



Fortescue
The New Force in Iron Ore

Plan



Exploration Environmental Management Plan

Environment

April 2019

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ACRONYMS

The following acronyms, defined in Table 1, have been used throughout this Plan.

Table 1: Acronyms

Acronym	Definition
BMS	Business Management System
Cwth	Commonwealth of Australia
DBCA	Department of Biodiversity Conservation and Attractions
DMIRS	Department of Mines, Industry Regulation and Safety
DWER	Department of Water and Environmental Regulation
EMS	Environmental Management System
EPA	Environmental Protection Authority
EEMP	Exploration Environmental Management Plan
EPBC	Environment Protection and Biodiversity Conservation Act
GIS	Geographical Information Systems
HSE	Health Safety and Environment
LUC	Land Use Certificate
NVCP	Native Vegetation Clearing Permit
PoW	Programme of Works
PIMS	Project Information Management System
RASCI	Responsible Accountable Supported Consulted Informed Model

1. INTRODUCTION

Fortescue Metals Group (Fortescue) is an integrated business comprised of mine, rail and port operations based in the Pilbara region of Western Australia, with its head office located in Perth.

Detailed background information regarding the timing and nature of Fortescue's environmental approvals under the *Environmental Protection Act 1986 (WA)*, the *Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)*, current operations and plans for future expansion are contained in Appendix 1 and Appendix 2.

1.1 Purpose and Scope

The purpose of the Exploration Environmental Management Plan (EEMP) is to outline the management actions and procedures applicable to Fortescue's exploration and evaluation activities across Western Australia. Application of these management actions will ensure Fortescue's environmental commitments and objectives are met.

The EEMP covers the following activities:

- Exploration Drilling Activities – where a Programme of Work (PoW) is required¹ on a Mining Act's prospecting and exploration licence.
- Resource Definition Drilling Activities² - where a Programme of Works (PoW) is required on a Mining Act's mining lease.
- Water Drilling Activities – where a Miscellaneous Licence is required on a Mining Act's prospecting and exploration licence.
- A Native Vegetation Clearing Permit (NVCP) – where NVCP is required to undertake exploration related activities on a state agreement tenure. This includes areas where clearing native vegetation in an environmentally sensitive area is required (e.g. Threatened Ecological Communities).

For the purposes of the EEMP the term *Exploration* collectively encompasses all of the above activities.

The EEMP does not address the following:

¹ Fortescue defines exploration activities as any activity that involves the drilling for minerals and requires a Programme of Works (PoW) application to be submitted under the Mining Act 1978. PoWs are usually submitted for the approval of activities such as drill lines and pads, water bores, borrow pits and exploration drill holes on exploration tenure (See Table 2).

² Resource Definition Drilling Activities involves advanced drilling programs and additional resource definition activities conducted to support the life of established mining operations

- Resource Definition Drilling Activities where a mining proposal applies over a mining lease.
- Exploration activities in New South Wales which are addressed under the New South Wales Exploration Activities -Environmental Management Plan (EX-PL-EN-0005).

1.2 Definitions

The following terms are used throughout the EEMP. Definitions are provided below to ensure their context is clear.

- Conservation significant fauna** is defined as those fauna listed as critically endangered, endangered, vulnerable or migratory under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* or as a rare or endangered fauna under the *Biodiversity Conservation Act 2016*.
- Environmentally sensitive areas** as defined in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and applicable to Fortescue's exploration activities include:
 - A defined wetland and the area within 50m of the wetland. Wetlands in relation to exploration activities include nationally important wetlands as defined in *A Directory of Important Wetlands in Australia (2001)*.
 - The area covered by vegetation within 50m of declared rare flora, including the vegetation continuous (less than 5m at one or more points) with the rare flora.
 - The area covered by a threatened ecological community.
- Exploration drilling activities** is any activity that involves the drilling for minerals and requires a PoW application to be submitted under the *Mining Act 1978*.
- Evaluation drilling activities** involve advanced drilling programs and additional resource definition activities conducted to support the life of established mining operations.
- Exploration Area** refers to the area within the boundary of an approved PoW issued under the *Mining Act 1978*.
- Raised blade clearing** involves clearing vegetation while leaving root stock and topsoil intact.
- Significant flora and vegetation** is defined by the EPA in the Environmental Factor Guideline for Flora and Vegetation as significant for a range of reasons including but not limited to:

Flora

- Being identified as Threatened or Priority species
- Locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems)
- New species or anomalous features that indicate a potential new species
- Representatives of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)
- Unusual species, including a restricted subspecies, varieties or naturally occurring hybrids
- Relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Vegetation

- Being identified as threatened or priority ecological communities
 - Restricted distribution
 - Degree of historical impact from threatening processes
 - A role as a refuge
 - Providing an important function required to maintain ecological integrity of a significant ecosystem.
- (h) **Track** is defined as a standard width track of an average of 4.5 metres. This width is considered standard due to safety considerations. Track lengths will be defined in the PoW.
- (i) **Priority weed species** is defined as:
- Weeds of National Significance
 - Declared Pests that require management within the Local Government Area(s) where the Fortescue controlled site is located
 - Environmental Weeds rated by the Department of Biodiversity Conservation and attractions (DBCA) as High and Rapid within the Pilbara Ranking Summary. Environmental weeds rated as High and Rapid and considered important for pastoralists purposes (e.g. Buffel grass and Birdwood grass) are only Priority Weeds within pastoral exclusion areas.
 - Weeds that have not been recorded in the Pilbara as Declared Pests or Environmental Weeds within the Pilbara Ranking Summary and have been determined to be introduced into the project area as a result of the implementation of the proposal.

1.3 Legislation and Regulatory Framework

Fortescue employees and contractors are required to comply with all relevant Commonwealth and State legislation. Legislation relevant to the EEMP are detailed in Table 2.

Table 2: Commonwealth and State Legislation Relating to Exploration activities

Legislation	Application
<i>Aboriginal Heritage Act 1972</i>	Provides protection of Aboriginal Heritage Sites. Requires a Section 18 approval under the Act to disturb an Aboriginal Heritage Site.
<i>Biosecurity and Agriculture Management Act 2007 and Regulations 2013</i>	Prevents new animal and plant pests and diseases from entering the state and manages the impact and spread of those pests already present in the State.
<i>Biodiversity Conservation Act 2016 (WA)</i>	Conservation and protection of biodiversity and biodiversity components within Western Australia.
<i>Bush Fires Act 1954</i>	Prevention, control and extinguishment of bush fires.
<i>Conservation and Land Management Act 1984 (WA)</i>	Provides for the vesting or reservation of land for conservation purposes, and the ability to enter into agreements with private landholders and pastoral leases. It establishes a number of statutory bodies including the Conservation and Parks Commission.
<i>Environmental Protection Act 1986 (WA)</i>	Prevention, control and abatement or pollution and conservation protection and enhancement of environment.
<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>	Protection on environmental matters of national significance.
<i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA)</i>	Regulates the clearing of native vegetation.
<i>Health Act 1911</i>	Provides for the regulation, control and management of matters relating to public health.
<i>Mining Act 1978</i>	Governs mining activities including mineral exploration and mining operations. Requires a Programme of Works approval for any activity other than general access to tenements. Mining proposals are required for larger scale activities unless the activity falls under a State Agreement.
<i>Mine Rehabilitation Fund 2012</i>	Tenement holders are required to report disturbance and contribute annually to the Mine Rehabilitation Fund (MRF). The MRF also provides for the declaration of abandoned mine sites.
<i>Rights in Water and Irrigation Act 1914 (WA)</i>	Relates to rights in water resources, to make provisions for the regulation, management, use and protection of water resources, to provide for irrigation schemes and for related purposes.
<i>Soil and Land Conservation Act 1945</i>	Addresses the conservation of soil and land resources and the mitigation of the effects of erosion.

Table 3: Approvals required to Undertake Exploration Activities and to Construct Supporting Infrastructure

Approval	Requirement	Legislation	Regulator
Programme of Work (PoW)	<p>For the purposes of this EEMP these activities include, but are not limited to:</p> <ul style="list-style-type: none"> • Clearing of drill lines and pads • Construction of borrow pits • Drilling of exploration holes • Clearing and construction of camps, laydowns etc • Construction of access roads. 	<i>Mining Act 1978</i>	DMIRS
Excess Tonnage Permit	An Excess Tonnage Permit is required for Exploration activities greater than 1000 tonnes or Prospecting activities greater than 500 tonnes	<i>Mining Act 1978</i>	DMIRS
Approval to Construct or Install an Apparatus for the Treatment of Sewage	Installation of a sewage treatment facility and effluent disposal system.	<i>Health Act 1911</i>	Department of Health Local Government Authority
Building Licence	Construction, alteration, addition to, repair, demolish, or underpin a building.	<i>Local Government (Miscellaneous Provisions) Act 1960</i>	Local Government Authority
Licence to Construct or Alter a Well (Section 26D)	<p>Any exploration activity (for both minerals and water) to:</p> <ul style="list-style-type: none"> • Commence, construct, enlarge, deepen or alter any artesian well 	<i>Rights in Water and Irrigation Act 1914</i>	DWER

Approval	Requirement	Legislation	Regulator
	<ul style="list-style-type: none"> Commence, construct, enlarge, deepen or alter any non-artesian well. <p>Monitoring bores within non-artesian aquifers are exempt from this requirement.</p>		
Form 2 (Section 26E)	Form 2 is required to be provided 1-month after completion of a non-artesian well approved under a 26D licence.	<i>Rights in Water and Irrigation Act 1914</i>	DWER
Licence to Take Water (Section 5C)	<p>Any activity which involves the taking of water from a watercourse, wetland or underground source. These activities may include, but are not limited to:</p> <ul style="list-style-type: none"> General camp purposes Dust suppression Construction purposes Drilling operations. 	<i>Rights in Water and Irrigation Act 1914</i>	DWER
Native Vegetation Clearing Permit	Required when clearing native vegetation in an 'environmentally sensitive area' (e.g. Threatened Ecological Communities) or on Agreement Mineral Leases or other Non-Mining Act tenure.	<i>Environmental Protection Act 1986</i>	DMIRS
Works Approval	<p>Construction of premises prescribed under Schedules 1 and 2 of the <i>Environmental Protection Regulations 1987</i>. Prescribed premises include, but are not limited to:</p> <ul style="list-style-type: none"> Sewage treatment facilities Landfills Material screening. 	<i>Environmental Protection Act 1986</i>	DWER

Approval	Requirement	Legislation	Regulator
Operating Licence/ Registration	<p>Operation of prescribed facilities and activities under Schedules 1 and 2 of the <i>Environmental Protection Regulations 1987</i>. These include:</p> <ul style="list-style-type: none"> • Sewage treatment facilities - Greater than 20m³ per day (equates to approximately 150 persons) • Landfills - More than 20 tonnes per year • Material screening – More than 50,000 tonnes per year. 	<i>Environmental Protection Act 1986</i>	DWER

1.4 Internal Management Plans and Procedures

Fortescue employees and contractors are required to comply with all internal procedures and guidelines. The procedures and guidelines relevant to this EEMP include:

- *Borrow Pit Management Plan (45-PL-EN-0018)*
- *Chemical and Hydrocarbon Spills Procedure (100-PR-EN-0014)*
- *Emergency Management Sub-Plan Bushfire Management (100-PL-EM-0009)*
- *Environmental Datasets – Data Governance Guidelines (100-GU-EN-0020)*
- *Exploration Drill Hole Stabilisation and Site Rehabilitation Procedure (E-PR-EN-0010)*
- *Fibrous Minerals Management (100-PR-SA-1060)*
- *Ground Disturbance and Topsoil Management Procedure (100-PR-EN-1042)*
- *Guideline for the Management of Aboriginal Cultural Heritage in Fortescue Project Areas (100-GU-HE-0003)*
- *Incident Event Management Procedure (100-PR-SA-0011)*
- *Land Use Certification (100-PR-TA-0001)*
- *Rehabilitation and Revegetation Monitoring Procedure (45-PR-EN-0027)*
- *Themeda Grasslands TEC Procedure (EX-WI-EN-0002)*
- *Weed Control Procedure (45-PR-EN-0006)*
- *Weed Hygiene Procedure (EX-PR-EN-0001).*

2. ROLES AND RESPONSIBILITIES

All Fortescue employees and contractors are required to comply with the requirements of this Plan.

The Group Manager Exploration will be accountable for ensuring the requirements of this EEMP are met during Exploration and Exploration Development.

Where responsibilities are delegated, this must be clearly recorded and communicated.

In Section 3 specific Management Actions have been attributed to the appropriate personnel.

3. KEY ENVIRONMENTAL ACTIVITIES

Many of the environmental activities³ associated with Fortescue's exploration activities have the potential to impact on the environment.

The key exploration activities undertaken by Fortescue that have the potential to impact on the environment are:

- Vegetation clearing and ground disturbance
- Drilling
- Vehicle movement
- Waste disposal
- Groundwater abstraction and discharge
- Rehabilitation
- Accommodation.

³ Fortescue uses the term 'activities' to refer to 'Environmental Aspects' as defined by ISO14001.

4. POTENTIAL ENVIRONMENTAL IMPACTS

The key potential direct and indirect environmental impacts from Fortescue's exploration activities are presented in Table 4.

Table 4: Potential Environmental impacts from Exploration Activities

Potential Environmental Impact	Details
Habitat loss and fragmentation	<p>Individual animals may potentially be harmed during vegetation clearing. Earthworks alter the topography of an area, often removing foraging areas and retreats, and exposing individuals to increased risk of predation.</p> <p>Linear infrastructure has the potential to separate habitat and create isolated vegetation. This can restrict the movement of animals and can often have long term impacts (e.g. restricting access to foraging areas, animals are killed crossing roads, genetic isolation).</p> <p>Introduction of weeds into exploration areas can impact on fauna habitat and significant vegetation community health resulting in habitat loss or fragmentation and alteration in fire regimes.</p>
Impacts to native fauna	<p>Vehicles often unavoidably kill terrestrial fauna and birds. There is also an indirect affect, with carrion resulting from collisions with vehicles attracting raptors and goannas to feed on the carcasses.</p> <p>Newly constructed roads and tracks inevitably bisect home ranges for individuals, resulting in a higher than normal number of fauna killed on tracks/roads.</p> <p>Noise and light may force terrestrial fauna away from existing habitats into new areas increasing the risk of predation or causing conflict with existing fauna assemblages. Light has the potential to attract species that forage at night on invertebrates that are attracted to the light where they come into conflict with human activities.</p> <p>An ongoing potential risk to conservation significant fauna is the presence of uncapped drill holes within Fortescue controlled sites (Malnic, 1997). Small mammals and reptiles can be caught in pipe and bucket pit-traps; therefore, it is probable that they also could be caught in uncapped drill holes. Sumps have a ramp for egress purposes.</p> <p>Poorly managed putrescible waste will attract native fauna, but also pests such as feral dogs and cats and rats and mice to human habitation areas. This can result in an increase in vermin and may alter the normal fauna assemblages in the area.</p> <p>An increase in feral animals can contribute to decline in native fauna populations and can cause significant damage to native habitats.</p>
Impacts to native vegetation and flora	<p>Dust interferes with physiological processes such as transpiration in vegetation. Whilst background levels of dust are high in the Pilbara, elevated dust loads can be caused by vegetation clearing, large disturbed areas exposed to disturbance and vehicle movement.</p> <p>Erosion can result in reduced topsoil, modified soil infiltration characteristics and altered surface drainage patterns. These processes can potentially result in vegetation health decline and an increase in sediment load runoff in surface waters.</p> <p>Native vegetation is generally adapted to fire, but changes in the frequency and intensity of fires pose a threat to species composition and vegetation structure.</p>

Potential Environmental Impact	Details
Disruption to surface hydrology	The construction of linear infrastructure and other infrastructure can disrupt patterns of surface flow, potentially exposing riparian vegetation to either reduced or increased water availability affecting vegetation health and habitat for native fauna.
Reduction in water quality	Pollution of groundwater and surface waters from spills and inappropriate storage and disposal of chemicals and hydrocarbons and wastes can impact on vegetation and native fauna. Where groundwater is discharged during drilling it can impact water quality unless contained in sump.
Contamination of soil	Pollution of soil from spills and inappropriate storage and disposal of chemicals and hydrocarbons and waste can impact on vegetation and native fauna. Soil contamination not appropriately mitigated can lead to pollution of groundwater and surface water.

5. ENVIRONMENTAL MANAGEMENT

A series of environmental management objectives have been developed to mitigate environmental impacts that could potentially be caused by Fortescue's exploration activities. These objectives include:

1. Ensure personnel and contractors are provided with appropriate training relevant to exploration activities.
2. Avoid unauthorised disturbance to registered/ known Aboriginal Heritage Sites.
3. Minimise potential environment and heritage impacts from ground disturbance activities.
4. Establish management strategies to minimise the potential impacts on significant flora and vegetation.
5. Establish management strategies to minimise the potential impacts on conservation significant fauna and their habitats.
6. Avoid the introduction and spread of weeds from exploration activities.
7. Ensure that the disposal and management of waste does not adversely affect environmental values or the health, welfare and amenity of people and land uses.
8. Ensure that chemicals and hydrocarbons are handled, transported and stored to ensure minimal environmental impact and chemical and hydrocarbon spills are managed appropriately.
9. Ensure dust emissions do not adversely impact on the environment or surrounding land users and their amenity.
10. Minimise the environmental impacts to groundwater associated with exploration drilling, bore development and test pumping activities.
11. Prevent and minimise impacts to surface water from exploration activities.
12. Minimise fire risk from exploration activities and provide coordinated management in an event of a fire.
13. Ensure exploration areas are rehabilitated in accordance with DMIRS requirements or approval.

For each objective, management actions have been developed to ensure the impacts from Fortescue's activities are managed, and that appropriate monitoring, reporting and corrective action functions are implemented to support the successful implementation of the management actions.

The key elements of the environmental management process associated with each objective are described in Table 5.

Table 5: Description of Key Elements of Environmental Process to Achieve Identified Objectives

Element	Definition/ Description
Objective	What is intended to be achieved
Management Action	Tasks undertaken to enable the objective to be met
Performance Indicators	Metrics for evaluating the outcomes achieved by Management Actions
Reporting/ Evidence	Demonstrates that the Management Action has been applied and the outcome evaluated.
Timing	Period during which the Management Action should be undertaken.
Responsibility	Accountability for ensuring management action is completed. The responsible role is dependent on project timing.

The key management actions, performance indicators, evidence, timing and responsibilities for each objective are provided in Table 6.

The Timing element is broken into Before Exploration, During Exploration and Post Exploration. These are defined as:

- **Before Exploration** means any activity conducted prior to undertaking exploration activities. This includes planning and design and PoW development and submission.
- **During Exploration** means any activity conducted during exploration. This includes clearing for drill lines and pads, drilling of exploration holes, clearing and construction of camps, laydowns and access roads.
- **Post Exploration** means any activity conducted after exploration activities have concluded. This includes rehabilitation activities and monitoring works. This does not include works conducted for proposed mining operations under a Mining Proposal.

The key management actions, performance indicators, evidence, timing and responsibilities for each objective are provided in Table 6.

Table 6: Key Management Actions for Exploration Activities

Objective 1	Ensure personnel and contractors are provided with appropriate training relevant to exploration activities				
Reference	Management Action	Performance Indicators	Reporting/Evidence	Timing	Responsibility
1.1	Ensure all personnel and contractors involved in exploration activities are made aware of their responsibilities in relation to environmental and Heritage management through the exploration or site induction program, specialist training programs and site-specific toolbox meetings. Specialist training programs may include: <ul style="list-style-type: none"> Hydrocarbon and chemical handling, storage and spill control and response Cross Cultural training Weed awareness and management Significant flora and vegetation management Fauna awareness, handling and care 	<ul style="list-style-type: none"> Environmental/Heritage management included in induction program Environmental/Heritage mitigation measures included in Toolbox meetings Specialist training programs conducted All personnel and contractors completed exploration induction program 	<ul style="list-style-type: none"> Site inductions and toolbox meeting minutes Training records 	Before Exploration/ During Exploration/ Post Exploration	Manager Exploration Manager, Geology Manager, Drilling Manager Native Title and Heritage
Objective 2	Avoid unauthorised disturbance to registered/ known Aboriginal Heritage Sites				
Reference	Management Action	Performance Indicators	Reporting/Evidence	Timing	Responsibility
2.1	Prior to ground disturbance, verify if an Aboriginal heritage survey is required. If required, ensure it is conducted in accordance with Department of Planning, Lands and Heritage guidelines and the terms of the applicable Agreement.	<ul style="list-style-type: none"> Survey conducted in accordance with Department guidelines prior to ground disturbance. Compliance with the applicable Land Access, Project or Heritage Agreement 	<ul style="list-style-type: none"> Survey report 	Before Exploration	Manager Exploration Manager, Geology Manager, Drilling Manager, Native Title and Heritage
2.2	Ensure that heritage survey reporting, and spatial data are recorded in the Corporate GIS and Document Management Systems (i.e. PIMS and Infoscope).	<ul style="list-style-type: none"> GIS, PIMS and Infoscope updated Compliance with Procedure 	<ul style="list-style-type: none"> GIS dataset PIMS record 	Before Exploration	Manager, Native Title and Heritage
2.3	Where an Aboriginal Heritage Site has been identified and cannot be avoided during ground disturbance activities, submit a Section 18 application to disturb the Aboriginal Heritage Site in accordance with the <i>Aboriginal Heritage Act 1972</i> .	<ul style="list-style-type: none"> Section 18 submitted Approval obtained and conditions met prior to disturbance 	<ul style="list-style-type: none"> Section 18 approval 	Before Exploration	Manager, Native Title and Heritage

Objective 3					
Minimise potential environment and heritage impacts from ground disturbance activities					
Reference	Management Actions	Performance Indicators	Reporting/ Evidence	Timing	Responsibility
3.1	Obtain the required approvals in Table 2 to undertake exploration activities and construct supporting infrastructure prior to ground disturbance. Where the exploration activity is proposed on DBCA managed land, consult with DBCA and develop a Conservation Management Plan, where required (DEC, 2011). Submit the endorsed Plan with the applicable PoW application.	<ul style="list-style-type: none"> PoW/licence/permit/works approval submitted and approved Conservation Management Plan developed Consultation with DBCA 	<ul style="list-style-type: none"> PoW/licence/permit/works approval application and approval Stakeholder consultation records 	Before Exploration	Manager Exploration Manager, Geology Manager, Drilling
3.2	Minimise disturbance and erosion where practicable by using existing tracks and pads and minimising track widths and drill pad size. Where safe operating distances are unable to be achieved within the standard pad sizes or hydrogeological conditions require a larger pad or sump, provide sufficient justification for a larger disturbance area in the PoW application and refer to the typical pad layouts in Figures 3-11.	<ul style="list-style-type: none"> Existing tracks and pads used where possible PoW application submitted and approved Compliance with the Guidelines 	<ul style="list-style-type: none"> PoW application 	Before Exploration	Manager, Exploration Manager, Drilling
3.3	When clearing vegetation for new tracks or drill pads (exploration and water bore drill pads) is necessary, ensure vegetation clearing requirements minimise the size of cleared working areas without compromising safety. Refer to the standard pad layouts in Figures 3-11 and standard track clearances in Figures 12-18.	<ul style="list-style-type: none"> Compliance with PoW Compliance with LUC Compliance with the EEMP. 	<ul style="list-style-type: none"> PoW application 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
3.4	Where the proposed drilling activities require a track width of >4.5m for major access to projects, provide sufficient justification for the larger disturbance area in the PoW application. Refer to standard track Figures 12-18.	<ul style="list-style-type: none"> PoW application submitted and approved 	<ul style="list-style-type: none"> PoW application 	Before Exploration	Manager, Exploration Manager, Geology Manager, Drilling
3.5	Minimise disturbance and erosion where practicable in steep terrain. <ul style="list-style-type: none"> Where hillside disturbance is required for drill pad construction, place the drill pad on shallow slopes where possible and estimate the slope and tonnage in the PoW application. Where hillside disturbance is required for track construction, plan the track route to avoid gully's and steep slopes where possible and estimate the slope and tonnage in the PoW application. Where cut and fill pads and/or tracks are necessary utilise the DMIRS hillside tonnage calculator to determine the tonnage disturbance and include in the PoW application. 	<ul style="list-style-type: none"> Drill pads placed on shallow slopes where possible DMIRS hillside tonnage calculator used for cut and fill 	<ul style="list-style-type: none"> PoW application 	Before Exploration	Manager Exploration Manager, Geology Manager, Drilling

Objective 3					
Minimise potential environment and heritage impacts from ground disturbance activities					
3.6	<p>Conduct a desktop assessment for a LUC⁴ application in accordance with the <i>Land Use Certification Procedure (100-PR-TA-0001)</i>.</p> <p>When an environmentally sensitive area, significant species⁵ and/or Aboriginal Heritage Site are identified during the desktop assessment relocate the activity where possible. Where the exploration activity is unable to be relocated:</p> <ul style="list-style-type: none"> Ensure a flora survey is conducted in accordance with EPA guidance outlined in Section 1.3 of the EEMP; and/or Ensure a fauna survey is conducted in accordance with EPA and/or Department of the Environment and Energy (DoEE) guidance outlined in Section 1.3 of the EEMP; and/or Discuss with the Heritage Department to ensure compliance with the applicable Legislation, Land Access, Project or Heritage Agreement. 	<ul style="list-style-type: none"> Significance species and Aboriginal Heritage sites avoided if possible Assessments conducted prior to disturbance Surveys conducted where required Compliance with the LUC Procedure and PoW conditions Compliance with the applicable Legislation, Land Access, Project or Heritage Agreement 	<ul style="list-style-type: none"> Survey Reports Approval documentation Consultation records Compliance audits 	Before Exploration	<p>LUC assessment and compliance with Land Access or Heritage Agreement:</p> <p>Manager, Exploration Manager, Geology Manager, Drilling Manager, Native Title and Heritage</p> <p>Undertake flora and fauna surveys:</p> <p>Group Manager Environment</p>
3.7	<p>Minimise clearing and vegetation disturbance to ensure significant flora and fauna species and Aboriginal Heritage Sites are protected and dust and erosion are minimised. Avoid heavily vegetated areas where possible. Use appropriate machinery for the activity and the environmental conditions to conduct vegetation clearing in accordance with a permit issued under the <i>Land Use Certification Procedure (100-PR-TA-0001)</i> advice provided with a PoW approval and relevant tenement conditions.</p>	<ul style="list-style-type: none"> No disturbance to significant species or Aboriginal Heritage sites Appropriate machinery used Existing tracks/pads used where possible LUC obtained Clearing within specified LUC boundary Compliance with Procedure, PoW approval 	<ul style="list-style-type: none"> Ground disturbance permit and application Annual Environmental Report 	During Exploration	<p>Manager, Exploration Manager, Geology Manager, Drilling</p>
3.8	<p>Where possible, clearing should not be undertaken where adverse weather conditions (i.e. excessive wind or rain) would result in significant topsoil losses.</p>	<ul style="list-style-type: none"> No significant loss of topsoil 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	<p>Manager, Exploration Manager, Geology Manager, Drilling</p>
3.9	<p>Where possible, use raised blade clearing for new tracks and drill pads unless the clearing is for cut and fill disturbance or the DMIRS has approved the use of lowered blade clearing techniques. Stockpile the vegetation accordingly.</p>	<ul style="list-style-type: none"> Raised blade clearing used DMIRS approval obtained if required 	<ul style="list-style-type: none"> Site audit reports DMIRS approval 	During Exploration	<p>Manager, Exploration Manager, Geology Manager, Drilling</p>
3.10	<p>When raised blade clearing is not used, clear vegetation and topsoil to a minimum depth of 100mm and stockpile separately in rows no higher than 2m and in close proximity to the disturbed area. When excavating for sumps and costeans ensure subsoil is stockpiled separately.</p>	<ul style="list-style-type: none"> Vegetation and topsoil cleared to a minimum of 100mm Material stockpiled separately Stockpile height <2m 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	<p>Manager, Exploration Manager, Geology Manager, Drilling</p>

⁴ Land Use Certificate system (LUC) - an internal permit system required to undertake on-ground activities.

⁵ Significant species are conservation significant fauna and conservation significant vegetation and flora as defined in the *Conservation Significant Fauna Management Plan (100-PL-EN-0022)* and the *Vegetation Health Monitoring and Management Plan (100-PL-EN-1020)*

Objective 3		Minimise potential environment and heritage impacts from ground disturbance activities			
3.11	Vegetation cleared during exploration activities must not be burnt, with vegetation stockpiled for use during rehabilitation activities.	<ul style="list-style-type: none"> Vegetation stockpiled 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
3.12	When ground disturbance activities have resulted in injury or death to conservation significant fauna or unauthorised disturbance to significant flora and vegetation or an Aboriginal Heritage Site, investigate and report the incident.	<ul style="list-style-type: none"> BMS updated Incident reported to the appropriate Regulator where required Compliance with the Incident Event Management Procedure 	<ul style="list-style-type: none"> BMS record Reporting record 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 4 Establish management strategies to minimise the potential impacts on significant flora and vegetation					
Reference	Management Action	Performance Indicators	Reporting/ Evidence	Reference	Responsibility
4.1	Ensure significant flora and vegetation identified during flora surveys (See Action 3.6) are recorded in the Corporate GIS and Document Management System (i.e. PIMS, Sharepoint).	<ul style="list-style-type: none"> • GIS and Document Management System updated • Compliance with <i>Environmental Datasets – Data Governance Guidelines</i> 	<ul style="list-style-type: none"> • GIS dataset • PIMS record 	During Exploration	Group Environment Manager
4.2	Where Declared Rare Flora (DRF) have been identified and cannot be avoided during ground disturbance activities obtain a licence to disturb DRF prior to disturbance in accordance with the <i>Biodiversity Conservation Act 2016</i> .	<ul style="list-style-type: none"> • Licence obtained prior to disturbance • Compliance with EEMP 	<ul style="list-style-type: none"> • Licence 	Before Exploration	Group Environment Manager
4.3	Prior to disturbance, ensure known locations of environmentally sensitive areas (and the associated buffer) to be protected and retained from disturbance are identified in the LUC in conjunction with awareness of personnel working in the area. Where the environmentally sensitive area is a TEC, and the TEC is Themeda Grasslands, adhere to the <i>Themeda Grasslands TEC Procedure</i> (EX-WI-EN-0002) otherwise consult with DBCA to determine an appropriate buffer to ensure the area is adequately protected.	<ul style="list-style-type: none"> • No disturbance to significant flora or vegetation • Site personnel working in the area are made aware of ESA location and measures for protection • Compliance with Procedure • DBCA consulted where required 	<ul style="list-style-type: none"> • Incident reports • Site audit reports • DBCA consultation records 	Before Exploration	Manager, Exploration Manager, Geology Manager, Drilling
4.4	Where DRF, Priority Flora or TECs/PECs have been identified, mark out a 10m buffer around these areas, unless otherwise specified, with green and white environment tape to ensure no disturbance occurs within the associated buffers.	<ul style="list-style-type: none"> • No significant impact on significant flora or vegetation • Environment tape installed • Compliance with the Ground disturbance and Topsoil Management Procedure 	<ul style="list-style-type: none"> • Incident reports • Flagging • Site audit reports 	Before Exploration During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
4.5	Where possible, design and locate any excavations such as sumps and costeans away from the drip line of significant flora and vegetation to minimise potential root disturbance and prevent horizontal transmission of potentially hostile material.	<ul style="list-style-type: none"> • Sumps and costeans away from drip line 	<ul style="list-style-type: none"> • Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 5					
Establish management strategies to minimise the potential impacts on conservation significant fauna and their habitats					
Reference	Management Action	Performance Indicators	Reporting/ Evidence	Reference	Responsibility
5.1	Undertake subterranean fauna surveys in accordance with sampling methods defined in the <i>Technical Guidance Sampling Methods for Subterranean Fauna</i> . Ensure the sampling is scheduled within the rehabilitation timeframes required under the PoW or NVCP. Where sampling is required within drill holes approved under different approvals, ensure the sampling schedule aligns with the different rehabilitation timeframes.	<ul style="list-style-type: none"> Survey reports completed 	<ul style="list-style-type: none"> Survey reports 	During Exploration	Manager, Environmental Approvals
5.2	Ensure conservation significant fauna identified during fauna surveys (See action 3.4) are recorded in the Corporate GIS and Document Management System (i.e. PIMS, Sharepoint).	<ul style="list-style-type: none"> GIS and Document Management System updated Compliance with <i>Environmental Datasets – Data Governance Guidelines</i> (100-GU-EN-0020). 	<ul style="list-style-type: none"> GIS dataset Document Management System record 	During Exploration	Manager, Environmental Approvals
5.3	Where a native fauna injury or death has occurred as a result of Fortescue exploration activities investigate and report the incident. Causes of incidents will be determined and management procedures will be modified (as required), with measures taken to prevent re-occurrence of incidents.	<ul style="list-style-type: none"> Incident reported in BMS Incident investigated according to Incident Event Management Procedure Incident reported to Regulator within the specified legislative or licensing condition, where required 	<ul style="list-style-type: none"> Incident Report in BMS Correspondence with relevant Regulator 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
5.4	Ensure conservation significant fauna identified during fauna surveys (See action 3.6) are recorded in the Corporate GIS and Document Management System (i.e. PIMS, Sharepoint).	<ul style="list-style-type: none"> GIS and Document Management System updated Compliance with <i>Environmental Datasets – Data Governance Guidelines</i> 	<ul style="list-style-type: none"> GIS dataset Document Management System record 	During Exploration	Group Environment Manager
5.5	Ensure adequate and effective fauna egress, exit structures and/or exclusion methods are included in the design of any excavations including sumps and costeans to avoid fauna entrapment, injury or death.	<ul style="list-style-type: none"> No mortality of fauna Fauna incidents are recorded in BMS Compliance with Management Plan 	<ul style="list-style-type: none"> BMS record 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
5.6	Adhere to appropriate speed limits on all roads to minimise fauna strikes and prevent fauna fatalities and injuries.	<ul style="list-style-type: none"> Road strikes reported in BMS Environmental mitigation measures included in Toolbox meetings 	<ul style="list-style-type: none"> BMS record 	During Exploration/ Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling
5.7	Temporarily plug drill holes immediately after drilling is complete to avoid fauna becoming trapped or harmed.	<ul style="list-style-type: none"> 0% of all drill holes at ground level are uncapped No mortality of conservation significant fauna as a result of uncapped drill holes 	<ul style="list-style-type: none"> Register of all drill holes Completed drill hole checklist Audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 5	Establish management strategies to minimise the potential impacts on conservation significant fauna and their habitats				
		<ul style="list-style-type: none"> Compliance with the Exploration Drill Hole Stabilisation and Site Rehabilitation Procedure 			
5.8	<p>If conservation significant fauna are identified, other than during a survey conducted in Action 3.6, record the sighting in BMS. Where the sighting is confirmed by a qualified fauna specialist⁶, ensure the Corporate GIS, Corporate Document Management System and BMS are updated.</p>	<ul style="list-style-type: none"> Sighting has been confirmed by a fauna specialist The Corporate GIS, Document Management System and BMS are updated 	<ul style="list-style-type: none"> Confirmation from specialist GIS dataset BMS record 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

⁶ Fauna specialist as defined by the EPA in the *Guidance for the Assessment of Environmental Factors No.56 – Terrestrial Fauna Surveys for Environmental Impact Assessments*.

Objective 6					
Avoid the introduction and spread of weeds from exploration activities					
Reference	Management Action	Performance Indicators	Reporting/ Evidence	Reference	Responsibility
6.1	Ensure priority weed species identified during flora surveys (See action 3.6) are recorded in the Corporate GIS and Document Management System.	<ul style="list-style-type: none"> • GIS and Document Management System updated • Compliance with <i>Environmental Datasets – Data Governance Guidelines</i> 	<ul style="list-style-type: none"> • GIS dataset • Document Management System record 	During Exploration	Group Manager Environment
6.2	Implement weed hygiene requirements for high risk vehicles, plant and equipment in identified weed risk areas and/or in areas where weed populations have been identified and high-risk activities are proposed to be undertaken as outlined in the <i>Weed Hygiene Procedure</i> (EX-PR-EN-0001).	<ul style="list-style-type: none"> • Weed hygiene undertaken in weed risk areas and/or in areas where weed populations have been identified and high-risk activities are proposed • Compliance with the <i>Weed Hygiene Procedure</i> 	<ul style="list-style-type: none"> • LUC conditions • Completed inspection/ clean down checklists where required 	Before Exploration/ During Exploration/ Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling
6.3	Prior to conducting ground disturbance activities, ensure known locations of weed populations are identified and management measures to minimise the potential for weed spread are included in the LUC.	<ul style="list-style-type: none"> • LUC approval includes weed management measures 	<ul style="list-style-type: none"> • LUC approval • LUC inspections 	Before Exploration/ During Exploration/	Manager, Exploration Manager, Geology Manager, Drilling
6.4	Inspect known populations of priority weed species and in rehabilitated areas conduct inspections to identify new weed outbreaks. Pay particular attention to areas where groundwater is being discharged and waste is being irrigated. Where required, implement control methods and ensure GIS is updated.	<ul style="list-style-type: none"> • New priority weed populations registered in BMS and GIS • Control activities recorded in BMS 	<ul style="list-style-type: none"> • Inspection record, including reports • BMS record • GIS dataset 	During Exploration/ Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling
6.5	If a new priority weed species is identified during exploration activities update BMS with the record and include the species in the site-specific weed control program.	<ul style="list-style-type: none"> • New population of priority weed species recorded in the BMS Plant and Animal register • Control program updated with priority weed species identified 	<ul style="list-style-type: none"> • BMS Plant and Animal record • Control program updated with priority weed species identified 	During Exploration/ Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 7 Ensure that the disposal and management of waste does not adversely affect environmental values or the health, welfare and amenity of people and land uses					
Reference	Management Action	Performance Indicators	Reporting / Evidence	Reference	Responsibility
7.1	Putrescible and inert wastes will be disposed to an appropriate Landfill Facility either on or off site.	<ul style="list-style-type: none"> Landfill waste disposed to an appropriate facility Compliance with EEMP Compliance with the Waste Management Plan 	<ul style="list-style-type: none"> Site Inspection Reports Disposal records 	During Exploration	Manager, Exploration Manager, Geology
7.2	Designated bulk bags for putrescible waste will be made available and securely closed when in use.	<ul style="list-style-type: none"> Bulk bags are available and securely closed when in use 	<ul style="list-style-type: none"> Site Inspection Reports 	During Exploration	Manager, Exploration Manager, Geology
7.3	Hydrocarbon and chemical wastes (including oily water) shall be segregated from the general waste stream and removed offsite by an appropriately licensed controlled waste contractor for disposal.	<ul style="list-style-type: none"> Hazardous wastes disposed to licensed facility Compliance with the Environmental Protection (Controlled Waste) Regulations and tracking system Compliance with EEMP Compliance with the Chemical and Hydrocarbon Management Plan 	<ul style="list-style-type: none"> Site audit report Controlled waste tracking form 	During Exploration/ Post Exploration	Manager, Exploration Manager, Geology
7.4	<p>Manage waste materials and on-site waste facilities as detailed below to minimise potential impacts on human health, fauna and a potential increase in feral animals. Waste management measures include:</p> <ul style="list-style-type: none"> Skip bins to be covered Bulker bags tied up during use All bins to have closed lids Hydrocarbon wastes disposed of in red bins (i.e. used rags) Spill Kits available in yellow bins and marked accordingly Any material contaminated with asbestos (including potentially contaminated samples) must be double bagged, labelled and placed in a Drum marked as per the <i>Asbestos Management Plan</i>, with the drum placed in the Asbestos holding area and disposed of as soon as possible. 	<ul style="list-style-type: none"> Compliance with EEMP 	<ul style="list-style-type: none"> Internal audit and inspection reports Site audit report 	During Exploration	Manager, Exploration Manager, Geology
7.5	Drill samples will be emptied out of sample bags into sumps, drill holes or other excavations before backfilling. The sample bags must be removed from site and disposed of at an appropriately licensed facility.	<ul style="list-style-type: none"> Sample bags disposed appropriately Drill samples disposed in sumps, drill holes or other excavations 	<ul style="list-style-type: none"> Site audit report Completed drill hole checklist 	Post Exploration	Manager, Exploration Manager, Geology

Objective 8 Ensure that chemicals and hydrocarbons are handled, transported and stored to ensure minimal environmental impact and chemical and hydrocarbon spills are managed appropriately					
Reference	Management Action	Performance Indicators	Reporting / Evidence	Reference	Responsibility
8.1	Chemical and hydrocarbons, and associated waste, will only be stored and handled accordingly: <ul style="list-style-type: none"> Storage of chemical and hydrocarbons and associated waste will be in designated areas with a current Safety Data Sheet (SDS) available for all chemicals stored Chemicals brought to site are on ChemaAlert and appropriate disposal methods are in place Chemical and hydrocarbon wastes to be stored in appropriate bins for controlled waste removal. 	<ul style="list-style-type: none"> Compliance with EEMP Chemical and hydrocarbons and associated wastes only stored in designated areas SDS available for all stored chemicals and hydrocarbons. Compliance with the <i>Chemical and Hydrocarbon Management Plan</i> 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration
8.2	Chemicals and hydrocarbons must be stored in accordance with AS1940, AS 3833 or AS 3780 to minimise the potential for environmental harm.	<ul style="list-style-type: none"> Compliance with storage requirements of AS 1940, AS 3833 and AS 3780 Safety Data Sheets (SDS) available for all stored goods 	<ul style="list-style-type: none"> Site inspection/audit reports Available SDSs 	Before Exploration/ During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
8.3	Chemical and hydrocarbons must be stored in bunded storage facilities capable of storing 110% of the volume of the largest vessel, or 25% of the total volume.	<ul style="list-style-type: none"> Storage in bunded facility/pallet Spills reported as an incident 	<ul style="list-style-type: none"> Site audit reports Incident report in BMS 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
8.4	Ensure chemicals and hydrocarbons are transported in accordance with the Australian Dangerous Goods Code (ADGC) and are appropriately stowed and restrained to prevent any movement which may result in a leak or spill.	<ul style="list-style-type: none"> Chemicals and hydrocarbons stowed and restrained during transported Transported according to ADGC 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
8.5	Where a hydrocarbon leak or spill has occurred as a result of drilling activities, place an adequately sized drip tray and/or spill matting under the drill rig to prevent soil contamination and to contain the leakage/spill in accordance with PoW conditions.	<ul style="list-style-type: none"> Drip trays placed under drill rigs Spill kits stored on drill rigs 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
8.6	Maintain appropriately sized spill response equipment in each vehicle and facility storing chemicals and hydrocarbons and in close proximity to where chemicals and hydrocarbons are being used.	<ul style="list-style-type: none"> Compliance with EEMP Compliance with <i>Chemical and Hydrocarbon Management Plan</i> Spill kit appropriately sized 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
8.7	Where a chemical or hydrocarbon spill has occurred as a result of Fortescue exploration activities, investigate and report the incident and manage the spill (including contaminated soil) as per the <i>Chemical and Hydrocarbon Spills Procedure</i> (100-PR-EN-0014).	<ul style="list-style-type: none"> Incident reported in BMS Incident investigated according to Incident Event Management Procedure Incident reported to Regulator within specified legislative or licensing condition, where required 	<ul style="list-style-type: none"> Incident Report in BMS Correspondence with relevant Regulator 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 9 Ensure dust emissions do not adversely impact on the environment or surrounding land users and their amenity					
Reference	Management Action	Performance Indicators	Reporting / Evidence	Reference	Responsibility
9.1	Fit drill rigs with dust suppression systems to minimise the potential for dust deposition on vegetation.	<ul style="list-style-type: none"> Dust suppression system fitted Dust emissions minimised 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
Objective 10 Minimise the environmental impacts to groundwater associated with exploration drilling, bore development and test pumping activities					
Reference	Management Action	Performance Indicators	Reporting / Evidence	Reference	Responsibility
10.1	When constructing or altering a bore under the <i>Rights in Water and Irrigation Act 1914</i> : <ul style="list-style-type: none"> obtain a licence in accordance with Section 26D submit a Form 2 under Section 26E one month after completion of a non-artesian well obtain a licence in accordance with Section 5C when operating a bore. 	<ul style="list-style-type: none"> Necessary licence(s) obtained Compliance with the <i>Rights in Water and Irrigation Act 1914</i> 	<ul style="list-style-type: none"> 26D License 5C Licence Form 2 	Before Exploration/ During Exploration	Manager Exploration Manager, Geology Manager, Drilling
10.2	When constructing a sump, ensure it has sufficient capacity to contain expected groundwater quantities with additional volume for excess fluid produced during exploration drilling.	<ul style="list-style-type: none"> Water quantities contained Audit to determine if sump is adequate 	<ul style="list-style-type: none"> Internal audit and inspection reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
10.3	When test pumping bores subject to soil erosion or adjacent to sensitive receptors, manage discharge in order to prevent scouring and minimise erosion.	<ul style="list-style-type: none"> No significant soil erosion No impacts to significant flora, vegetation, fauna or fauna habitat Discharge rates reduced 	<ul style="list-style-type: none"> Internal audit and inspection reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
10.4	Contain generators/pumps used for test pumping to reduce the risk of a hydrocarbon spill and potential soil and groundwater contamination.	<ul style="list-style-type: none"> No impacts to significant flora, vegetation or fauna No soil or groundwater contamination Compliance with the EEMP 	<ul style="list-style-type: none"> Internal audit and inspection reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
10.5	When an uncontrolled release of water has occurred as a result of exploration activities and the release has caused or is likely to cause pollution or environmental harm as defined in the <i>Environmental Consequence Descriptors Matrix</i> (100-MX-EN-0001), investigate and report the incident.	<ul style="list-style-type: none"> Incident reported in BMS Incident investigated according to <i>Incident Event Management Procedure</i> Incident reported to Regulator within the specified legislative timeframe, where required 	<ul style="list-style-type: none"> Incident report Correspondence with relevant Regulator Annual reporting 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
10.6	All water encountered during drilling will be contained within the drill pad, whilst water contained in the sumps will be allowed to settle and either evaporate or infiltrate. Each sump will have sufficient capacity to contain expected groundwater volumes and allow water to settle to minimise turbidity.	<ul style="list-style-type: none"> No significant soil erosion No impacts to significant flora, vegetation, fauna or fauna habitat 	<ul style="list-style-type: none"> Internal audit and inspection reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 11 Prevent and minimise impacts to surface water from exploration activities					
Reference	Management Action	Performance Indicators	Reporting / Evidence	Reference	Responsibility
11.1	Where possible, design and locate camps and other infrastructure with potential to release contaminants into surface waterways away from natural creeks, water bodies and waterways.	<ul style="list-style-type: none"> No contamination of surface waterways Infrastructure located away from natural creeks and waterways Toilets located >100m from drainage lines and in a location with vertical buffer of at least 2 metres from expected maximum wet season water table. 	<ul style="list-style-type: none"> Site audit reports 	Before Exploration/ During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
11.2	Ensure borrow pits and other excavations are designed, located and constructed to design specifications to minimise interference and disruption of natural surface water flows and quality and impacts on turbidity and the establishment of ponded water.	<ul style="list-style-type: none"> Borrow pits comply with design specifications Compliance with the EEMP 	<ul style="list-style-type: none"> Site audit reports 	Before Exploration/ During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
11.3	Design and locate borrow pits to minimise the potential impact on fauna and associated habitat.	<ul style="list-style-type: none"> Impacts on fauna and associated habitat is minimised Borrow pits located away from fauna and associated habitat 	<ul style="list-style-type: none"> Survey Reports Development Plans Borrow pit design and location 	Before Exploration/ During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
11.4	Ensure new tracks, drill pads and sample farms avoid drainage lines and limit impacts on river/creek beds and banks. Where access tracks are required to cross natural creeks and waterways, ensure tracks and the associated windrows do not block water flows and impact on riparian vegetation.	<ul style="list-style-type: none"> Drainage infrastructure complies with design specifications No significant impact on riparian vegetation 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
11.5	Minimise disruption of natural surface water flow by ensuring surface water does not pond against structures and bunds.	<ul style="list-style-type: none"> No disruption of natural surface water flows No ponding against structures or bunds 	<ul style="list-style-type: none"> Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 12					
Minimise fire risk from exploration activities and provide coordinated management in the event of a fire					
Reference	Management Action	Performance Indicators	Reporting / Evidence	Reference	Responsibility
12.1	Construct and maintain firebreaks around accommodation areas (permanent or temporary camping), chemical and hydrocarbon storage areas and other assets.	<ul style="list-style-type: none"> • Fire breaks constructed and maintained 	<ul style="list-style-type: none"> • Site audit reports 	During Exploration	Manager, Exploration Manager, Geology
12.2	Exploration vehicles will have dry chemical fire extinguishers and accommodation areas will have sufficient, reliable fire water supplies (e.g. portable fire trailer) in place to effectively suppress or extinguish fires.	<ul style="list-style-type: none"> • Fire suppression equipment in place • Compliance with EEMP 	<ul style="list-style-type: none"> • Site audit reports 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
12.3	Where a fire has occurred as a result of Fortescue exploration activities, investigate and report the incident and manage the fire in accordance with the <i>Emergency Management Sub-Plan Bushfire Management Plan</i> (100-PL-EM-0009).	<ul style="list-style-type: none"> • Incident reported in BMS • Incident investigated according to <i>Incident Event Management Procedure</i> • Incident reported to Regulator within specified legislative or licensing condition, where required • Compliance with EEMP 	<ul style="list-style-type: none"> • Incident Report in BMS • Correspondence with relevant Regulator 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling
12.4	When a bushfire is identified within twenty kilometres of an exploration asset, notification must be sent to Emergency Services who will provide the necessary notification to internal and external stakeholders and manage and respond to the fire where necessary.	<ul style="list-style-type: none"> • Bushfire notification received • Compliance with EEMP • Compliance with the <i>Emergency Management Sub-Plan Bushfire Management Plan</i> 	<ul style="list-style-type: none"> • Bushfire notification 	During Exploration	Manager, Exploration Manager, Geology Manager, Drilling

Objective 13					
Ensure exploration areas are rehabilitated in accordance with DMIRS requirements					
Reference	Management Action	Performance Indicators	Reporting/ Evidence	Reference	Responsibility
13.1	All disturbed areas will be progressively rehabilitated and made safe, stable, and non-polluting and have demonstrated capacity to support a self-sustaining ecosystem similar to surrounding natural environments.	<ul style="list-style-type: none"> Compliance with <i>Exploration Drill Hole Stabilisation and Site Rehabilitation Procedure</i> Rehabilitation completed within timeframe 0% of all drill holes at ground level are uncapped No mortality of conservation significant fauna as a result of uncapped drill holes Monitoring conducted 	<ul style="list-style-type: none"> Monitoring reports Register of all drill holes Survey reports 	During Exploration/ Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling
13.2	Where the disturbed area is a TEC, and the TEC is Themeda Grasslands, adhere to the rehabilitation requirements outlined in the <i>Themeda Grasslands TEC Procedure</i> (EX-WI-EN-0002) and undertake data analysis in accordance with the <i>Rehabilitation and Revegetation Monitoring Procedure</i> (45-PR-EN-0027).	<ul style="list-style-type: none"> Compliance with Procedure Monitoring conducted in accordance with the Procedure Reporting undertaken in accordance with the Procedure 	<ul style="list-style-type: none"> Inspection/audit reports Monitoring reports Correspondence with Regulator 	During Exploration/ Post Exploration	Manager, Exploration Manager, Drilling Group Manager, Environment
13.3	<p>Upon completion of ground disturbing activities complete rehabilitation activities in accordance with the conditions of the approved PoW or NVCP and:</p> <ul style="list-style-type: none"> Where rehabilitation activities are required in an environmentally sensitive area or in an area with recorded significant species⁵, complete rehabilitation within 6 months of the completion of ground disturbing activities. <p>Where rehabilitation works are unable to be completed within 6 months of the completion of ground disturbing activities, <u>seek approval from DMIRS for an alternate timeframe</u>. Specifically,</p> <ul style="list-style-type: none"> Where rehabilitation activities are required outside of an environmentally sensitive area or outside of an area with recorded significant species, seek approval for rehabilitation activities within 12 months of the completion of ground disturbing activities. Where access tracks are considered semi-permanent ensure rehabilitation timeframes are extended appropriately. Where rehabilitation activities are unable to be completed within the agreed timeframe and the rehabilitation activities are not in an environmentally sensitive area or in an area with recorded significant species provide justification and seek approval for an extension from DMIRS. 	<ul style="list-style-type: none"> Rehabilitation completed as per the approved PoW or NVCP. Where rehabilitation is unable to be completed within the approved timeframe approval for an extension from DMIRS is obtained. 	<ul style="list-style-type: none"> Register of all drill holes Survey/Audit reports Monitoring reports Correspondence with Regulator 	During Exploration	Manager Exploration Manager, Geology Manager, Drilling
13.4	<p>Where tracks are to be retained for future exploration works, consult with DMIRS and obtain approval from:</p> <ul style="list-style-type: none"> the owner on freehold land the relevant vested authority on crown land or reserves 	<ul style="list-style-type: none"> Approval obtained from owner/vested authority/Pastoral Leaseholder 	<ul style="list-style-type: none"> Approval letter 	During Exploration	Manager Exploration Manager, Geology Manager Pastoral Access

Objective 13	Ensure exploration areas are rehabilitated in accordance with DMIRS requirements				
	<ul style="list-style-type: none"> the Pastoral Leaseholder on a pastoral lease. 				
13.5	Once bore construction and test pumping activities are finalised and the water within the sumps has evaporated/infiltrated, backfill with stockpiled soil and progressively rehabilitate. If the bore is not required for ongoing monitoring or water supply, bores should be decommissioned in accordance with the requirements outlined in the Minimum Construction Requirements for Water Bores in Australia (ARMCANZ, 2011).	<ul style="list-style-type: none"> Rehabilitation of sumps Compliance with Guideline 	<ul style="list-style-type: none"> Internal audit and inspection reports 	During Exploration/ Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling
13.6	Where required and practicable, rehabilitate drainage lines.	<ul style="list-style-type: none"> Previously disturbed areas resemble undisturbed natural contours Compliance with EEMP Compliance with the Surface Water Management Plan Compliance with approval requirements where applicable (i.e. NVCP) 	<ul style="list-style-type: none"> Monitoring and reports Annual Environmental Report 	Post Exploration	Manager, Exploration Manager, Geology Manager, Drilling
13.7	Conduct weed control activities for known populations of priority weed species which may affect revegetation efforts on rehabilitated sites.	<ul style="list-style-type: none"> Compliance with <i>Weed Control Procedure</i> Weed control records 	<ul style="list-style-type: none"> Monitoring reports Control records 	Post Exploration	Manager, Exploration Manager, Geology
13.8	Monitor rehabilitation sites to ensure plugged drill holes have not subsided, rehabilitated hillside areas remain stable and rehabilitation and revegetation efforts have been effective. Where necessary, conduct further rehabilitation works to ensure the area is rehabilitated in accordance with the requirements of the <i>Exploration Drill Hole Stabilisation and Site Rehabilitation Procedure</i> (E-PR-EN-0010).	<ul style="list-style-type: none"> Monitoring conducted Compliance with <i>Exploration Drill Hole Stabilisation and Site Rehabilitation Procedure</i> Additional rehabilitation measures conducted where necessary 	<ul style="list-style-type: none"> Monitoring reports Register of all drill holes 	Post Exploration	Manager, Exploration Manager, Geology
13.9	Following rehabilitation works complete and lodge the Exploration Rehabilitation Report to DMIRS via: http://www.dmp.wa.gov.au/Environment/Programmes-of-Work-5966.aspx	<ul style="list-style-type: none"> Rehabilitation complete Rehabilitation report submitted to DMIRS 	<ul style="list-style-type: none"> Inspection reports, photos 	Post Exploration	Manager, Exploration Manager, Geology

6. COMPLIANCE

Fortescue ensures compliance with its legal obligations through first party quality assurance by site environment teams with a focus on effective environmental management through the corporate Environmental Management System (EMS).

Fortescue has adopted a risk-based approach to monitor compliance with its environmental obligations. The Exploration HSE Team will monitor their compliance with the commitments contained within the EEMP and the required site-specific management and monitoring programs using the *Self-Verification of Environmental Obligations- Environment (100-PR-EN-1040)*.

Where non-conformance issues or opportunities for improvement are identified these will be documented and tracked via the Business Management System (BMS).

7. REVIEW

It is important that plans and procedures are frequently reviewed and revised as Fortescue's operations change and opportunities for improved management practices are identified.

This EEMP will be reviewed every five years, or when significant additional information comes to hand. Upon review, the document will be revised where appropriate and the revision status will be updated in accordance with Fortescue's document control procedures.

8. STAKEHOLDER CONSULTATION

Fortescue has undertaken extensive stakeholder engagement whereby landowners, regulators and other relevant parties have been consulted with regard to investigation and design of mining activities and supporting infrastructure through the environmental approval process.

The then Department of Mines and Petroleum (DMP) and the Department of Environment and Conservation (DEC) was consulted and where required approved the content of the original version of the Plan for which this revision will replace.

The current revision of this Plan has been submitted to the Department of Mines Industry Regulation and Safety for their review and approval.

Table 7 will be updated following receipt of stakeholder comment as a result of the review and approval process.

Table 7: Stakeholder Consultation, Comments and Responses

Stakeholder	Correspondence	Comments	Changes
DEC	E-EN-0385.01	Rev 5b_ Response to comments	Changes made to address comments received regarding DEC managed land.
DMP	E-EN-0369.03	Rev 5d: Response to comments	Changes made to address comments received from both DEC and DMP on Rev 5b and 5c
DEC	E-EN-0385.04	Rev 5e: Response to comments	Changes made to address comments from DEC. Comments relate to TECs, weed management, ESAs and bushfire management.
DMP	E-EN-0369.04	Rev 5g: Response to comments received from DEC	Changes made to address comments from DEC on Rev 5e and 5f
DMP	100-EN-0412.01	Rev 6: Approved	NA
DMIRS		Rev6c: Submission for review and approval	NA
DMIRS	EX-EN-0002	Rev 6c: Comments received	Track width and provisions of supporting documentation
DMIRS	EX-EN-0002.01	Rev 6d: Response to comments	Key changes include: <ul style="list-style-type: none"> • Track widths • Rehabilitation timeframes • Supporting documentation provided • Revised Figures

9. REFERENCES

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Beard, J. S. (1975) Pilbara. Explanatory Notes and Map Sheet 5, 1:1 000 000 series Vegetation Survey of Western Australia, University of Western Australia Press: Nedlands.

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Environment Australia (2001). *A Directory of Important Wetlands in Australia, Third Edition*. Environment Australia, Canberra.

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Thackway, R. and Cresswell, I.D. (1995). An Interim Biogeographic Regionalisation for Australia: a framework for setting priorities in the national reserves system cooperative program, Australian Nature Conservation Agency, Canberra.

Figure 1: Multi Use Laydown: 100 x 100m Generalised Layout

Multi Use Laydown: 100 x 100 m Generalised Layout

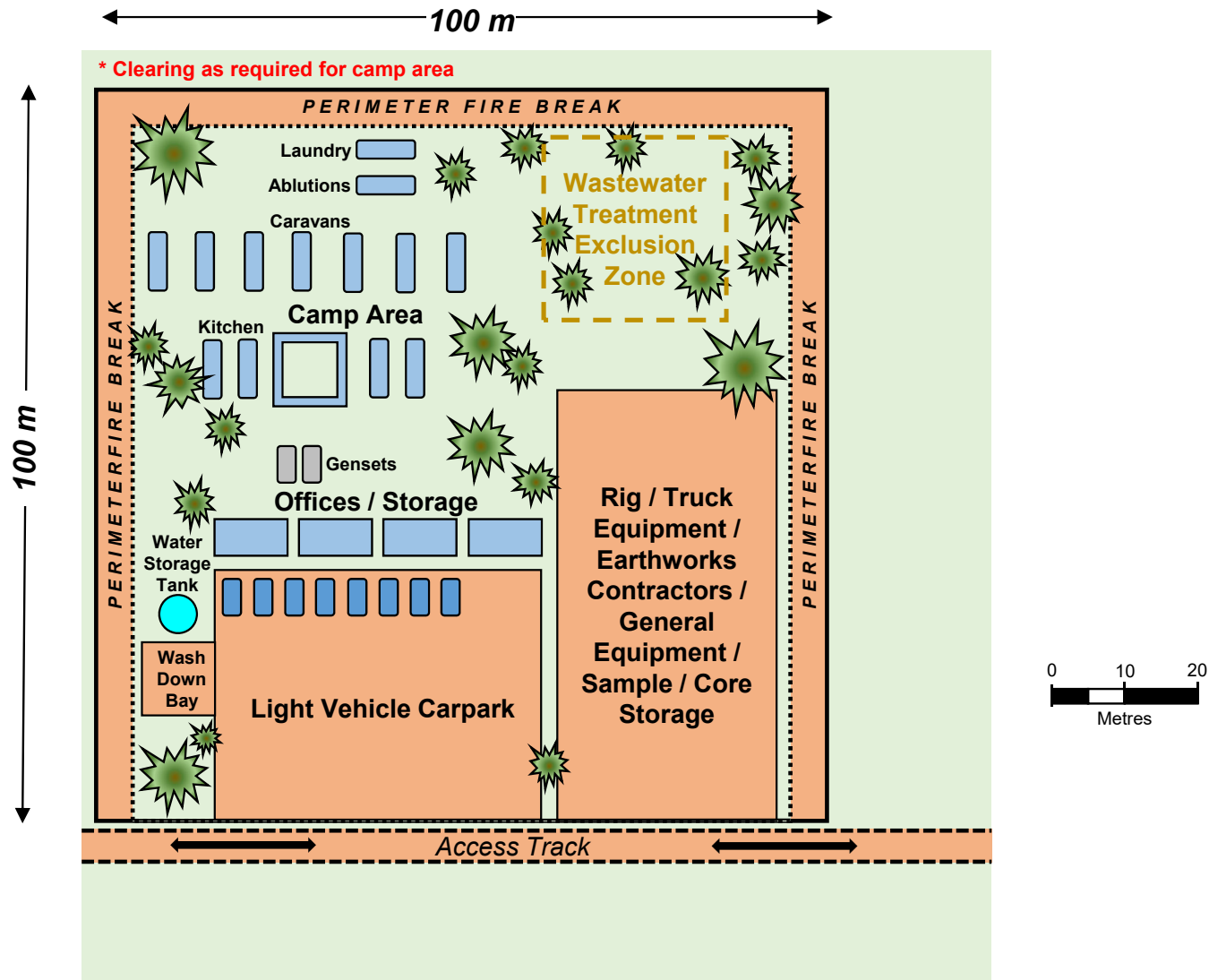


Figure 2: Multi Use Laydown: 100 x 200 m Generalised Layout

Multi Use Laydown: 100 x 200 m Generalised Layout

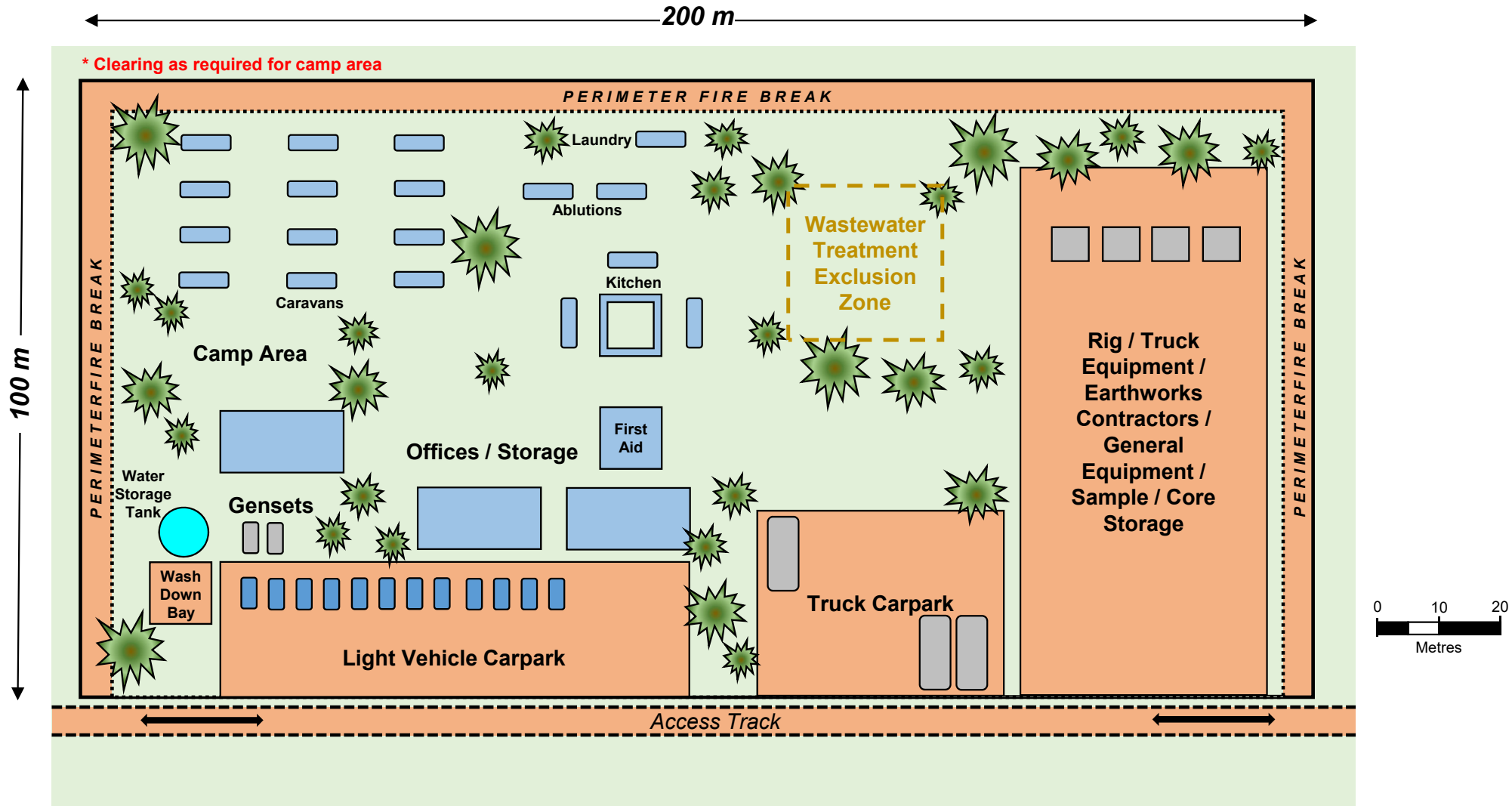


Figure 3: RC Drill Pad: 20 x 20 m Set Up (1 Sump)

Average Track Width (With / Without Windrows)

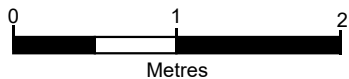
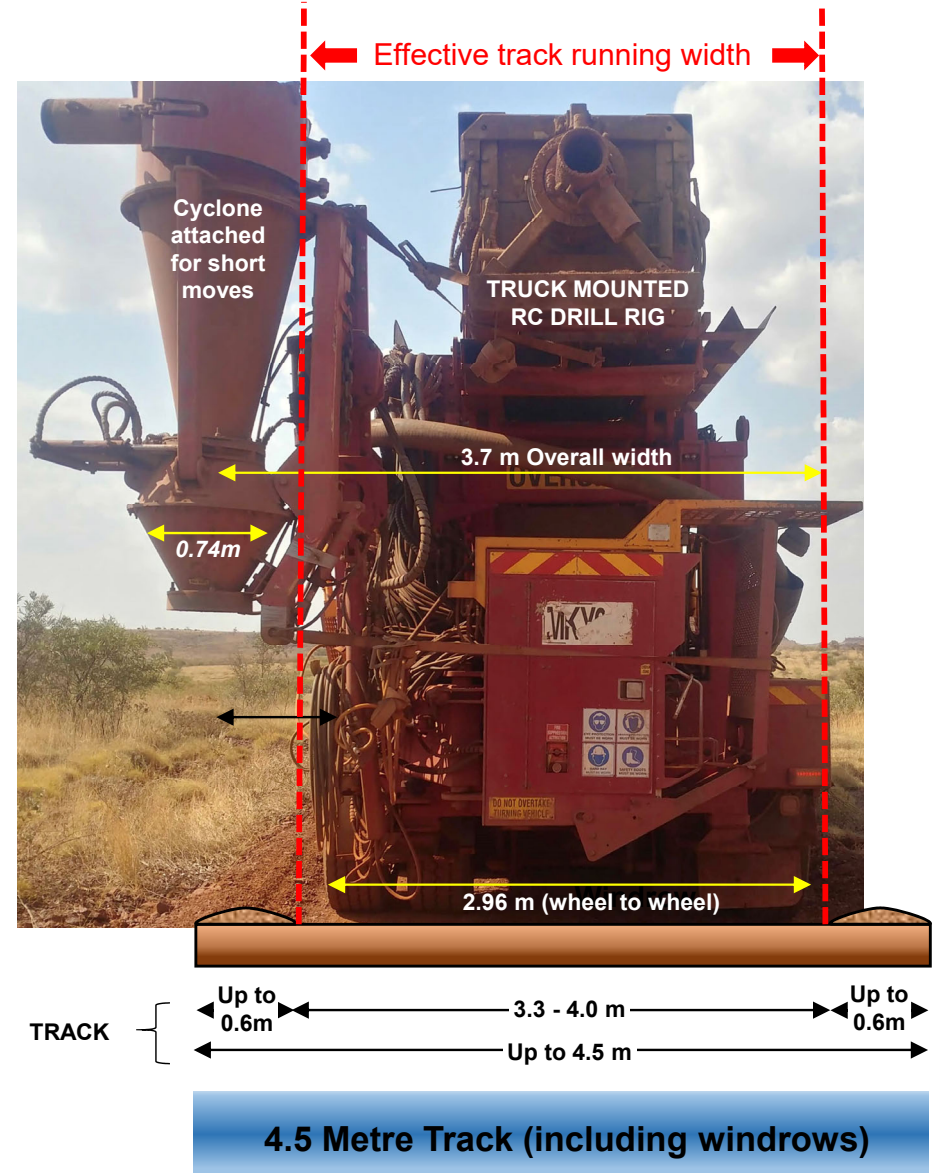
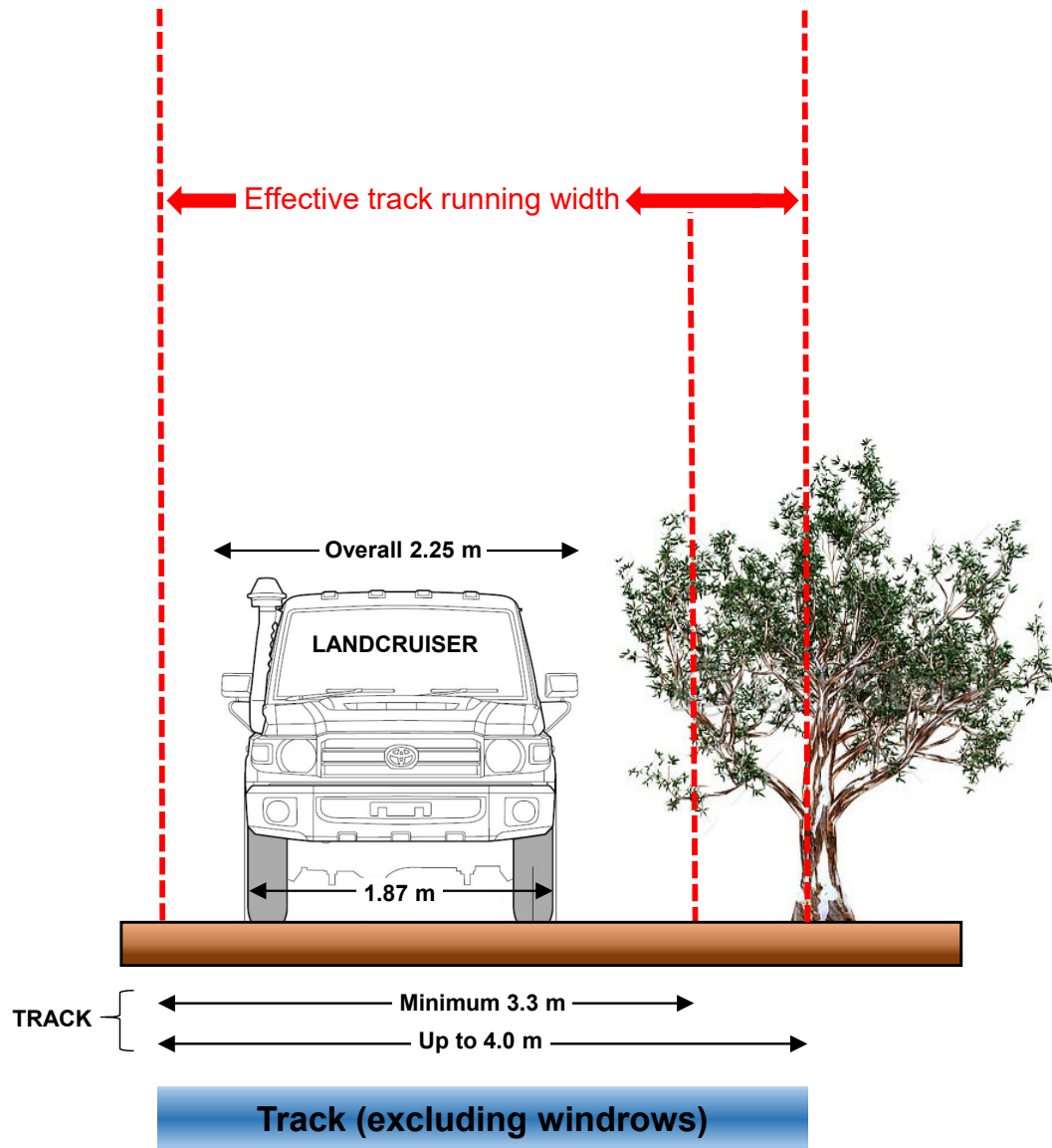
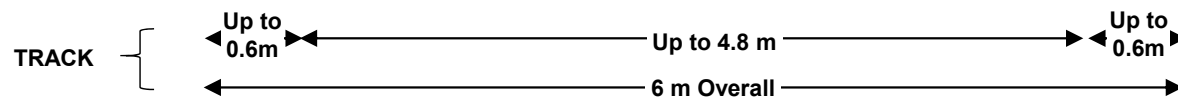
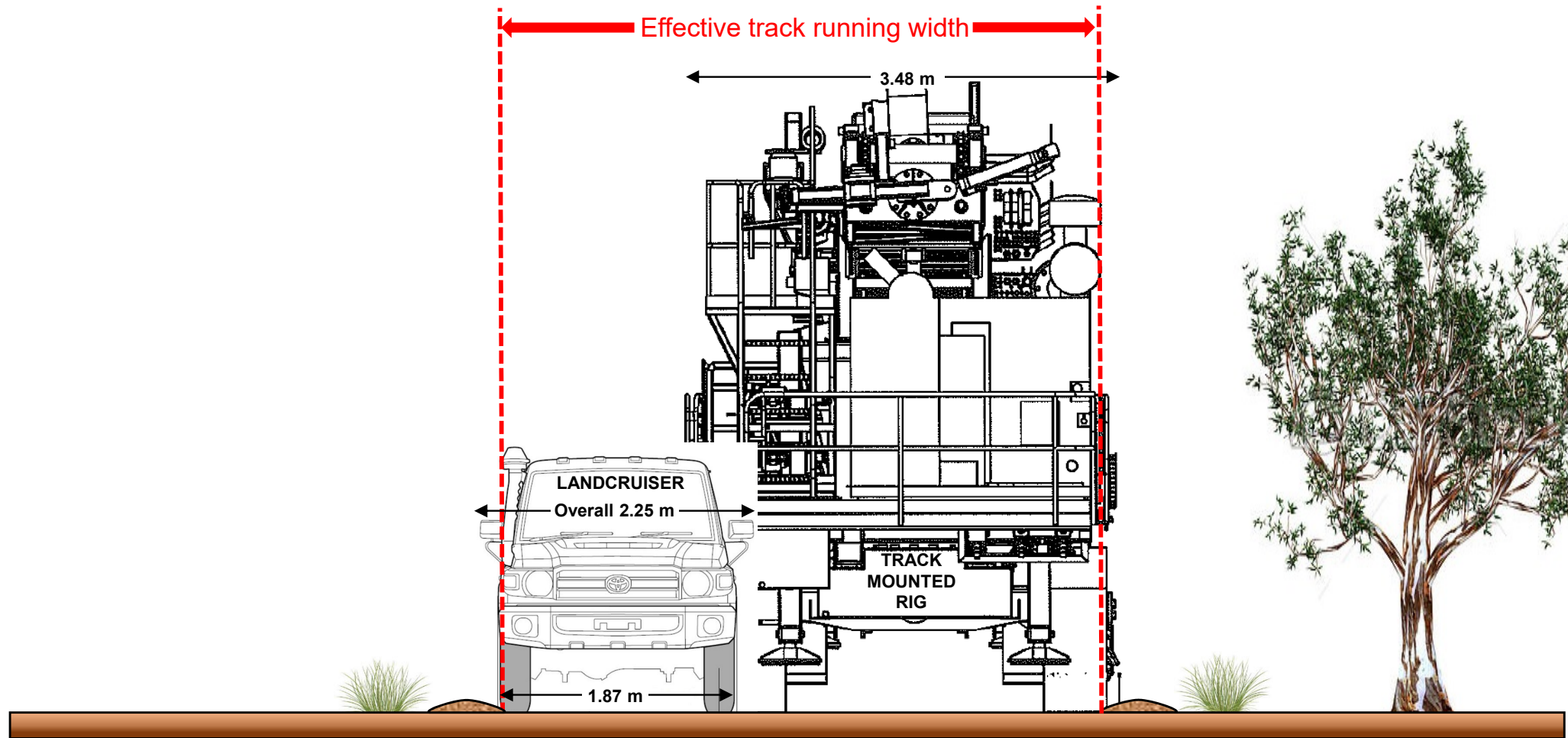


Figure 4: RC Drill Pad: 20 x 20 m Set Up (1 Sump) Cut & Fill

Main Thoroughfare Track Dimensions



6 Metre Track

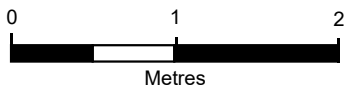
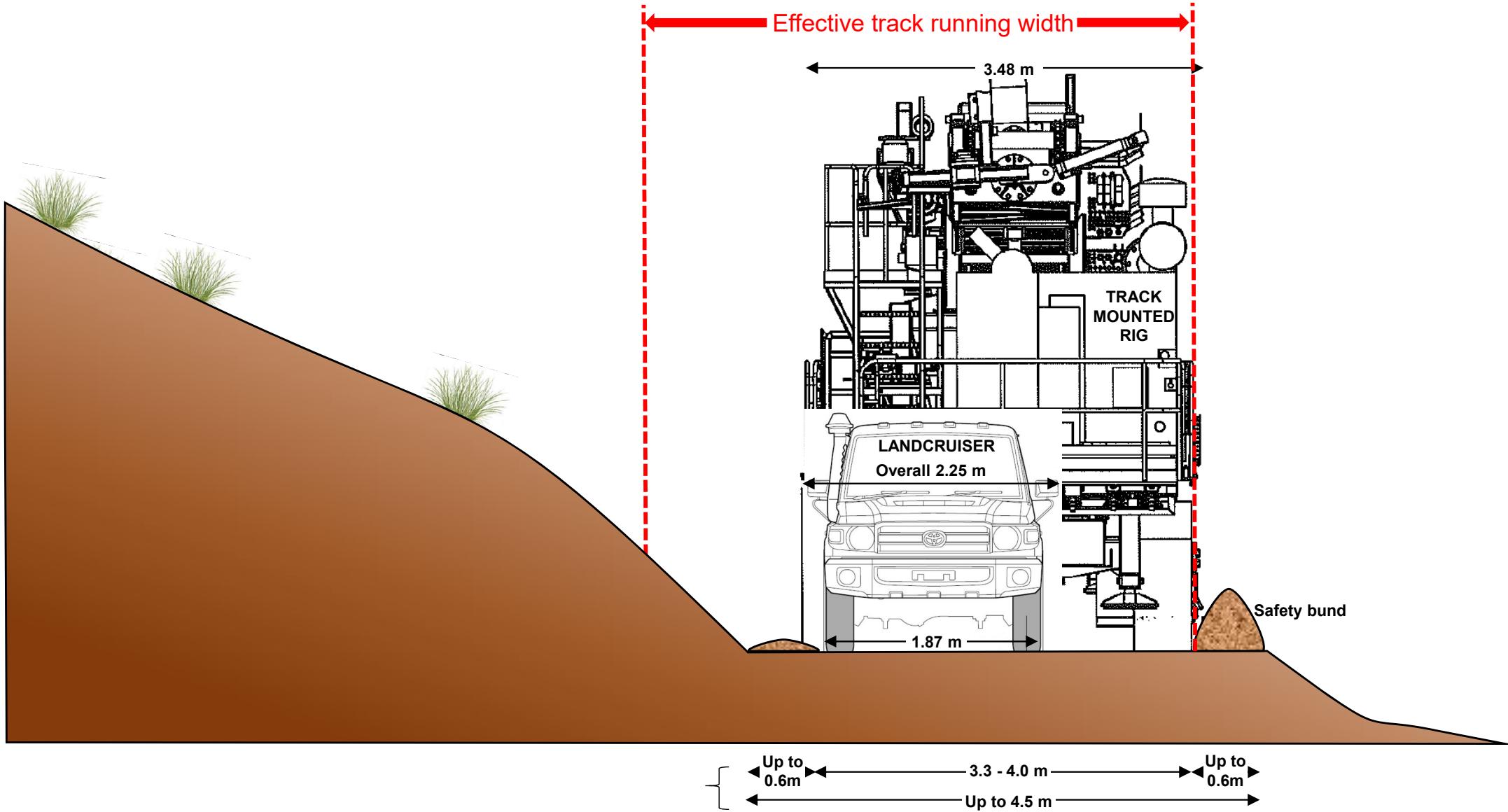


Figure 5: RC Drill Pad: 20 x 20 m Set Up (2 Sumps)

Track Dimensions Hillside



4.5 Metre Track (including windrows)

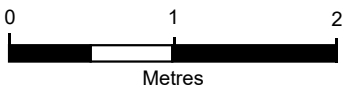


Figure 6: RC Drill Pad: 25 x 20 m Set Up (1 Sump)

Main Thoroughfare Track Dimensions Hillside

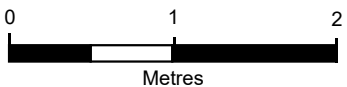
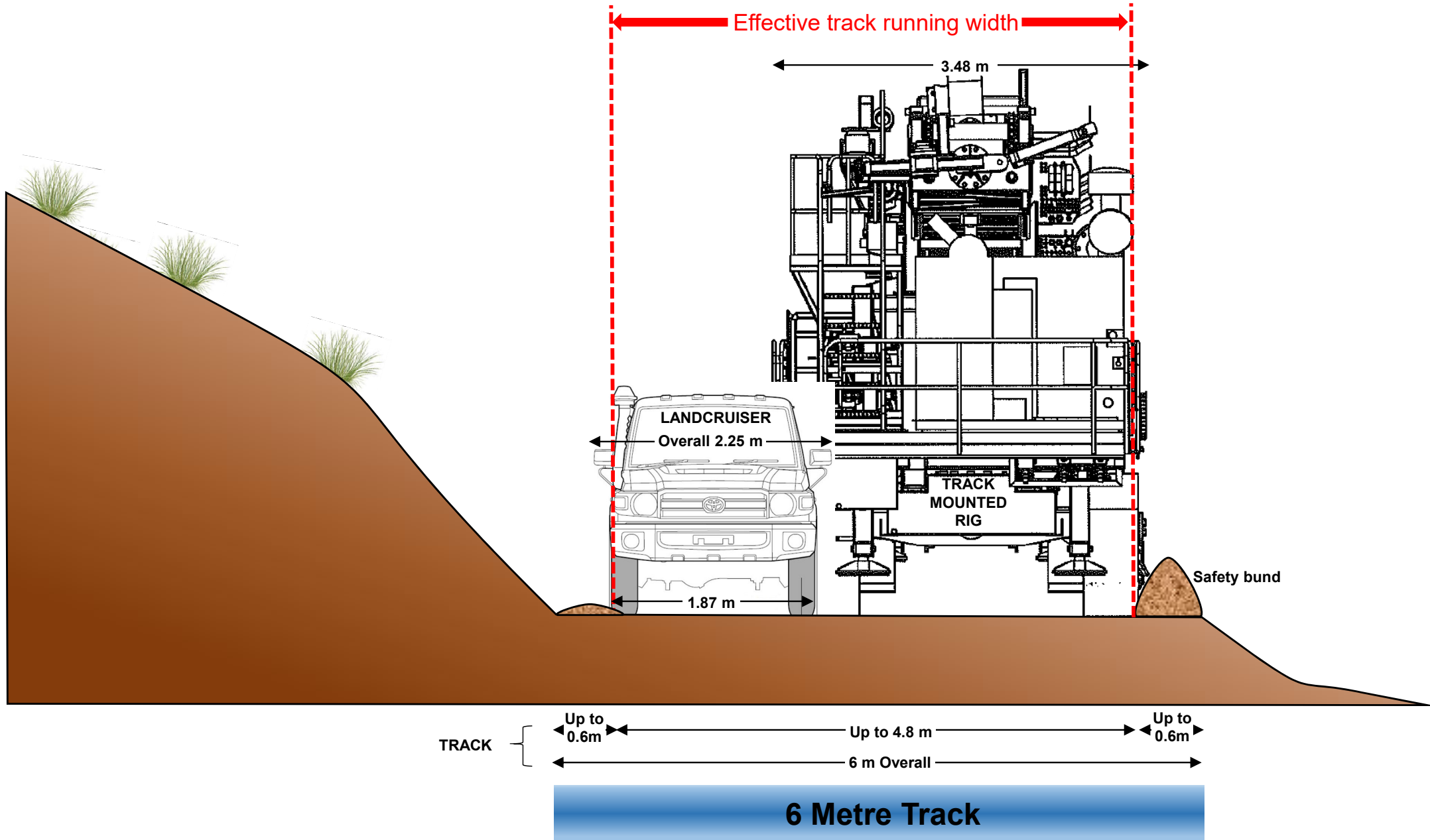
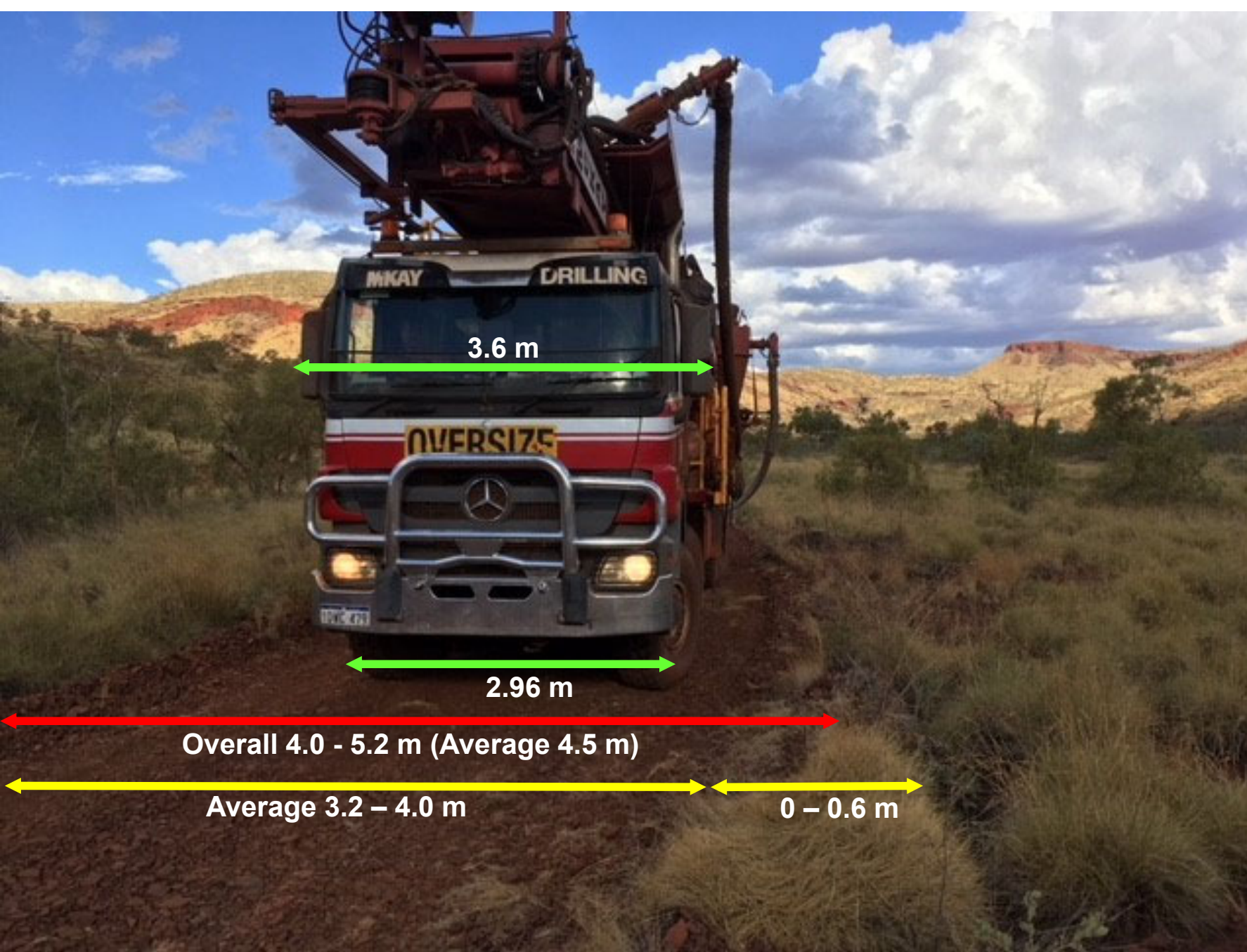


Figure 7: RC Drill Pad: 25 x 20 m Set Up (1 Sump) Cut & Fill



Cat D8 Dozer and Average Track Widths

Figure 8: Drill Pad: 25 x 20 m RC Set Up (2 Sumps)



RC Drill Rig and Average Track Widths

Figure 9: RC Drill Pad: 30 x 20 m Set Up (1 Sump)



RC Drill Rig and 4m Track with Overgrowth

Figure 10: Diamond Drill Pad: 20 x 30 m Set Up

RC Drill Pad: 20 x 20 m Set Up (1 Sump)

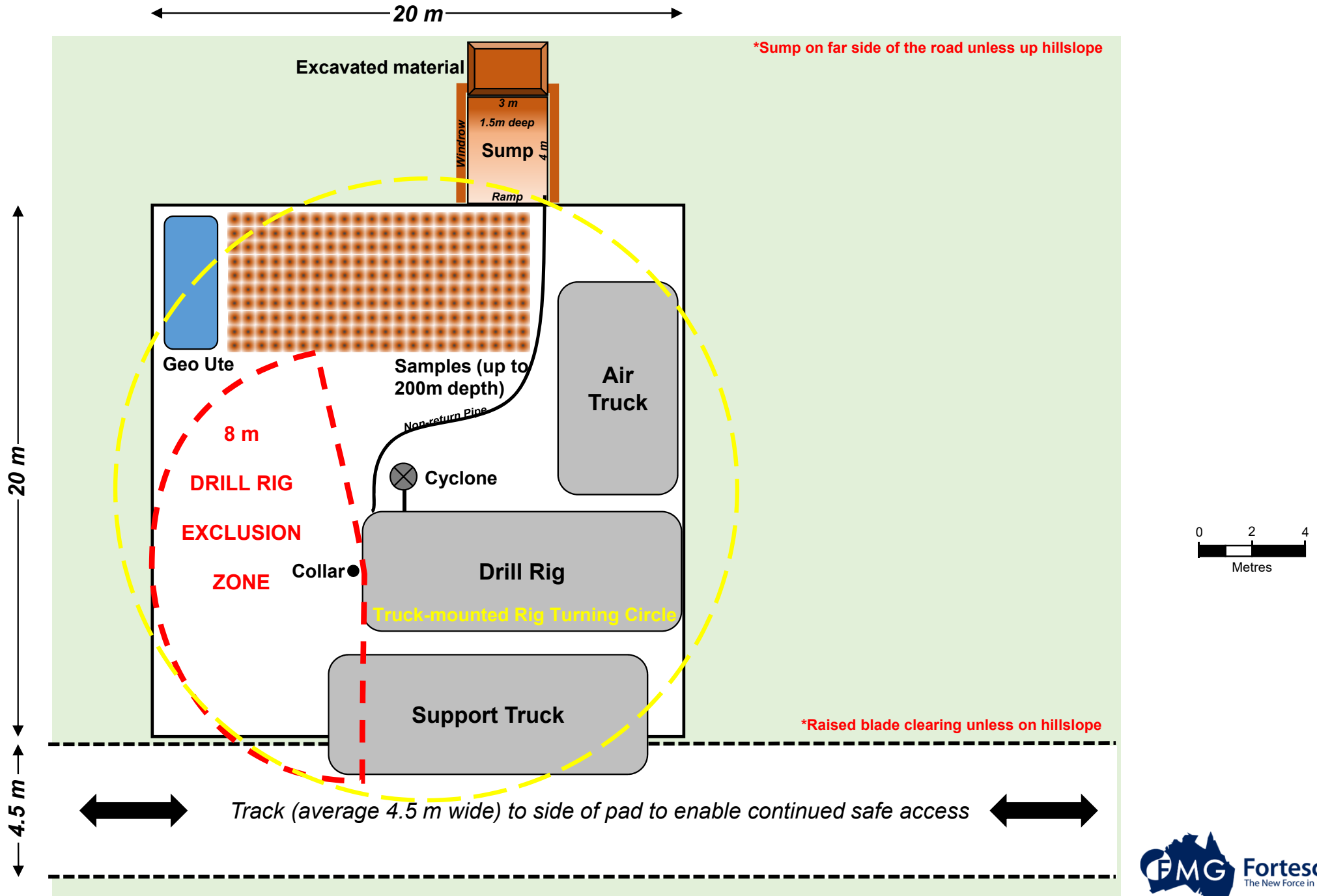


Figure 11: Water Bore Drill Pad: 50 x 50 m Set Up

RC Drill Pad: 20 x 20 m Set Up (1 Sump) Cut & Fill

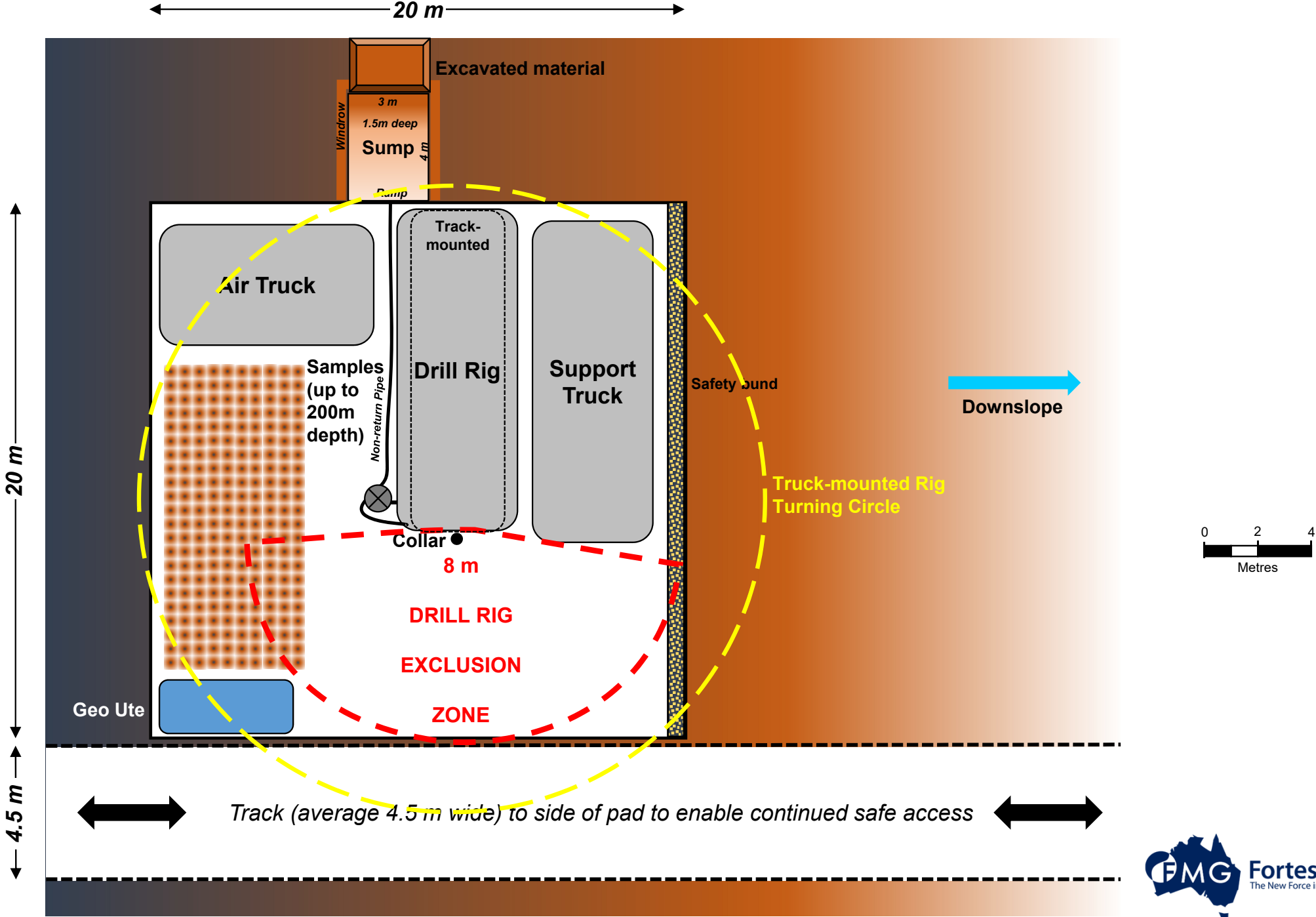


Figure 12: Average Track Width (With/ Without Windrows)

RC Drill Pad: 20 x 20 m Set Up (2 Sumps)

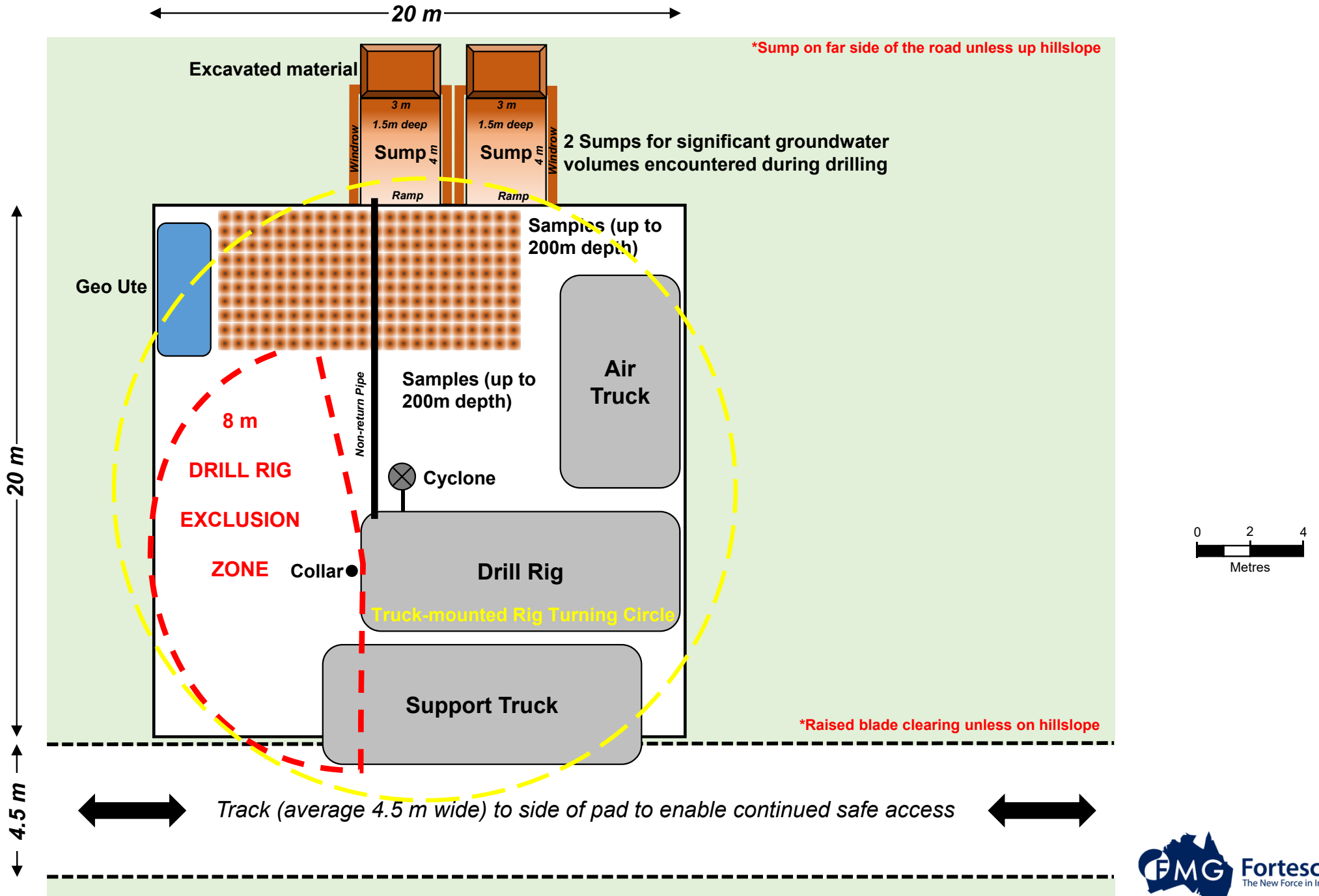


Figure 13: Main Thoroughfare Track Dimensions

RC Drill Pad: 25 x 20 m Set Up (1 Sump)

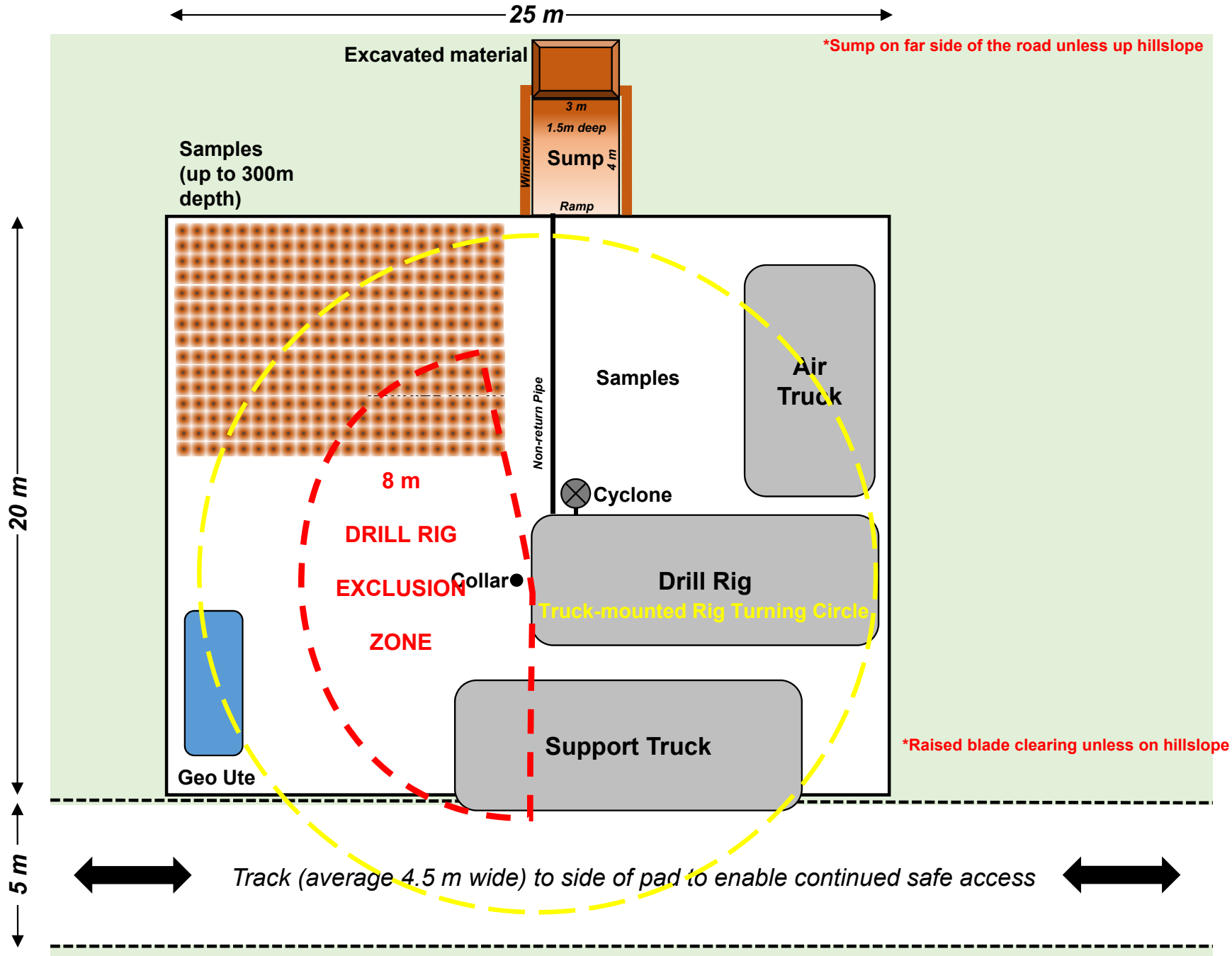


Figure 14: Track Dimensions Hillside

RC Drill Pad: 25 x 20 m Set Up (1 Sump) Cut & Fill

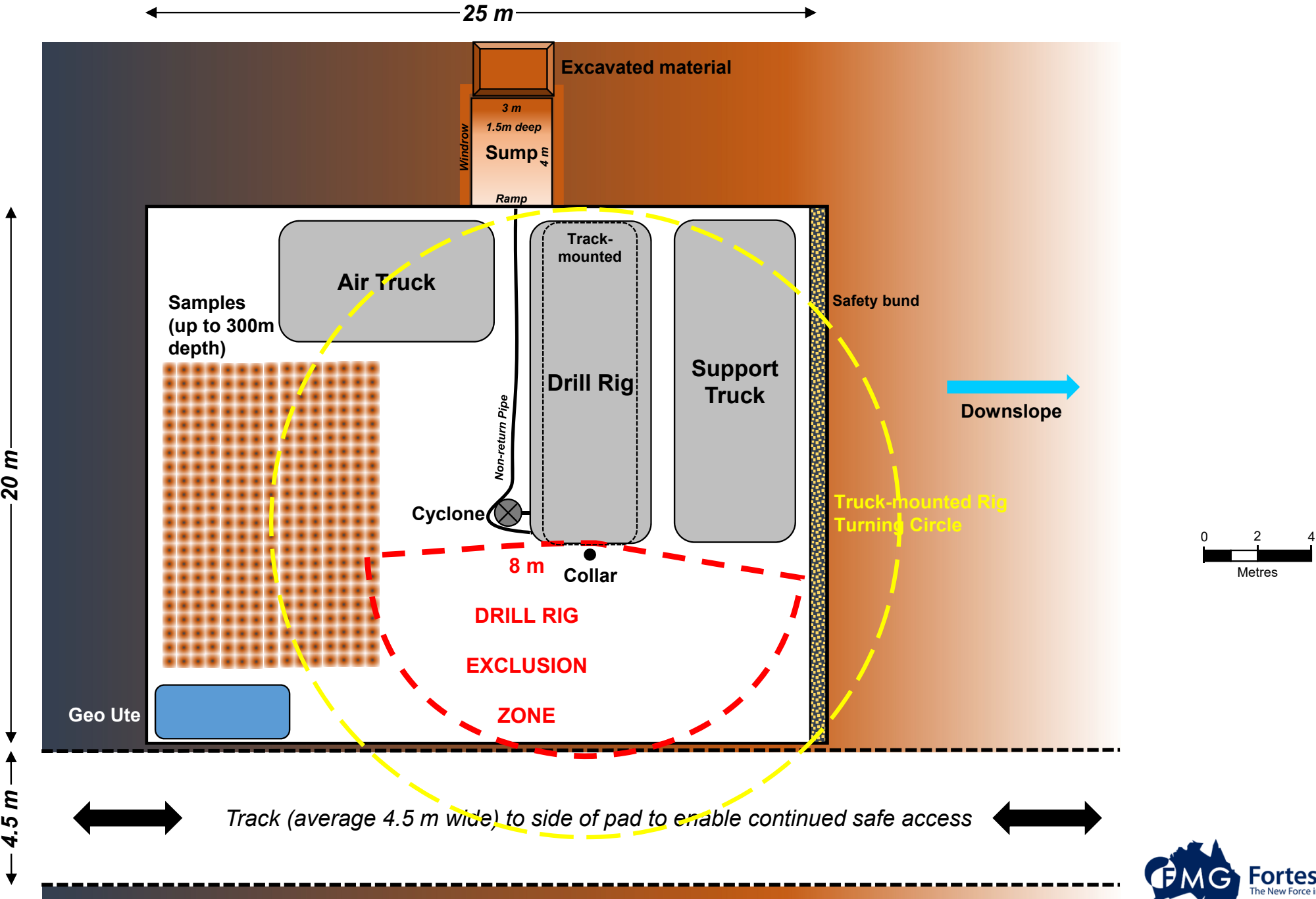


Figure 15: Main Thoroughfare Track Dimensions Hillside

Drill Pad: 25 x 20 m RC Set Up (2 Sumps)

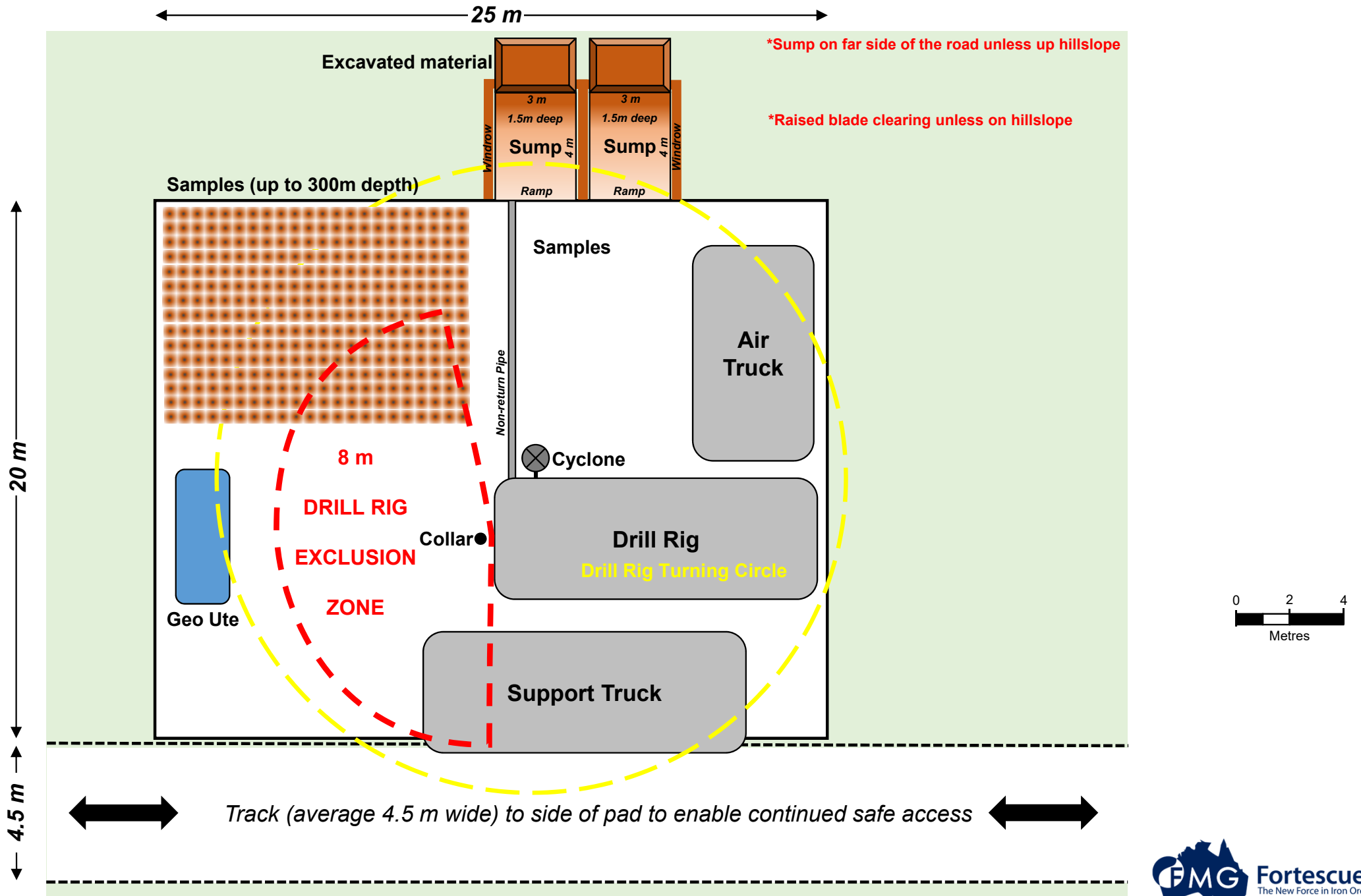


Figure 16: RC Drill Rig and Average Track Widths

RC Drill Pad: 30 x 20 m Set Up (1 Sump)

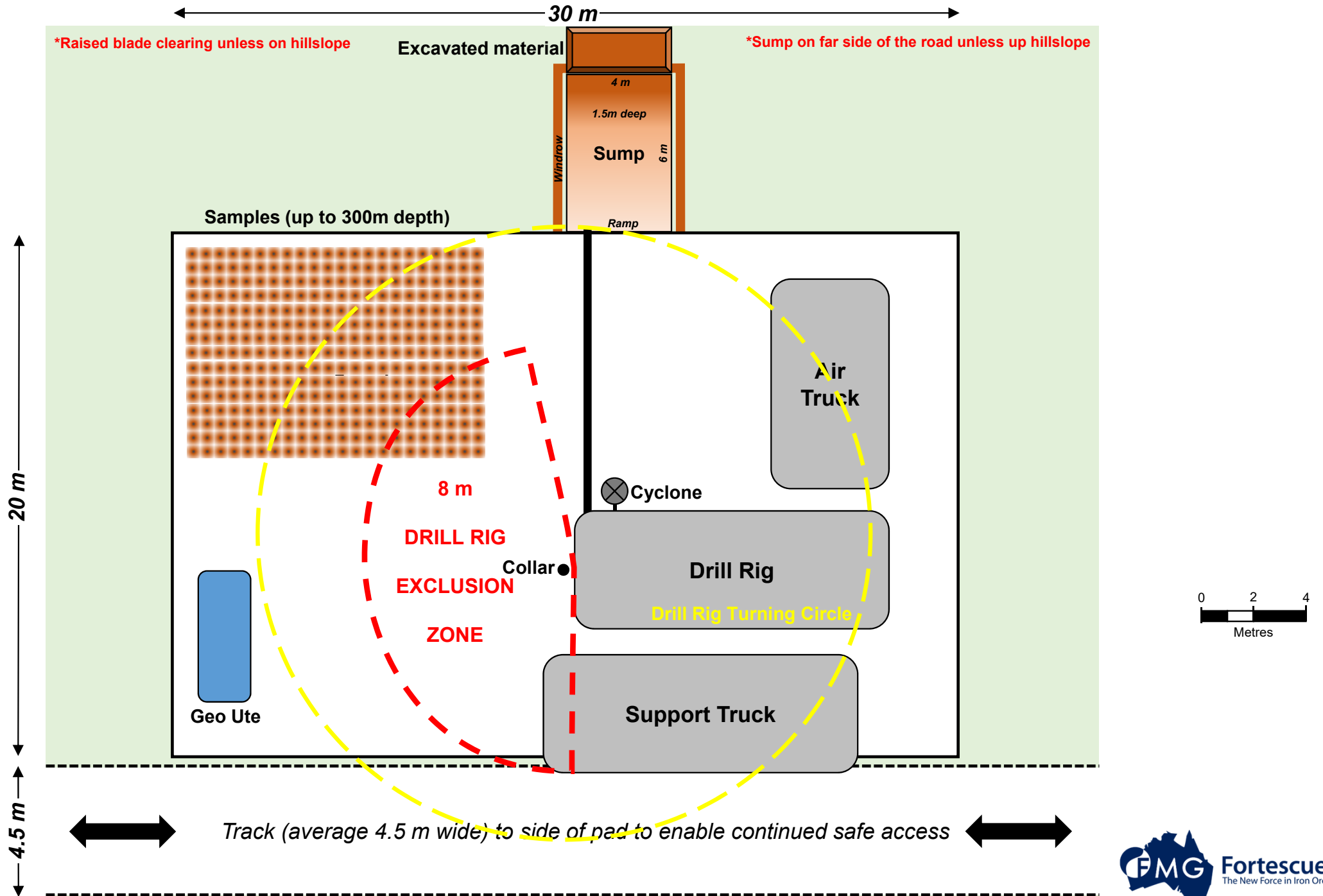


Figure 17: Cat D8 Dozer and Average Track Widths

Diamond Drill Pad: 20 x 30 m Set Up

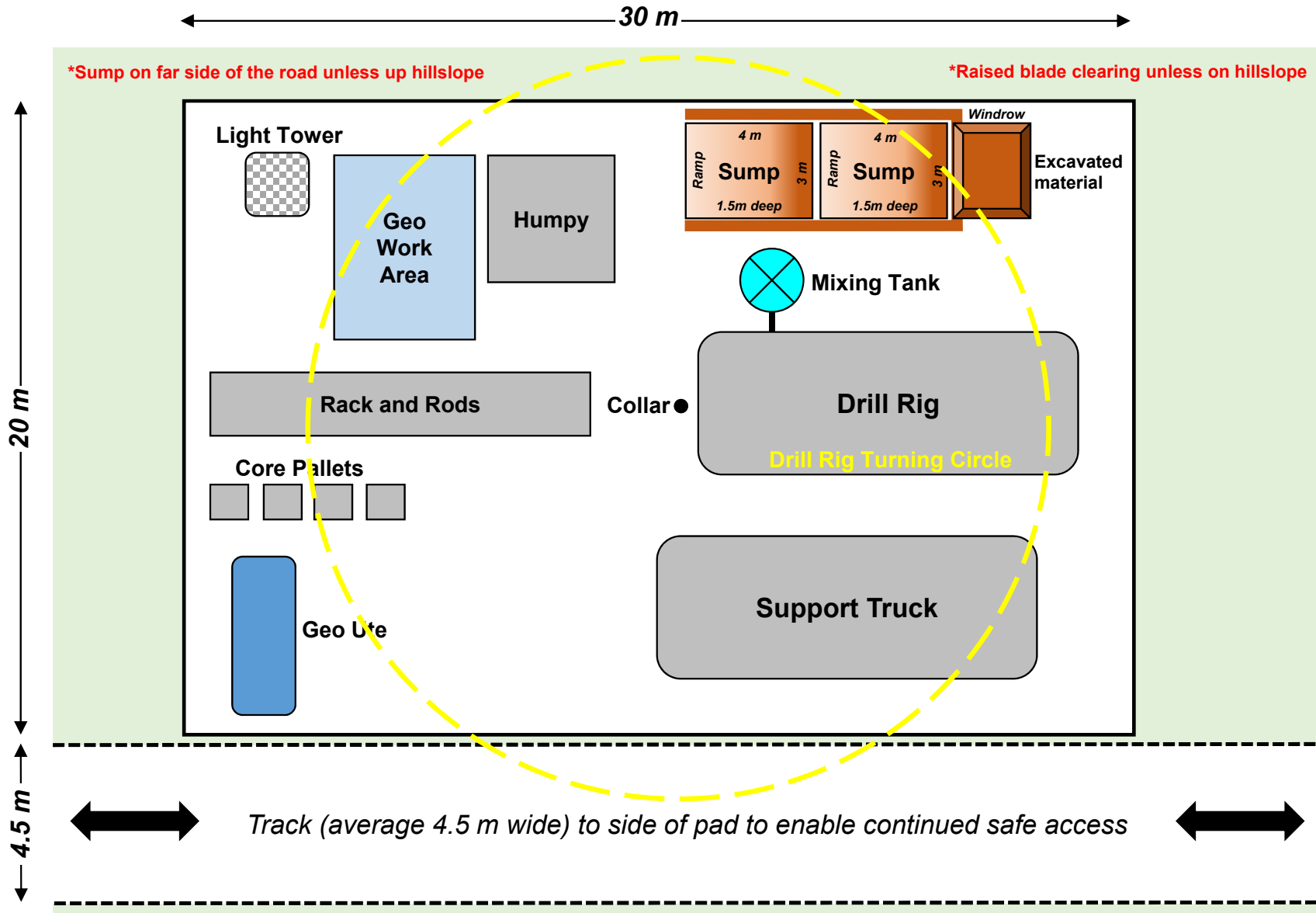


Figure 18: RC Drill Rig and 4 m Track with Overgrowth

Water Bore Drill Pad: 50 x 50 m Set Up

50 m

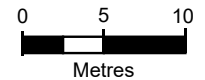
*Sump on far side of the road unless up hillslope

*Larger size sumps for bore development and pump testing

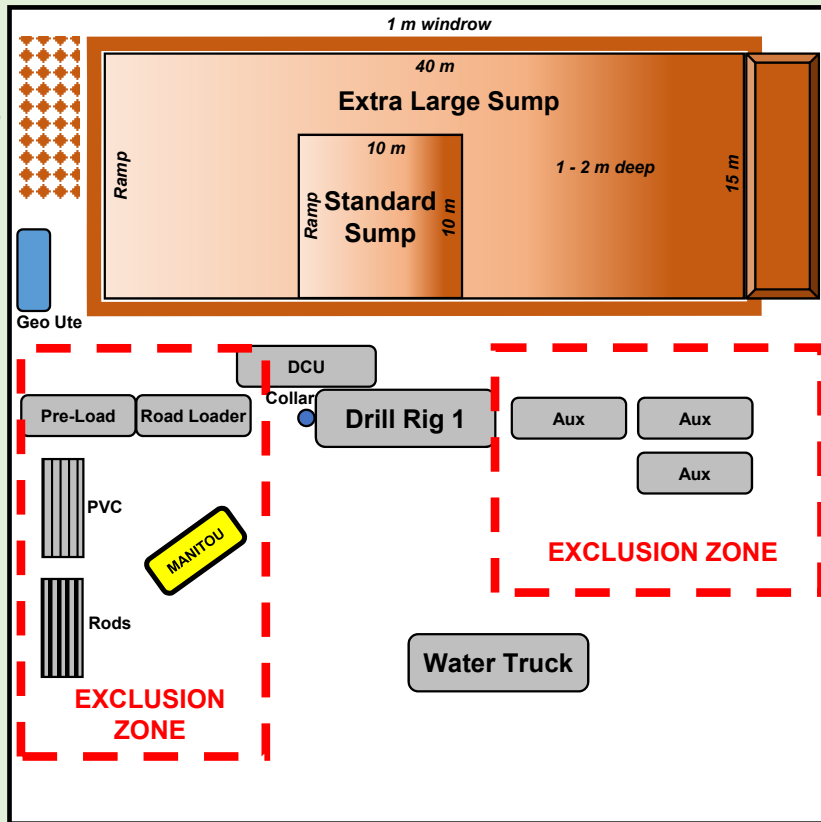
*Sump refilled once drilling and pump testing has been completed

Excavated material (used to make wall around sump)

Samples (up to 200m depth)



*Raised blade clearing unless on hillslope



Samples

50 m

Track (average 4.5 m wide) to side of pad to enable continued safe access

4.5 m

Appendix 1: Project Background

Fortescue Metals Group Background

Fortescue Metals Group (Fortescue) is an integrated business comprised of mine, rail and port operations based in the Pilbara region of Western Australia with its head office located in Perth.

Fortescue has commenced operation of the Pilbara Iron Ore and Infrastructure Project (the Project), which consists of several iron ore mines and associated rail and port infrastructure in the Pilbara region of Western Australia.

The Project was granted Major Project Facilitation Status in December 2004 and Fortescue has signed two Agreements with the State of Western Australia:

- *The Railway and Port (The Pilbara Infrastructure Pty Ltd) State Agreement* for the port and rail infrastructure to transport ore from the mines to the port
- *The Iron Ore (FMG Chichester Pty Ltd) Agreement* for the iron ore mines.

The Project has been developed in the following stages:

- Stage A, consisting of a two-berth iron ore export facility at Port Hedland and a north-south railway from the central Pilbara to Port Hedland, approved under Ministerial Statement 690
- Stage B, consisting of iron ore mines in the eastern Pilbara (Christmas Creek) and an east-west spur rail line connecting to the Stage A railway; approved under Ministerial Statement 707. (Note this approval included the Mindy Mindy mine site but this has not been developed to date)
- Cloudbreak iron ore mine west of the Christmas Creek area, approved under Ministerial Statement 721 and federal approval under the EPBC Act (EPBC 2005/2205)
- Port facility upgrade consisting of a third berth at Anderson Point, Port Hedland, approved under Ministerial Statement 771
- Port Facility upgrade of a fourth berth at Anderson Point, Port Hedland, Not Assessed - Public Advice Given in 2010
- Solomon iron ore project consisting of two new mines and a railway connecting to the existing Fortescue rail line, approved under Ministerial Statement 862 and federal approval under the *EPBC Act* (EPBC 2010/5567 and 2010/5513) in 2011
- Additional rail infrastructure between Herb Elliot Port Facility and Cloudbreak Mine Site, approved under Ministerial Statement 690 and 707 and federal approval under the EPBC Act (EPBC 2010/5513)
- Christmas Creek water management scheme to increase the mine dewatering rate and to inject surplus water into two brackish and one saline injection zones, approved under Ministerial Statement 871

- Cloudbreak Life of Mine, approved under Ministerial Statement 899 (supersedes the conditions of Ministerial Statement 721); Ministerial Statement 962 (to amend conditions of Ministerial Statement 899; and Ministerial Statement 1010 (to increase abstraction and reinjection of groundwater under Ministerial Statement 899 and 962)
- Northstar Hematite Project, Not Assessed - Public Advice Given in 2012 and federal approval under the EPBC Act (EPBC 2012/6530)
- North Star Magnetite Project, to construct and operate an open-cut iron ore mine and associated infrastructure, approved under Ministerial Statement 993
- Christmas Creek Mine revised proposal, approved under Ministerial Statement 1033 (supersedes the conditions under Ministerial Statement 707 and Ministerial Statement 871) and federal approval under EPBC Act (EPBC 2013/7055).
- Solomon Iron Ore Project Sustaining Production, approved under Ministerial Statement 1062 (supersedes the conditions under Ministerial Statement 862) and federal approval under the EPBC Act (EPBC 2014/7275).

Changes to Ministerial Statements 690, 707, 721, 771 and 899 were made and approved under Section 45 or 46 of the *Environmental Protection Act 1986 (EP Act)*.

Fortescue is extending its current operations in the Pilbara with proposed expansion of mining to the west within the Western Hub Project area which contains approximately 10 ore bodies. Expansion of mining is also proposed east of Solomon at Nyidinghu.

Fortescue is also conducting drilling programmes to further delineate resources and iron ore reserves within tenements surrounding Solomon and in additional locations throughout the Pilbara.

In addition to its wholly owned tenements, Fortescue is party to joint ventures and agreements with other tenement holders within the Pilbara region and is the manager of iron ore exploration operations upon these tenements.