



**BARKLY REGIONAL COUNCIL
TENNANT CREEK LANDFILL
EMERGENCY RESPONSE MANAGEMENT
PLAN**

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1 INTRODUCTION

1.1 PURPOSE

The Emergency Response Management Plan (ERMP) has been prepared in relation to operations at Tennant Creek Landfill. When emergency response is required at site it is expected that staff act in accordance with this ERMP. All site personnel must make themselves familiar with the ERMP to facilitate safe and effective actions in the case of environmental emergencies.

The purpose of this document is to provide a framework for assessing, identifying, managing and responding to site specific emergencies in a manner that minimises negative impacts on the environmental and human health. The ERMP primarily addresses environmental emergencies. Site Occupational Health and Safety (OH&S) requirements are managed and administered by Barkly Regional Council (BRC) and are not the primary focus of the ERMP.

A site specific ERMP is required under the Northern Territory (NT) Environmental Protection Authority (EPA) Environmental Protection License (EPL) 281, issued on the 1st of July, 2019.

1.2 OBJECTIVE

The aim of the ERMP is to provide personnel at Tennant Creek Landfill with the procedures for responding to site specific emergencies or activities that can cause environmental harm. The main objectives are the following:

- Identification of potential environmental emergencies;
- Clearly outline the roles and responsibility of staff and visitors;
- Clearly outline relevant emergency response personnel and contact details;
- Establish specific initial emergency response procedures;
- Establish emergency evacuation zones; and
- Outline reporting requirements.

It is to be noted that the ERMP focuses on site specific emergencies and that the Northern Territory Emergency Management Act (the Act) is the legislative basis for emergency management across the Northern Territory.

1.3 EMERGENCY SITUATIONS

Potential environmental emergencies for Tennant Creek Landfill are listed in **Table 1** below.

TABLE 1 – POTENTIAL EMERGENCY SITUATIONS

Emergency	Description
Surface Fire	Bush fires, machinery fire and explosions.
Landfill Fire	Combustion or ignition of incompatible wastes.
Surface Water Contamination	Surface water contacting waste mass and leachate runoff impacting water supply (typically associated with large rainfall event).
Landfill Gas	Exposure to landfill gas.
Hazardous Waste Exposure	Exposure to hazardous wastes in screening process.

1.4 ROLES AND RESPONSIBILITIES

The roles and responsibilities of staff at the Tennant Creek Landfill in regards to emergency response are outlined in **Table 2**.

TABLE 2 – ROLES AND RESPONSIBILITIES

Role	Responsibilities
Director of Infrastructure	<ul style="list-style-type: none"> Oversee implementation, on-going management and coordinate any future reviews of the EMP.
Site Supervisor	<ul style="list-style-type: none"> Ensure employees and contractors understand their obligations under the EMP; Monitoring compliance with the EMP; Maintenance and inspections; Report any non-compliances with the license conditions to the NT EPA as soon as practicable after becoming aware (and in any case within 24 hours); and Ensure that all the on-site safeguards and controls are in place.
All landfill staff and contractors	<ul style="list-style-type: none"> Understand and comply with the requirements of the EMP; All personnel to undergo inductions; Be aware of emergency procedures and responses; Report any potential environmental breaches to manager / supervisor.

2 OPERATIONS

2.1 OVERVIEW

The Tennant Creek Landfill is operated by Barkly Regional Council and is located approximately 500km north of Alice Springs.

The landfill services the waste disposal requirements of 'more than 1000 persons' and accepts domestic waste, small amounts of commercial waste and limited regulated waste. Asbestos is not accepted at the facility. Operations on site include collecting, transporting, sorting, storing and disposing of wastes. The landfill requires compaction and placement of cover soils. Burning of waste is no longer permitted on site, as outlined in EPL 281 Condition 27.

TABLE 3 – CONTACT DETAILS

Company	Barkly Regional Council
Contact	Elai Semisi
Address	41 Peko Road, Tennant Creek, NT
Phone	0448 091 827
Email	elai.semisi@barkly.nt.gov.au
Web	https://www.barkly.nt.gov.au/council/contact-us

2.2 EMERGENCY CONTACTS

Tennant Creek is considered a remote community with a population of approximately 3,000. A summary of emergency contacts is provided in **Table 4** below.

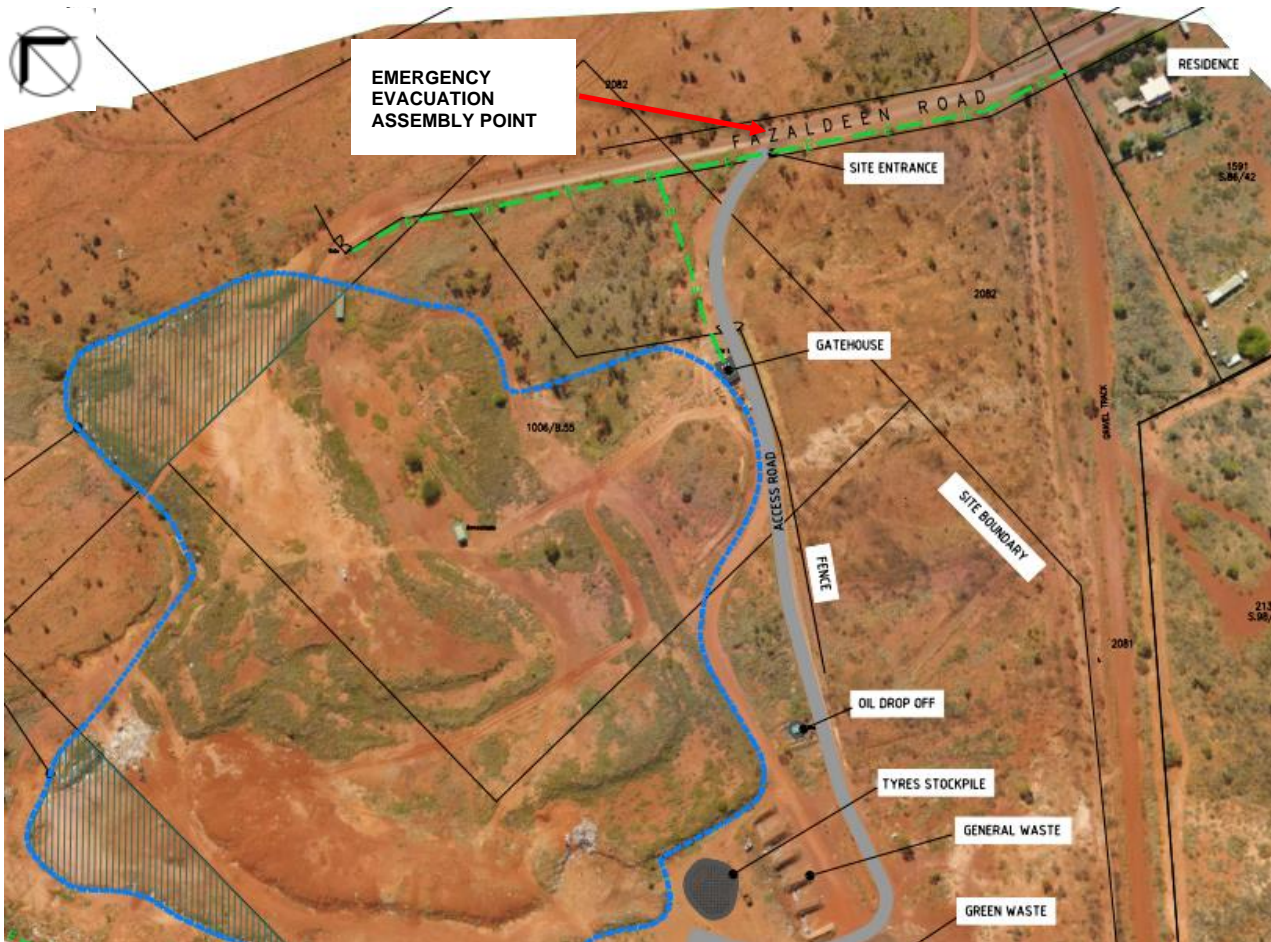
TABLE 4 – TENNANT CREEK EMERGENCY CONTACT DETAILS

Contact	Phone	Description
Police / Fire / Ambulance	000 / 112	Primary Emergency Contact
Tennant Creek Hospital	(08) 8962 4399	Town Hospital
Tennant Creek General Practice	(08) 8962 4633	Town health care service
Anyinginyi Health Aboriginal Corporation	(08) 8962 2633	Town health care service
Care Flight / Royal Flying Doctor's Service	000 / 112	Medical retrieval service
Aboriginal Areas Protection Authority	(08) 8999 4365	Report interference or damage to an Aboriginal sacred site

2.3 DESIGNATED EVACUATION ASSEMBLY POINTS

In the event of a site evacuation, all personnel will stop work immediately, leave equipment in a safe position and calmly but quickly walk to the designated evacuation point. The designated evacuation assembly point is located immediately adjacent to the site entrance on Fazaldeen Road, as shown in **Plate 1** below.

PLATE 1 – TENNANT CREEK ASSEMBLY POINT



2.4 SITE SECURITY & SIGNAGE

The site should maintain adequate fencing to restrict unauthorised access to maximise safety, protect people and to prevent illegal dumping. Any trenches must be fenced and it is recommended that there is also perimeter fencing to all areas of the site. Currently, the site is only partially fenced, with the southern section of the site being unfenced.

Appropriate signage in English and Indigenous Australian should be erected around each facility to direct personnel to various drop off site activities and at speed limits as required.

2.5 EDUCATION AND TRAINING

2.5.1 Site Induction

All staff and contractors entering the Tennant Creek Landfill, excluding the general public, should be inducted on arrival to site. The induction should cover the following items as a minimum:

- Site layout;
- Administrative procedures;
- Access and exits;

- Emergency procedures;
- Bushfire Management Plan;
- Environmental protocols; and
- Evacuation procedures.

In addition to the general items above, if required, all inductees should be informed of any specific activities that are relevant and/or may interfere with their purpose on site.

2.5.2 Task Specific JSA

Job Safety Analyses are undertaken for all site related tasks to identify and manage risks accordingly. Site personnel should be aware of all risks and mitigation strategies (as reasonably practicable) before undertaking a task on site.

2.5.3 Debrief

Site personnel will be debriefed after an incident occurs or if a 'near-miss' is reported. This debrief should be focused on preventing recurrence and ensuring staff are aware of their responsibilities.

2.6 REPORTING REQUIREMENTS

2.6.1 Environment

Strict immediate notification requirements apply in all cases of serious environmental incidents. The Northern Territory EPA state, "You must notify the NT EPA if you are undertaking an activity and an incident occurs which causes, or threatens to cause, pollution resulting in material or serious environmental harm."

EPL 281 requires BRC to keep records of all non-compliances within the license. The records must be adequate to enable the licensee to comply with the con-compliance notification conditions of the license.

BRC must notify the NT EPA of any non-compliance with this the license by completing the Non-Compliance Notification via NT EPA Online (or by email waste@nt.gov.au), as soon as practicable after (and in any case within 24 hours) first becoming aware of the non-compliance.

The incident should be reported by the site supervisor and include the following information:

- When the non-compliance was detected and by whom;
- The date and time of the non-compliance;
- The actual and potential causes and contributing factors to the non-compliance;
- The risk of environmental harm arising from the non-compliance.
- The action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance;
- Corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur;
- If no action was taken, why no action was taken, or
- A date when an incident investigation report will be submitted to the NT EPA.

A report is required if there is a spill of containment or waste has entered a waterway (including a drain), spread more than 3 metres or has left the premises.

2.6.2 Health and Safety

Immediate verbal communication to NT WorkSafe is required in the case of a notifiable incident involving:

- Death;
- Serious injury or illness; or

- Dangerous incident.

Written notification must be provided less than 48 hours after the incident.

2.6.3 Heritage

Any interference or damage to a sacred site or restricted works area must be reported as soon as practicable to the Aboriginal Areas Protection Authority and the Central Land Council.

3 EMERGENCY RESPONSE

The following section details the emergency response actions required for potential environmental incidents at Tennant Creek Landfill.

3.1 FIRES

On-site fires are to be treated as a potential emergency. Always consult with Tennant Creek Fire Brigade for advice on fire control. Currently there is water available on site specifically used for firefighting purposes. Water from the sediment dam can be used for these purposes but it is noted that this dam is dry for most of the year and that capacity is limited. There are a couple of suitable options for fire management including either purchase of poly tanks (minimum of 20,000L capacity) and fill with water or continue to use fire brigade, but liaise closely to ensure any potential for fire is reduced.

A fire break should be maintained, although it is noted that vegetation is limited around the site.

3.1.1 Small to Medium Surface Fires

In the case of an unplanned small or medium sized fire immediately contact the Tennant Creek Fire Brigade, notify site personnel and evacuate to a designated safe area – do not try to extinguish the fire alone.

In the case of a planned small to medium sized fire (it is not permitted to cause or permit any waste to be burned as per EPL 281):

1. Liaise with Tennant Creek Fire Brigade prior to burning, it is recommended that the Fire Brigade lights the fire and provides supervision.
2. Smother the fire with large volumes of wet or damp soil.
3. Work progressively inwards from the edges of the fire until the whole area is covered.
4. Compact the area and allow to cool.
5. Move all material, burn residues and applied smothering cover to its final disposal site.

3.1.2 Large Surface Fires

In the case of a large surface fire:

1. Do not try to extinguish the fire alone.
2. Notify all personnel on site if able to do so and proceed to the designated evacuation point.
3. Immediately contact the Tennant Creek Fire Brigade to deal with the fire.
4. Once extinguished, liaise with the fire brigade for following actions, which may include:
 - Smothering fire area with large volumes of soil to stop excessive smoking and to absorb excess water (preventing leachate formation);
 - Work progressively inwards from the edges of the fire until the whole area is covered;
 - Compact the burn site;
 - Allow to cool; and
 - Move all material, burn residues and applied smothering cover, to its final disposal site.

3.2 LANDFILL FIRE

Fires within the landfill must be considered as an emergency due to the risk of toxic gases and the formation of large internal voids within the waste mass.

3.2.1 Small and Easily Accessible Landfill Fires

In the case of easily accessible landfill fires, where it is determined safe to do so:

1. Systematically excavate the area of the fire.
2. Spread the burning waste or soil over a designated soil base.
3. Douse the burning material with water (if safe to do so, check with site manager).
4. Place large volumes of uncontaminated soil over the doused material to limit smoking and absorb excess water.
5. Work progressively inwards from edges of the fire until whole area is covered.
6. Compact the burn site and allow to cool.
7. Refill the excavated area with the material.

3.2.2 Subterranean Landfill Fires

It is to be noted that control measures are very important to prevent deep-seated landfill fires, such as effective use of daily cover, removing ignition sources from the waste and preventing contact of incompatibles.

If the fire is large and unable to be reached by landfill equipment (subterranean):

1. Ensure site personnel have been appropriately debriefed on the risk of landfill fires, including the usage of PPE and restricted operating zones.
2. Liaise with Tennant Creek Fire Brigade and ensure that residents nearby have been notified if air quality pollution is a risk.
3. Determine the burning area of the landfill.
4. Isolate the fire by excavating a deep trench around the burning area.
5. Backfill the trench immediately with clay to act as a barrier to prevent fire from spreading.
6. Cap the area with large volumes of clay to limit toxic gases from escaping and to prevent oxygen from entering.
7. Temporarily cap any air pathways into the landfill mass near the burning area to limit oxygen ingress.
8. Assess the site daily.
9. Oxygen may also be displaced by injecting inert gas into the fire (e.g. nitrogen).

3.3 EQUIPMENT FIRE

If landfilling plant catch on fire it is typically due to electrical faults or litter being trapped on the exhaust or manifold. Regular inspections, maintenance and cleaning of site equipment is important to reduce the risk of equipment fire.

In the event of an equipment fire, the following process is recommended:

1. Activate the fire suppression system (if available).
2. Extinguish the fire using a dry powder or CO₂ extinguisher, which should be readily available in all landfilling plant.
3. Isolate batteries when able to do so.
4. If safe to do so, move the equipment to a safe location away from the active landfill disposal area. It is important to prevent the fire from spreading to the landfill.
5. Monitor the landfilling equipment to check for reignition.

3.4 SURFACE WATER CONTAMINATION

Surface water contamination includes run-off or clean water infiltration into the waste mass or disturbed land caused by activities on site. The primary objective is to avoid the contamination of clean water, particularly with leachate. All surface water contamination must be reported as per the requirements listed in the Environmental Management Plan (EMP).

Controls must be put in place to reduce the risk of surface water contamination, such as a maintained leachate collection system and stormwater diversion drains upstream of the landfilling area.

In the event of potential or actual surface water contamination the following response is required:

1. Isolate the contamination and ensure that access to the contamination site has been restricted (especially for the public).
2. Notify NT EPA about the incident with all relevant details as outlined in **Section 2.6.1**.

3.5 LANDFILL GAS

Landfill gas emissions can be negligible or extremely serious, especially when exacerbated by a landfill fire (discussed in **Section 3.2**).

It is understood that the Tennant Creek Landfill has a relatively low amount of putrescible material, meaning the risk of excessive landfill gas emissions are already low. Controls are in place to limit landfill gas emissions such as daily covering and minimising the tipping face area. Additionally, no smoking signs should be posted for the public.

The following procedures apply in the case of landfill gas:

1. Ensure appropriate PPE is worn if high concentrations of gas are detected.
2. Ensure site personnel are aware of their responsibilities relating to potential ignition sources (e.g. smoking).
3. If the concentration of methane gas exceeds 50,000ppm the area must be immediately evacuated and the NT EPA must be notified.

3.6 HAZARDOUS WASTE

Clear signs for hazardous wastes are posted around the site to limit the risk of incorrect disposal of hazardous wastes. Site staff regularly perform inspections on disposed wastes to check for hazardous or incompatible wastes.

If hazardous waste has been identified the following procedure applies:

1. Notify site management to report the hazardous waste.
2. Ensure all appropriate PPE relating to the identified hazardous waste is worn when encountering the waste.
3. Remove the waste and dispose of the hazard in accordance with NT EPA guidelines or the site EPL.
4. If large amounts of hazardous waste is found, report it to the NT EPA as soon as practicable.

4 TRAINING AND AWARENESS

All Council staff including subcontractors should have an awareness of the ERMP and its procedures. All personnel engaged in waste management to undergo inductions and be trained in, understand and uphold the emergency response procedures outlined in this plan. Staff are to be trained in and have appropriate equipment to handle any site specific environmental emergencies that could occur, this includes training in managing chemicals and hazardous wastes.

5 REFERENCES

- Barkly Regional Council, (2014). *'Environmental Policy Statement'*.
- Bowman and Associated Pty Ltd, (2015). *'Fernview Landfill – Emergency Response Management Plan'*.
- GreenTec Pty Ltd, (2020). *'Environmental Management Plan'*.
- GreenTec Pty Ltd, (2020). *'Leachate Management Plan'*.
- GreenTec Pty Ltd, (2020). *'Landfill Closure Management Plan'*.
- Iolar, (2016). *'Tennant Creek Master Plan'*.
- Northern Territory Emergency Management Council, (2018). *'Tennant Creek Local Emergency Plan'*.
- Northern Territory Environmental Protection Authority, (2019). *'Environmental Protection License 281'*.
- Northern Territory Government, (2013). *'Emergency Management Act'*.
- Tennant Creek Town Council, (2006). *'Environmental Management and Operational Plan'*.