NEW HOPE GROUP

Erosion and Sediment Control Plan

New Acland Coal Mine Stage 3

February 2023

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1. Introduction

This Erosion and Sediment Control Plan (ESCP) outline's the erosion and sediment control (ESC) requirements for the New Acland Coal (NAC) Mine (the Mine). The ESCP also outlines the activities to prevent erosion and sedimentation from impacting on the Environmental Values (EV) of surrounding waterways. The Mine operates under Environmental Authority (EA) No. EPML00335713, which became effective on 26 August 2022 following the grant of Mining Leases (MLs) 50232 and ML700002 on that date.

1.1. Objectives

The objectives of the ESCP are to:

- minimise and mitigate erosion and sedimentation resulting from operations as well as erosion impacts associated with clearing of vegetation along the banks of the drainage lines;
- separate runoff from disturbed and undisturbed areas where practicable, including:
    a) diverting water from disturbed catchments into mine water storages or sediment dams constructed to contain runoff; and
    b) diverting clean water from entering areas of planned and existing disturbance;
- re-establish disturbed areas to allow vegetation propagation and regrowth;
- improve the integrity of areas prone to erosion through temporary and permanent erosion control measures;
- provide information necessary to implement effective erosion control measures; and
- prevent the degradation of water quality resulting from erosion and sedimentation through continued monitoring and improvement measures.

In addition, the ESCP addresses:

- the management of surface water flow from operational areas with the potential to generate sediment affected water;
- the types of ESC and appropriate application of these controls; and
- the contingency plans, operational measures, monitoring and mitigation techniques to manage erosion and sedimentation impacts.

1.2. Definition of areas requiring ESC

The EA guides the Mine's approach to water management. The EA also creates and defines water categories stipulating different management obligations for each. The three water categories referred to in the EA are:

1. **Mine Affected Water:** which includes: pit water, tailings water, process water;
2. **Stormwater:** rainfall runoff which has been in contact with disturbed areas other than those considered as Mine Affected Water; and
3. **Clean Water:** stormwater from undisturbed areas or substantially rehabilitated areas.

This document focuses on addressing the management of Stormwater. Stormwater is permitted to be released to water from ESC structures that are outlined in this ESCP to meet the objectives prescribed in this ESCP. Although the Management of Mine Affected Water and Clean Water is typically addressed in the NAC Stage 3 Water Management Plan, ESC measures for maintaining these structures are also addressed in this document.

2. EA Compliance

Under the *Environmental Protection Act 1994* (EP Act) the Mine must comply with the following conditions outlined in the EA. This is summarised in **Table 1** below.

Table 1 EA Compliance Conditions addressed in this document

Condition number	Condition	Addressed in Document
C18	An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.	This document provides the ESCP. The document was developed by personnel with over 10 years of experience in Water Management and ESC at Mine sites. **Section 4** outlines the measures for ESC at different stages of mining activities with further details included in **Appendix A**.
C19	Stormwater other than mine affected water, is permitted to be released to waters from: a) Erosion and Sediment Control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by Condition C18	**Section 4** outlines the measures for ESC for Stormwater at different stages of mining activities with further details included in **Appendix A**. Section 5 provides details on inspection and operational requirements. **Section 6** and 7 outline responsibilities and reporting requirements under this plan.
	b) Water management infrastructure that is installed and operated in accordance with a Water Management Plan that complies with **Condition C20** for the purposes of ensuring water does not become mine affected water.	ESC measures for infrastructure that is installed to comply with the Water Management Plan is summarised in **Section 4.2 Table 2** with construction ESC measures for this infrastructure also outlined in **Section 4.1**.

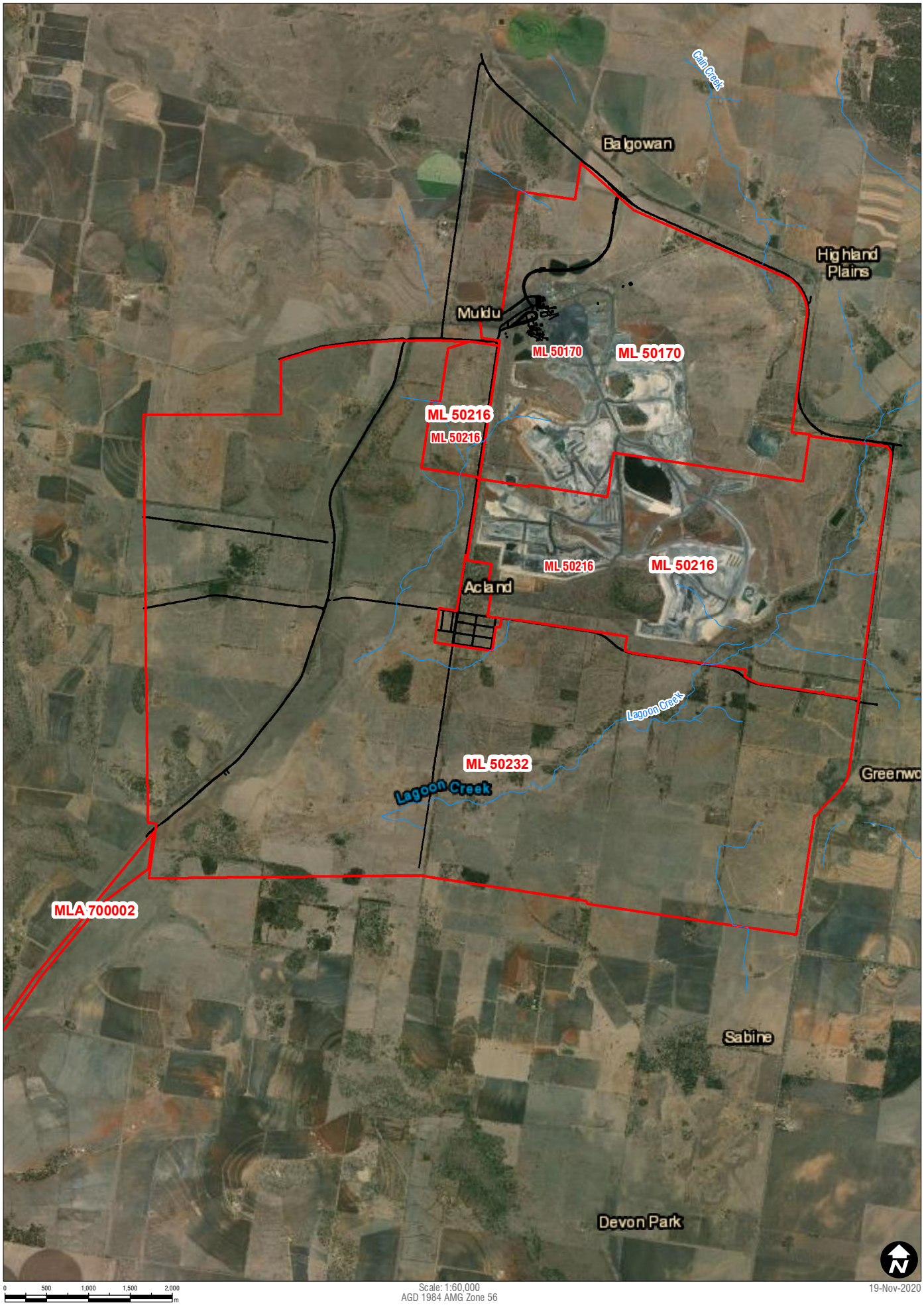
3. Site Description

3.1. Site Layout

The New Hope Group (NHG) has commenced the Stage 3 Project which has the potential to generate up to ~7.5 million tonnes (product coal) per annum (Mtpa) from open cut mining activities located on mining lease (ML) 50170, ML 50216, ML 50232 and ML 700002, under the approval of EA No. EPML00335713 (dated 06 July 2022). The Stage 3 Project will progressively develop three new resource areas, namely, Manning Vale East, Manning Vale West, and Willeroo utilising a strip-mining process with disturbed areas progressively rehabilitated. This expansion will extend the life of the Mine to approximately 2035 at which stage the current coal resource will be depleted. Final rehabilitation of the disturbed areas (Mine and Stage 3) will continue several years beyond the life of mine.

The Mine site is located within southeast Queensland's Darling Downs region, approximately 14 km north-northwest of Oakey, approximately 35 km northwest of Toowoomba in Queensland. The Mine is subject to undulating terrain that spans the Lagoon Creek Catchment. Lagoon Creek flows into Oakey Creek which is part of the larger Condamine River Catchment. The Upper Condamine River catchment has an area of approximately 13 000 km^2. The Upper Condamine is part of the Balonne-Condamine Basin which includes most of the Darling Downs and forms part of the Murray Darling Basin Catchment.

The Mine Site is shown in **Figure 1**.



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LEGEND

Mining Leases

Watercourse

Note: Aerial imagery captured December 2017

New Acland Mine Site Location

Figure 1

3.2. Climate

Historical rainfall data was sourced for the site from the Scientific Information for Landowners (SILO) database for 1900 to 2021. The SILO database is a database hosted by the Queensland Department of Environment and Science (DES) developed in collaboration with the Bureau of Meteorology (BoM). A gridded data point was selected from SILO to represent the Mine due to its correlations with nearby gauges and the length and quality of the gauged record. The centroid of the SILO grid selected was -27.3, 151.7.

Mean annual rainfall and mean annual evaporation are said to be 628mm and 1772 mm, respectively. Rainfall associated with intense thunderstorms can result in 1hr rainfall depths of 28mm to 78mm for events up to the 1% AEP event. This can result in localised flooding and erosion of exposed soils.

Monthly rainfall and evaporation averages are presented in **Figure 2**. The results are indicative of a dry climate showing evaporation exceeding average rainfall for every month of the year. These results also illustrate the seasonal variation of rainfall in the area.

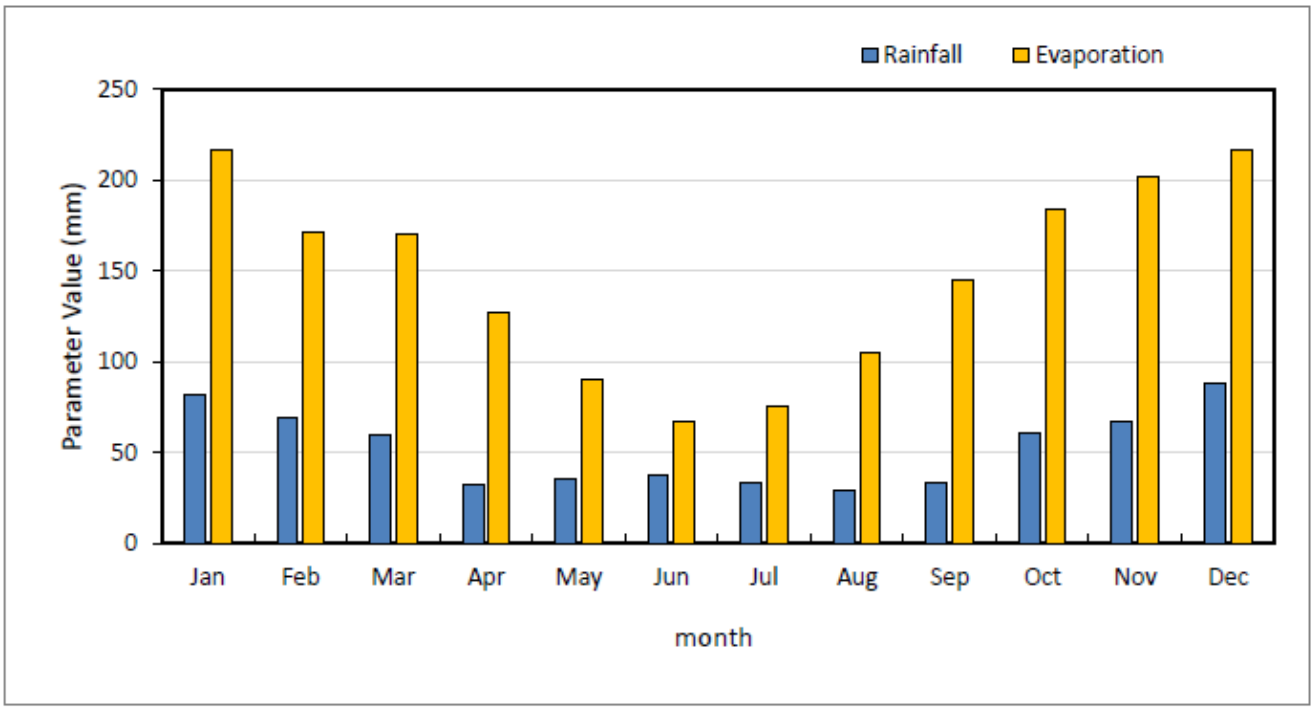


Figure 2 Average Monthly Rainfall Data and Evaporation Data (SILO: -27.3, 151.7)

3.3. Topography

The natural topography of the locality is characterised by a variety of features including flat plains and steeper ridgelines and hills.

The Mine generally falls to the south-west, discharging into Lagoon Creek which flows into Oakey Creek. Natural terrain varies from 2.5% slope down to 0.5% slope. Rehabilitated surfaces are guided by the conditions outlined in the steeper than natural terrain with maximum slopes of 17%, typically much less than this.

All creeks and waterways within the vicinity of the Stage 3 Project area are ephemeral, holding water in small pools for short periods of time post rainfall season.

3.4. Soil and Spoil Characteristics

Soils across the MLs are generally defined as alluvial plans, gently undulating clay plains and mixed sediments and soils on basalt.

The risk of soil loss from water erosion magnifies with increase water velocity when the land is devoid of vegetation. The risk of soil loss that been assessed as low to moderate over the ML areas.

4. Erosion and Sediment Sources and Controls

The transport of sediment off site and into natural drainage systems can have a wide range of detrimental effects including safety, social, economic and environmental impacts. Pollution can occur in the form of finer sediment fractions such as silts and clays that create turbid water, and also in the form of coarse sediments such as sand particles that travel off-site.

The selection of appropriate ESC controls is influenced by several site and project specific characteristics these include:

- the scale and type of the disturbance;
- the soil types and/or slopes;
- the locality of the disturbance;
- the duration of the disturbance; and
- site specific constraints such as available space and sensitive receptors.

ESC sources and controls are outlined below.

4.1. Construction

The following activities have been identified as activities that could cause soil erosion and generate sediment unless controlled:

- stripping of vegetation, subsoil and topsoil;
- stockpiling of subsoil and topsoil;
- earthworks activities;
- construction of water management structures (i.e. clean water diversions, dirty water channels and sediment dams);
- construction / upgrades of creek/drainage crossings;

Management principals to reduce the risk of erosion and sedimentation are provided below:

- minimise soil erosion (i.e. rehabilitation, drainage and erosion control measures) at the source, rather than trapping resultant sediment;
- separation/diversion of 'clean' water catchment runoff from disturbed areas (where practical) to minimise sediment-laden runoff volumes requiring treatment;
- conducting best practice land clearing procedures for all proposed disturbance areas. This includes clearing when soil moisture conditions are optimal, working machinery across the slope and preventing wheel ruts which can concentrate overland flow paths, timing and staging of works to minimise exposure of bare soil, and removing windrows and machinery tracks;
- undertake disturbance works, as much as is practically possible, during the dry season (April to October) and during periods when good weather is forecast;
- dust suppression through irrigation/watering will be required to manage dust generation over areas with the potential to generate sediment affected water until a time that the sites are stabilised;
- containment of all sediment affected water on-site prior to treatment or disposal in a suitable manner; and

- channel runoff from disturbed areas and water from excavations towards sediment dams or sediment traps using grading, swales, ditches or barriers. Typical ESC designs for construction activities are outlined in **Appendix A**.

Disturbance activities will be conducted in accordance with a variety of administrative processes which will guide the implementation of ESC during construction, including:

- this ESCP and any relevant Contractor plans and procedures;
- project specific plans and approvals such as those for the Lagoon Creek crossing
- if required, assessment against the DEHP Manual for Assessing Consequence Categories and Hydraulic Performance of Structures including external certification (if required); and
- inspections.

Erosion and sediment control measures will be put in place prior to disturbance to reduce sediment laden stormwater discharging to the receiving environment. The schedule and timing of works is an important element of any construction activity. Construction (particularly within floodplain areas) will consider the risk rating for monthly rainfall. Where construction must occur during wet season, appropriate levels of erosion and sedimentation controls shall be established and includes:

- Stormwater management measures, such as drainage diversions and bunding, will be implemented before works occur; and,
- Emergency response procedures and flood forecasting will be incorporated into operating procedures.

4.2. Operations

Specific erosion control measures to be employed for the Stage 3 Project are presented in **Table 2** below. Many of the principals employed for construction ESC, as outlined in **Section 4.2** will also be utilised during operations.

Table 2 Control measures for life of mine land use.

Area	Control Measure
Cleared Land	• Restrict clearing to areas essential for the works • Windrow vegetation debris along the contour • Minimise length of time soil is exposed • Divert runoff from undisturbed areas away from the works • Direct runoff from cleared areas to sedimentation dams • Installation of temporary sediment dams to capture runoff from cleared areas in advance of the pit progression. These dams will be mined through within two years of construction. See **Appendix B** for standard sizing methodology.
Exposed sub-soils	• Minimise length of time subsoil is exposed • Direct runoff from exposed areas to sedimentation dams

Area	Control Measure
Active Pits	• Drainage to be installed to divert surface water away from excavation (see **Appendix A** for standard sizing methodology) • Utilise cut-off drains to divert upper catchment away from disturbed areas • Installation of temporary sediment ponds in accordance with the pit progression to capture areas draining away from the pit and undergoing rehabilitation. See **Appendix B** for standard sizing methodology. • Install appropriate controls in concentrated flow paths/drains along haul roads and the alike where erosion is evident • Avoid stockpiles within flow paths • Topsoil stockpiles should be revegetated to reduce wind erosion or erosion from runoff • Utilise slope/ embankment drains where erosion is evident. Utilise check dams to reduce velocity and promote sediment drop-out • Riprap aprons or spreader-bars at the outlet open channels to dissipate flow
Active Waste Rock Dump	• Direct all runoff from dumps to dedicated Environment Dams • Avoid placement of sodic waste material on final external batters • Control surface drainage to minimise the formation of active gullies
Rehabilitation	• Recontour waste rock dumps progressively to landform criteria • Install drainage control works (see **Appendix A** for standard sizing) • Replace topsoil, rip on the contour and seed • Direct runoff from rehabilitated areas to sediment dams
Infrastructure	• Provide protection in drains (i.e. rip pap, grass) where water velocity may cause scouring • Confine traffic to maintained tracks and roads • Install suitable controls (i.e. sediment traps, silt fences) where necessary to control sediment (see **Appendix A** for standard sizing). • Rehabilitate disturbed areas around construction sites promptly • Provide cross fall drainage either side of the road crown (or from in-fall and outfall cross falls) to shed runoff from the road surface (if possible) • All access tracks shall be regularly inspected to determine whether wheel rutting is concentrating runoff and causing erosion. Particularly, all access roads should be inspected and re-profiled (where needed) prior to the wet-season to prevent concentration of sheet flow • Table drains, culverts and cross drains are to be used where required to safely convey the water from the haul road and access track surfaces so as to prevent runoff from eroding them or adjacent land. Check dam spacing generally should not exceed 50 m • Sediment fencing, vegetation filters, and level spreaders are used to control the sediment at the end of mitre drains, and controls are periodically inspected to maintain their performance

Area	Control Measure
Creeks, Diversions and Structures	• Riprap aprons at the outlets of culverts and ditches to dissipate the velocity • Line ditches with riprap where erosion is evident, or slopes are greater than 10% • Prevent stockpiling material within or adjacent to channels or overland flow paths • Sediment ponds shall be implemented where sediment laden runoff in channels is observed. Investigation and implementation of erosion control measures should occur to prevent erosion at the source where operationally possible • Any clean water diversion structures will be designed to convey the 10% AEP[1] design discharge in accordance with Table 4.3.1 of the International Erosion Control Association (IECA) guideline (See **Appendix B**) and will include suitable channel lining measures, as required

4.3. Post Mining

ESC measures are provided for disturbed land undergoing progressive rehabilitation until the disturbed land is rehabilitated to a stable, vegetated landform following completion of mining related activities. Previously disturbed areas, undergoing progressive rehabilitation behind the active pit will drain to the temporary sediment ponds as outlined in **Section 4.4** and in **Appendix B**.

Rehabilitation of disturbed land is completed in accordance with the Stage 3 Project's Final Land Use Rehabilitation Plan (FLURP).

[1] Annual Exceedance Probability (AEP) is the probability of the event occurring or being exceeded in any one year (equivalent to a 1:10 ARI rainfall event).

4.4. Sediment Ponds

Sediment ponds shall be used to treat sediment affected water.

New Acland Coal Pty Ltd (NAC) implements two types of sediment ponds – Permanent and Temporary Sedimentation Ponds. Permanent Sedimentation Ponds are situated to provide on-going treatment to disturbed areas. Temporary Sedimentation Ponds are located within the future mine footprint used to capture sediment affected water and reduce pit inflows in disturbance areas ahead of the pit progression up until a time the structure is mined through.

The permanent sediment ponds located at the existing Stage 2 Mine are provided in **Table 3** and shown in **Figure 3**. As mining progresses, the number and location of temporary sedimentation ponds shall be determined by NAC staff in accordance with **Appendix B**. The design intent is to appropriately capture and treat sediment laden runoff from disturbed areas.

Temporary Sedimentation Ponds shall be no greater than 5ML, have an operational life of less than 2 years and be excavated below natural surface level (i.e. no embankment). The Temporary Sediment Ponds are expected to be Type D and F Basins as outlined in **Appendix B**.

Table 3 Permanent Sediment Pond details

Structure	Size	Location	Operation
Sediment Dam 1 (SD1)	94 ML (including ~16 ML of sediment)*	Near the product coal haul road exit, western mining lease boundary area (ML50170).	Contains runoff from CHPP Precinct and treated effluent discharge from STP.
Sediment Dam 2 (SD2)	60 ML	Near the South Pit's out-of-pit dump (ML50216)	Accepts clean stormwater from the established South Pit rehabilitation directly and as a transfer from ED3.
Temporary Sediment Dams	<5 ML	Located to collect runoff from cleared areas ahead of pit progression and prevent discharge into Pits. Multiple dams located near MVE, MVW and WILL Pits.	Contains runoff from disturbed areas and reduces volume of runoff which reports to Pits.

4.5. Catch Drains

Clean water diversions direct 'clean' water runoff from upstream catchments around the potentially disturbed and/mine affected areas of the site. The use of clean water diversions is likely to be required for catchments upslope of small disturbance areas.

Any clean water diversion structures will be designed to convey the 10% AEP design discharge and will include suitable channel lining measures, as required.

Catch drains can also be used to divert sediment affected waters away from clean areas into ESC controls such as swales or sediment ponds. Refer to **Appendix A** for standard sizing.

4.6. Swales

Runoff from exposed areas will be controlled by construction of swales/channels and bunds/ banks that will direct sediment laden runoff to suitably designed and constructed ESC devices.

Swales will be designed to convey runoff from a 10% AEP rainfall event. Energy dissipation and sediment trapping structures (i.e. check dams) may be required (at regular intervals to limit erosion, however this will be determined during the design of the channels). Refer to Appendix A for standard sizing.

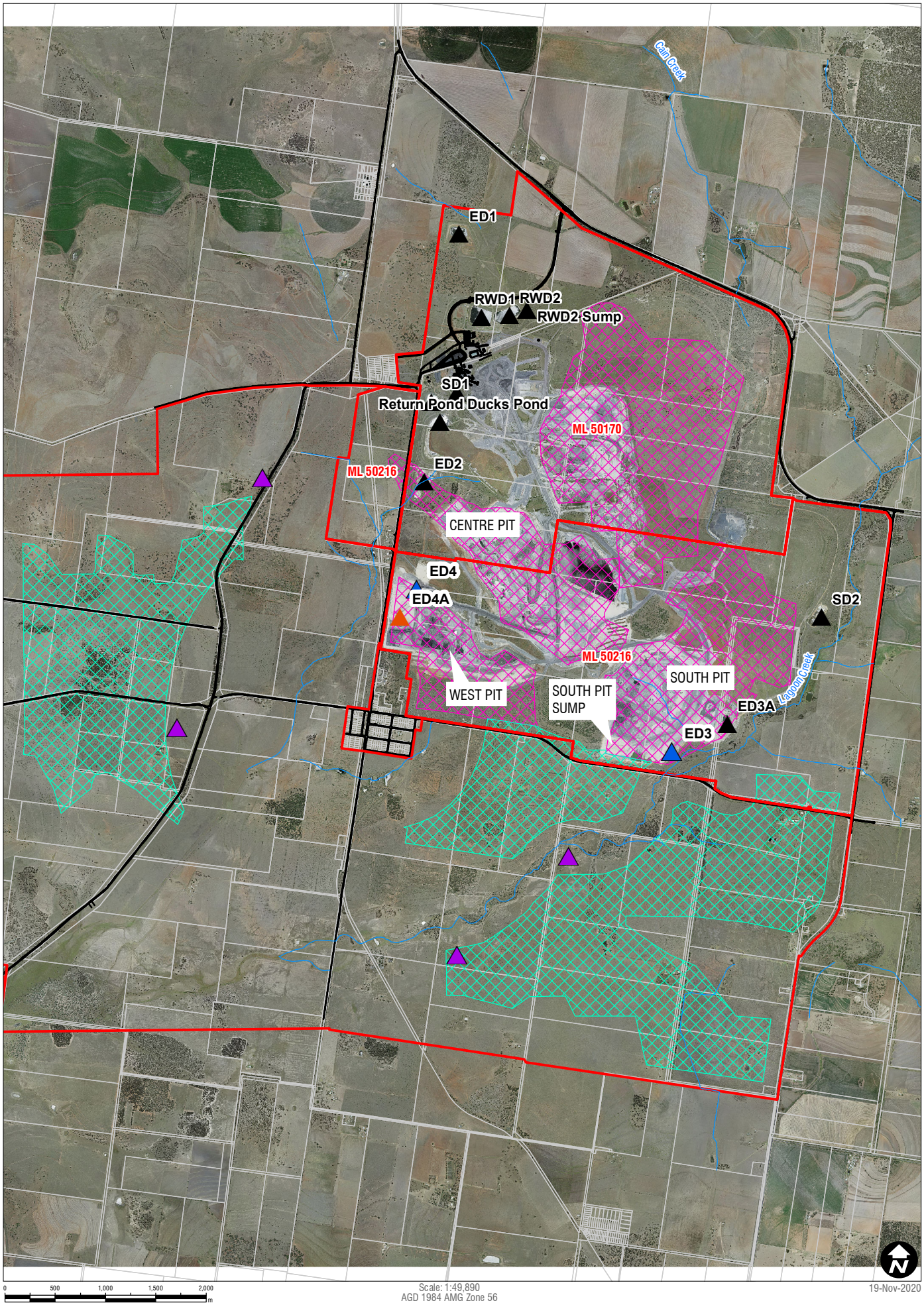
4.7. Check Dams

Check dams are used in channels to trap sediment and reduce the potential for scouring to occur. They can be made from a number of different materials including rock, coir logs, sandbags etc. Check dams are typically installed at regular intervals – typically closer together on steeper slopes.

It is important that check dams are installed such that flows cannot pass around the sides and that they overflow over the check dams themselves. The use of sandbags is limited to temporary ESC in channels during construction, as these devices tend to deteriorate over time. Where sandbags are used, it is important not to overfill them as this can cause gaps when the sandbags are wedged together. Three quarters to two thirds full is generally the right amount of material within each sandbag.

4.8. Sediment Fences

Sediment fences act as minor sediment dams. They temporarily detain runoff, trapping sediment and allowing filtered water to pass. Sediment fences should be constructed around the base of any small areas of exposed land that are not subject to concentrated overland flows and that are not adequately protected by existing structures. Sediment fencing should be installed around the extent of the disturbance area where sediment-laden water could potentially enter clean downstream receiving waters. They are placed on the contour, or slightly convex to the contour, and each end of the fence should be turned to create a stilling pond up slope of the fence. Sediment fences require regular maintenance. Trapped sediments should be removed, pickets straightened, filter cloth re-secured and tightened as required.



LEGEND

- Mining Leases
- Watercourse
- Existing Infrastructure
- Historic Water Management Infrastructure
- Infrastructure (under construction)
- Proposed Infrastructure
- Stage 1/2 Pit Extent
- Stage 3 Pit extent

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Note: Aerial imagery captured December 2017

WATER MANAGEMENT INFASTRUCTURE

Figure 3

5. Inspection, Monitoring and Maintenance

The performance of ESC devices will decline if they are not maintained. All ESC devices (including sediment dams) shall be inspected regularly as part of the site's environmental inspection program. Notifications of non-compliance will specify the type(s) of non-compliance, the corrective actions needed and a time schedule for achieving compliance.

In accordance with the FLURP, regular visual inspections of rehabilitated areas will be undertaken to ensure water is safely conveyed from the areas and that a stable landform is being created. The inspections will also include assessing vegetation cover to ensure that erosion potential is minimised.

Inspection activities include:

- rehabilitation monitoring is carried out periodically in accordance with the FLURP.
- weekly inspection of the industrial area sediment ponds, drainage, wash bays, oil water separator system are carried out.
- sediment basins are maintained on an as needed basis. Inspections, as described above, indicate the frequency of maintenance required. Ponds are desilted once an annum or when the volume of sediment is predicted to exceed the maximum sediment volume considered in the ponds design.
- wash bay sumps emptied on a frequent schedule to prevent high sediment loads impacting downstream infrastructure.

6. Reporting

Following an environmental incident, an *Environmental Incident Report* is to be completed to ensure that appropriate causation, remediation and monitoring is developed, implemented and documented.

7. Roles and Responsibilities

Key roles and responsibilities, as related to ESC management, are shown in **Table 4**. Details of the ESC monitoring will be provided to all the relevant Regulators as part of the overall environmental reporting process.

Table 4 Responsibilities relating to ESC Management

Position	Responsibility
Site Environment Officer	Water quality monitoring in accordance with this ESCP and the WMP Monitoring and maintenance of water management structures in accordance with this ESCP and the WMP Internal water management inspections Required environmental monitoring reporting
Environment Superintendent	Revision of this ESCP Planning of compliance activities
Health, Safety, Training & Environment Manager	Establishment of best practice culture and monitoring Enforcement of the requirements of this ESCP
All coal mine workers	Undergo appropriate inductions and training Comply with the relevant Acts, Regulations and Standards. Compliance with this ESCP Promptly report to management on any non-conformances or breaches of the system.

APPENDIX A

ESCP Device Sizing and Design

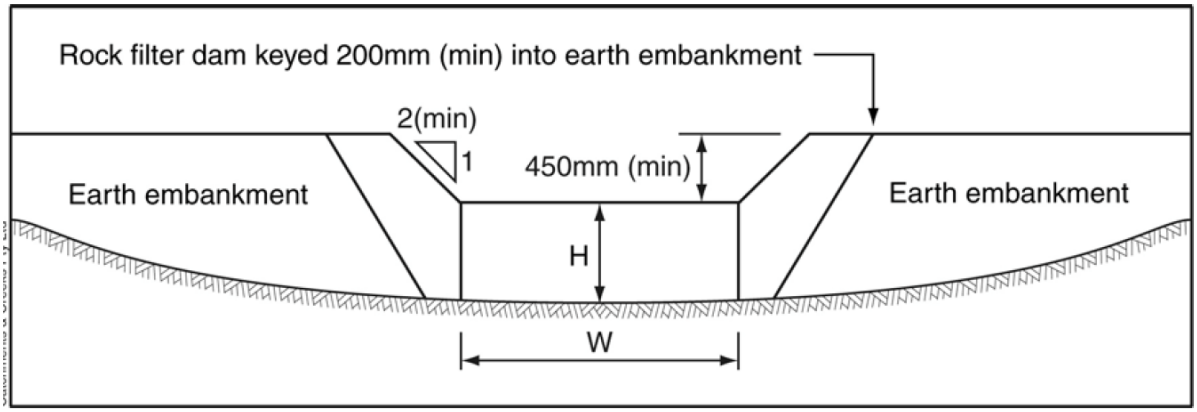
A.1 Sediment Traps

Sediment bunds are used to direct flows and/or slow flow velocities. Sediment bunds generally consist of a settling pond followed by a coarse filter. Contaminated water pools on the upstream side of the bund. Geotextile filters are sometimes used on the bund although vegetation and grass lining can be effective for velocities less than 2 m/s.

Table A-1 Sediment Traps Typical Parameters

Parameter	Value
Design storm	1:10 ARI event
Surface area of settling pond per discharge	5-6m²/m³ of inflow
Top width	1.5m
Max height	1.5m
Max side slopes (H:V)	2:1 (u/s); 3:1 (d/s)
Mean rock size d50)	225mm
Foundation	Heavy duty filter cloth

Figure A-1 Sediment Trap Typical Cross Section



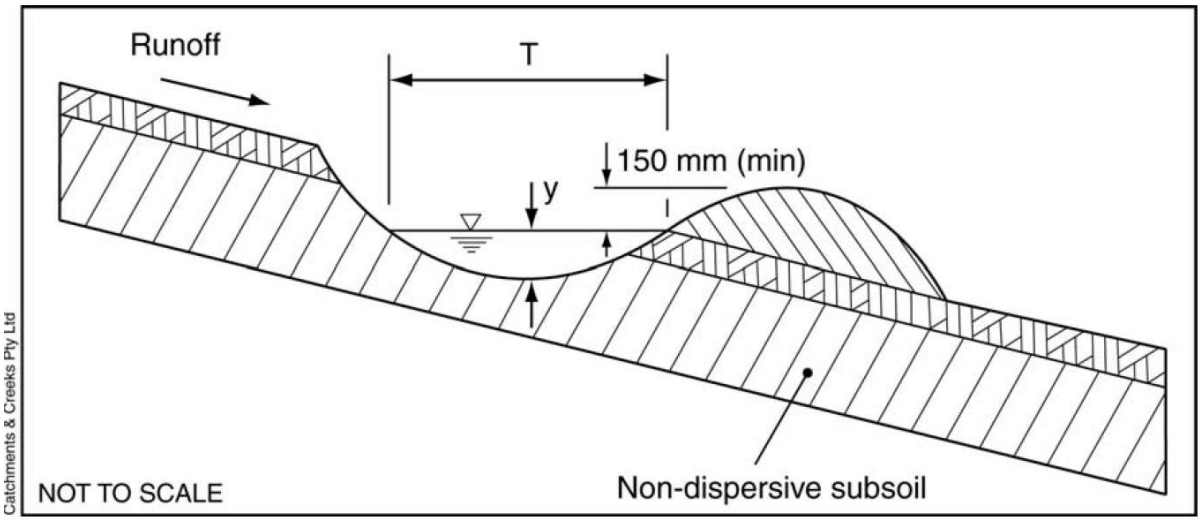
A.2 Catch Drains

Catch drains can be used to intercept a catchment to prevent rill erosion or to direct flows to other ESC devices such as sediment basins. The table below outlines broad design criteria for the such devices.

Table A-2 Catch Drains Typical Parameters

Parameter	Value
Design storm	1:10 ARI event
Allowable velocity for earth lined channels	0.5m/s
Max top width	3m
Max flow depth	0.5m
Max longitudinal slope	0.43%
Max catchment area	2.8ha

Figure A-2 Catch Drains Typical Cross Section



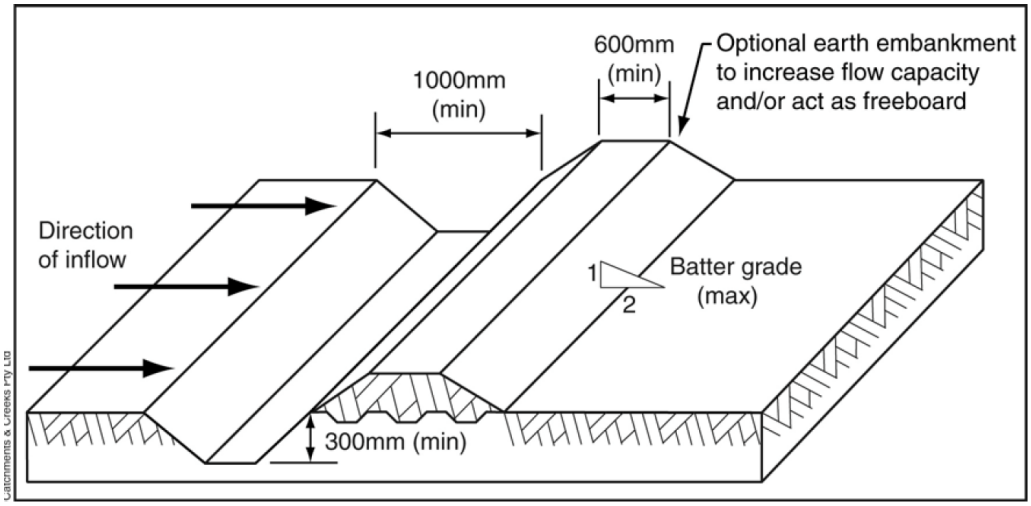
A.3 Swales

Swales are sized for a specific design flow rate based on the catchment area, topography and soil conditions. Design parameters below outlines some broad design criteria for the device.

Table A-2 Swales Typical Parameters

Parameter	Value
Design storm	1:10 ARI event
Freeboard	150mm or 10% of depth
Side slopes (H:V)	3:1
Max velocity	0.5-1m/s (<2m/s with grass lining)
Max channel slope	0.5%

Figure A-3 Swales Typical Cross Section



APPENDIX B

Temporary Sedimentation Pond Sizing

Refer Excel Document Template

NEW ACLAND COAL MINE		
TEMPORARY SEDIMENT BASINS		
DESIGN TEMPLATE	Template Revision Date	30-Aug-20
Limitation	This design template is intended for use by mining or environmental professionals to plan and design temporary sediment basins with a **maximum storage capacity of 5ML** and a **maximum life of 2 years**.	
	This is not intended for use in controlling sediment from large sources such as out-of-pit spoil dumps or for long-term assets such as ROM stockpiles or major haul roads	
Author		
Date		
Basin Name		
Location Description		
Overflows to:		
Seeps to:		
Catchment Description *It is assumed that diversion drains/banks will be installed as necessary to minimise clean undisturbed catchment draining to the basin. On this basis, all catchment will be assumed to be disturbed.*		
Emerson Class (for clayey soils) (refer Emerson tab)		
Dominant type of exposed surface		
Basin Type		
The choice of basin type may depend on the dispersiveness of the exposed catchment soils, the acceptability of overflow and/or seepage	*If soil is dispersive - Type D recommended* *If soil is non-dispersive - Type C or F recommended* *If overflow or seepage undesirable - Type D or F recommended* *If discharge under gravity impractical - Type D or F* *If discharge under gravity is possible and catchment is non-dispersive - Type C recommended*	
Catchment Area (Ha)		
Insert Sketch of basin location, catchment and cleanwater diversions		
If GIS or other site data unavailable, try this link :	*https://qldglobe.information.qld.gov.au/*	
	select : Add layers : Elevation/Contours	

Geotech Investigation of Basin Site

Recommend min 2 test pits at Basin site, using minimum 20t excavator, to 3m depth or refusal

Record approx location of test pit on diagram above

In the case of a Type C Basin - locate 1 test pit in creek bed at proposed location of embankment

Excavator Test Pit Log	**Visual soil classification**
Thickness (m)	Description - colour, type, stiffness/density, moisture
0.0	Total depth of pit (m)

Visual soil classification

Colour	**Subtype**	**Type**	**Stiffness**	**Moisture**
Red	Sandy	Gravel	Dense	Sl moist
Orange	Gravelly	Clay	Soft	Moist

Refer to tab Visual Identification of Soil for assistance

Excavator Test Pit Log	**Visual soil classification**
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Visual soil classification

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Excavator Test Pit Log	**Visual soil classification**
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Visual soil classification

Colour	**Subtype**	**Type**	**Stiffness**	**Moisture**
Red	Sandy	Gravel	Dense	Sl moist
Orange	Gravelly	Clay	Soft	Moist

Refer to tab Visual Identification of Soil for assistance

Type D / F Basin	This is intended to be a fully-excavated basin with a defined overflow location but sized to capture the full runoff from the design storm
Type D	*Requires flocculation to settle majority of colloidal particles within 5 days, before pumpout*
Type F	*Suspended particles should settle themselves within 5 days before pumpout, without flocculation*

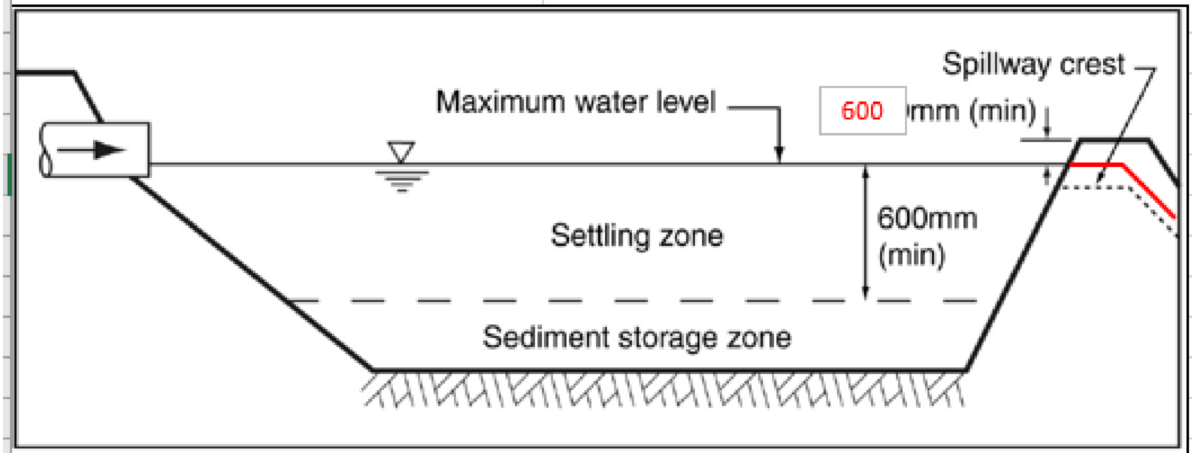

Figure B10 – Settling zone and sediment storage zone within a Type D basin

Refer excel template for sizing of individual Type D/F Basins

Refer excel template for sizing of individual Type C Basins

Type C Basin	This is intended to be a partially-excavated basin with a low-level embankment and a controlled discharge such that it self-drains after each rain event. Type C basins may be located in a drainage gully provided upstream catchment can be diverted around embankment
	suitable
	If there is no available outlet at floor level, Type C is not suitable
	No flocculation should be required

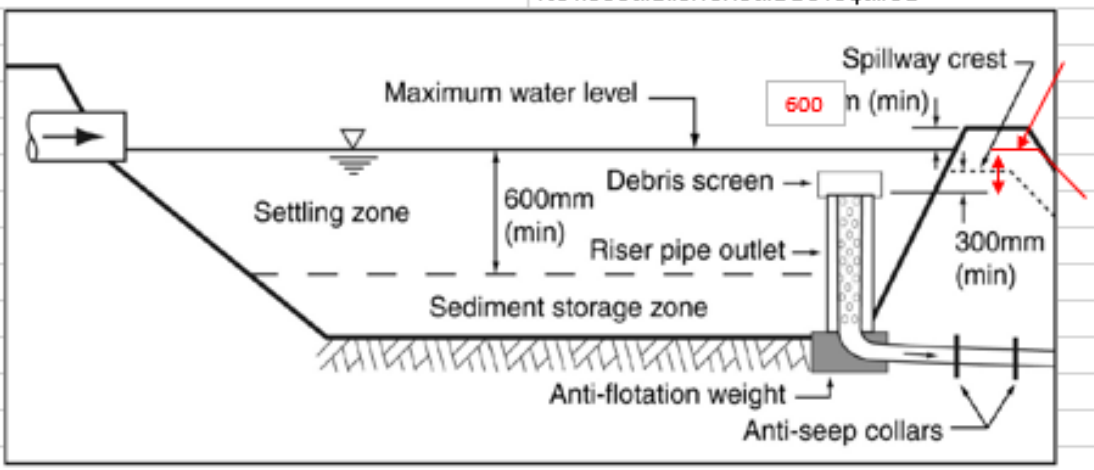

Figure B8 – Type C sediment basin with riser pipe outlet (long-section)

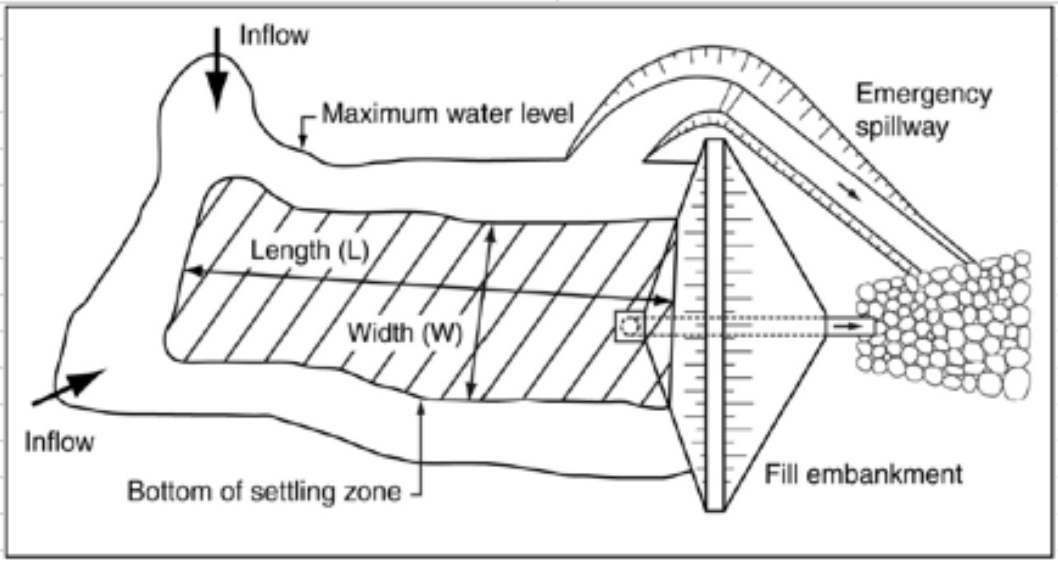

Figure B9 – Type C sediment basin with riser pipe outlet (plan view)