLLECT** Eflare kit from the Origin Office at the Daly Waters Pub → **MEET** at Daley Waters Aerodrome apron gate

Set up and planning

1. Split into 2-3 teams each with 2 persons and 1 vehicle.
   Teams: Runway 14, Runway 32 and Taxiway / Apron
2. Prepare vehicle - conduct radio checks, check lights and clear our rear seat including footwells.
3. Secure the respective eflare kit in back right seat of the vehicle with the seatbelt.
   Each kit to include the following lights and rubber bases:

Runway 14	Runway 32	Taxiway / Apron
• 24 x White lights • 4 x Red threshold lights • 8 x Green displaced threshold lights	• 23 x White lights • 4 x Green/Red threshold lights	• 2 x Orange hold point lights • 22 x Blue lights

4. The On Scene Commander to monitor the time of arrival and monitor the CTAF frequency and provide updates and warning to personnel via UHF radio deploying eflares as necessary.
5. **CAUTION**: Where the aerodrome is delayed in setting up the eflares and leaving the aerodrome in an unsafe state for a landing, the pilot is to be notified on the CTAF 126.7 frequency advising on when the aerodrome will be available.
6. In the event an approaching aircraft is spotted either notify the aircraft directly or if unsuccessful notify personnel deploying the eflares on the UHF "Vacate runway immediately, aircraft on final, vacate runway immediately".
7. Where time permits a final runway inspection is conducted to identify any foreign objects or debris as part of the Eflare deployment. The vehicle should head on a 32 approach so approaching aircraft can be seen.

Placing and retrieving eflares

WARNING: When both deploying and retrieving eflares, the passenger needs to get out of the vehicle to place each light. Don't reach down from the vehicle as this risk over extension resulting in a back injury.

The driver must:

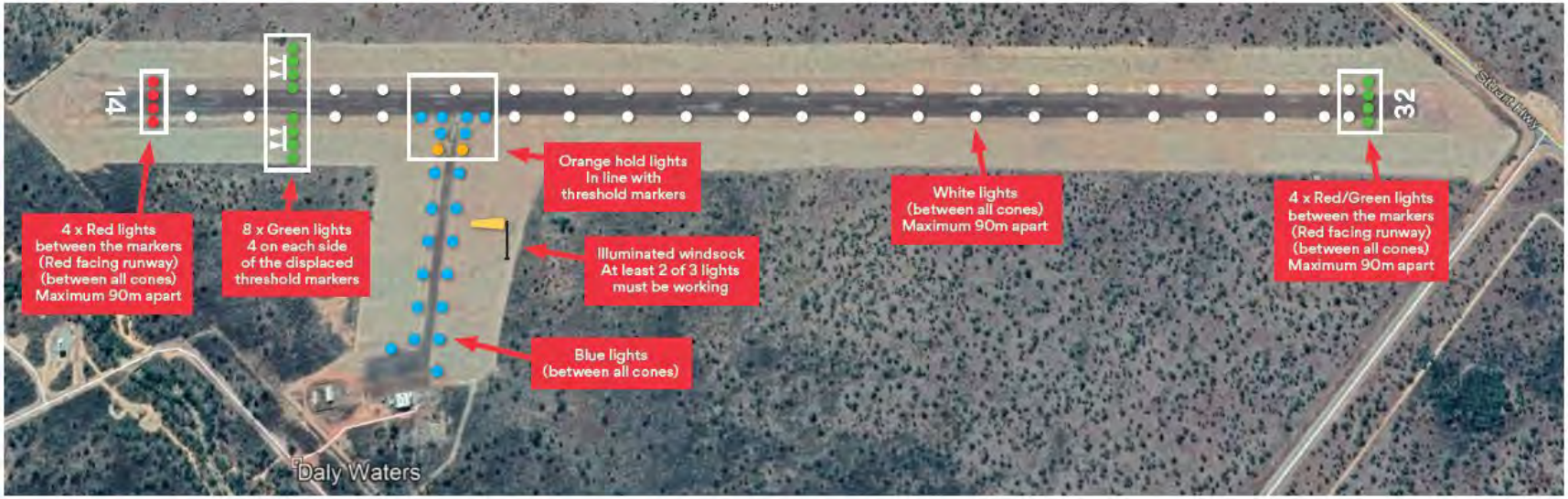
- Drive no faster than 25km/hr
- Drive on the right-hand side of the runway cones
- Stop in line with the rear left passenger door
- Wait for passenger to indicate they are ready before proceeding to the next light location

The person deploying the eflares must:

- Only remove the seatbelt on the runway when travelling less than 25km/hr
- Only set up 1 light at a time
- Avoid turning on the light in the vehicle
- Indicate to the driver when ready to go to next light location

Wait 10 minutes after aircraft has taken off before retrieving runway eflares.

Daly Waters Aerodrome Lighting Plan



Layout Procedures

Layout Runway 14

1. Start at the 14 end of runway (**turn left** from the taxiway).
2. 4 x Red lights - place evenly between the end cones. Locations are indicated with spray paint.
3. 4 x Green lights (each side) – placed each side on the white displaced threshold markers.
4. 8 x White runway lights – start on the East side or the **left side** if looking down the runway.
   Place a light between each cone so no more than 90m apart. Locations are indicated with spray paint markings.

Layout Runway 32

1. Start at the 32 end of runway (**turn right** from the taxiway).
2. 4 x Green/Red lights - place the Green side facing the away from the runway, evenly between the end cones. Locations are indicated with spray paint.
3. 23 x White runway lights – start on the East side or the **left side** if looking down the runway
   Place a light between each cone so no more than 90m apart. Locations are indicated with spray paint markings.

Layout apron / taxiway

1. Start on the runway and work back towards the apron.
2. 6 x Blue lights – 3 lights placed each side of the taxiway between the cones. Locations are indicated with spray paint.
3. 2 x Orange lights – place each side on the taxiway. Locations are indicated with spray paint.
4. 14 x Blue lights – placed between the cones along the taxiway. Remaining lights spaced approximately 60m apart.
5. 1 x Red light – placed near unserviceable marker in centre of apron.

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Appendix L. Example ERN (Emergency Response Number)

EMERGENCY RESPONSE CONTACT NUMBERS - RIG

Rig Name	: **SilverCity Rig 40**
Well Name	: **Amungee NW 2H**
Lease Number	: **EP 98**
GPS Coordinates	: **LAT 16° 20' 51.034" S LONG 133° 53' 4.403" E**

tamboran RESOURCES

Field Medical Support

Note - in the event of a medical emergency and the site paramedic can not be raised, contact CareFlight directly as per number listed below

CareFlight Emergency - [redacted]

Aspen Paramedic- [redacted]

Site Contact - UHF Ch. 10

Emergency Services
000 from landline
112 from mobile phone

ADDITIONAL NUMBERS

Rig Manager:
Well Site Representative:
Camp Manager:
Site Medic Sat Phone: [redacted]
UHF Channel:

DIRECTIONS FROM RIG TO HELICOPTER LANDING ZONE:
Helipad LAT 16° 20' 48" S LONG 133° 53' 3" E

SPECIAL INSTRUCTIONS:
All travel plans must be approved by the Well Site Rep prior to starting any trip
All equipment must have a weed hygiene certificate
Make arrangements with the Well Site Rep to have your equipment inspected before entering any access roads or well sites
Ensure all personnel sign in at the access gate with Weed Inspection details .

DIRECTIONS TO SITE: From intersection of Stuart Highway and Carpentaria (Hi-Way Inn Daly Waters)
1. Travel East on the Carpentaria highway for 56.8 km.
2. Turn right onto the access road and travel 200m to the gate. 40 Kph
3. Pass through the gate (remember to close after) follow road to the left. Travel 300m to camp pad
4. Continue past camp pad 500m to lease.

Appendix M. Emergency Response Planning Map