

Supplier Document Review Cover Sheet



PROJECT TITLE	MULGA MINE - BULK EARTHWORKS AND ACCESS ROADS - FEASIBILITY STUDY
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CONTRACT/PO NUMBER	HI-MUL-101-FES-CEW	SUPPLIER/CONTRACTOR	Agilitus
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DOCUMENT TITLE	
Mulga Downs Mine – Erosion and Sedimentation Control Plan	

Document Review Status

- | | | |
|-----------|--|--------------------------|
| S1 | No Comments | <input type="checkbox"/> |
| S2 | Comments as Noted,
Revise & Resubmit Within 10 Working Days | <input type="checkbox"/> |
| S3 | Not Reviewed, Information Only | <input type="checkbox"/> |
| S4 | Not suitable for Review,
Revise & Resubmit Within 10 Working Days | <input type="checkbox"/> |

Review of the document does not relieve the Contractor/Supplier of its responsibility for the due and proper performance of the Works in accordance with the Contract.

ADDITIONAL COMMENTS

Mulga Downs Bulk Earthworks and Access Roads

Erosion and Sediment Control Plan (ESCP)

Prepared for HanRoy

April 2025
MDM-30000-HY-REP-0002
HanRoy Project Number: HI-MUL-101-FES-CEW
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Glossary

Acronym	Definition
AEP	Annual Exceedance Probability
AGIL	Agilitus
AMD	Acid and Metalliferous Drainage
AWT	Above Water Table
BoD	Basis of Design
DIWA	Directory of Important Wetlands in Australia (National)
DSO	Direct Shipped Ore
ESCP	Erosion and Sediment Control Plan
FS	Feasibility Study
GNH	Great Northern Highway
IFD	Intensity – Frequency – Duration
Mtpa	Million tonnes per annum
MDM	Mulga Downs Mine
NMD	Neutral Mine Drainage
SD	Saline Drainage

1. Introduction

The purpose of this report is to provide an Erosion and Sediment Control Plan (ESCP) for the Feasibility Study (FS) stage of the proposed HanRoy Mulga Downs Mine (MDM) to communicate proposed erosion and sediment control measures to HanRoy and approval authorities. It has been prepared based on the 30% civil engineering design being completed by Agilitus (AGIL) to address erosion and sediment control related risks to the MDM and minimise adverse effects to the downstream environment (including hydraulic and water quality impacts) during runoff events.

This ESCP has been developed considering based on advice from HanRoy of the management intent to contain runoff from disturbance areas where sediment loads are likely to be high (i.e. waste dumps, stockpiles, pits and ROM pads) and divert runoff through sediment treatment facilities prior to release to the environment. Agilitus has not undertaken any assessment of contamination risk for these areas which in practice may not require controlling. HanRoy should review material characterisation data along with flow velocity modelling to determine contamination risks.

To minimise the impact of the proposed development on the external environment the proponent shall implement this ESCP. To avoid significant and/or sustained deterioration in downstream water quality this ESCP may be amended as required, in response to the monitoring and maintenance program to be developed by HanRoy.

1.1 Background

The MDM is a planned iron ore mine in the Pilbara region approximately 210 km south of Port Hedland and 180 km northwest of Newman (Figure 1-1), with a development area on the traditional lands of the Banjima people spanning approximately 40 ha. The mine is designed to support production of up to 10 million tonnes per annum (Mtpa) and has an anticipated operational lifespan of 17 years, focusing on the production of Direct Shipped Ore (DSO) and iron ore fines. The current FS scope is limited to Above Water Table (AWT) mining.

Mining operations will employ conventional drill and blast, load and haul methods. The ore will be processed and stockpiled at one of the three crushing and screening plants within the mine (only two will be active at any time) before being transported by private road to Great Northern Highway (GNH), where it will travel north to the Hillside Rail Siding before being loaded onto the Roy Hill Main Line railcars and transported to Port Hedland for shipping.



Figure 1-1: MDM Location (Hanroy, 2024)

The development of MDM will involve building a significant quantity infrastructure including:

- Aerodrome
- Camp site
- Access roads and vehicle movements
- Pits and associated infrastructure (i.e. waste dumps, crushers, ANFO facilities)
- Services including power and communications
- Rail (Spur Case only)
- Fuel facilities

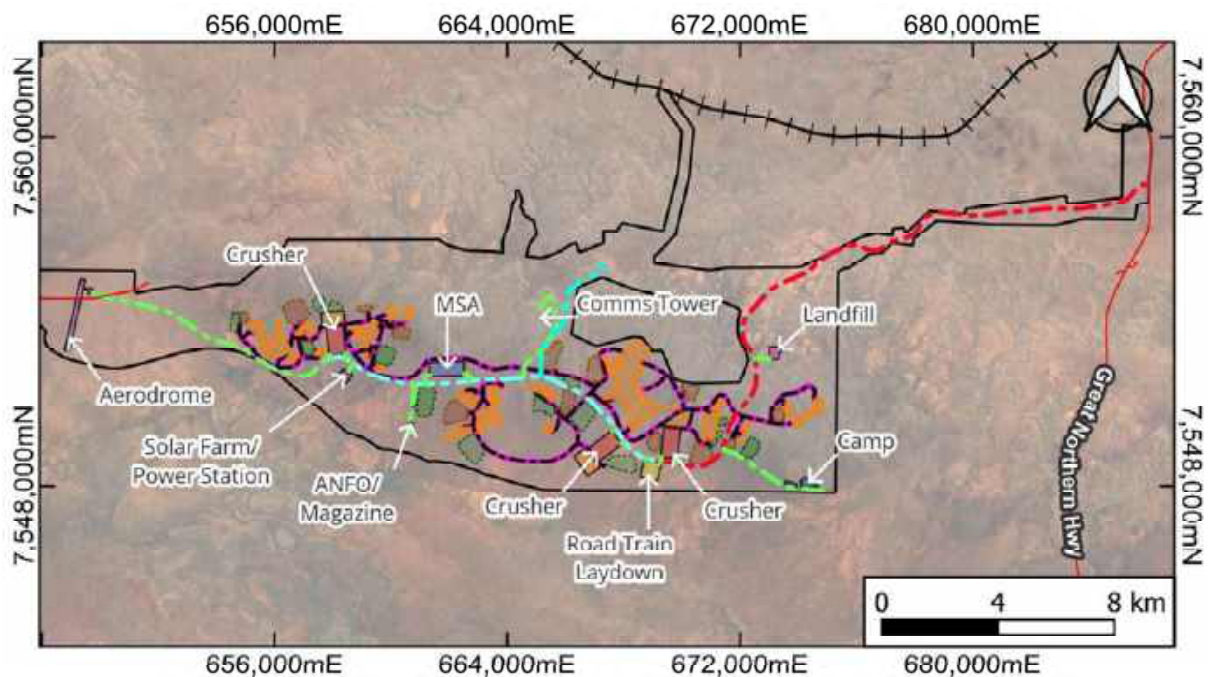


Figure 1-2: Mine Layout

1.2 Scope

While this ESCP considers the external surface hydrology catchment and affected downstream environments, implementation of management measures is restricted to the MDM boundary (Figure 1-3) and aligns with the principles of Best Practice Erosion and Sediment Control (IECA, 2008). It considers the following:

- Site characterisation.
- Identification of disturbed areas of the MDM which could lead to significant and/or sustained mobilisation of sediments that could lead to the deterioration of water quality in downstream environments.
- Identification and design of stormwater management measures to address potential sedimentation sources.
- Recommendation of measures for maintenance and monitoring of erosion and sediment control structures.

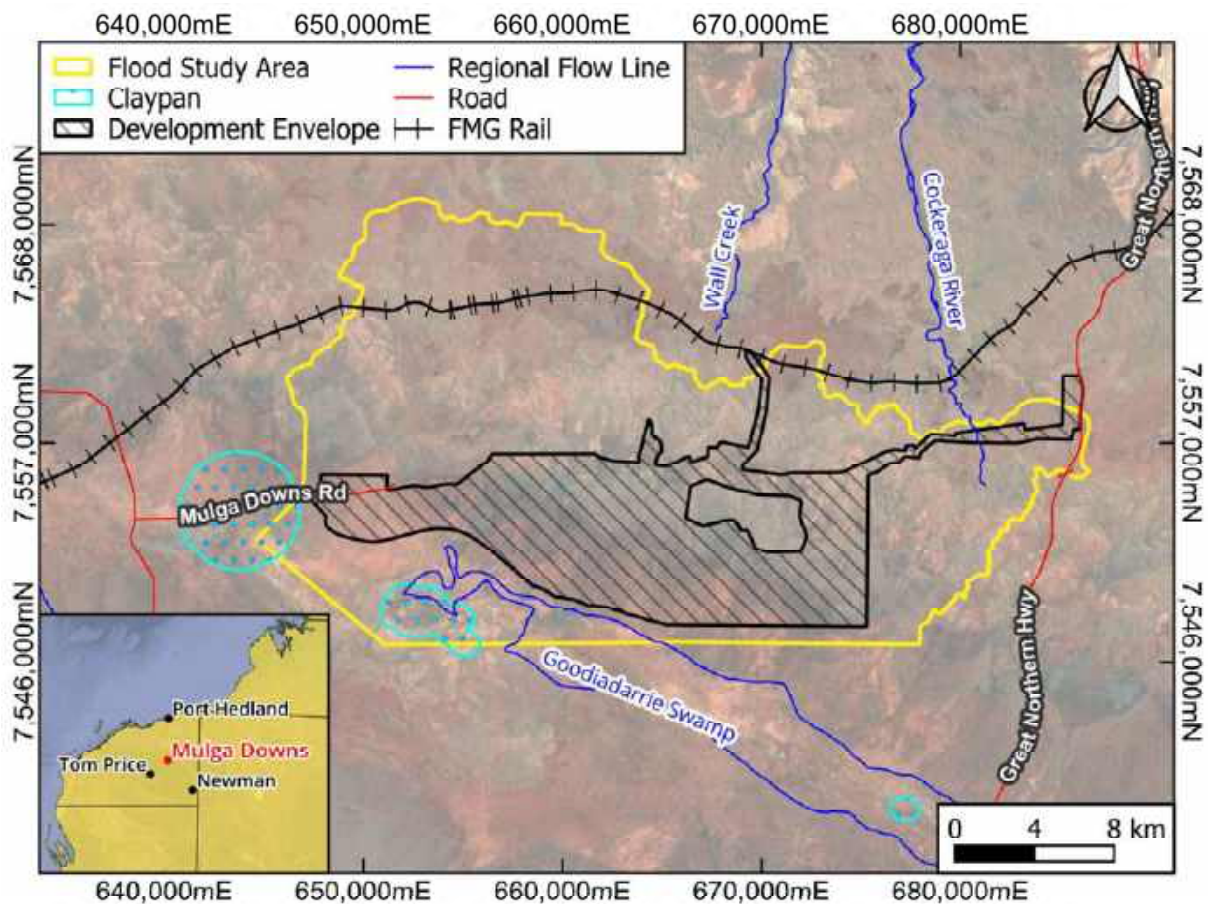


Figure 1-3: MDM Tenement Boundaries

1.3 Relevant Legislation and Guidelines

Legislation and guidelines used for the creation of this ESCP are as follows:

- Rights in Water and Irrigation Act, 1914
- Environmental Protection Act, 1986
- Environmental Protection and Biodiversity Conservation Act, 1999
- Soil and Land Conservation (SLC) Act, 1945
- Water Quality Protection Guidelines for Mining and Mineral Processing (Nos 1-11), 2000 – Water and Rivers Commission
- Best Practice Erosion and Sediment Control Guidelines, 2008 - IECA
- Managing Urban Stormwater – Soils and Construction Vol 1, 4th Ed, 2004 - Landcom
- Managing Urban Stormwater – Mines and Quarries, Vol 2E, 2008 – DECC
- Soil erosion and sediment control: Engineering Guidelines for Queensland Construction Sites. Witheridge, G and Walker, R (1996) Brisbane, Qld: Institution of Engineers, Queensland Division

2. Site Characteristics

2.1 Climate

MDM experiences a grassland climate with a hot dry summer from October to April and mild winter from May to September. Rainfall is unreliable and unpredictable and is generally generated through significant events (e.g. cyclones). The rainfall Intensity-Frequency-Duration (IFD) data obtained from the Bureau of Meteorology (BOM) is presented in Table 2-1.

Table 2-1: IFD Rainfall Depths (mm) at 22.0945°S, 118.5918°E

Duration	63.2%	50%	20%	10%	5%	2%	1%
30 min	19.0	21.9	30.9	37.1	43.2	51.4	57.7
45 min	22.2	25.5	35.9	43.1	50.1	59.4	66.6
1 hour	24.4	28.0	39.6	47.4	55.1	65.4	73.4
1.5 hour	27.5	31.7	44.9	53.9	62.9	74.8	84.2
2 hour	29.8	34.4	49.1	59.2	69.2	82.8	93.4
3 hour	33.2	38.5	55.8	67.8	80.0	96.6	110
4.5 hour	37.0	43.2	63.8	78.6	93.7	115	132
6 hour	40.0	47.1	70.6	87.8	106	131	151
9 hour	44.8	53.2	81.8	103	126	158	185
12 hour	48.8	58.3	91.1	116	143	182	213
18 hour	54.9	66.2	106	137	170	218	257
24 hour	59.8	72.3	117	152	191	244	289
30 hour	63.7	77.2	126	164	206	264	313
36 hour	66.9	81.3	133	173	219	279	330
48 hour	72.0	87.5	143	187	236	300	352
72 hour	78.7	95.5	155	202	254	318	371

2.2 Land Use

The MDM is largely undeveloped, except for existing unsealed access tracks across the site. The surrounding area is also largely undeveloped pastoral land. The old Mulga Downs Station homestead is located to the north of the MDM development envelope, just inside the western extents of the surface water study area. The Mulga Downs Station Homestead is an asbestos contaminated site.

The Wittenoom Asbestos Management Area (WAMA) is located immediately adjacent to the west and southwest of the MDM development envelope. Other mines including Cloudbreak Iron Ore Mine and Roy Hill Mine exist greater than 50 km from the site to the east.

2.3 Regional and Local Hydrology

MDM is entirely located within the Goodiadarrie Swamp catchment, which is a sub catchment of the Lower Fortescue River, and surface water flows, in general, to the south and southwest towards the Swamp (Figure 2-1), which flows west towards the Pilbara coastline and consists of a series of interconnected wetlands spanning 70 km, covering an approximate area of 4,140 km². MDM is bordered by the Chichester Range to the north and the Hamersley Range to the south. The claypan

extents shown on Figure 2-1 represent the extent of the Priority Ecological Communities associated with the claypans.

Surface water in the Pilbara is primarily large runoff created by significant rainfall events and cyclones, and tends to contain high sediment loads. MDM is located within the Pilbara Surface Water Area, a Surface Water Proclaimed Area under the Western Australian *Rights in Water and Irrigation Act 1914*. Water quality is discussed in the previous ESCP (GHD, 2023).

There are no Ramsar Sites in the vicinity of MDM, with the nearest wetland listed in the Directory of Important Wetlands in Australia (DIWA) being the Fortescue Marsh (which is a proposed Ramsar Site) which is shown to the south on Figure 2-2. To the west of the Goodiadarrie Hills, the Fortescue Marsh is generally referred to as Goodiadarrie Swamp.

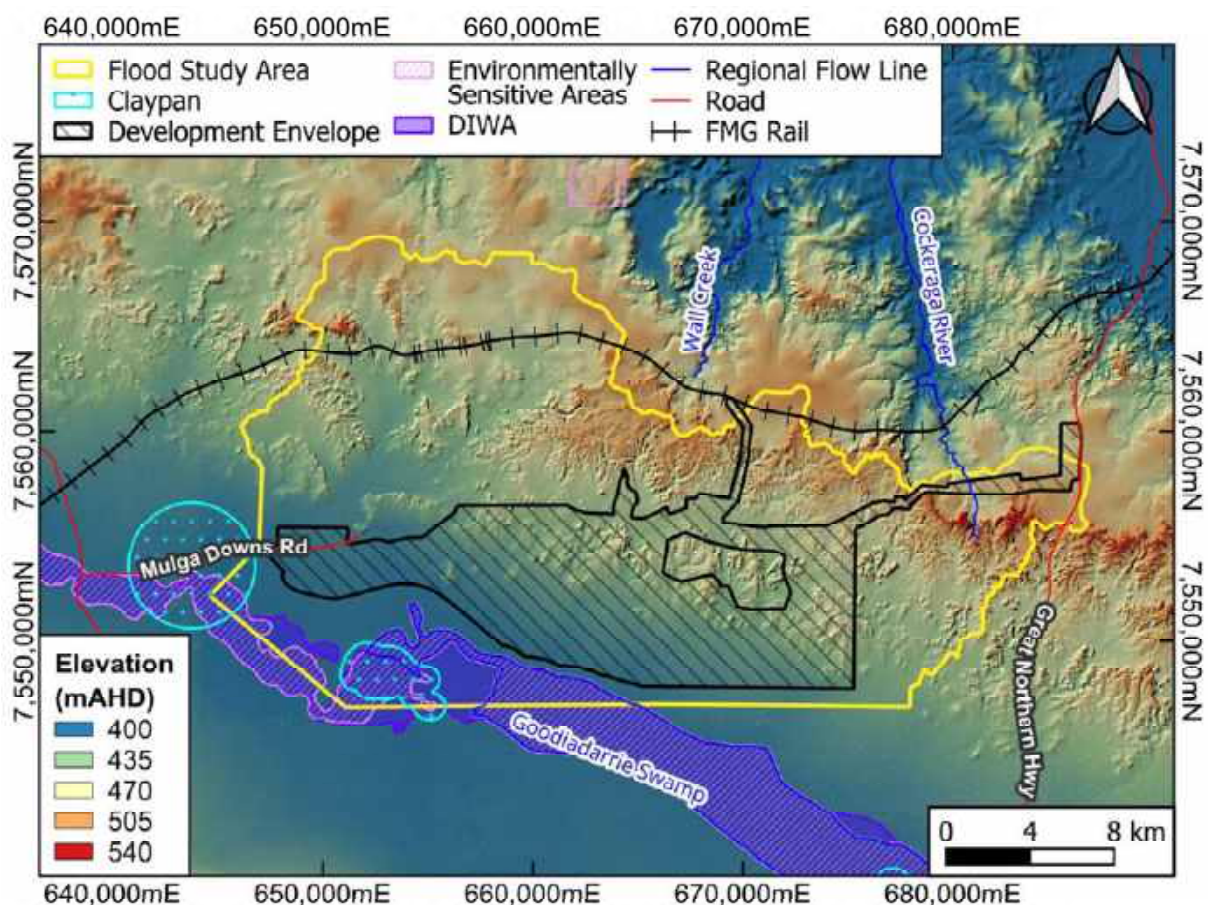


Figure 2-1: Site Topography and Hydrology

2.4 Geology and Soils

A number of geotechnical assessments have been previously completed for the MDM including:

- Mulga Downs Mine FS – Recommended Geotechnical Site Investigation (Ref: MDM-30000-GT-REP-0001, PSM4131-049R)
- Mulga Downs Rail Spur - W Alignment and Mulga Junction – Geotechnical Desktop Study Report (Ref: MDH-3270-GT-REP-0007, 062403REP01)
- Mulga Downs East Project Feasibility Study – Haul & Mine Access Roads – Geotechnical Factual Report (Ref: MD-1000-GT-REP-0001)

- Mulga Downs East Project Feasibility Study – Mine Deposit Borrow Search Areas – Geotechnical Factual Report (Ref: MD-1000-GT-REP-0002)
- Mulga Downs Pre-Feasibility Study – Package 2 Desktop Site Investigations (Ref: 8000-GE-REP-0001)

Typical materials encountered include silt, clay, sand and gravel, with unconsolidated soils identified within existing drainage channels which often result in sediment generation regardless of the storm event. For further information on this, refer to the documentation detailed above and the previous conceptual ESCP (GHD, 2023).

2.5 Groundwater

The open pit mining operation will not extend below the water table, avoiding the need for dewatering. Water supply required for construction and operation of MDM will be sourced from groundwater.

2.6 Topography

At the north of the study area, the topography has steep undulating hills and reaches its highest point of approximately 515 mAHD, in contrast to its lowest point of approximately 405 mAHD along the Fortescue River. The natural terrain slope is presented in Figure 2-2, which generally slopes downhill from north to south and forms the natural flowpaths shown.

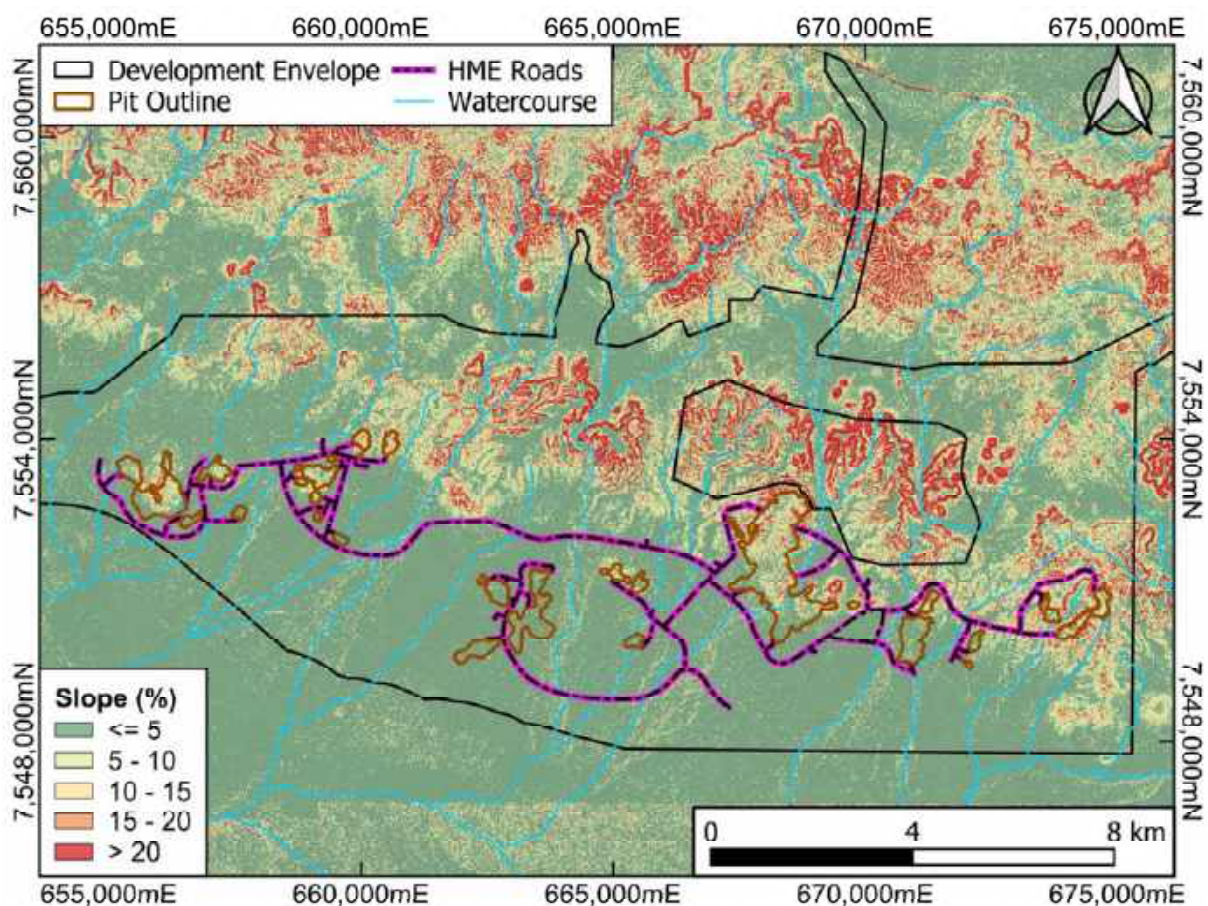


Figure 2-2: Natural Terrain Slope

2.7 Environmental Values

2.7.1 Fauna

A number of fauna surveys have been undertaken across MDM with over 400 species identified including reptiles, mammals, amphibians, insects and birds. An Environmental Management Plan will be implemented to minimise the impact of any habitat loss associated with clearing for the MDM.

2.7.2 Flora and Vegetation

A number of flora and vegetation surveys have been undertaken and identified a variety of shrublands, woodlands and grasslands with conditions ranging from excellent to completely degraded. No Threatened Ecological Communities have been identified, nor are there any environmentally sensitive areas or conservation areas within the proposed project boundaries.

2.8 Heritage

MDM is located within two Native claim title areas and aboriginal heritage surveys have been undertaken that have identified approximately 300 aboriginal heritage sites. An Aboriginal Heritage Management Plan will be developed for the site. Environmental and heritage constraints are presented in Figure 2-3.

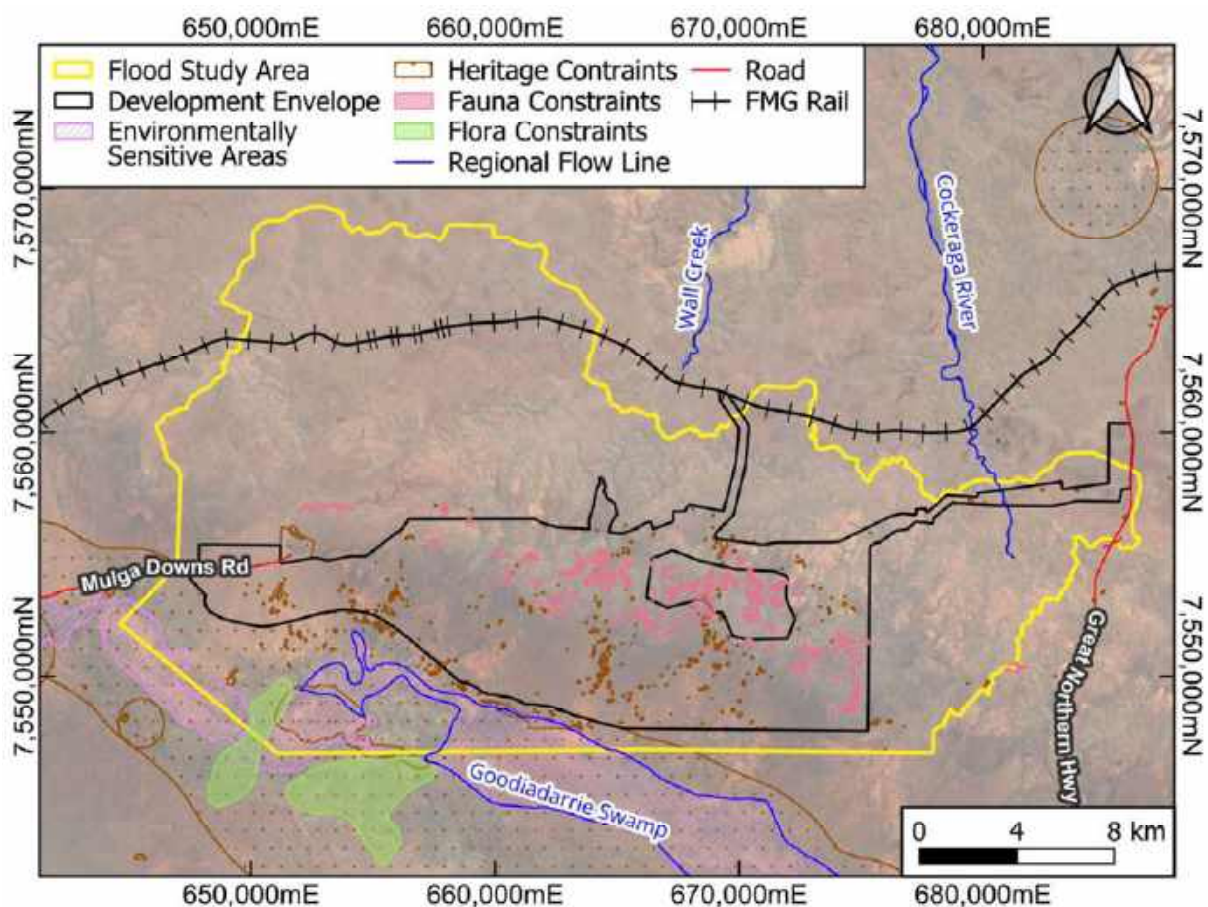


Figure 2-3: Heritage and Environmental Constraints

3. Erosion and Sediment Control Strategy

3.1 Potential Sources of Erosion and Sedimentation

Due to the ground disturbance and vegetation removal associated with the new infrastructure and activities, there is likely to be an increase of sediment runoff and erosion. Surface water quality in the Pilbara tends to be dominated by high sediment loads caused by the large runoff events generated by significant rainfall events and cyclones.

Diversion of flows into defined channels (diversion channels) have the potential to concentrate flows and increase velocities, also increasing potential for scour. Activities associated with the MDM such as open cut mining and stockpiling of topsoil and waste materials are all likely locations where sedimentation and erosion may occur.

Mining operations that have the potential to cause erosion or generate sediment and impact the surrounding catchment areas are:

- Continued operational and construction activities
- Clearing or disturbance of land for mining or other activities
- Placement of overburden and topsoil
- Vehicle and equipment movements

The MDM may also be a source of Acid and Metalliferous Drainage (AMD), Neutral Mine Drainage (NMD), and Saline Drainage (SD). If associated materials are identified and exposed, they will require additional management measures outside the scope of this report.

3.2 Potential Impacts of Erosion and Sedimentation

If left uncontrolled, erosion and sedimentation can reduce water quality due to increased sediment loads. Discharging untreated water to the natural environment has the potential to infill downstream water courses and ponds and smother vegetation, impacting both flora and fauna.

In addition to the reduction in water quality, erosion can undermine built infrastructure and cause long term changes to the landscape such as soil degradation and loss of vegetation and habitat. The economic and environmental cost can be substantial, so intervention, monitoring and control is critical.

Erosion and sedimentation impacts which may potentially result from MDM include:

- Erosion due to increased runoff volumes and velocities from the removal of vegetation, land disturbance, the introduction of impervious surfaces on hardstand areas and diversion of surface water around infrastructure footprints
- Increased sedimentation due to stockpiling of materials and the construction of surface facilities including access roads and tracks
- Increased scouring during the construction of surface facilities adjacent to watercourses
- A decline in water quality and degradation of local amenities through sediment transport to nearby watercourses

3.3 Erosion and Sediment Control Strategy

There are two categories of surface water across the MDM which will require different management measures to minimise potential impacts on the downstream environment:

- Clean Water – runoff from upstream catchments and undisturbed or rehabilitated areas

- Dirty Water – runoff from disturbed areas including roads, waste dumps, stockpiles and infrastructure pads

The primary objective of the surface water management measures proposed in this ESCP is for the MDM to result in no significant impacts on the surface water regime within the Goodiadarrie Swamp and its catchment, in terms of both the quality and quantity of the water.

3.4 Control Measures

3.4.1 Erosion and Dust

Activities like clearing, mining, earthmoving, drilling, blasting and vehicle movement on unsealed roads all have potential to create dust, as does erosion due to runoff from stockpiles, waste dumps and unsealed laydown areas. It is proposed to adopt the following standard practice measures to minimise erosion and dust creation across MDM:

- Minimise ground disturbance and clearing and conduct ongoing rehabilitation
- Control stockpiles heights, reuse topsoil and design batter slopes that minimise potential for erosion
- Locate infrastructure away from existing watercourses where possible
- Divert clean water from upstream catchments around infrastructure footprints and into downstream flow paths using natural channels as much as possible
- Install bunding around the base of waste dumps to separate external clean water from internal dirty water
- Access roads across watercourses will have floodways, culverts and table drains installed with appropriate erosion protection to manage surface water flows
- Apply water and/or chemical dust suppressants to unsealed surfaces where appropriate.
- Limit driving speeds on unsealed surfaces to the posted speed, which is typically 10km/hr below the design speed

3.4.2 Sedimentation and Water Quality

Treatment of clean water is not necessary as any sediment loads carried will be typical of the area and can be returned, untreated, to the downstream environment.

Dirty water runoff from disturbed areas has potential to contain high sediment loads and will be managed using the following measures:

- Direct dirty water runoff from waste dumps and crusher pads towards sedimentation basins
- Design access roads and internal haul roads to minimise any contribution to sediment loads during frequent rainfall events

Water should generally be treated close to the disturbance area to reduce the volume of runoff involved and maintain separation from clean water. Runoff should be captured using bunds and open drains to direct it towards sedimentation basins for treatment prior to discharging to the downstream environment. Batter faces of bunds should be designed to minimise the potential for erosion, with rock pitching, vegetation and lining where the water velocity and bund material indicate that erosion is likely.

Waste rock is expected to primarily consist of banded iron formation and shale. These are geochemically benign, and it is not anticipated that there is any requirement to treat dirty water for acid. HanRoy should undertake assessments as required to validate this assumption.

4. Design of Control Structures

4.1 Design Criteria

Design criteria for hydraulic structures is covered by the project Basis of Design (BoD) (Document number MDM-30000-GE-SPC-0001), and additional information provided below.

4.2 Levees and Drains

Levees will be used to protect critical mine infrastructure and will be designed in conjunction with drains to divert high volumes of clean water, and also separate clean and dirty water. Levees will typically be constructed using low permeability material to prevent seepage and be protected from erosion where flow velocities dictate the requirement.

4.3 Sedimentation Basins

Dirty water from disturbed areas will be directed into sedimentation basins to reduce sediment loads prior to discharge into the downstream environment. Sufficient basin depth will be provided to ensure adequate storage for deposited sediment and remove the design sediment load.

The flow off the site shall be collected for the design storm event in a sedimentation basin for disposal by evaporation. Flows higher than the design event will be allowed to bypass the sedimentation basin as sediment loads in runoff are naturally elevated during larger events and therefore site runoff is anticipated to mimic natural flow conditions. Each basin will be located on the downstream side of any water flows exiting plant areas.

Proposed nominal locations of sedimentation basins are shown on Figure 4-3, which have been numbered for reference and are based on the assumption that bunding and/or diversions will be implemented around the base of the waste dumps in order to retain and direct flows to the basins.

4.3.1 Sedimentation Basin Sizing

As per RFI 012, the CALM method (Witheridge and Walker, 1996) has been used to size sedimentation basins as through-flow basins to remove 80% of all sediments greater than 125 μ for a 10% AEP 6-hour event using the inputs detailed in Table 4-1. The catchment area reporting to each basin is presented in Table 4-2, along with the required ponded surface area calculated.

In addition:

- The calculated basin dimensions assume a minimum base width of 5 m to accommodate the incoming drain, as shown on Figure 4-1. A minimum total depth of 1.2 m below the weir of the structure was adopted to allow for a minimum Settlement Depth of 0.6 m and Sediment Storage Depth of 0.6 m. If the required minimum storage volume is greater than this provides, based on the surface area of the basin, the Sediment Storage Depth will be increased. The relationship between basin depth and area can be adjusted to provide more efficient earthworks outcomes subject to detailed earthworks design.
- The sediment basin outlet structure should consist of a spillway designed for events greater than the 10% AEP.
- Sediment should be removed from the trap before each wet season, or at other appropriate intervals established from monitoring.

During larger events (such as a 1% AEP event), flow is still processed through the basin, but the detention time is reduced and the sediment removal efficiency reduced. During these events, the

sediment loads in runoff are naturally elevated and therefore dirty water passing through the basins will not adversely impact the downstream environment.

Where practical, settling ponds, sediment traps and waste dumps should be placed outside the 1% AEP floodplain of drainage lines. Where this is not possible, suitable mitigation measures shall be provided to protect them from inundation, which may cause additional erosion and sedimentation.

Table 4-1: CALM Method Input Parameters

Parameter	Value
6-hour 10% AEP average rainfall intensity from IFD (Table 2-1)	14.6 mm/hr
Settling velocity for a 125 μ particle	0.01 m/s
Basin surface area required per m ³ /s of inflow for a 125 μ particle	143 m ²
L:W ratio for basin surface area	3:1
Design settlement depth	0.6 m
Sediment storage depth	Minimum 0.6m
Annual sediment yield estimated using RUSLE method (A = R x K x LS x C x P)	1170 t/km ² /yr or 557 m ³ /ha/yr
<ul style="list-style-type: none"> Rainfall-runoff erosivity (R) (Viscarra Rossel, et al., 2016 / GHD, 2024) Soil Erodibility (K) (Viscarra Rossel, et al., 2016 / GHD, 2024) Slope length and steepness factor Ground cover management (C) - no ground cover management Soil conservation practice (P) - default for cleared vegetation Duration (basin desilted every 12 months) 	<ul style="list-style-type: none"> 1241 MJ.mm/ha.hr.yr 0.029 t.hr/MJ.mm 0.25 across the site 1 1.3 1 year

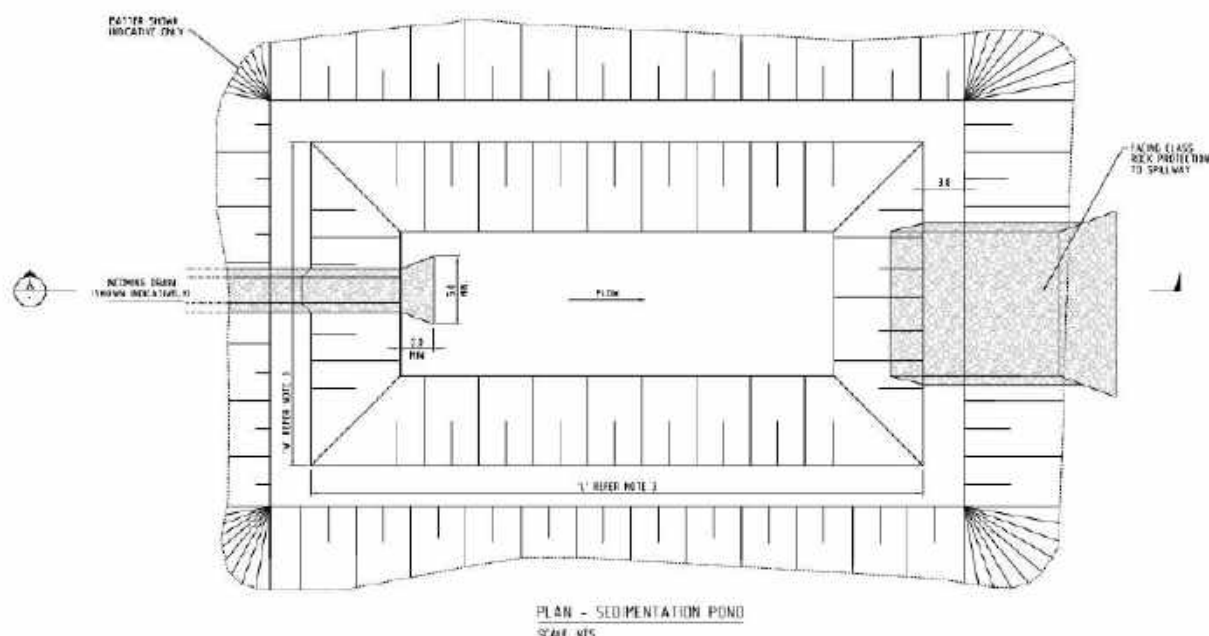


Figure 4-1: Typical Sedimentation Pond Plan

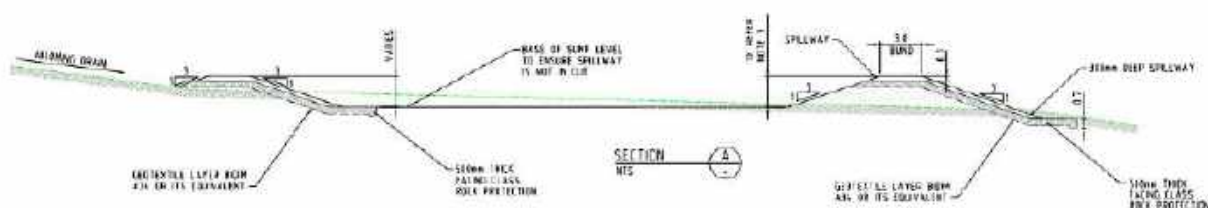


Figure 4-2: Typical Sedimentation Pond Section

Table 4-2: Indicative Sediment Basin Sizes

Sediment Basin ID	Type	Catchment Area (ha)	10% AEP Flow Rate (m ³ /s)	Proposed Pond Surface Area (m ²)*	Proposed Depth to Weir (m)	Minimum Target Volume (m ³)**
1	Waste Dump	9.4	0.2	446.5	1.20	24
2	Waste Dump	57.3	1.4	477.2	1.27	253
3	Pad	34.9	0.9	446.5	1.20	126
4	Pad	61.5	1.5	490.6	1.30	278
5	Waste Dump	10.1	0.2	446.5	1.20	26
6	Waste Dump	22.2	0.5	446.5	1.20	68
7	Pad	55.8	1.4	472.3	1.26	245
8	Waste Dump	50.4	1.2	454.4	1.22	214
9	Waste Dump	28.7	0.7	446.5	1.20	96
10	Waste Dump	29.8	0.7	446.5	1.20	101
11	Waste Dump	31.6	0.8	446.5	1.20	110
12	Pad	41.8	1.0	446.5	1.20	163
13	Pad	62.7	1.5	494.4	1.31	286
14	Pad	44.6	1.1	446.5	1.20	180
15	Waste Dump	23.3	0.6	446.5	1.20	72
16	Pad	97.3	2.4	628.3	1.46	496
17	Waste Dump	17.1	0.4	446.5	1.20	48
18	Waste Dump	40.3	1.0	446.5	1.20	155
19	Waste Dump	8.2	0.2	446.5	1.20	20
20	Waste Dump	10.1	0.2	446.5	1.20	26

* Proposed pond surface area assumes minimum depth 1.2 m, minimum base width 5 m, 1 in 3 batters and 3:1 aspect ratio at surface

** Minimum volume calculated using Average Settlement Depth = 0.6 m and Sediment Storage Depth as calculated per GALM Method



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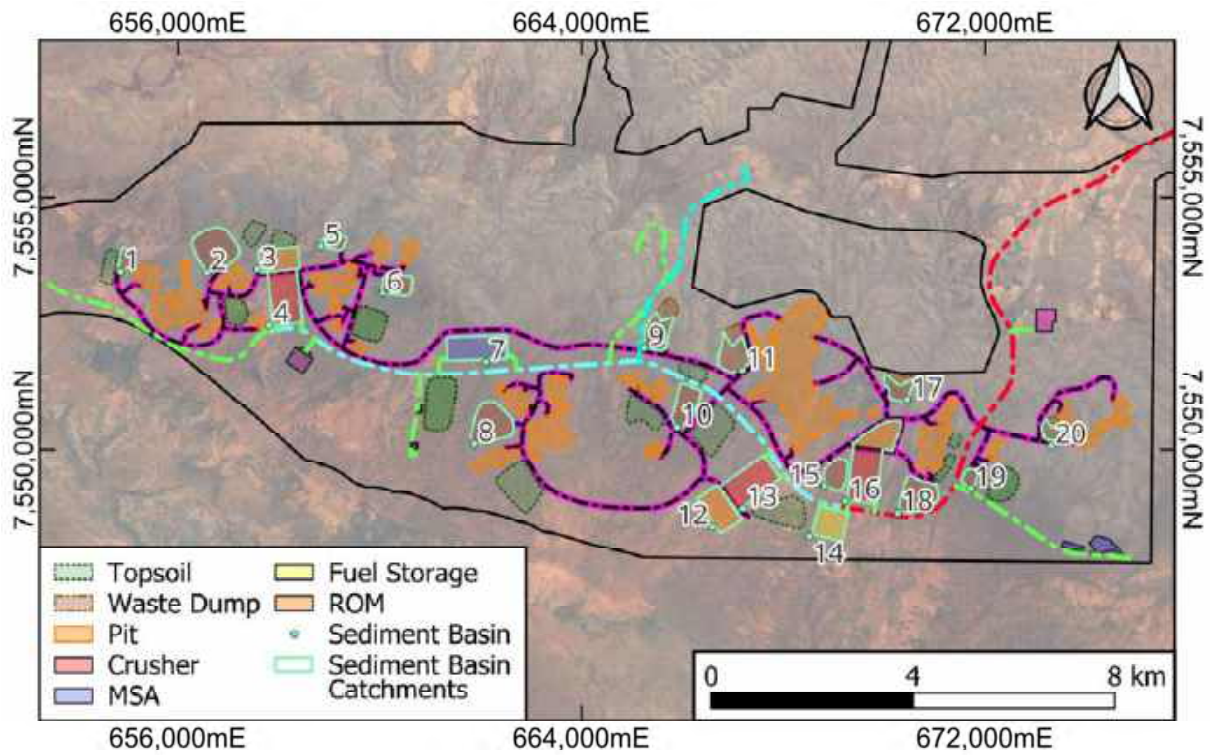


Figure 4-3: Proposed Locations of Sedimentation Basins

5. Implementation

5.1 Responsibilities

Responsibility for the ongoing maintenance and management of water in and around the site rests with all employees, making sure that site requirements are clearly communicated and followed with necessary polices. In addition to this, responsibility for the following items should be delegated as deemed appropriate:

- Implementation and revision of this plan, as required, including monitoring and reporting
- Implementation of strategies, policies and procedures necessary to support this plan and ensure appropriate environmental protection measures
- Inductions, supervising and monitoring of ESCP
- Management of environmental impacts and risks
- Environmental Incident Reporting
- Communication of environmental requirements and consequences
- Actions to protect the environment
- Site inspections

5.2 Operational Maintenance

In order to ensure that the aims of the ESCP are achieved throughout the life of the MDM, it is important to implement regular inspection and maintenance of all erosion and sediment control measures:

- IECA (2008) recommends that all erosion and sediment control measures should be inspected with the following regularity, and details requirements for this:
 - At least daily when rain is occurring
 - At least weekly
 - Within 24 hours prior to expected rainfall
 - Within 18 hours of a rainfall event of sufficient intensity and duration to cause on-site runoff
- Repairs and maintenance requirements identified as part of these inspections are to be actioned within 7 days.
- Maintenance of sediment basins by removing built-up sediment should be completed as soon as reasonable and practicable, but within 7 days of an inspection, when settled sediment exceeds the volume of the sediment storage zone.
- Management and maintenance of vegetation in and around infrastructure so that it slows flow but does not block it.
- Formal asset management, i.e. recording upgrades, inspections, maintenance and modifications.

In addition, access to rehabilitated areas should be restricted.

5.3 Review and Reporting

This ESCP is to be reviewed and updated as required in order to maintain the suitability and effectiveness of the measures proposed. Situations that will prompt a review include:

- Modifications to site approvals
- Recommendations from an incident report or audit

- Recommendations to improve the environmental performance (which may include advances in technology)

Any changes must be communicated to relevant stakeholders as part of best practice change management.

5.4 Mine Closure

Erosion and sedimentation measures may be removed as part of the rehabilitation process after the mine closes and infrastructure is removed.

6. Monitoring and Contingencies

6.1 Monitoring Plan

Prior to commencing works on site, a water quality study should be completed to establish baseline levels and triggers for immediate action if the values are exceeded.

6.2 Trigger Response

Where a trigger value is exceeded, response should be immediate and consist of the following:

- Investigation of the source to determine responsibility and extent of impact
- Internal reporting of the results of an investigation
- Reporting to necessary authority if required
- Establishment of responsibility and timeframe for rectification

7. References

Department of Energy, Mines, Industry Regulations and Safety, Interactive geological map (Geoview.WA), Australian government, accessed 24 August 2024, <https://www.dmp.wa.gov.au/GeoView-WA-Interactive-1467.aspx>

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