

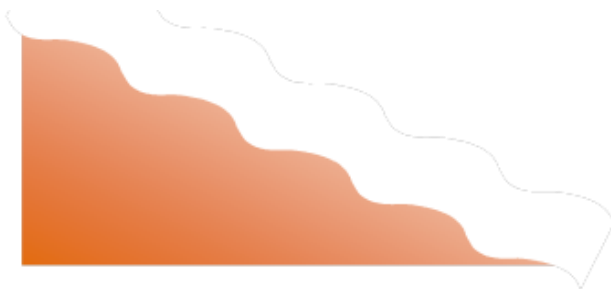
ENVIRONMENTAL MANAGEMENT PLAN
FOR USE OF A LISTED WASTE AS A TRACK CONDITIONER



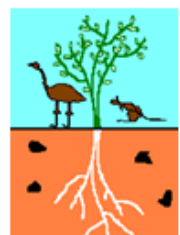
Prepared for Alice Springs Turf Club

by Low Ecological Services

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1 Executive Summary

This Environmental Management Plan (EMP) forms a part of Environmental Protection Licence EPL208, authorising the Alice Springs Turf Club to apply waste mineral oils to the Pioneer Park racetrack, for the purpose of dust control and softening / conditioning of the horse-racing surface as well as dust control on the internal access road servicing the stable yards and trainer accommodation on the eastern side of the track and access track around the northern bend of the racetrack.

Since the initial issue of EPL208 in 2017 waste oil is no longer stored onsite and there much has been learned from monitoring soil, ground and surface water, and from a waste oil soil penetration test. Changes from the 2017 EMP concern a more streamlined and targeted monitoring program to reflect the results and interpretation of monitoring to date. References to onsite storage of waste oil have been removed and the document reduced in volume.

The listed waste consists of waste oils delivered to Pioneer Park from Darwin via a licensed waste carrier, on an as-required basis. Oil deliveries and applications are made 3 – 4 times annually. Waste oil samples were analysed for the purpose of the initial EPL and EMP in 2017 and again in 2020. Results found samples on both occasions to be typical of waste mineral mechanical oil, with normal, low or non-detectable concentrations of potentially toxic heavy metals and contaminants.

This EMP identifies all risks and hazards associated handling and dispersal of the waste oil. It includes procedures for onsite waste oil handling and racetrack / service road applications that when applied will reduce risks to a level that is as low as reasonably practical (ALARP).

The list of environmental commitments in this EMP is given in Table 1.1.

Table 1-1 Environmental Commitments in this EMP

Environmental Commitment	Section in the EMP
Disperse not more than 40 KI of waste oil to the racetrack and designated areas on any one event and not more than 120 KI within a one year period.	3.2.5, 7.2.3
Maintain a register of waste oil dispersed recording date, time, locations and quantities.	7.2.2, 10.2
Annual internal audit of the local environment with respect to EMP activities undertaken.	10.2
Monitoring program conducted by a suitably qualified independent professional within the 5 year term of the EPL: twice yearly groundwater testing; surface water testing following major rainfall events; annual comprehensive soil testing, waste oil soil depth penetration testing in 2023 and 2026, and bi-ennial waste oil analysis next due in 2022.	10.1.
Annual review of this EMP.	10.3.2
Clean up and reporting of any spill or uncontrolled release of waste oil.	9.1
Records of stakeholder engagement and consultations.	11

2 Introduction

Waste oil has been used as a dust suppressant and track conditioner at Alice Springs Pioneer Park since operations began in 1977. It is used in the same manner at Darwin and Katherine racecourses in the NT.

Low Ecological Services were commissioned by the Alice Springs Turf Club Incorporated (Turf Club) to prepare an Environmental Management Plan (EMP) to supplement the Turf Club's application for a revised and extended environmental protection license to dispose of a listed waste (waste oil) at Pioneer Park Racetrack in Alice Springs. The Northern Territory Environmental Protection Agency (NTEPA) first requested the Turf Club to apply for a license to for handling a listed waste in 2015. The initial EPL208 commenced 21 July 2017 and expired 21 July 2022. This EMP is based on the original 2017 EMP with changes for more streamlined monitoring and to reflect waste oil is not stored onsite.

This EMP has been developed in accordance with the Guidelines for the Preparation of an Environmental Management Plan (NTEPA, May 2015), the *Waste Management and Pollution Control Act*, and Guidelines for Waste Discharge Licensing under the Northern Territory *Water Act*. This EMP identifies risks and impacts from the disposal / dispersal of waste oil in approved areas (racetrack, service roads) on the environment and provides the management framework, prevention measures, mitigation measures, monitoring requirements and review processes to reduce these risks to as low as reasonably practical (ALARP).

2.1 SCOPE

This EMP is concerned with the dispersal of waste oil for use as a track conditioner at the Turf Club's Racetrack.

2.2 PURPOSE

The purpose of this EMP is to identify environmental and social risks from the use of the waste oil and provide management, mitigation and preventative measures to reduce these risks to ALARP.

3 Project Overview

3.1 SITE LOCATIONS

The Pioneer Park Racetrack is located on Heath Road, Kilgariff; six kilometres south of the Alice Springs town centre. The closest affected stakeholders include:

- Stable yards and trainer accommodation to the east;
- Dunns Bed and Breakfast to the east;
- Aboriginal women's shelter to the north;
- CAT Project's vacant land to the south; and
- The Stuart Highway on the western boundary.

There are two main watercourses in the area. Both are ephemeral, flowing only after significant rainfall.

- Todd River to the north and east; and
- St Mary's Creek on the western boundary.

Flooding from the Todd River has been recorded in areas to the east of the Racetrack. The Racetrack is elevated above the surrounding area, with runoff from the track directed into the middle of the track. There has been no flooding onto the Racetrack, from the Todd River or St Marys Creek. The soil and water monitoring program proposed in this EMP will determine if any waste oil is migrating off-site.

3.2 PROJECT OPERATIONS

This EMP covers the dispersal of waste oil in approved areas; the Racetrack and service roads.

3.2.1 Waste Oil Characterisation

The waste oil comprises various waste mineral and synthetic mechanical oils collected from the Darwin area. An analysis of the representative samples collected from the stored waste oil at the Turf Club in 2017 showed that the samples were 'Normal' with respect to Australian Laboratory Services (ALS) (NATA accredited laboratory) criteria. All potentially toxic heavy metals and contaminants are at low or non-detectable concentrations, with only calcium and zinc being elevated. Waste oil samples were tested again in 2020 with results being as expected for the material, with very low or non-detectable concentrations of potentially toxic heavy metals and contaminants. The results from these analyses are included in Appendix 1.

3.2.2 Collection

Waste oils are sourced from a bulk storage facility in Darwin, NT and transported to site by a licensed waste transporter.

3.2.3 Storage

There is no storage of waste oil on site at Pioneer Park. Oil is delivered to the site when requested and immediately transferred to the Turf Club's oil dispersal vehicle. is made to the track upon ASTC request.

3.2.4 Processing or Treatment

The waste oil is dispersed as is in approved areas, without any prior processing or treatment.

3.2.5 Dispersal

Waste oil is dispersed onto the Racetrack surface 3-4 times per year from the back of a purpose-built vehicle at an average rate of 1.0 litres / m². Applications of oil to the service tracks are much less frequent; 1 – 2 times within a 5 year period. Not more than 40 KL is to be deposited in any one event and not more than 120 KL in any one year period. Waste oil is pumped from the delivery truck into the dispersal vehicle on the racetrack itself to that any spillage occurs within the already contaminated area.

4 Legislation, Agreements and Codes of Practice

Key legislation, regulations, guidelines and standards relevant to this EMP are provided below.

4.1 COMMONWEALTH ENVIRONMENTAL LEGISLATION AND REGULATIONS

- *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999;*

- National Environmental Protection Measure 2013;
- *Work Health and Safety Act 2011*;
- Work Health and Safety Regulations 2011.

4.2 NORTHERN TERRITORY LEGISLATION AND REGULATIONS

- *Environmental Assessment Act 2013*;
- *Environmental Offences and Penalties Act 2011*;
- *Northern Territory Environment Protection Authority Act 2014*;
- *Dangerous Goods Act 2012*;
- *Water Act 2013*;
- Water Regulations 2013;
- *Soil Conservation and Land Utilisation Act 2016*;
- *Waste Management and Pollution Control Act 2016*;
- Waste Management and Pollution Control Regulations 2014;
- *Litter Act 2015*;
- *Work Health and Safety Act 2016*;
- *Public and Environmental Health Act 2016*.

4.3 OTHER REQUIREMENTS

- NTEPA Licence to and Dispose of a Listed Waste.

5 Environmental Management

See section 8, *Environmental Management Performance Objectives, Standards and Measurement Criteria* for full details of ASTC environmental management policies in relation to waste oil handling.

6 Description of the Environment

6.1 OVERVIEW

The Racetrack is in a disturbed environment, surrounded by business and undeveloped land. Previous land use at the site included livestock grazing. The native vegetation on site is sparse and significantly modified due to past and current land use practices. The ground cover is dominated by the introduced *Cenchrus ciliaris* (buffel grass).

Soils of the area are composed of reddish brown silty clays with trace amounts of sands and small gravels. They have slow to moderate permeability and are likely a combination of imported and local material (Northcote, et al., 1975).

The Racetrack is elevated above the surrounding area and lies above the 1 in 100-year flood line as shown in the Alice Springs floodplain mapping (Northern Territory Government Department of Lands, Planning and the Environment, 2017).

6.2 SOILS

The soils of the area have been mapped and described by Northcote, et al (1975) from the publication “*A Description of Australian Soils*”. The soils are classified in Table 6.1 with further sub-classifications described in Table 6.2.

Table 6-1 Soil classification by Northcote, et al (1975)

Soil Classification	Description
AB75	Flood-plains: chief soils are deep red earthy sands (Uc5.21) and deep red sands (Uc1.43). Associated are various (Dr) soils, such as (Dr1.83), and (Gn2) soils, such as (Gn2.12, Gn2.13).

Table 6-2 Finer scale soil classification by Northcote, et al (1975)

Soil Classification	Description
Uc5.21	Sands with Coherent Earthy Subsoils - Red
Uc1.43	Firm Siliceous Sands - Red
Dr1.83	Crusty Red duplex soils
Gn2.12	Non-calcareous Earths Red - Neutral
Gn2.13	Non-calcareous Earths Red - Alkaline

6.3 GEOLOGY

The Digital Version of Geology Australia (Bureau of Rural Sciences after Australian Geological Survey Organisation, 1991) mapping classifies the geology under the Racetrack as –P101.

Table 6-3 Geological map unit.

Geological Unit	Description
-P101	Sedimentary rock of the Heavitree Quartzite and Bitter Springs formation. The Heavitree formation is predominantly quartz sands with white and tan grains cemented into very hard rock by silica cement (Walker, 2015). The Bitter Springs formation is characterised by Crystalline dolostone, dolomitic limestone, siltstone, sandstone, evaporites, stromatolites, mafic volcanic (Geoscience Australia, 2017).

6.4 SURFACE AND GROUNDWATER

An investigation of the NT Natural Resource Maps in 2016, developed by the Department of Land Resource Management (DLRM), indicates that there are two main aquifers below the site, one approximately 20 m BGL and a second one at approximately 70 m BGL. There is no evidence to suggest the two aquifers are connected. Neither of these aquifers are connected to the Alice Springs town water supply. Groundwater in the near vicinity is not used for human, pastoral or industrial consumption.

There is a paleochannel of the Todd River running along the north east of the Racetrack, known as the Outer Farm Basin (Department of Land Resource Management, 2016).

There are two main surface watercourses in the area and several associated flood-out zones:

- Todd River to the north and east; and

- St Mary's Creek along the western boundary.

Both these watercourses are ephemeral, only flowing after significant rainfall. There has been no record of flood waters from either of these systems flowing onto the Racetrack. The racecourse lies elevated above the Computed 1% AEP (1 in 100 year) flood extent as illustrated in Figure 1 below. The largest recorded flood in 1988 is believed to have been a 1 in 50 year event. extracted from the Alice Springs Floodplain Maps, Dept of Environment, Parks and Water Security, 2021

Surface water run-off from the Racetrack is directed into and contained within the centre of the Racetrack.

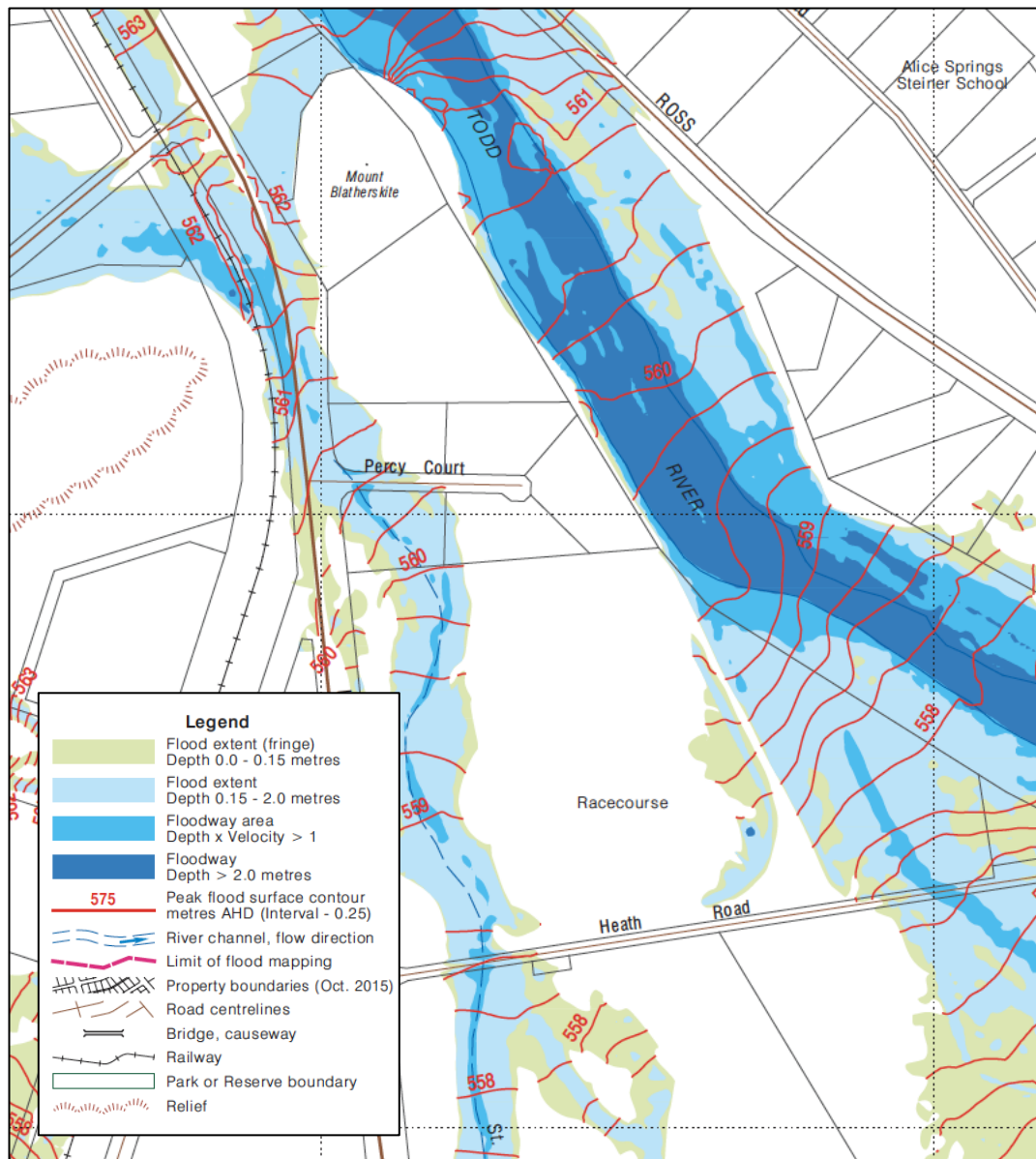


Figure 1. 1 in 100 year flood extent with respect to the Alice Springs Racecourse.

6.5 BROAD SCALE VEGETATION MAPPING

Broad vegetation mapping of the area by Wilson, et al (1990) classifies the vegetation at the Racetrack area as map unit 59.

Table 6-4 Broad scale vegetation unit. (Wilson, et al., 1990)

Vegetation Map Unit	Description
59	Mixed Species Low Open Woodland - dominated by <i>Acacia estrophiolata</i> (ironwood), <i>Atalaya hemiglauca</i> (whitewood) low open-woodland with open-grassland understory

Lennartz (2000) has assessed the land units and vegetation of the Alice Springs area and describes the vegetation communities of the Racetrack as *A. estrophiolata* and *Hakea divaricatae* (fork-leaved corkwood) over *C. ciliaris* (buffel grass) and *Sclerolaena convexula* (tall copper burr) (Lennartz, 2000).

6.6 FLORA AND FAUNA

A search of the NT Flora and Fauna atlases within a 2 km radius of the Racetrack found 1910 records of 188 different fauna species and 302 records of six different flora species. Of these there are eight near threatened (NT) and three vulnerable (VU) fauna under the *Territory Parks and Wildlife Conservation Act (TPWC)* and one VU and one endangered (EN) fauna species as classified under the Commonwealth *Environmental Protection and Biodiversity Conservation Act (EPBC)*. There was one flora species listed as NT under the *TPWC Act*.

Table 6-5 shows fauna of conservation significance potentially found within a 2 km radius of the Racetrack. These species are not likely to be affected by spreading the waste oil on the Racetrack due to the current use of the area for horse racing, the degradation of the surrounding environment and the absence suitable habitat for these species in the area.

Table 6-5 Fauna species of conservation significance 2 km radius of the site.

Scientific Name	Common Name	TPWC	EPBC
<i>Calyptorhynchus banksii samueli</i>	Red-tailed Black-cockatoo (Central Australia)	NT	
<i>Acrocephalus australis</i>	Australian Reed-Warbler	NT	
<i>Limosa limosa</i>	Black-tailed Godwit	NT	
<i>Lophoictinia isura</i>	Square-tailed Kite	NT	
<i>Pseudechis australis</i>	King Brown Snake	NT	
<i>Rattus villosissimus</i>	Long-haired Rat	NT	
<i>Phaps histrionica</i>	Flock Bronze-wing	NT	
<i>Antechinomys laniger</i>	Kultarr	NT	
<i>Liopholis slateri</i>	Slater's Egernia	VU	EN
<i>Macrotis lagotis</i>	Bilby	VU	VU
<i>Falco hypoleucos</i>	Grey Falcon	VU	

Table 6-6 shows flora of conservation significance potentially found within a 2 km radius of the Racetrack. The areas where the waste oil has been dispersed has been cleared and maintained for horse racing activities since 1977 and therefore, as they do not occur there, the conservation species listed in

Table 6-6 will not be affected by dispersal of waste oil on the Racetrack or service roads.

Table 6-6 Flora species of conservation status recorded within 2km of the Racetrack

Scientific Name	Common Name	TPWC	EPBC
<i>Pentapetes phoenicea</i>	-	NT	-

As the oil dispersal areas lies within a disturbed location, proximity to Alice Springs and the area being surrounded by highly modified environments (originally cattle grazing and now residential and commercial properties), assessment under the *EPBC* Act is not required. Any potential impacts to the above identified flora and fauna of conservation significance can be managed by mitigation measures outlined in this EMP.

6.7 LAND SYSTEMS AND LAND UNITS

Broad land system mapping by Perry, R.A (1962) classified the Racetrack area as Todd, which is described as:

- Alluvial floodplains, swamps, drainage depressions and alluvial fans; sandy, silty and clay soils on Quaternary alluvium.

The area is classified into five finer scale land units; these are described in Table 6.7. The location where most of the waste oil will be dispersed of is located within land unit 4.09.

Table 6-7 Finer scale land unit mapping descriptions (Lennartz, 2000).

Land Unit	Description
4.04	Flood out with coolabah over buffel grass
4.07	Lower flood out terrace flat with river red gums over buffel grass
4.09	Broad alluvial plains with ironwood and corkwood trees over buffel grass and native grasses.
5.02	Rivers and creeks with sandy beds and river red gums over sparse grasses in some areas.
5.09	Remnant drainage channels with coolabah over buffel grass.

6.8 SOCIO-ECONOMIC ENVIRONMENT

Neighbouring properties include:

- The women's shelter to the north;
- Stables and associated accommodation facilities to the east;
- A Bed & Breakfast across the flood out to the east of the stables;
- CAT projects vacant land across Heath Road to the south; and
- Vacant land across the Stuart Highway to the west.

Due to the infrequent disposal of low volumes (max 40 KL at any one time at a rate of 1 L per m²), the waste oil has does not impact the surrounding stakeholders but potentially benefits them by reducing dust emissions.

6.9 CULTURAL AND HERITAGE

There are no known sites of cultural or heritage significance within Pioneer Park. There will be no new clearing or developments outside of already disturbed sites relating to waste oil use. All run-off from the track is directed into the middle of the Racetrack area.

7 Environmental Risks, Impacts and Assessment

7.1 CONCEPTUAL SITE MODEL (CSM)

The purpose of the CSM is to define all potential sources, pathways and receptors of contamination that may arise during the collection and dispersal of the waste oil at the Racetrack. This information has been used to develop the comprehensive risk assessment in Section 7.2. The CSM will be updated through the course of operations, as new information fills knowledge gaps and aid remedial measures if required. Due to the small scale of operations and limited spatial extent of impacts, the CSM is provided in a simple written form.

Sources:

- Potential uncontrolled release or oil spills during transport of waste oils around the site.
- Oil deliberately dispersed onto the Racetrack and approved service tracks.

Pathways

- Very heavy rain mobilising oil dispersed onto racetrack and service roads, mixing with general runoff into surrounding area including St Mary's Creek and Todd River.
- Flood waters entering the entering oil dispersal areas and spreading the waste into surrounding area. Potential impact on watercourse and environmental values downstream;
- Root uptake by vegetation within close proximity to the dispersal area;
- Migration of deposited waste oil laterally and vertically into groundwater.

Receptors

- Groundwater aquifers;
- Surface watercourses, drainage channels, predominantly the Todd River and St Marys Creek,
- Soil outside of designated dispersal areas;
- Plants directly impacted through spills, indirectly through root uptake or by off-site contamination;
- Fauna through direct contact, inhalation or ingestion (low probability) or indirectly through contaminated water sources; and
- People through direct dermal contact, slips or trips due to spills or contact with contaminated run-off.

Identified Knowledge Gaps

- The depth of penetration of waste oil under the racetrack service was tested in 2020 and no trace of hydrocarbon was detected below 400mm, noting that waste oil had been regularly applied to the track for 43 years. Such testing is recommended to be repeated to strengthen confidence that vertical migration of oil is not occurring.

- Off-site migration from dispersal areas; soil testing across ten sites during the period of the first EPL indicated that surface water was not dispersing waste oil from approved dispersal sites into the surrounding environment. Such testing is recommended to be repeated to strengthen confidence that this is not occurring.
- Groundwater contamination; groundwater sampling and testing during the period of the first EPL indicated no hydrocarbon from the waste oil or any other source was contaminating local groundwater. It is noted that Bore RN04541 is located about 170 metres southwest of the 2020 spill site where hydrocarbon contamination was detected to a depth of 2m. Dispersion into the water table from this source is a potentially higher risk than migration from the racetrack. This will be taken into account in the Monitoring program.

ENVIRONMENTAL RISK ASSESSMENT AND IDENTIFICATION

7.1.1 Scope

The scope of the environmental risk assessment covers all aspects of the delivery and dispersal of the listed waste.

7.1.2 Key Definitions

Key definitions relating to risk management are provided in Table 7.1.

Table 7-1 Key definitions relating to Risk Management

Key Definitions	
<i>Incident Event</i>	An event capable of causing critical, major, moderate or minor damage to the environment or negligible damage with no significant environmental effect.
<i>Hazard</i>	A physical situation with the potential for damage to the environment, human injury, damage to property or some combination of these.
<i>Risk</i>	The likelihood of a specified undesired event occurring within a specified period or in specified circumstances. It may be either a frequency (the number of specified events occurring in a time unit) or a probability (the probability of specified event following a prior event), depending upon circumstances.

7.1.3 Risk Assessment Methodology

This section describes the environmental risk assessment for potential events that may impact the environment during activities covered by this EMP. The purpose of this risk assessment is to identify hazards and develop risk-reducing measures to prevent and mitigate impacts from operational activities. This assessment also outlines recommended management actions aimed at reducing risk to ALARP. Environmental risk assessment consists of five basic steps described briefly below. Each section has been developed as a collaborative process which involved LES, the Turf Club, stakeholders and government agencies; incorporating industry best practises and risk analysis techniques.

Hazard Identification

Hazard identification involves identifying the sources of risk, i.e. those activities or incidents that could result in an environmental impact. Hazards are categorised into those arising from routine operations, and those arising from incidents.

Risk Analysis

Risk analysis determines the likelihood of an activity or event occurring, and the consequences of that activity or event on the environment. The risk ranking matrix, **Error! Reference source not found.** was used to assess the consequence and likelihood of all identified events. The matrix is based on six classifications of severity and six for the likelihood of a hazard.

Risk Evaluation

Risk evaluation prioritises the risks i.e. determines if the risk of an activity or incident is acceptably low, or if management actions are required to reduce the risk to ALARP. The risk evaluation presented in Table 7.2 takes existing safeguards and management measures into consideration i.e. represents the residual risk with existing or planned safeguards in place.

Risk Management

Risk management prescribes management measures to mitigate the identified environmental risks in addition to general environmental and other management policies currently in place at the Turf Club.

Residual Risk Analysis

Residual risk is the risk rating once additional management measures have been implemented; this rating is ALARP.

7.2 SUMMARY OF KEY ENVIRONMENTAL RISK AND MANAGEMENT MEASURES

7.2.1 Characterisation of the Waste Oil

The waste oil is transported to site from a holding facility in Darwin. The oil is mechanical waste oil, sourced from various Darwin locations. Waste oil characterisation from laboratory analysis was carried out in 2017 and 2020. The samples tested are likely to be representative of oil applied to the racetrack as the source has remained the same and foreseeably will remain the same in the future.

The lab analysis report for samples taken in 2020 are included in the Appendix. One waste oil sample was collected from each of two 20 KI deliveries made to Pioneer Park by licensed contractor JJ Richards on 6 May, 2020. Samples were taken directly from the pipe used in transferring oil from the delivery truck to the Turf Club's oil dispersal trailer. Samples were transported in a chilled esky to an NATA accredited lab and analysed within required holding times. Waste oil results from ALS characterised the samples as normal used oil with most potentially toxic heavy metals at either low or non-detectable concentrations.

Results of analysis for polychlorinated biphenyls (PCBs) I found both samples to be below the LOR (limit of reporting) of 0.2 mg/kg for total polychlorinated biphenyls and at aroclor's 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

7.2.2 Collection

Risk

Risk associated with the collection of the waste oil from Darwin sources and its transport to Alice Springs racecourse is managed by the licensed contractor, currently JJ Richards.

Management

Deliveries of listed waste are recorded including:

- Volume delivered;
- Contractor delivering goods;
- Time and date; and
- Person receiving the delivery.

7.2.3 Dispersal

Risk

The main risks associated with the dispersal of the waste oil are in

- Spills in the process of transfer of waste oil from the delivery truck to the turf club's dispersal vehicle. Dispersal outside designated areas;
- Inappropriate rate of dispersal; and
- Dispersal during periods of high rainfall.

Management

Waste oil will only be dispersed in approved areas; the racetrack, and internal access roads servicing the stable yards and trainer accommodation along the western side of the track, and the access road around the northern loop of the racetrack. See Figure 2. Applications on the racetrack will continue to be 3-4 times annually for track conditioning and dust control. Applications on the access roads will be relatively infrequent, for dust control. The waste oil is to be dispersed on the racetrack at an average quantity of 1 litre per m². The waste oil will only be dispersed during dry conditions, with no rainfall forecast rainfall within the following week and with light winds.

Based on current practice and results of soil and water monitoring the total amount to be dispersed on the Racetrack and approved areas is 120 KL per annum.

Transfer of waste oil from the delivery truck to the dispersal vehicle will take place on the racetrack, to that any spills will take place on the already contaminated surface. Turf Club staff will be trained in the process of safe transfer to minimise spill risk. They will also be trained in managing unforeseen larger spills, informed through familiarity with relevant safety data sheets (SDS) and oil spill kits containing oil absorbent clean-up material.

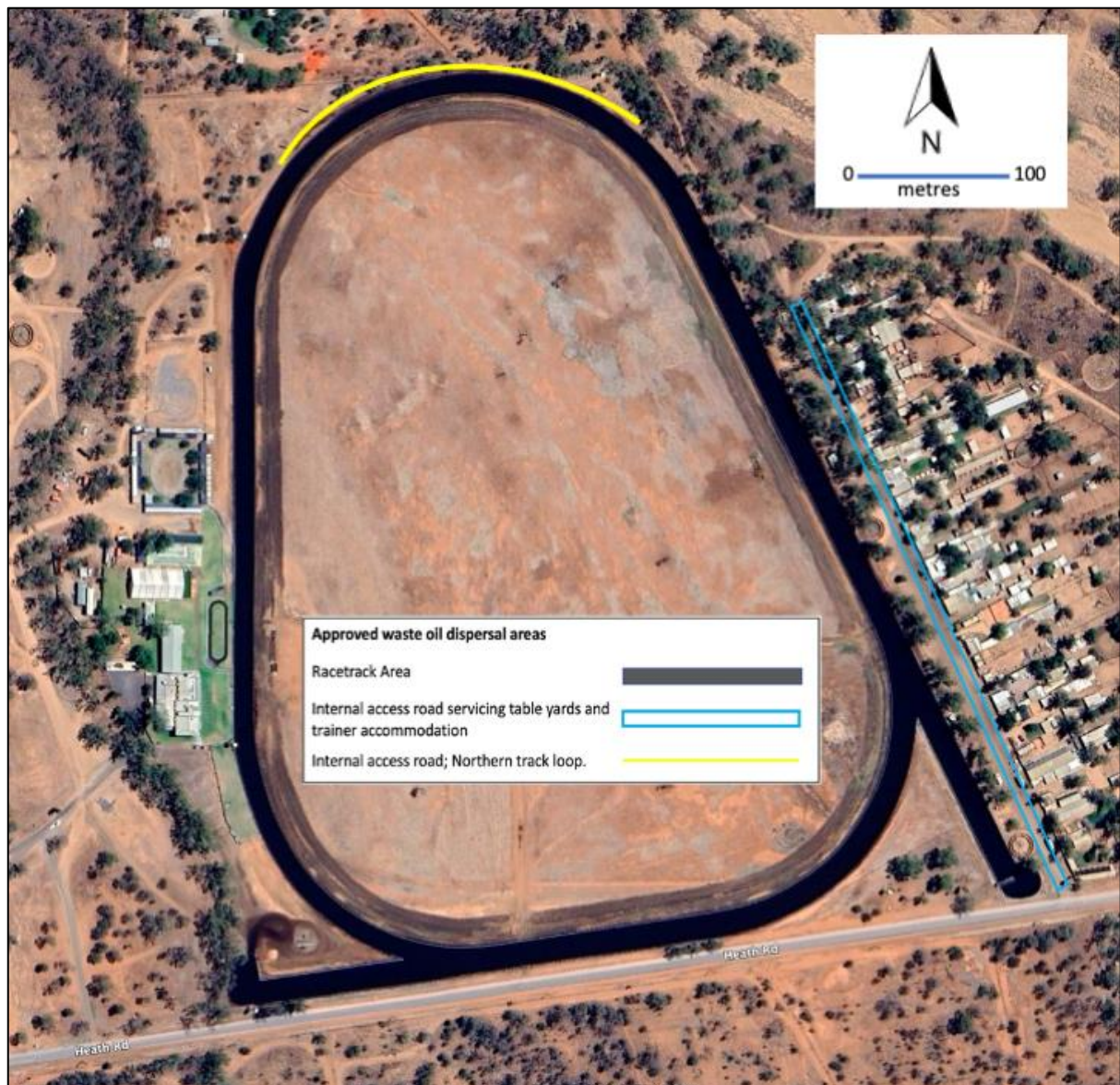


Figure 2. Areas of approved waste oil dispersal.

Alice Springs Turf Club Pioneer Park Racetrack Listed Waste EMP

		Low Risk	Moderate Risk	High Risk	Likelihood – Probability of Harm / Loss					
					1	2	3	4	5	6
					Unlikely / Unknown Not expected to occur	Remote Potential May occur only in exceptional circumstances	Possible Could occur at some time	Probable Expected to occur at some time	Frequent Likely to occur regularly	Highly Likely Ever present; occurs in most circumstances
		Environmental Impact								
SEVERITY – Consequence of Harm / Loss	1	Alteration/disturbance within the limits of natural variability; effects not transmitted or accumulating; resources not impaired. Minimal pollution effect contained locally.			1	2	3	4	5	6
	2	Temporary alteration/disturbance beyond natural variability; effects confined to site and not accumulating; resources temporarily affected. Minor pollution, slight or negligible impact, negligible remedial or recovery work. Short term localised and insignificant impacts to habitat or populations. Rapid recovery – measured in hours.			2	4	6	8	10	12
	3	Alteration/disturbance of a component of an ecosystem; effects not transmitted or accumulating. Pollution with some onsite impact and recovery work; possible outside assistance to contain. Incidental changes to abundance/biomass of biota in affected area; insignificant changes to overall ecological function. Recovery period measured in days – months.			3	6	9	12	15	18
	4	Alterations to one or more ecosystems or component levels, but which are recoverable; effects can be transmitted/accumulating. Significant pollution with offsite impact and recovery work. Impact that will cause a detectable effect in local ecosystem factors. Recovery period measured in months.			4	8	12	16	20	24
	5	Irreversible alteration to one or more ecosystems or several component levels; effects can be transmitted, accumulating; lost sustainability of most resources. Massive site impact and recovery work. Detrimental effect that will cause a significant effect on local ecosystem factors. Recovery period measured in years.			5	10	15	20	25	30
	6	Irreversible alteration to one or more ecosystems or several component levels; effects can be transmitted, accumulating; lost sustainability of most resources. Massive pollution with significant recovery work. Large scale detrimental effect that is likely to cause a highly significant effect on local ecosystem factors such as water quality, nutrient flow, community structure and food webs, biodiversity, habitat availability and population structure. Long term recovery period measured in decades			6	12	18	24	30	36

Table xx

Risk assessment matrix used in compilation of detailed risk assessment presented in
Table 7-2

Table 7-2 Detailed Environmental Risk Assessment

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating		Severity	Likelihood	Risk Rating	
Waste oil spill outside of approved (already contaminated) areas.	Contamination of soil, surface water or groundwater.	Inappropriate handling of waste oil during transfer of oil from delivery truck to the Turf Club dispersal vehicle.	3	3	9 – Mod	- Transfer of oil takes place only on the racetrack. - Containers maintained to ensure no leaks. - Clean-up/spill kits in all relevant areas. - Clean-up materials and wastes contained for off-site disposal at licensed waste disposal facility. - Staff trained in the appropriate handling of waste oil on site.	3	1	3 - Low	Due to the chance of human error and container failure there remains a small possibility of oil spill. Risk is reduced to ALARP.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Visual Amenity	Offence to residents and stakeholders	Appearance of site	2	2	4 – Low	- No storage of waste oils on site. - Maintain oil tanks and ensure they are sealed and without leaks. - Ensure any spills or leaks are immediately remediated. - General area has low population density and is remote from populated areas. - Consult with surrounding stakeholders about major operations, deal with any complaints promptly.	1	1	1 - Low	The residual risk is acceptable as the impact to visual amenity will be limited by the rural property aspect and limited number of surrounding stakeholders. Communication with surrounding stakeholders will ensure that any negative impacts can be minimised.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Noise	Disturbance to residents, wildlife or adjacent activities	Noise generated during routine dispersal operations – not significant in context of nearby Stuart Hwy traffic.	1	3	3 – Low	- General area has low population density and is remote from high density populations e.g. Alice Springs town centre. - Consult with surrounding land users and stakeholders. - Maintain a noise complaint register. - Conduct operations during daylight hours. - Vehicles and equipment used for waste oil dispersion operations appropriately maintained.	1	2	2 - Low	The residual risk is acceptable as the Racetrack is in a semi-isolated area, 6 km outside of Alice Springs. Flora, fauna and surrounding stakeholders remain vulnerable to noise; however, the impacts are likely to be minimal due to the infrequent operations which are restricted to daylight hours.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Potential for Fire	- Loss of vegetation - Destruction of fauna habitat	Open flames near oil carrying vehicles.	3	2	6 – Mod	- Adequate firefighting equipment maintained and located on-site; personnel trained in its use. - Fire breaks maintained. - No open flames outside of designated areas. - Assign designated smoking areas with appropriate bins for cigarette disposal. - SDS available next to flammable material. - Fire drill and emergency response conducted annually.	2	2	4 - Low	The presence of flammable and combustible materials on site and surrounding vegetation does not entirely discount the possibility of fire. However, the ALARP preventive and mitigation measures relating to oil dispersal operations reduces risk to a very low level.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Uncontrolled release of waste oil	• Soil, surface water and groundwater contamination. • Mortality of flora and fauna arising from soil, surface and groundwater contamination; and direct contact.	• Contamination from leak or spill not remediated. • Inappropriate disposal of waste oil. • Unauthorised onsite disposal.	4	2	8 – Mod	• All waste oil used are in the appropriate area for dispersal as per this EMP and NTEPA waste discharge license. • Maintenance of waste oil records including type and volumes. • No unauthorised disposal of waste oil. • NTEPA waste discharge license and stakeholder approval before any waste dispersed. • Transfer of oil between supplier and ASTC tanker takes place only on (already contaminated) racetrack.	2	1	2 - Low	If waste oil were released into the environment the severity of the risk would still be high, however the likelihood of this occurring is greatly reduced. The severity has also been reduced through mitigation, i.e. adherence to licensing requirements, clean-up materials; and containment of any spills and immediate clean-up.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Vehicle Collision with Fauna	Fauna death or injury	- Unpredictable movement of animals. - Vehicles travelling at high speeds. - Vehicles travelling at dawn or dusk or in times of poor visibility.	3	2	6 - Mod	- Limit vehicle activities to daylight hours when fauna are more visible, only drive at night if necessary or in the event of an emergency. - Limit vehicle speeds to 10 km/h except in the event of an emergency. - Ensure vehicles are inspected regularly for safety and have working lights and brakes. - No off-road driving. - Ensure all staff are aware of potential impacts to fauna from vehicle strike.	2	2	4 - Low	Due to the unpredictable nature of fauna and the use of the Racetrack area there is still a possibility that a fauna collision may occur. However, the likelihood has been greatly reduced and the severity of impact reduced through vehicle speed limits and staff awareness training.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Soil Contamination	Flora and fauna	- Repeated application of waste oil - Off-site migration - Bioaccumulation of metals overtime	3	3	9 - Mod	- Soil monitoring program at locations specified in this EMP. - Restrict amount and volume of waste oil used as a track conditioner to amounts specified under licence and this EMP. - Disperse waste oil during dry conditions, with low winds and no forecast rainfall for at least 7 days. - Only disperse waste oil in designated area as specified by this EMP.	2	2	4 - Low	Waste oil analysis indicate only very low concentration of heavy metals or contaminants of concern for ecological and human health risks. However, there is the potential for these contaminants to accumulate to potentially unsafe levels from repeated applications. Testing has indicated that migration of oil into the soil profile of the track itself is not more than 40cm, after 43 years of applications.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Surface and Groundwater Contamination	Flora and Fauna Groundwater Downstream sources	- Seepage - Rainfall run-off - Flooding - Concentration build up over years of exposure	4	3	12 - Mod	- Ground and surface water monitoring program undertaken as stipulated by this EMP. - Periodic waste oil depth penetration testing into/beneath track surface. - Restrict amount of waste oil dispersed to amounts specified by this EMP. - Only disperse waste oil during dry conditions, with low winds and no forecast rainfall. - Only disperse waste oil in designated area as specified by this EMP.	3	2	6 - Mod	Impacts on groundwater are largely irreversible in the short term, however if contamination is found, then a level of remediation measures could be enacted. Soil and groundwater monitoring will show any contamination from past waste oil disposal and inform future management approaches.

Hazard Identification			Risk Analysis			Risk Prevention and Mitigation Measures	Residual Risk			Acceptability
Hazard	Potential Impacts and receptors	Causes or potential sources	Severity	Likelihood	Risk Rating	ALARP	Severity	Likelihood	Risk Rating	Reason
Erosion and Sediment	Surface water, flora, fauna and surrounding stakeholders	- Flooding. - Inadequate Racetrack maintenance. - Large quantity of waste oil dispersed.	4	3	12 - Mod	- Racetrack is continually maintained for purpose of horse racing; - Racetrack sloped to inside of track so all runoff off the track remains within the Turf Club boundary. - Use of access tracks and access to the Racetrack limited during and directly after significant rainfall (>10 mm). - Racetrack is elevated above the 1 in 100-year flood line. - Listed waste sprayed evenly over Racetrack surface at specified rate of ~ 1 litre / m².	2	1	2- Low	Due to the high standards of maintenance and works required to maintain the Racetrack for professional horse racing, the residual erosion risk is acceptable. All works to date and future ongoing maintenance have a high focus on the integrity and lack of erosion or loss of surface soils. No erosion to date.

8 Environmental Management Performance Objectives, Standards and Measurement Criteria

The following environmental performance objectives, standards, implementation procedures and measurement criteria have been developed to address the risks identified in Section 7. Industry best practice and appropriate government guidelines have been referenced to ensure that the following management criteria represent current best practice and techniques.

As this EMP involves continual assessment and evaluation, these environmental management criteria and standards will be adapted to suit the best practice of the time. Any changes in the dispersal of the waste oil at the racecourse will be reflected in updates to this EMP.

8.1 BIODIVERSITY

Table 8-1 Objectives and procedures to minimise impacts on biodiversity.

Objective	To prevent a loss of biodiversity as a result of the use of waste oil within the Racetrack area.		
TARGETS	Implementation	Performance Standard	Measurement Criteria
1. Zero to minimal injury to native fauna. 2. Weed species controlled as per NT Government requirements. 3. No unauthorised loss or disturbance to flora, fauna or fauna habitat.	Turf Club OH&S Policy	No off-road driving.	No evidence of off-road driving in relation to waste oil dispersal.
	NTEPA Waste Licence	Amount of waste oil disposed limited to 40 KL at any one time.	Records kept of amounts of waste oil dispersed.
	Turf Club OH&S Policy	Operations restricted to daylight hours.	No evidence of after daylight operations in relation to waste oil dispersal.
	NTEPA Waste Licence	No uncontrolled release.	No evidence of waste oil released outside of approved area. Annual inspection of Racetrack and immediate surrounding area by third party qualified consultants

8.2 LAND AND SOIL

Table 8-2 Objectives and procedures to minimise impacts on land and soil.

Objective	To prevent land degradation as a result of the use of waste oil within the Racetrack area.		
TARGETS	Implementation	Performance Standard	Measurement Criteria

- Any new roads or access tracks to be constructed following DLRM and IECA best practice guidelines. - Reduce wind borne erosion through dust control measures.	Soil and land management	Appropriate erosion and sediment control devices implemented	Any erosion or sediment control device installed to meet standards as set out in the DLRM and IECA guidelines
	Stakeholder engagement	No increase in dust	Complaints register maintained

8.3 WASTE

Table 8-3 Objectives and procedures to minimise environmental impacts.

Objective	To ensure waste oil dispersal within the racecourse area is confined to approved areas		
TARGETS	Implementation	Performance Standard	Measurement Criteria
- No uncontrolled releases. - Waste dispersed in approved areas only. - All dispersal of the listed waste to comply with the NTEPA licence.	NTEPA Waste Licence	Waste oil only dispersed in area approved under EPL.	No evidence of dispersal of waste oil outside approved locations. Annual inspection of Racetrack and immediate surrounding area by third party qualified consultants
	Monitoring and review procedures	Annual observance of waste oil dispersal operations by independent qualified third party and inspections by NT EPA authorised officers.	No spills or leaks identified during routine site inspections.

8.4 AIR AND NOISE

Table 8-4 Objectives and procedures to minimise impacts on air and noise

Objective	To minimise the adverse effects on air quality and noise to surrounding receptors as a result of the use of waste oil within the Racetrack area.		
TARGETS	Implementation	Performance Standard	Measurement Criteria
- Minimal impact on the amenity of surrounding land holders. - Ensure dust and noise has minimal impact on the surrounding environment. - No increased fires.	Turf Club OH&S Policy	Conduct all operations during business hours where possible.	No evidence of after-hours work.
	Stakeholder engagement and Turf Club Traffic Policy	No excess dust or air pollution from operations.	Vehicle speed limits to reduce dust creation; consultation with surrounding

			stakeholders to ensure no impacts from excess dust.
	Site inductions and signage	No smoking or open flames around waste oil vehicle.	Induction records show 100% attendance by all staff.

8.5 WATER

Table 8-5 Objectives and procedures to minimise impacts on water

Objective	To prevent surface and ground water degradation, contamination or alteration as a result of the use of the waste oil within the Racetrack area.		
TARGETS	Implementation	Performance Standard	Measurement Criteria
1. No contamination of ground or surface water. 2. No impacts to downstream watercourse or receptors.	NTEPA Waste Licence	No waste oil stored with potential for overflow into surrounding watercourse.	Water/soil sampling of watercourse shows no contamination. Monitoring in accordance with methods prescribed in this EMP
	NTEPA Waste Licence	No waste oil dispersal with possibility of contaminating surrounding watercourses.	Water/soil sampling of watercourse shows no contamination.
	NTEPA Waste Licence	No dispersal of waste oil in area with potential to contaminate groundwater sources.	Soil sampling at depth shows no migration of contaminants into soil profile at risk of migrating to groundwater depth.

8.6 HERITAGE AND CULTURE

Table 8-6 Objectives and procedures to minimise impacts on heritage and culture

HERITAGE AND CULTURE	To ensure that all heritage and culturally significant sites are identified and protected within the Racetrack area from activities associated with the waste oil.		
TARGETS	Implementation	Performance Standard	Measurement Criteria
1. No disturbance to known cultural or heritage sites. 2. Appropriate actions taken for any potential new cultural or heritage site(s) discovered.	Soil and Land Management Policy	No unauthorised clearing.	Any land clearance approved under NT Planning Scheme 2021.
	Site Inductions	Identified heritage and culturally	Sites of significance recorded and protection measures

		significant sites clearly marked.	included in staff and contractor inductions.
	Site Inductions	No disturbance to new culturally significant or heritage site(s) discovered.	Newly discovered sites recorded, reported Turf Club CEO and the NT government Heritage Branch.

8.7 ROLES AND RESPONSIBILITIES

This section outlines the key roles and responsibilities in relation to the implementation of this EMP for the dispersal of waste oil at the Racetrack are outlined in this section.

Site Manager

As the site manager it is the responsibility of the Alice Springs Turf Club CEO to:

- Ensure that this EMP is effectively implemented;
- Ensure operations in regard to the waste oil is conducted in compliance with this EMP;
- Ensure staff training and inductions, including contactor induction is carried out;
- Undertake monitoring and compliance audits required by this EMP;
- Ensure all incidents are investigated, reported and appropriate corrective actions taken;
- Report identification of heritage or cultural sites of potentially significant value to the Heritage branch of the NT government for further advice; and
- Liaise with affected external stakeholders as required.

Site Employees

It is the responsibility of all site employees to conduct works in relation to the waste oil in accordance with the environmental and safety requirements of this EMP, including:

- Be aware of all risks involved with the dispersal of waste oil as identified in this EMP;
- Carry out activities involving the dispersal of waste oil in compliance with the Environmental Protection Licence and this EMP;
- Report any incidents or spills to the CEO immediately.
- Report to the site manager any potential heritage or culturally significant site; and
- Be ready and able to implement emergency response requirements of this EMP (use of spill kits).

9 Corrective Actions and Contingencies

9.1 SPILLS OR UNCONTROLLED RELEASES OF WASTE OILS

Any spill outside of approved dispersal areas will be reported to the NTEPA within 24 hours of occurrence and a suitably qualified third party engaged to assess impact.

9.1.1 Small Spills

Oil spills of less than 300 litres that occur outside of designated dispersal areas will be treated immediately in-situ. As much oil as possible will be removed using absorbent skill kits. Contaminated soil will be ripped to the depth of oil penetration with added fertiliser to accelerate decomposition of oil by microbes. Contaminated soil may be removed and applied to designated dispersal areas.

9.1.2 Large Spills

Oil spills larger than 300 litres require contaminated soil to be removed and remediated off site or dispersed in approved dispersal areas.

The spill, including location and volume, is to be reported to the NTEPA immediately and a suitable third party consultancy employed to assess the impacts.

10 Monitoring and Reporting

10.1 SOIL AND WATER MONITORING

10.1.1 Knowledge Gaps

Some knowledge of oil migration risk to environmental receptors has been gained through monitoring undertaken under EPL208 2017-22.

- Depth of penetration of waste oil into and beside the track; testing at 3 sites in 2020 found no detectable hydrocarbon in soil depths greater and 40cm beneath the racetrack surface, after 43 years of waste oil applications.
- Off-site migration from dispersal areas from soil testing; Although there were no recorded values for BTEX, low hydrocarbon levels measured at various soil sample sites (which are located within a few metres of the edge of the racetrack) show there is some lateral migration of oil, mobilised by rainfall (or associated with vehicle use). These results give a baseline for the environmental condition and a value for the contaminants in the soil profile of each sample location and are a sound basis for long term analysis of contaminant accumulation / movement trends at those sample sites. The previous EMP stipulated annual sampling at these soil sites however this EMP proposes that biennial sampling is a suitable sampling interval now that a baseline is established.
- Groundwater contamination; 13 groundwater sampling events of 4 bores located around the racecourse found no evidence of hydrocarbon contamination. Baseline levels of copper and zinc have been identified for each of these bores which have exceeded previously stipulated trigger levels which have been below drinking water standards (while notably this groundwater is not used for human, pastoral or industrial consumption). Base levels of groundwater electrical conductivity and turbidity exceeded trigger values in almost every case. This data should continue to be collected, with previous trigger values not being applied. There is no demonstrable link in terms of timing between oil dispersal / applications and groundwater sampling and consequently the sampling schedule is revised.
- Contamination of surrounding water courses from storage and dispersal areas; opportunistic surface water sampling has proved somewhat problematic and it has been deemed more useful

to sample selected receptor sites only when there has been significant flow of surface water from dispersal sites.

Ongoing environmental monitoring and improving upon the existing knowledge gaps will be met through ongoing soil and water monitoring, with the following 5 year program set out below.

10.1.2 Monitoring Program

In summary, the environmental monitoring program 2022 – 2027 will comprise:

- **Groundwater monitoring:** 5 bores sampled twice yearly in April and October, irrespective of applications of waste oil on the racetrack or other approved dispersal areas.
- **Soil monitoring;** 10 sample sites, precisely located in which soil is collected for laboratory analysis annually, to detect any lateral or vertical movement of hydrocarbon.
- **Waste oil penetration depth testing;** 3 randomly selected racetrack sites in which soil is sampled at 10-20 cm intervals to a minimum 60cm; to be conducted every 3 years, in 2023 and 2026.
- **Surface water analysis;** to be collected following very high rainfall from water in St Mary's Creek and the inside of the racetrack that is likely to contain runoff from the racetrack.
- **Waste Oil Characterisation;** Samples to be taken from the delivery truck outlet and analysed by NATA accredited laboratory every two years, in 2022, 2024 and 2026.

Groundwater, soil and surface water samples will be collected as scheduled by a suitably qualified third party. **Error! Reference source not found.** shows soil and groundwater sampling sites in effect for this EMP. Soil sample locations are selected to represent potential accumulation of contaminants and risks to off-site receptors, water courses and groundwater.

There are ten soil sample locations and five groundwater sample locations. Bore RN003607 collapsed in 2017 and so was not able to be used in monitoring during the term of the first EMP and was replaced by bore RN018252. Bore RN003685 is added to the monitoring program for this EMP as a longer term control site that is located further upstream where hydrocarbon contamination from the racecourse is not possible, or is extremely remote.

Surface water sample locations are not precisely determined. Surface water will be sampled opportunistically, following very large rainfall events only, when there is evidence of surface water flow into St Mary's Creek and the inside of the racetrack, where two surface water samples will be collected for analysis on these occasions.

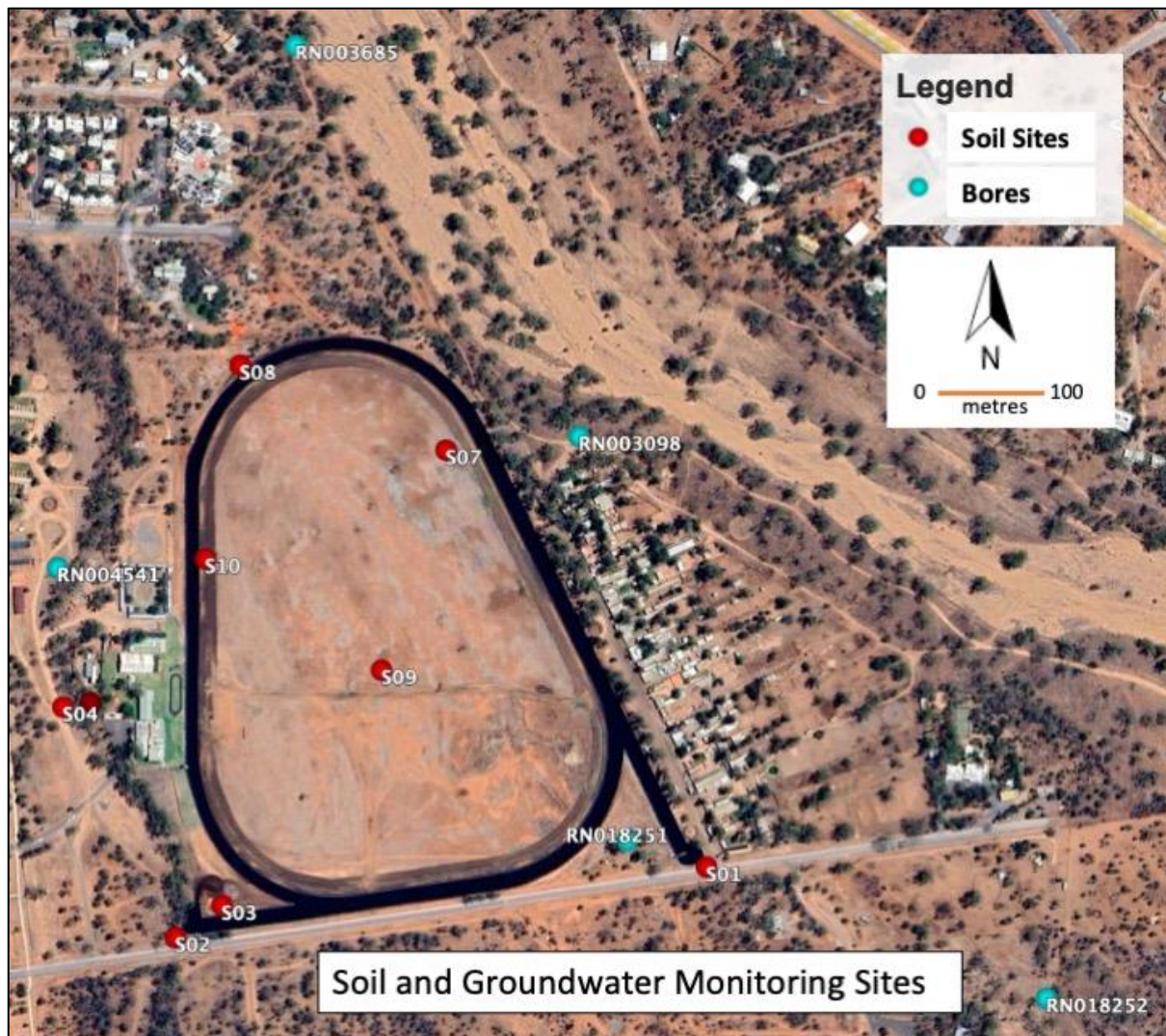


Figure 3. Locations of Soil and Groundwater Monitoring Sites.

Table 10-1 Location and description of environmental monitoring sample locations.

	Description	Latitude	Longitude
Soil Sample Sites			
S01_TC	Drain on south-eastern edge of Racetrack	-23.755726°	133.879837°
S02_TC	Drain on south-western edge of Racetrack, heading into St Marys Creek	-23.756480°	133.874159°
S03_TC	Low point on edge of south-western racetrack edge	-23.756094°	133.874604°
S04_TC	St Marys Creek, downslope from previous waste oil storage area	-23.754096°	133.873041°
S05_TC	Bank of St Marys Creek adjacent to previous waste oil storage area	-23.753999°	133.873317°
S06_TC	Inside of Racetrack on north-eastern edge of Racetrack	-23.751111°	133.877296°
S07_TC	Outside of north-eastern edge of Racetrack	-23.751405°	133.876753°
S08_TC	Outside edge of northern-western edge of Racetrack. Between Racetrack and the women's shelter	-23.750698°	133.875140°

S09_TC	Centre of Racetrack	-23.753598°	133.876436°
S10_TC	Directly inside of Racetrack surface	-23.752708°	133.874443°
Groundwater Sample Sites			
RN004541	Represents aquifer at 20 m depth	-23.752696°	133.872955°
RN003098	Represents deeper aquifer at approximately 70 m	-23.751543°	133.878430°
RN003685	Represents the aquifer at approximately 30m	-23.747991	133.875488
RN018252	Represents the aquifer at 20m	-23.756647	133.883577
RN018251	Represents aquifer at 20 m depth	-23.755405°	133.879074°
Surface Water Sample Sites			
1.	Any water in St Mary's Creek potentially containing racetrack runoff.	-	-
2.	Any water pooling in the centre of the racetrack.	-	-

10.1.3 Analysis

Based on the laboratory results of the oil analysis soil and water samples will be tested for hydrocarbons, PCBs and heavy metals. Based on the results of these analyses, future testing can be further refined to focus on contaminants of interest.

A suitably qualified third party will be contracted to undertake the monitoring program, including review. Should monitoring find unacceptable levels of contamination, this EMP will require revision to effectively manage contamination.

10.2 AUDIT AND COMPLIANCE

An annual internal compliance audit will be conducted to ensure all waste oils are:

- Dispersed only in approved areas;
- Records maintained showing all volumes of waste oil in and out;
- No evidence of contamination outside of designated dispersal areas; and
- Records of any remedial actions taken if required.

10.3 REPORTING AND REVIEW

10.3.1 Routine

All quantities of waste oil delivered to, and dispersed onsite will be recorded, including the following:

- Date;
- Source of waste oil;
- Amount of waste oil delivered and dispersed, and
- Delivery contractor.

10.3.2 Annual

Monitoring program results and audits will be reported annually to NT EPA. This EMP will be reviewed annually. Changes to the EMP will require NT EPA approval and may require amendment to the Environmental Protection Licence.

10.4 TRAINING AND AWARENESS

All staff and contractors involved with the delivery and dispersal of the waste oil will be trained and inducted into the requirements of this EMP and the Turf Club's emergency response plan. This induction will include but not be limited to, the following:

- Overview of site location and local environmental conditions;
- Current site conditions and operations;
- Location of emergency spill response kits and fire management equipment;
- Emergency muster points;
- Procedure for recording, inspection and incident reporting;
- Roles and responsibilities;
- Required personal protective equipment; and
- Key risks and associated management plans as stipulated in this EMP.

11 Communications and Stakeholder Engagement

Stakeholders potentially affected by Turf Club waste oil use activity include:

- Stable yards and trainer accommodation to the east;
- Duns Bed and Breakfast to the east;
- Aboriginal women's shelter to the north;
- CAT Project's vacant land to the south; and
- The Stuart Highway on the western boundary.

There have been no complaints to date from any interested body in the Club's activities relating to waste oil use. A complaints register will continue to be maintained, and any complaints of a serious environmental nature will be reported to the NT EPA.

12 References

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13 Appendix 1 – Oil Characterisation 2020

		Certificate of Analysis																							
UIN 07ED4E5 Used Oil		<table border="1"> <tr> <td>DATE SAMPLED</td> <td>06-May-20</td> </tr> <tr> <td>DATE RECEIVED</td> <td>21-May-20</td> </tr> <tr> <td>DATE REPORTED</td> <td>25-May-20</td> </tr> <tr> <td>TRIBOLOGY LABORATORY</td> <td>Sydney</td> </tr> </table>		DATE SAMPLED	06-May-20	DATE RECEIVED	21-May-20	DATE REPORTED	25-May-20	TRIBOLOGY LABORATORY	Sydney														
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TRIBOLOGY LABORATORY	Sydney																								
Unit No. ES2016014		<table border="1"> <tr> <td>SAMPLE NO.</td> <td>10204760611</td> </tr> <tr> <td>TRACKING NUMBER</td> <td>37399108</td> </tr> <tr> <td>WORK ORDER NO.</td> <td></td> </tr> <tr> <td>MACHINE COMPONENT</td> <td></td> </tr> <tr> <td>OIL MAKE</td> <td>Unidentified</td> </tr> <tr> <td>OIL TYPE</td> <td>Unidentified</td> </tr> <tr> <td>OIL GRADE</td> <td>-</td> </tr> <tr> <td>OIL ADDED</td> <td>Ltrs</td> </tr> <tr> <td>FILTER</td> <td>Not Applicable</td> </tr> <tr> <td>FILTER CHANGED</td> <td></td> </tr> <tr> <td>OIL CHANGED</td> <td></td> </tr> </table>		SAMPLE NO.	10204760611	TRACKING NUMBER	37399108	WORK ORDER NO.		MACHINE COMPONENT		OIL MAKE	Unidentified	OIL TYPE	Unidentified	OIL GRADE	-	OIL ADDED	Ltrs	FILTER	Not Applicable	FILTER CHANGED		OIL CHANGED	
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OIL ADDED	Ltrs																								
FILTER	Not Applicable																								
FILTER CHANGED																									
OIL CHANGED																									
Unit: Make Model Serial No. Capacity Ltrs Site		Metals (ppm) *Aluminium (Al) 9 *Nickel (Ni) <1 *Copper (Cu) 61 *Chromium (Cr) 1 *Iron (Fe) 59 *Lead (Pb) 19 *Tin (Sn) 3																							
Compartment: Name Waste Oil 1 Make Model Serial No.		Contaminants and Additives (ppm) *Silicon (Si) 25 Boron (B) 116 *Sodium (Na) 91 *Potassium (K) 49 *Phosphorus (P) 701 *Molybdenum (Mo) 19 *Calcium (Ca) 1622 *Magnesium (Mg) 64 *Zinc (Zn) 752																							
Customer: ALS ENVIRONMENTAL NSW		Physical Tests Water (%) (FTIR) >1.0 Soot (%) (FTIR) 0.7 Viscosity (cSt, 100°C) 11.7 PQ Index <10 Oxidation (Abs) (FTIR) 20.9 Sulphation (Abs) (FTIR) 7.9 *Fuel (%) 1 Total Base Number (FTIR) <0.1																							
DIAGNOSIS Results were obtained on the sample as received. Diagnosis not applicable. Please check results against requirements. Note: Sample Information Form states, 10:00AM. NATA Accreditation No.825. Site No. 2024. *NATA accreditation covers the performance of this service.																									
Analysis undertaken on the sample as received. Testing performed between Date Received and Date Reported unless otherwise specified.																									
		LEGEND  Stop  Abnormal  Caution  Normal																							
Right Solutions • Right Partner		Authorized Signatory - Diagnostician: Antonio Colangelo																							
		This document shall not be reproduced except in full.																							
		Page 1 of 2																							



Right Solutions • Right Partner
UIN 07ED4E5
10204760611

No Data Available	No Data Available
No Data Available	No Data Available
No Data Available	Filter Image Filter patch test is not performed Contact laboratory for more information

ALS Environmental NSW
 Attn: Enviro NSW Results
 277-289 Woodpark Rd
 Smithfield NSW 2164

0204 9920 V1.1.0

This analysis report is dependent upon the accurate completion of the sample submission sheet and correct sampling techniques as advised. The analysis is intended as an aid only in predicting mechanical wear and should not be regarded as a substitute for proper servicing or mechanical inspection. The company does not accept any liability whatsoever in respect of any loss or damage (including loss of profits, economic or other consequential loss or damage) however caused which may arise directly, or indirectly, as a result of the matters referred to in this analysis report.

Australia & New Zealand

Brisbane
26 Shand Street
Stafford QLD 4053
Phone: (07) 3326 6300

Perth
109 Bannister Road
Canning Vale WA 6155
Phone: (08) 9232 0400

Sydney
2/171-175 Newton Road
Wetherill Park NSW 2164
Phone: (02) 9756 3150

Muswellbrook
Unit 2/6 Industrial Close
Muswellbrook NSW 2333
Phone: (02) 65413865
Unit 1A/6 Industrial Close

Wellington
74 Seaview Road
Lower Hutt Wellington NZ 5010
Phone: (64) 04 586 6202

International Locations

U.S.A.
Atlanta, Georgia
Kansas City, Kansas
Portland, Oregon

Valley View, Ohio
Phoenix, Arizona
Sparks, Nevada

Europe
Prague

Canada
Burlington, Ontario Edmonton, Alberta

Southeast Asia
Kuala Lumpur, Singapore

South America
Santiago de Chile

All test methods are determined by laboratory location, and customer requirements. Methods can be made available on request by contacting the testing laboratory.

Alarm limits are based on a combination of trend and OEM, client and/or ALS proprietary specifications. For more information please contact your testing laboratory.

Page 2 of 2



UIN 07ED4E6

Used Oil

Unit No. ES2016014

Unit:
Make
Model
Serial No.
Capacity Ltrs
Site

Compartment:
Name Waste Oil 2
Make
Model
Serial No.

Customer:
 ALS ENVIRONMENTAL NSW

DIAGNOSIS

Results were obtained on the sample as received.
 Diagnosis not applicable. Please check results against requirements. Note: Sample Information Form states, 11:00AM.
 NATA Accreditation No.825, Site No. 2024. *NATA accreditation covers the performance of this service.

Analysis undertaken on the sample as received.
 Testing performed between Date Received and Date Reported unless otherwise specified.

Certificate of Analysis

DATE SAMPLED	06-May-20
DATE RECEIVED	21-May-20
DATE REPORTED	25-May-20
TRIBOLOGY LABORATORY	Sydney

SAMPLE NO.	10204760612
TRACKING NUMBER	37399109
WORK ORDER NO.	
MACHINE COMPONENT	
OIL	
OIL MAKE	Unidentified
OIL TYPE	Unidentified
OIL GRADE	-
OIL ADDED	Ltrs
FILTER	Not Applicable
FILTER CHANGED	
OIL CHANGED	

Metals (ppm)

*Aluminium (Al)	9
*Nickel (Ni)	<1
*Copper (Cu)	69
*Chromium (Cr)	1
*Iron (Fe)	59
*Lead (Pb)	22
*Tin (Sn)	3

Contaminants and Additives (ppm)

*Silicon (Si)	24
Boron (B)	72
*Sodium (Na)	83
*Potassium (K)	36
*Phosphorus (P)	682
*Molybdenum (Mo)	13
*Calcium (Ca)	1591
*Magnesium (Mg)	49
*Zinc (Zn)	740

Physical Tests

Water (%) (FTIR)	>1.0
Soot (%) (FTIR)	0.6
Viscosity (cSt,100°C)	12.0
PQ Index	<10
Oxidation (Abs) (FTIR)	18.6
Sulphation (Abs) (FTIR)	9.5
*Fuel (%)	1
Total Base Number (FTIR)	0.7



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Authorized Signatory - Diagnostician: Antonio.Colangelo

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Page 1 of 2

		Right Solutions • Right Partner UIN 07ED4E6 10204760612	
No Data Available	No Data Available	ALS Environmental NSW Attn: Enviro NSW Results 277-289 Woodpark Rd Smithfield NSW 2164 0268 V1.1.0	
No Data Available	No Data Available		
No Data Available	Filter Image Filter patch test is not performed Contact laboratory for more information		
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Australia & New Zealand		International Locations	
Brisbane 26 Shand Street Stafford QLD 4053 Phone: (07) 3326 6300	Perth 108 Bannister Road Canning Vale WA 6155 Phone: (08) 9232 0400	Sydney 2/171-175 Newton Road Wetherill Park NSW 2164 Phone: (02) 8786 3150	U.S.A. Atlanta, Georgia Kansas City, Kansas Portland, Oregon
Muswellbrook Unit 2/8 Industrial Close Muswellbrook NSW 2333 Phone: (02) 65413865 Unit 1A/6 Industrial Close	Wellington 74 Seaview Road Lower Hutt Wellington NZ 5010 Phone: (64) 04 586 6202	Canada Burlington, Ontario Edmonton, Alberta	Europe Prague
		Southeast Asia Kuala Lumpur, Singapore	South America Santiago de Chile
All test methods are determined by laboratory location, and customer requirements. Methods can be made available on request by contacting the testing laboratory. Alarm limits are based on a combination of trend and OEM, client and/or ALS proprietary specifications. For more information please contact your testing laboratory.			