Environmental Management Plan (Waste)

Waste collection from RAAF Base Tindal and transporting to Shoal Bay Waste Management Facility of a Hazardous Solid Waste.

Document Control History

Version	Date	Description	Approved By
1.0	10/09/2024	Initial Document	Danna Forero

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1 Introduction

Top End Civil specialises in transport and civil earthworks. Top End Civil leadership is committed to best practice Quality, Environment and Workplace health and safety management. Top End Civil maintains 3rd party certification for the following systems:

- AS/NZS ISO 45001:2018 Safety Management Systems-Requirements with guidance for use
- AS/NZS ISO 9001:2015 Quality Management Systems-Requirements with guidance for use
- AS/NZS ISO 14001:2015 Environmental management systems-Requirements with guidance for use
- National Heavy Vehicle Accreditation Scheme (NHVR)

The primary purpose of this EMP is to provide an easily interpreted reference document that ensures all environmental commitments, safeguards and mitigation measures are collectively being implemented, monitored, audited/reviewed and improved during Waste Management activities.

The environmental commitments and controls include those identified in the following:

- TEC Integrated Management System (IMS)
- TEC Integrated Management System Policy
- NT Environmental Protection Authority environmental approvals and management plans.
- Client specific Environmental Management processes

Additionally, the EMP documents the environmental aspects and impacts including risk identification and management process for the Waste Management activities described in section 2 “Scope of TEC Works”.

The EMP is designed to reflect and operate under the principles and objectives of both the TEC Integrated Management System (IMS) and EPA NT environmental requirements.

The EMP is designed to be ‘flexible’ enough to facilitate Waste Management activities and promote innovation while maintaining stringent requirements to protect the surrounding environment. The key performance objectives are to ensure compliance with all environmental legislation and approvals, avoid potential environmental harm, and ensure environmental quality is not compromised during Waste Management activities.

2 Scope of TEC Works

The scope of works for this EMP includes the collection and transporting of a Hazardous Solid Waste.

2.1 Collection

Main collection location is at the RAAF Base Tindal. The RAAF Base Tindal is located 15 kms outside Katherine and 320 kms south-east of Darwin in the Northern Territory.

2.2 Transporting

The collected waste will be transported to the Shoal Bay Waste Management Facility. Shoal Bay Waste Management Facility (Shoal Bay) is the location of waste management and recycling for Greater Darwin. Shoal Bay is the only licenced landfill in the Greater Darwin Area and includes best practice lined landfill cells, a waste transfer station, a recycling facility and resale shop, a garden organics waste processing facility and a renewable energy facility. Shoal Bay receives over 180,000 tonnes of waste per annum and operates in a unique tropical environment under an environmental protection licence.

2.2.1 Proposed transport route:

- RAAF BASE Tindal
- Head north on Carson Dr towards National Highway 1 (1.2 km
- Follow National Highway 1 to McMillans Rd in Pinelands (316 km)
- Follow McMillans Rd. to Shoal Bay Access Rd in Holmes (8.1 km)

2.3 Hazardous Solid Waste

The waste has been generated during upgrade activities at the RAAF Base Tindal. The waste is approximately 540 m^3 concrete stormwater piping. The waste has been analysed and contains traces of the listed waste Chromium VI Hexavalent.

3 EMP Objectives

Ensure worker safety, minimise environmental impact, and comply with legal and regulatory requirements.

3.1 Regulatory Instruments

- NT Environmental Protections Act

  The object of the Environmental Protection Act is to minimise the impact of development on all aspects and parameters of the natural environment. All persons are obliged under this Act to ensure they do not cause any environmental harm unless all practical measures to avoid that harm have been taken.

  The Project will mitigate its possible impacts on natural water bodies, soil health and stability, air and noise pollution and native flora and fauna. In accordance with the Act, TEC will notify their client Representative and/or NT EPA of any potential or actual serious or material environmental harm caused by TEC in relation to any waste activity.

- NT EPA Waste Management and Pollution Control Act (NT).

  The Act provides for the protection of the environment through encouragement of effective waste management, pollution prevention and control practices.

- Work Health and Safety (National Uniform Legislation) Act 2011

The WHS (NUL) Act sets out the objects, key principles, duties, obligations and rights in relation to occupational health and safety. The general nature of the duties imposed by the WHS (NUL) Act means that they cover a very wide variety of circumstances, do not readily date and provide considerable flexibility for a duty holder – a person or organisation given legal responsibilities under the WHS (NUL) Act – to determine what needs to be done to comply.

- Work Health and Safety (National Uniform Legislation) Regulations 2011

  The Work Health and Safety (National Uniform Legislation) Regulations 2011 - the WHS (NUL) Regulations - are made under the authority of the WHS (NUL) Act. They specify the ways duties imposed by the WHS (NUL) Act must be performed or prescribe procedural or administrative matters to support the WHS (NUL) Act, such as requiring licenses for specific activities, keeping records, or notifying certain matters to NT WorkSafe.

3.2 AS/NZS Standards

- AS/NZS ISO 45001:2018 Safety Management Systems-Requirements with guidance for use
- AS/NZS ISO 9001:2015 Quality Management Systems-Requirements with guidance for use
- AS/NZS ISO 14001:2015 Environmental management systems-Requirements with guidance for use

4 Roles and Responsibilities

4.1 Project Manager

- Ensure compliance with all applicable legal, approval and project environmental obligations
- Ensure all project workers have a clear understanding of the environmental requirements relevant to their scope of work
- Ensure all project workers are competent to undertake their duties including fulfilment of the general environmental duty, with regard to appropriate education, training and experience
- Ensure the necessary resources and processes are in place for implementation of required environmental controls
- Ensure all site supervisors are familiar with environmental obligations, this EMP and associated documents, and their responsibilities within them
- Participate and provide guidance in the regular review of the EMP and associated documents
- Take action in the event of an emergency and allocating the required resources to minimise environmental impact
- Ensure non-conformances are identified, recorded and reported
- Report any activity that has resulted, or has the potential to result, in an environmental incident to the Contract Client Representative
- Work with the EHS Consultant in planning and implementing environmental requirements

4.2 Environmental Health and Safety Coordinator

- Be aware of the local, waste management legislation and standards
- Implement the environmental management manuals/procedures, and update as required in consultation with the TEC

- Monitor the implementation and effectiveness of this EMP
- Review and update this EMP in consultation with the TEC
- Conduct environmental auditing, monitoring and training
- Complete environmental reporting requirements
- Provide advice on environmental matters and corrective actions as requested
- Review statutory compliance and ensure compliance with all relevant approvals
- Support TEC to investigate HSE and risk issues, non-compliances/breach of EMP and ensure corrective measures are taken to maintain compliance
- Monitor to ensure all workers are trained on their roles and responsibilities related to waste management
- Regulatory/EMP compliance issues (waste classification, permits, interface with regulatory authorities)
- Ensure corrective measures are actioned on time in the event of any non-compliance related to Waste

4.3 Workers/Contractors

- Adhere to safety and environmental protocols and report incidents.
- Report any activity that has resulted in, or has the potential to result in an environmental incident immediately to the TEC Manager
- Where necessary, ensuring environmental inspections are undertaken and any environmental records are collected and documented
- Carry out all activities in accordance with this EMP
- Identify and report non-conformances
- Implement corrective and preventative action
- Work with the TEC Management in planning and implementing environmental requirements
- Ensuring waste is properly contained and labelled
- Collection of wastes from collection point
- Ensure waste transfer paperwork is accurately completed before waste is transported off-site

5 Environmental Control Measures

When transporting waste, including hazardous materials like Hexavalent Chromium 6-contaminated concrete, safety and environmental protection are paramount.

5.1 Waste Transportation

5.1.1 Ensure Compliance with Regulatory Requirements

Objectives

- Adhere to all relevant local, state, and federal regulations governing the transportation of hazardous waste.

Actions

- Obtain necessary permits and licenses for the transport of hazardous materials.
- Follow regulatory guidelines for packaging, labelling, and documentation (e.g., waste manifests).
- Ensure that the landfill facility is licensed to accept the specific type of hazardous waste.

5.1.2 Minimise Human Health Risks

Objective

- Protect workers, the public, and communities along the transport route from exposure to hazardous waste.

Actions

- Equip all workers with appropriate Personal Protective Equipment (PPE)
- Train workers on safe handling, loading, and transport procedures
- Select transport routes that minimise exposure to populated areas

5.1.3 Prevent Environmental Contamination

Objective

- Prevent the release of hazardous materials into the environment during transportation

Actions

- Securely contain and cover waste materials to prevent spillage and dust generation
- Use vehicles designed and maintained for transporting hazardous waste
- Implement dust suppression methods during loading and unloading
- Monitor weather conditions to avoid transporting during adverse conditions that could increase risk

5.1.4 Ensure Safe and Secure Handling of Waste

Objective

- Safely handle waste at all stages, from loading to unloading, to avoid incidents or spills.

Actions

- Follow best practices for loading and securing waste materials in transport vehicles
- Inspect containers and vehicles for integrity before transport
- Implement spill containment measures and have spill kits readily available

5.1.5 Emergency Preparedness and Response

Objective

- Be prepared to respond effectively to any incidents or accidents during transportation.

Actions

- Communicate the emergency response plan specific to the waste being transported
- Equip transport vehicles with emergency response tools and materials
- Train personnel on emergency procedures, including spill response and first aid

5.1.6 Maintain Transparency and Communication

Objective

- Ensure clear communication with all stakeholders involved in the waste transportation process

Actions

- Maintain accurate and up-to-date records of all waste transport activities
- Communicate transport plans, including routes and schedules, with relevant authorities and stakeholders
- Report any incidents, spills, or deviations from the plan to the appropriate regulatory bodies

5.1.7 Continuous Monitoring and Improvement

Objective

- Regularly assess and improve waste transportation practices to enhance safety and efficiency

Actions

- Conduct daily inspections of transportation processes and equipment
- Collect and analyse data on transportation incidents and near-misses to identify areas for improvement
- Stay informed about new technologies and best practices in hazardous waste transportation

5.2 Air Quality

Objectives

The Air Quality Management objectives are to:

- Minimise impacts of dust generated.
- Minimise complaints from the community in relation to dust generated
- Preventing the release of any dust or any other airborne contaminant that cause an environmental nuisance

Performance Criteria

- Dust generated is appropriately managed.
- The release of dust must not cause an environmental nuisance.

Mitigation Measures

The key dust mitigation measures during Waste Management activities will include:

- Dust suppression during waste collection
- Stabilising and reinstatement of work areas as soon as possible after collection

Corrective Actions

- In the event of any air quality incident, appropriate actions shall be implemented to ensure environmental harm from the event is minimised.
- All air quality incidents shall be reported to TEC Manager immediately.
- All air quality related incidents/non-conformances identified shall be corrected as soon as possible and strategies implemented to reduce the likelihood of the incident/non-conformance recurring.

5.3 Land/Waterways Management

Objectives

The land/waterways management objectives are to:

- Ensure any Waste Management-related activities do not cause contamination to the surrounding areas

Performance Criteria

- No contamination of land or waterways resulting from Waste Management activities

Mitigation Measures

The mitigation measures to be implemented to minimise impacts to the land and waterways during Waste Management.

- In the event of suspected land or waterways contamination work will cease and the area made secure to enable inspection and appropriate management of the contaminated land
- Contain and cleanup any spill.

Corrective Actions

- In the event of a land or waterways incident, appropriate corrective actions shall be implemented to ensure environmental harm from the event is minimised.
- Any land or waterway incidents will be reported to the TEC Manager immediately.
- All land or waterway related incidents/non-conformances identified shall be corrected as soon as possible and strategies implemented to reduce the likelihood of the incident/non-conformance reoccurring.

5.4 Waste Management

Objectives

The Waste Management objectives are to:

- Ensure waste materials are collected and transported in a manner that minimises impacts on air, water and land resources and protects the health of workers on the surrounding community.

Performance Criteria

- No unauthorised discharge of waste to the environment

Mitigation Measures

- For all waste collected and transported, the following information shall be recorded in the Waste Register:
  - Date of pickup of waste.
  - Waste Classification
  - Treatment (landfill)
  - Volume
  - Receptacle Type
  - Name & Licence details of the transporting contractor (TEC)
  - If an EPA waste certificate has been received, and the tracking code
  - The name of the receiving facility, and
  - Other relevant comments/information.

Corrective Actions

- Waste spills are not to be cleaned up by hosing or sweeping materials.
- In the event of a spill or similar incident, appropriate actions shall be implemented to ensure environmental harm from the event is minimised.
- All waste spills shall be reported to the TEC Manager immediately.
- All waste related non-conformances/incidents identified shall be corrected as soon as possible and strategies implemented to reduce the likelihood of the incident/non-conformance recurring.

5.5 Flora and Fauna Management

Objectives

Whilst the site does not have any identified flora and fauna, the flora and fauna objectives for TEC are to:

- Avoid any adverse impacts on flora and fauna species because of Waste Management activities

Performance Criteria

- No clearing of vegetation or potential habitat areas without an approved permit in place

Mitigation Measures

- Visually observe the environment and cease work if flora or fauna is identified.

Corrective Actions

- Any injured wildlife (native or introduced) are to be taken to receive veterinary attention immediately.
- All unauthorised clearing or other incident shall be reported to the TEC Manager immediately.
- All flora or fauna related incidents/non-conformances identified shall be corrected as soon as possible and strategies implemented to reduce the likelihood of the incident recurring.

5.6 Severe Weather Management

Objectives

- Identify potential adverse weather conditions (i.e., lightning storms, excessive wind speed, severe weather, and cyclone conditions).
- Evaluate the threat, and implement precautions to prevent environmental harm.

Performance Criteria

- No Soil, surface water and groundwater pollution
- No Impacts to flora and fauna

Mitigation Measures

- Weather is to be monitored by the TEC Manager
- Any adverse weather conditions were there is a potential resulting in an environmental impact must be risk assessed
- Site must be left in a safe and secure state prior to evacuation

6 Workplace Health and Safety Controls

6.1 Engineering Controls - Dust

- The loading, transporting and unloading activities will all be open area, no dust extraction is required.

6.2 Administrative Controls

- It is not expected personal air monitoring will be required.
- Regular training for workers on safe handling, use, and disposal of concrete potentially containing Cr(VI)
- Limit access to areas where Cr(VI) is present

6.3 Personal Protective Equipment (PPE)

- Provide appropriate PPE, including respirators, gloves, and protective clothing.
- Ensure proper fitting, usage, and maintenance of PPE.

6.4 Hygiene Practices

- Provide washing stations for workers handling Cr(VI).
- Eating, drinking, or smoking in areas where Cr(VI) is used is prohibited.

6.5 Incident Procedure

All safety and/or environmental incidents shall be managed in accordance with the TEC Critical Incident and Debriefing Procedure available via Lucidity online.

7 Environmental Monitoring & Inspections

7.1 Daily Site Inspections and Surveillance

Inspections and surveillance of Waste Management activities (including sub-contractors) will be undertaken on a day-to-day basis by the TEC Manager. These inspections will not be documented unless significant non-conformances with the EMP are identified.

As part of daily activities, TEC Manager will be required to maintain a site diary detailing the day's activities and any issues (including environmental issues) which may have arisen during the course of operations.

7.2 Monitoring of Specific Environmental Events

Monitoring of the following environmental events may occur during Waste Management activities:

- Air emission monitoring
    - Visual monitoring for dust shall be conducted on a daily basis

7.3 Audits

TEC conducts internal and external audits to ensure compliance with its IMS, due to the expected time the project it is not anticipated any formal auditing will be required. All systems will be

implemented and monitored during the activity as required the effectiveness of control measures will trigger a review and update of the EMP as necessary.

8 Reporting

8.1 Record Keeping:

TEC management will maintain records, not limited to:

- Waste loading and unloading dockets
- Incidents reports
- Monitoring results
- Training sessions.

9 Emergency Response

Emergency Response shall be managed in accordance with the TEC Emergency Preparedness Procedure available via Lucidity online.

9.1 Communication Plan

TEC Management will notify relevant authorities, workers, and the public in case of a major incident and provide clear instructions on actions to be taken during an emergency.

9.2 First Aid Measures

TEC will ensure availability of first aid kits and trained personnel to respond to Cr(VI) exposure and provide instruction for decontamination and medical treatment.

10 Training and Awareness

TEC shall ensure all project workers are aware of and understand the environmental requirements of TEC relevant to their role and responsibilities. This includes regulatory requirements (EPL), and TEC EMP and procedures. To achieve this, the training and awareness measures identified below shall be implemented as required for the duration of the Project.

10.1 Site Induction

Prior to working for TEC, all workers and sub-contractors will undertake an induction detailing the significant environmental and WHS requirements associated with work activities. The induction will include, without limitation, the following environmental components:

- This EMP
- Legal requirements including due diligence, duty of care and potential consequences of infringements
- Environmental responsibilities and duties
- Conditions of licences, permits and approvals
- TEC IMS Policy
- Significant environmental issues and areas of the site, including the identification of boundaries and No-Go areas, location washing equipment
- Environmental management techniques for key environmental elements (soil and water, flora and fauna etc.)

- Incident management and emergency procedures
- Reporting process for environmental harm/incidents
- Handling complaints
- Protection and maintenance of environmental controls including relevant paperwork
- Any Client Specific Inductions as required for their work activity

A record of all persons who have attended the induction shall be maintained. Visitors are not permitted to perform works.

11 Continuous Improvement:

TEC will implement findings from inspections and incident reports to improve safety and environmental management practices.

12 Supporting Information

- Emergency Contact List
- Risk Register
- Training Records

This EMP is a living document and is subject to regularly updated to reflect changes in project scope, legal requirements, or best practices.