TNG LIMITED

EXPLORATION

Environmental Management Guidelines

This document presents in summary the principal mechanisms of the Environmental Management Guidelines of TNG Limited as applied to the field operations.

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ENVIRONMENTAL MANAGEMENT GUIDELINES

1. INTRODUCTION

TNG Limited is committed to ensuring that environmental responsibility is incorporated as part of their normal business practice. It is the duty of all employees to exercise care in their work to ensure this commitment is achieved.

The procedures outlined in this document must be followed by all staff and contractors during the course of our field activities and aim to minimise any general degradation of the surroundings that may result from carelessness or neglect. In general these guidelines express common sense practices that might be described as "good housekeeping".

Other environmental reports may be commissioned where intensive exploration is proposed and involves substantial disturbance to the vegetation.

A variety of terrains may be encountered during exploration; from flat-lying areas (without river systems or other surface water) to rugged hill regions where rivers can be deeply incised. Generally the inland regions of Western Australia and the Northern Territory are semi-arid and experience Australia's four typical seasons: summer, autumn, winter and spring, and receive erratic rainfall, mostly as summer storms. The summer climate is extremely hot, and electrical storms frequently start bushfires, which burn unchecked over large areas. The vegetation is well adapted to this environment, and regenerates with surprising resilience.

In the Top End (Northern Territory), the wet is summer (November-April) when the region is hot, humid and rainy, while the Dry (May-October) is almost as warm, but not nearly so humid. The Top End gets just 7% of its rainfall during the Dry.

2. EXPLORATION PROCEDURES RELATING TO REHABILITATION.

Care for the environment is part of good management practice. Employees are required to work in a diverse range of site locations, often in quite fragile and arid areas.

Access to land for exploration and mining is usually by a lease agreement with the government and other private land users, including pastoralists and aboriginal groups. Individuals therefore have certain obligations on a personal and company basis, to protect the environment.

2.1 USE OF TRACKS

- Keeping to designated roadways or tracks and avoiding other undisturbed or rehabilitated areas can prevent damage and soil erosion. In wet weather, limit travel on unmade tracks to avoid leaving wheel ruts, which encourage erosion.

2.2 VEGETATION

- Vegetation protects soil from erosion by wind and water. Current policy is to retain existing trees and vegetation where possible. Therefore drill pads in particularly sensitive areas may be smaller in size. Every effort should be made to protect vegetation that borders the drill site, by limiting the discharge of dust and saline water.

2.3 PROTECTION OF WILDLIFE

- Because of the limitations on the access of land outside the Mineral Leases, and the need to protect the relatively sparse wildlife in arid areas, all forms of hunting are prohibited, and no firearms are allowed on the Leases. To eliminate the risk of feral animals preying on or breeding with native species, no domestic pets are allowed.

2.4 ATMOSPHERIC AND WATER POLUTION

- The atmosphere is an important and very visual environmental area, and care must be taken to prevent or minimise the release of dusts, smoke, hydrocarbons, hyper-saline water and other chemicals. The requirement to minimize noise emissions from operating equipment is also becoming more prevalent in some areas, especially near populated centres.

- Care also needs to be taken to prevent the contamination of waterways, which may result from remote or camp facilities.

2.5 ABORIGINAL HERITAGE SITES

- From time to time, aboriginal sites may be identified on or near drilling sites. All personnel are to avoid contact with, or disturbance of, these sites as they are protected under the *Northern Territory Aboriginal Sacred Sites Act 1989 (NTSSA)*. It is an offence under this Act to disturb any site or remove artifacts. The Act carries significant penalties.

2.6 PASTORALISTS AND TRADITIONAL LANDHOLDERS

- Considerable effort has been invested to develop and maintain good relations with pastoralists and it is important that all employees present as good ambassadors for the industry by observing common courtesies.

- Fences must not be damaged and gates must be left as found (not always closed). Stock is not to be interfered with in any way and water sources are not to be polluted or used without permission.

- It is also important to establish whether there is any entitlement or ownership from local aboriginal groups. If so, their wishes must be respected and permission may need to be sought for entry to the site. This information will usually be provided by the client.

2.7 CONTAINERISED MATERIALS IN TRANSPORT

- Containerised material with spill potential which may be transported to and from site are expected to be gasoline, diesel fuel and/or drilling fluids. These materials will be transported only in approved containers.

- When transporting hazardous materials a spill response kit is required to be on the transporting vehicle. A spill response kit must contain the following:

    1. First Aid Kit
    2. Fire Extinguisher
    3. Containers for disposal of spilled material
    4. Sorbent material

* Note: The sorbent material (i.e. sorbent booms and/or towels, kitty litter or vermiculite must be in sufficient quantity to handle any anticipated spill.

2.8 SPILL CONTROL MEASURES

- In the event of a spill, immediate measures should be taken to contain the spill and prevent potential migration of contamination. General spill control actions that could be implemented include:

    1. Spills of Solid Material – Shovel up excess and place contaminated material into an approved drum, cover and label.
    2. Small Liquid Spills – Absorb with sorbent material, including sand or clean fill. Place contaminated material into an approved drum, cover and label.
    3. Large Liquid Spills – Immediately dike the area surrounding the spill or create some type of obstruction to prevent the spill migration. Absorb the spill with sorbent material, including sand or clean fill. After all free liquid is absorbed, remove the material and any contaminated soil. Place contaminated material into an approved drum, cover and label.

- All bags, containers, drums, etc. containing contaminated materials must be labeled.

- At a minimum, include product name and physical hazards.

2.9 DOCUMENTATION

- After a spill, the site supervisor should document the incident. At a minimum, the following should be included on an Incident Report Form.
    1. Chronological history of the incident
    2. Facts about the incident and when they became available
    3. Titles and names of personnel; composition of response teams
    4. All actions taken, reasoning and persons involved.

2.10 SURFACE CLEARING AND DRILLING ACTIVITIES

- Clearing and access issues are to be addressed early on in program implementation.

- The local pastoralist / landowners are to be notified of the location, scope and timing of the exploration activities.

- Clearing lines of vegetation for access should only be done after reasonable alternatives for access have been considered. Where clearing is necessary, equipment blades are to be above ground level so as to minimise soil displacement and erosion potential.

- Grid lines and cross lines that have been cleared are to be closed off at the completion of the program to prevent them being used as a thoroughfare by vehicles. Cleared vegetative material can be used as a barrier for this purpose.

- Damage to the environment is to be kept to a minimum.

- Should groundwater be intercepted whilst drilling, appropriate measures must be taken to contain the material being ejected / discharged (i.e. sumps or tanks). Drilling must cease immediately upon the discharge of water until appropriate and approved containment facilities have been implemented.

- Prevention of hydrocarbon discharge and removal with suitable remediation of all contaminated soils.

- At the completion of any drilling, all drill holes are to be securely capped immediately and plugged below ground level (preferably with conical concrete plugs – plastic onto-plugs are not to be used).

- Within six months of completion of the approved drilling program, all plastic bags, grid pegs and other artificial debris and waste are to be removed from the site and compacted areas ripped on the contour and seeded with locally occurring native flora species (recommended for WA projects).

- Clearing and use of mechanized equipment approval are to be sought as required by the Mining Act. Clearing is to be conducted using a single blade/vehicle width wherever possible, with the blade or equivalent held 1-20 cm above the ground to minimize ground disturbance.

- The clearing of larger shrubs and trees is to be avoided where possible, for example RAB hole sites can often be moved up to 20m to avoid unnecessary clearing.

2.11 DRILL HOLE HAZARD ALERT

- Drilling in the vicinity of old drill holes that have been capped or plugged can be hazardous.

- With the use of modern high pressure air assisted drilling there is the potential for neighbouring old drill holes to expel their plug **forcefully.**

- This may occur when the old drill hole is intersected by the new or when a transition zone at depth exists between the two drill holes. Drill plugs may consist of compacted soil and rock, plastic caps to PVC collars or concrete conical plugs, all of which are capable of causing injury if ejected.

- Exploration management, all associated staff and drilling contractors must be made aware of this potential hazard.

- Resources must be made available to identify any old holes in the vicinity of current operations that may generate a hazard. Action must be taken to prevent injury by removing old plugs or by laying a protective mat or appropriate cover across the surface of the old drill hole.

- Staff and contractors must ensure that old drill holes "unplugged" are re-plugged correctly.

2.12 REHABILITATION OF DRILL SITES

- Cut off PVC drill collar at approximately 40cm below surface within 6 months of the hole being drilled.

- Insert drill hole plug. Preferably with an appropriate conical concrete plug.

- Tamp plug to ensure that the plug fits securely into the drill hole collar.

- Backfill drill hole to the surface, with low permeability material e.g. clay/oxide drill cuttings.

- Mound over the backfilled hole to facilitate water shedding away from the drill hole with low permeability material (approximately 200mm high by 800mm wide) and then cover with topsoil.

- Remove and suitably dispose of all rubbish.

- Prevention of hydrocarbon discharge and removal with suitable remediation of all contaminated soils.

- Remove and suitably dispose of all sample bags within 6 months of completion of drilling. Drill samples may be retained in approved (designated) sample farms.

- Backfill within 6 months of construction, all sumps with excavated material, cover with topsoil, rip on the contour and seed with suitable locally occurring native flora species.

- Drill samples (excluding plastic sample bags) may be disposed of into sumps prior to backfilling.

- Rip on the contour all compacted drill sites and grid lines and seed with suitable locally occurring native flora species.

- Re-spread all cleared vegetative material over disturbed surfaces.

- Implementation of appropriate compliance audit to ensure compliance with DME guidelines, Mining Management Act 2012.

2.13 CONDITIONS FOR EXCAVATION OF COSTEANS

- The local pastoralist being notified of the location, scope and timing of the exploration activities prior to commencement.

- Clearing of vegetation is to be minimised.

- Vegetation and topsoil being stockpiled for replacement after backfilling costeans.

- Damage to the environment being kept to a minimum.

- At completion of operations, the costeans are to be backfilled with excavated material, covered with topsoil and the site scarified and left in a clean and tidy state.

- Whilst costeans are open at least one end is to be ramped to allow egress of fauna.

- Costeans should be backfilled within six months of excavation and all artificial material and debris buried or removed from site.

- Implementation of appropriate compliance audit to ensure compliance with DME guidelines, Mining Management Act 2012.

- Notify the Regional Environmental & Rehabilitation Officer when operations are completed so that an inspection of the site may be conducted.

2.14 CONDITIONS FOR EXCAVATION OF SUMPS

- The local pastoralist being notified of the location, scope and timing of the exploration activities prior to commencement.

- Clearing of vegetation being minimised.

- Sumps should be located away from significant vegetation (large trees or stands of dense scrub) where possible, to minimise disturbance to roots and prevent horizontal transmission of saline water and potentially hostile material coming into contact with vegetation.

- Vegetation and topsoil being stockpiled for replacement after backfilling sumps.

- Damage to the environment being kept to a minimum.

- At completion of operations, the sumps are to be backfilled with excavated material, covered with topsoil and the site scarified and left in a clean and tidy state.

- Whilst sumps are open, at least one end is to be ramped to allow egress of fauna.

- Sumps should be backfilled within six months of excavation and all artificial material and debris buried or removed from site. Written approval for extension of time to have sumps open must be obtained from the District Mining Engineer.

- Implementation of appropriate compliance audit to ensure compliance with DME guidelines, Mining Management Act 2012.