Waihi North Project

Site Specific Erosion and Sediment Control Plan

Appendix C.1 – Willows Road

Prepared for OGNZL

Prepared by: SouthernSkies Environmental Ltd

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A	Final for FTA.
B	Updated with FTA consent conditions
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Limitations

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CONTENTS

1. OVERVIEW

1.1. Scope

This Site-Specific Erosion and Sediment Control Plan (SSESCP) relates to the activities associated with the establishment of the Willows Road site, including, the Willows Portal Tunnel to the Wharekirauponga Underground Mine, Waste Rock Stack, Magazine Storage Area, Topsoil Stockpile, Surface Facilities Area, Heliport and associated access roads. These features are shown on Figure 1.

The total footprint for the works within the Willows Road site is approximately 24.8 hectares.

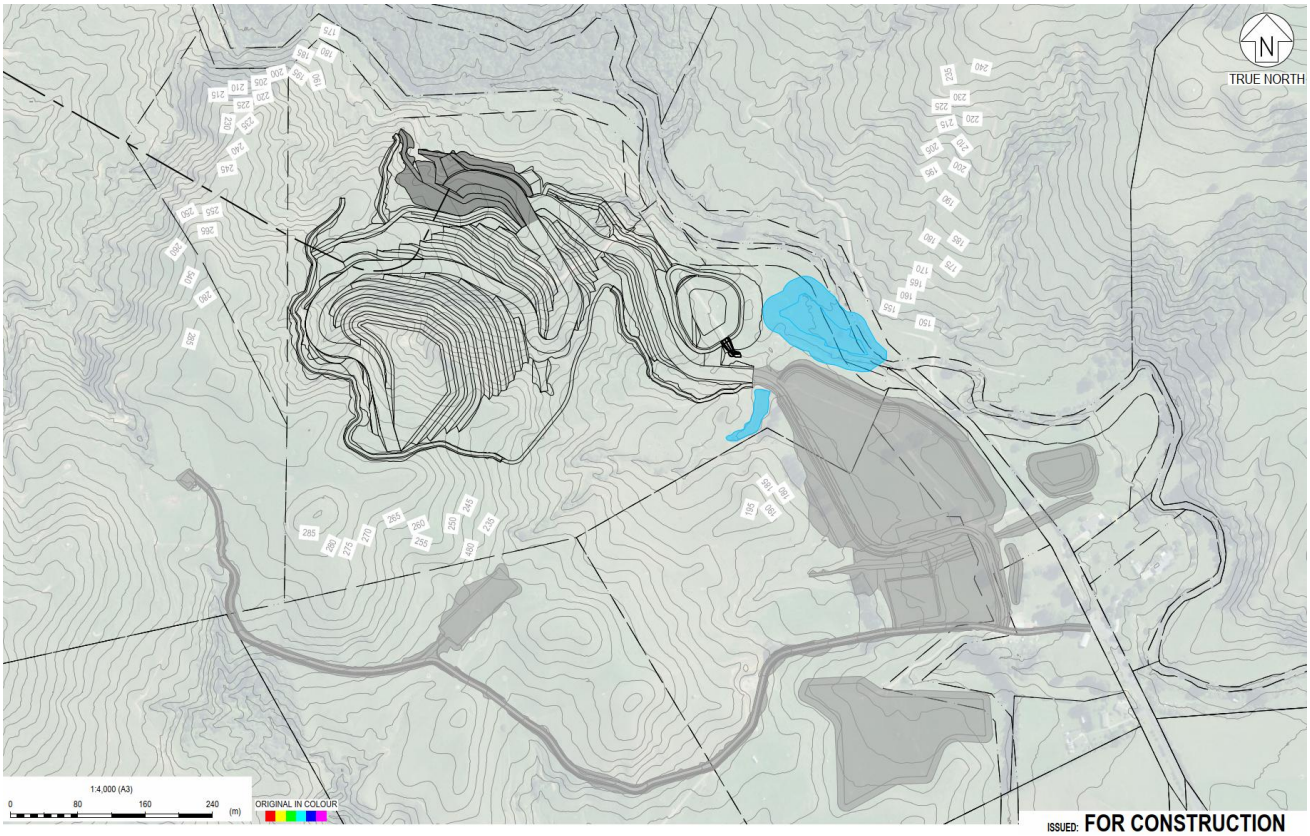


Figure 1: Willows Road Surface Facilities Area General Arrangements (Source: EGL).

This SSESCP provides design erosion and sediment control (ESC) measures indicating how the site will manage runoff during these construction activities. This document should be read in conjunction with the Assessment of Environmental Effects prepared by Mitchell Daysh and specialist reports prepared by others.

The Willows Road establishment works comprise the following three components:

Section 1 – Surface Facilities Area (SFA).

Section 2 – Surface Infrastructure Access (SIA) Road, Tunnel Portal and Waste Rock Stack (WRS).

Section 3 – Magazine Storage Area, access road, topsoil stockpile and heliport.

This SSESCP has been prepared in general accordance with Waikato Regional Council (WRC) Technical Report No. 2009/02 *Erosion and Sediment Control Guidelines for Soil Disturbing Activities, January 2009* (TR2009/02).

The ESC measures will be used during the 'enabling works' phase which does not include mining or management of potentially acid forming (PAF) material. Once mining activities occur contact water will be pumped to the Water Treatment Facility.

This SSESCP has been reviewed by OceanaGold and Fulton Hogan.

2. DESCRIPTION OF WORKS

Earthworks are anticipated to be required over an area of 24.8ha (excluding mining activities). The expected areas are provided in Table 1.

Table 1: Earthwork areas.

ID	Area (ha)
Surface Facilities Area, Silt Pond, Staff Carpark	6
Magazine Storage Area	0.5
Magazine and Helipad Access Road	1.4
Topsoil Stockpile	2.1
Heliport area	0.3
SIA Access Road, Tunnel Portal, Collection Pond and Waste Rock Stack	14.5
Total	**24.8**

The WRS is designed to store up to 1,100,000m^3 of rock minerals from the Wharekirauponga tunnel and mine development. The stockpile will store both Non-Acid Forming (NAF) and PAF material. The WRS will include the construction of a Collection Pond for collection of surface water in contact with PAF material for pumping back to the Water Treatment Plant and treatment before discharge to the Ohinemuri River.

OGNZL has scheduled for the rock mineral to be returned to the mine and tunnel as backfill on completion of the mining, which is currently scheduled for 10 years.

The SFA has been designed by GHD, while the WRS, SIA access road and collection pond have been designed by Engineering Geology Limited (EGL).

The key phases of earthworks relating to the erosion and sediment control include:

- Construction of the erosion and sediment controls.
- Construction of the Collection Pond and Silt Pond. Note, the Collection Pond and Silt Pond are separate structures to the temporary sediment retention ponds (SRPs) proposed as part of this SSESCP.
- Topsoil removal and the establishment of topsoil stockpiles.
- Establishment of the Waste Rock Stack.
- Contouring for the Surface Facilities Area.
- Construction of access roads and tunnel portal.
- Contouring for the Magazine Storage Area and Heliport.

The ESC measures are shown on the ESC drawings which are provided in Appendix B.

As the works progress detailed ESC drawings will be prepared prior to these works commencing.

Some ESC design features have been included in the EGL and GHD reports, for example clean water diversion sizing. In this case, where requirements vary between, the more stringent will be adopted from the outset.

2.1. Surface Facilities Area

Refer to ESCP-WR-001

The surface facilities include noise bunds, car parking, permanent silt pond, effluent disposal field, pipe storage/stockpiling area, offices, amenities, and related facilities.

The Silt Pond, designed by GHD, will be built to capture surface runoff from the Surface Facilities Area. A super silt fence will be installed below the footprint of the pond to capture any runoff during the construction of this pond.

Two SRPs will be constructed to capture sediment laden runoff during the earthworks phase. SRP-3A will capture runoff from the construction of the new open channel and staff carpark areas. SRP-3B will be used to capture runoff from the SFA area.

Both SRPs are designed at 2% of their respective catchment areas.

During the construction of the new open drain the existing overland flow path will continue to flow along its current alignment. A small diversion (approx. 20m) may be required near SRP-3A in order to fit the SRP, existing overland flow path and dirty water diversion through to SRP-3B between the footprint of SRP-3A and the Silt Pond. Where required, the diversion will be lined with geotextile.

Once the new open channel is constructed to design SRP-3A will be decommissioned and the lower section of the new open channel constructed. This will need to be completed during a fine weather window, or a silt fence will need to be installed alongside the existing overland flow path.

With the full alignment of the new open channel constructed to design, the existing overland flow path will be diverted down the new channel and existing alignment taken offline. At this stage all areas flowing into the open channel need to be stabilised. Dirty water diversions will be altered to continue to direct runoff from the SFA area to SRP-3B.

Once the earthworks are completed, the facility areas will be sheeted with aggregate. Landscaped areas, including the noise bunds (if remaining in place) will be topsoiled and stabilised with grass seed and mulch. SRP-3B and the super silt fence will then be decommissioned. The permanent Silt Pond will be commissioned and used to treat runoff from the SFA.

2.2. Wharekirauponga Underground Mine

Refer to ESCP-WR-002

Box cut

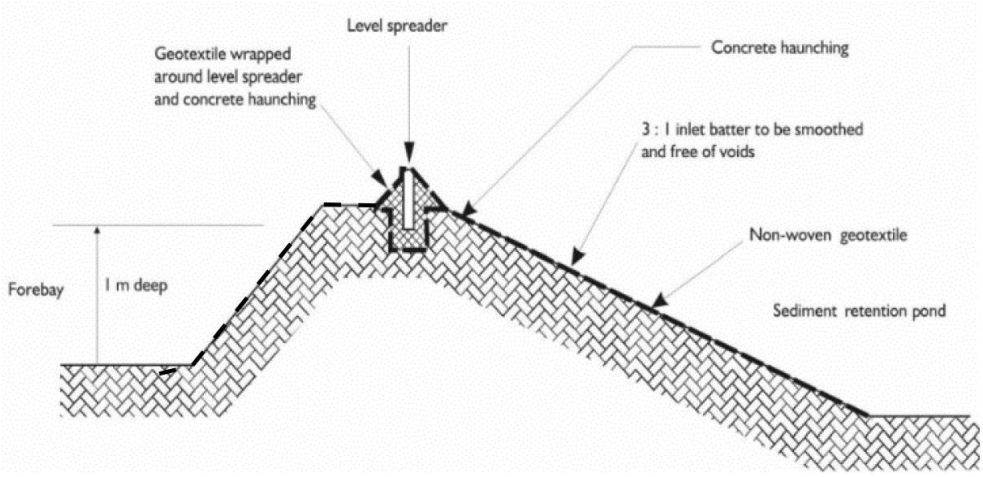
The Wharekirauponga Underground Mine tunnel portal will be formed on the northern side of the Waste Rock Stack (WRS). The initial works will involve a box cut and slope stabilisation.

Where practical, clean water diversions will be constructed around the portal to divert clean water away from the box cut.

A SRP (SRP-1) will be constructed below the tunnel portal to treat dirty water runoff from the 0.5ha box cut. Dirty water diversions will be formed below the box cut for the tunnel portal. Runoff will then be conveyed down the steep terrain, following existing farm tracks, to the SRP. Due to the limited space available, the SRP has been designed at 2%. Features to assist with controlling erosion and reducing velocity are discussed below.

Drop out pits will be used to reduce flow velocity before the runoff is piped down to the SRP. A pipe or flume is preferred to avoid erosion along the steep tracks down to the SRP. The farm tracks will provide access to the SRP.

At the outlet of the pipe/flume(s) rock riprap will be placed in a bund to reduce the flow velocity before runoff enters the forebay of the SRP. Geotextile will be used to line the channel from the riprap bund to the forebay and geotextile will be laid over the 3:1 batter in the pond, up and around the level spreader and back down into the forebay to help reduce the risk of erosion on the wall between the forebay and the main pond.



The box cut for the tunnel portal will provide a source of NAF fill for the construction of the toe of the WRS and for the Collection Pond construction. Cut from within the Collection Pond footprint may also be used to build its embankment. Excess or unsuitable cut will go to the topsoil stockpile at the southern end of the site.

As the tunnel portal is cut down, the batters and benches will be progressively stabilised. The batters include a two-bench design with an 8m berm. The benches will also be used to convey runoff off the batters away from the slope below. The top batter, which will be cut through soil to a slope of 35 degrees, will be hydroseeded and covered with a biodegradable matting (e.g. jute mat) and planted. Topsoil may also be placed back over the top batter.

Each bench will have a 2% crossfall back towards the batter to prevent water from spilling over the batter faces. A bund will be formed near the edge of the bench which will be reinforced (e.g. with shotcrete). Once stabilised, the water flowing along the benches will be directed off site as clean water.

The lower batter (cut slope 45-50 degrees) will be rock bolted meshed and shotcrete.

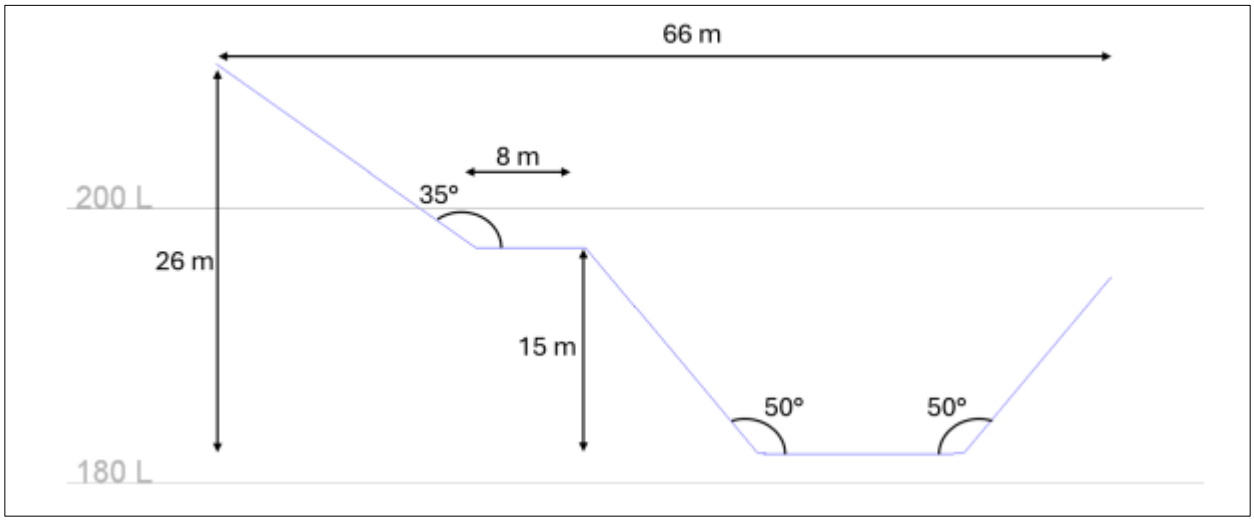


Figure 2: Schematic southern side wall design geometry (Source: Waihi North Project - Willows Preliminary Box Cut Design Memo, PSM).

The access roads to the portal will be progressively formed and sheeted with rock. Roadside table drains will act as dirty water diversions to convey runoff to the SRP during its construction. Once the Collection Pond has been constructed and commissioned, runoff will be diverted to the Collection Pond.

During the earthworks phase, the water impounded within the decline will be pumped to a SRP as required.

2.3. Waste Rock Stack

Refer to ESCP-WR-002

The WRS will be established to stockpile up to 1,100,000m^3 of rock excavated during tunnelling for the underground mine.

Two SRPs (SRP-2A and SRP-2B) will be constructed around the Collection Pond to capture runoff during the earthworks and setup phase. These SRPs will be operational until the Collection Pond is commissioned.

SRP-2A will capture runoff from the existing access track, once the toe embankment has filled up to approximately RL 172.5 runoff can be direct to the SRP. Runoff may also be pumped from the shear key to SRP-2A.

SRP-2B will capture runoff from the SIA Road construction and Collection Pond construction. Runoff may also be pumped from the shear key to SRP-2B.

Both SRP-2A and 2B are sized at 3% of their contributing catchment area.

The lower portion of the WRS will be established at the same time as the tunnel portal, access road, and the Collection Pond.

Clean water culvert

Refer to ESCP-WR-002-03 and ESCP-WR-002-04

A temporary clean water diversion coffer dam and culvert will be installed to convey clean water from the gully beyond the toe embankment. The pipeline will be an 800mm diameter PE pipe that will be welded together and pulled into place. Initially this will be held in place (e.g. with concrete blocks, H piles etc) along the edge of the existing access track and discharge approximately 50-100m downstream of the permanent discharge point. As the toe embankment is filled the clean water culvert will be pulled into its final alignment and permanent outlet constructed.

Initially this will require a small stream diversion at the top of the coffer dam to divert the flow around the coffer dam footprint and into the existing culvert. The existing culvert may also need to be slightly realigned

to be outside of the footprint of the coffer dam. With the stream flowing around the coffer dam, the area will be mucked out and coffer dam constructed, pipe laid and inlet structure installed.

As the coffer dam is constructed the pipeline will be pulled into place. The pipeline will sit in a temporary alignment until the toe embankment fill provides a suitable platform for the pipeline to sit within. At this stage the pipeline will be pulled into its final alignment and permanent outlet constructed.

Once the coffer dam is constructed the clean water will be diverted down the clean water pipeline.

Toe Embankment

As these ESC drawings are developed, they will be provided to WRC for review and certification prior to continuation of works.

The toe embankment sits within the base of the gully below the WRS and is required to be constructed early to stabilise and retain the slope above.

Clean water diversions will be constructed to isolate the toe embankment fill area.

Work within the gully will only commence once the clean water culvert is operational.

A track will be formed down to the base of the gully. Topsoil will be stripped and placed in a clean water bund above the track. This will be extended as far as possible. Novacoils may be required to convey clean water past the working area.

A bund will be formed at the base of the gully at the extent of earthworks. The bund will be 2m tall and lined with geotextile. A T-bar will be installed through the bund with the T-bar held at a height of 0.6m above the base. As works commence, the decanting earth bund (DEB) will be formed. As the base of the gully is mucked out along the extent of the Stage 1A subsoil drain an upstream bund at the top of the subsoil drain extent will be formed (2m high) to isolate the gully working area. The subsoil drain will then be installed. Clean water from above the working area could be diverted into the subsoil drain once capped with clay (and subject to Geotech approval). The gully will then continue to be filled to construct the toe embankment.

Runoff will be managed by the DEB and pumping to SRP-2A and 2B as required.

Once the toe embankment is filled to the height of the Perimeter Access Road, the northern batter will be stabilised and DEB decommissioned. All dirty water runoff will be conveyed along the Perimeter Access Road to SRP-2A.

Shear key

As these ESC drawings are developed, they will be provided to WRC for review and certification prior to works commencing on the shear key.

A shear key is required at the bottom of the WRS. This will be completed before any filling of the WRS occurs. Refer to EGL design details.

The shear key is approximately 145m long and 30m wide at the base of the key. Material will be excavated and placed as fill on the SFA platform. Drainage will be installed, followed by the filling of the base of the shear key with Zone A fill material.

Above the Zone A fill will be Zone X waste rock fill. This will be sourced from the box cut excavation inside the proposed ESCs.

Clean water will be directed to the clean water culvert.

Water impounded within the base of the shear key will be pumped out to SRP-2A and SRP-2B for treatment.

Collection Pond

The Collection Pond requires earthworks over a footprint of approximately 1ha. Any dirty water runoff generated during the earthworks operation will be controlled by SRP-2B.

Once the walls of the Collection Pond are formed, water impounded within the pond will need to be pumped to SRP-2B for treatment prior to discharging off site.

Once the Collection Pond is constructed and commissioned all runoff from the SIA Road, Perimeter Access Track and the WRS will be directed into the Pond via the dirty water drains designed by EGL.

Once the enabling earthworks are complete the Collection Pond will receive mine water that may be PAF contaminated. Water collected with then report to the Water Treatment Plant.

Updates to the ESC drawings will be provided for the next stages of the WRS and the construction of the uphill diversion drain and perimeter access track.

2.4. Topsoil Stockpile

Refer to ESCP-WR-003-01

An area of approximately 2.1ha will be used to stockpile topsoil generated from the project.

Clean water diversions will be installed around the top of the stockpiling area.

A SRP (SRP-4) will be constructed near the base of the topsoil stockpile which will capture and treat runoff from the stockpile as well as runoff during the construction of the Magazine Access Road. The maximum contributing catchment area is 2.2ha and this will be managed on site to ensure that no more than 2.2ha is directed to this pond at a time.

The stockpile will be progressively stabilised with grass seed and hay mulch. SRP-4 will be retained to manage runoff quality during topsoil recovery and site rehabilitation.

2.5. Magazine Storage Area, Access Road and Heliport

ESC drawings to be provided prior to commencement of earthworks commencing within this area.

The establishment of the Magazine Storage Area (Explosives Magazine) requires earthworks across a total area of approximately 0.6ha. The ESC measures will be confirmed in the ESC drawings that will be provided prior to this piece of work commencing.

The existing farm race will be upgraded to an 885m long, 6m wide access road to service the Magazine Storage Area. Majority of the earthworks associated with the Magazine Access Road upgrade will be cut into the bank on the northern side of the access road, with some areas of fill required below the access road.

Clean water diversions will be installed around the Magazine Storage Area to direct upper clean water catchment away from the earthworks area. An existing farm culvert installed beneath the farm track will be upgraded to a 450mm diameter pipe to cater for the flows from the upper clean water catchment.

The Magazine Access Road will be constructed in two sections (in terms of erosion and sediment control methodology). The first section of approximately 350m from Willows Road requires minimal earthworks. This section will be completed as a cut and cover operation where the road will be cut to grade and stabilised with aggregate within the same day. Batters formed above the road will be progressively stabilised (e.g. hydroseeded or mulched).

The second section of work up to the Magazine Storage Area requires more earthworks to widen the road and provide suitable access. As the road is cut out a roadside table drain will be formed. Runoff from the road will be sloped/cambered towards the table drain and will flow down to SRP-4 constructed below the topsoil stockpile. The access road will be progressively sheeted with aggregate. Batters formed above the road will

be progressively stabilised.

From the Magazine Storage Area, the access road will continue to be upgraded and widened to the proposed Heliport Area. Roadside table drains will be installed along the edge of the access road and will be used to convey runoff to SRP-4 for treatment and discharge. Minor earthworks over an area of approximately 500m^2 will be required to form a flat pad for the heliport. Details will be provided within future ESC drawings.

Once the construction of the Magazine Storage Area is complete it will be sheeted with aggregate. The Magazine Access Road is then covered with 'Type 1 Pavement' (refer to GHD design details).

3. EROSION AND SEDIMENT CONTROL DETAILS

The erosion and sediment control methodology has been designed in general accordance with best practice and the principles outlined in TR2009/02.

Specific erosion and sediment control calculations and drawings can be found within the appendices.

Appendix A – Erosion and sediment control calculations and typical details.

Appendix B – Erosion and sediment control drawings.

Clean Water Diversions

Upper catchment clean water will be diverted where possible and practical using clean water diversions, at the approximate locations depicted on the drawings.

TR2009/02 recommends that clean water diversions are designed to carry the flow from the 20% annual exceedance probability (AEP) rain event (plus 300mm freeboard). Where possible the clean water diversions have been increased in size to convey the 5% AEP storm event, including a freeboard of 300mm. Table 3 provides the clean water diversion sizing details.

Clean water diversion design details have also been provided by EGL and GHD, where requirements vary between the ESC designs, the more stringent will be adopted from the outset.

Table 2: Clean water diversion input parameters.

Parameter	Input
Rainfall depth (24hr 5% AEP)	290mm
Freeboard	300mm
Base width	0.5m (unless otherwise specified)
Stabilisation type (TBC on site)	Grass, rock lined, geotextile

All clean water diversions shall discharge to stable flow paths beyond each works site.

Table 3: Clean water diversion sizing details for Willows Road.

Clean Water Diversions					
Site reference	Catchment area (maximum)	Peak flow (m^3/s)	Diversion slope (minimum)	Channel capacity (m^3/s)	**Design Flow Depth (including 300mm freeboard)**
CWD – SFA Also designed by GHD – Refer SW Cleanwater Diversion Drain 1 and 2	0.75	0.286	2%	0.29	**550**
SIA Access Road CWD – Refer to EGL design 'Clean Water Drain 4'					
CWD – WRS	3ha	1.146	3%	1.20	**700**
CWD – WRS	2ha	0.764	3%	0.80	**650**
CWD – WRS	1ha	0.382	3%	0.52	**600**
CWD – Topsoil stockpile	1.2ha	0.48	2%	0.50	**600**
CWD – Magazine Platform – Refer to GHD design 'Overland Flow Diversion Drain'					
CWD – Helipad Platform – Refer to GHD design 'Overland Flow Diversion Drain'					

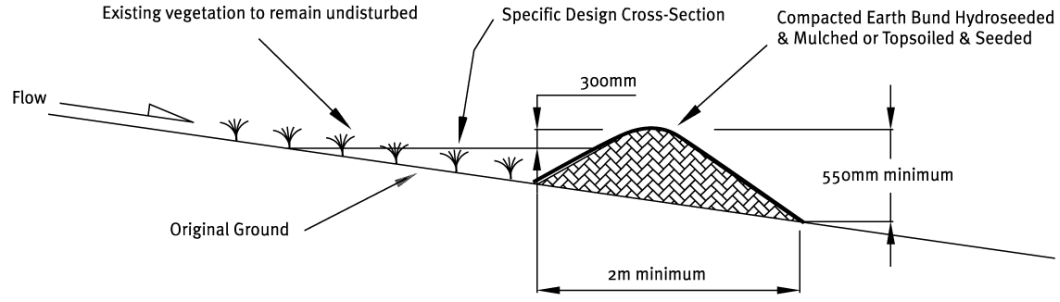


Figure 3: Cross-section of a clean water diversion bund.

Where a clean water diversion channel is required to be constructed then the following schematic is provided for a maximum clean water catchment of 3ha. In this case the total flow depth would be 700mm (400mm plus 300mm freeboard).

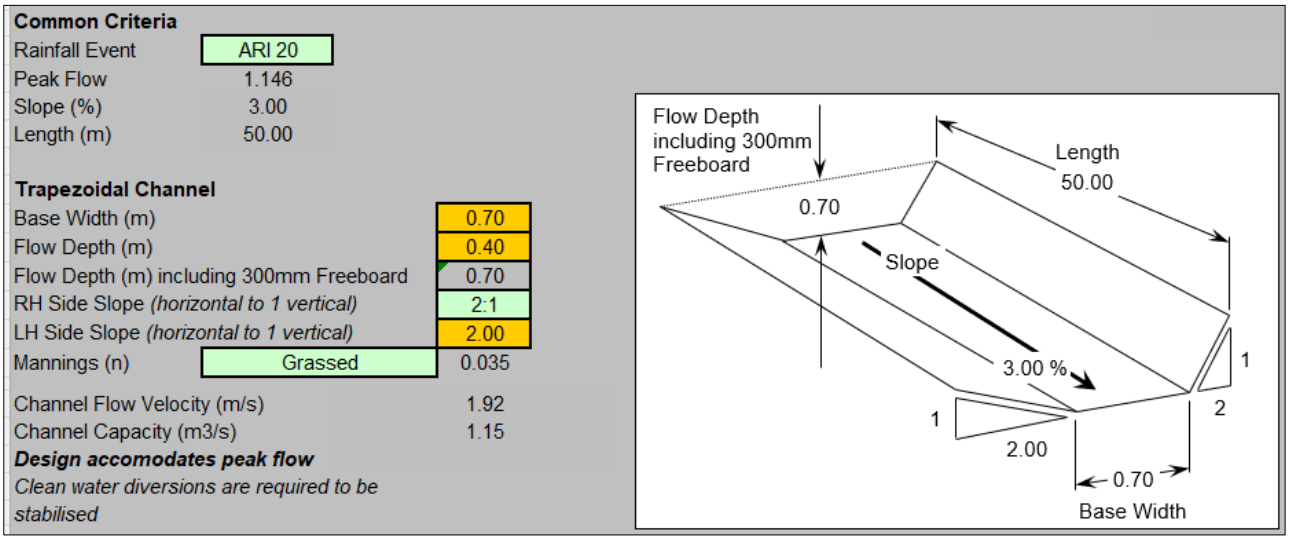


Figure 4: Design details of a clean water diversion channel for up to 3ha.

3.1. Dirty Water Diversions

Dirty water diversions will direct sediment laden runoff to the sediment control measures. The dirty water diversions have been sized to provide diversion capacity up to the 5% Annual Exceedance Probability (AEP) storm event, plus a freeboard of 300mm.

Calculations are provided in Table 4.

Table 4: Dirty water diversion details assuming maximum dirty water catchment area.

Dirty Water Diversions						
Area	Catchment area (maximum)	Peak flow (m^3/s)	Base width (m)	Diversion slope (minimum)	Channel capacity (m^3/s)	**Design flow depth (including 300mm freeboard)**
Surface Facilities Area – SRP-3B	4ha	1.858	0.5	2%	2.03	**600**
Surface Facilities Area – SRP-3A	1ha	0.465	0.5	2%	0.75	**500**
SRP-2A	1ha	0.465	0.5	2%	0.75	**500**
SRP-2B	2.1ha	0.976	0.5	2%	1.29	**550**
SRP-1 Box cut	1ha	0.465	0.5	2%	0.75	**500**
SRP-4 – Topsoil stockpile	2.2ha	1.022	0.5	2%	1.29	**550**

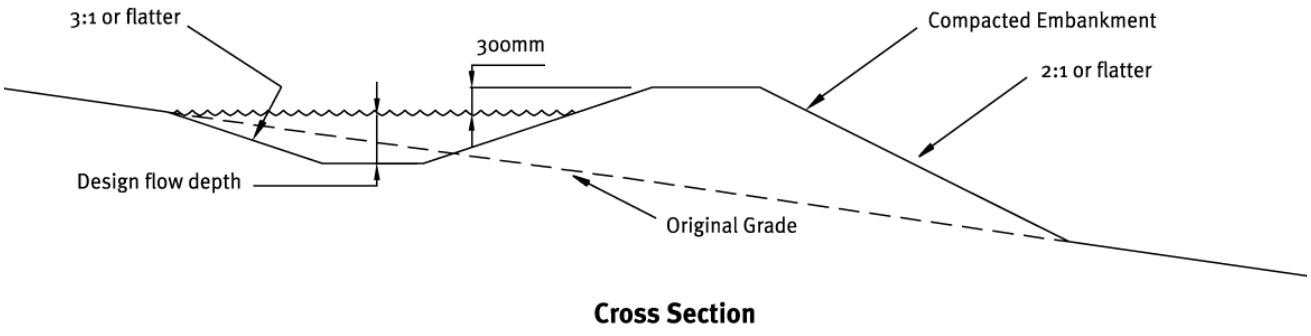


Figure 5: Cross-section of a dirty water diversion.

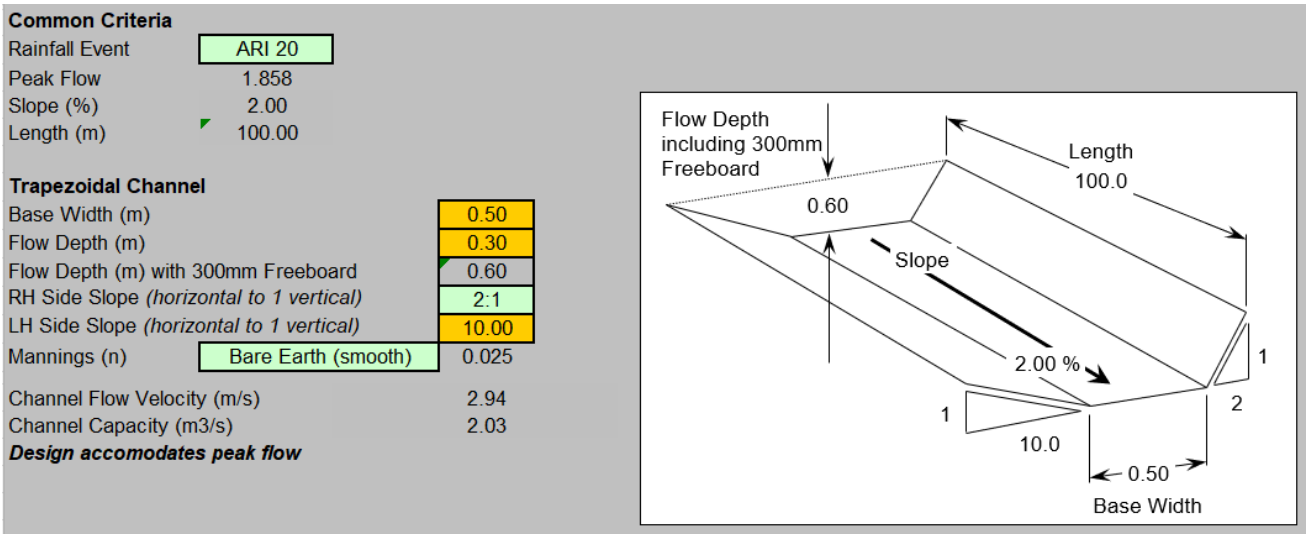


Figure 6: Design details of a dirty water diversion channel for up to 4ha.

3.2. Sediment Retention Ponds

Sediment Retention Ponds (SRPs) will be used where catchment areas exceed 0.3ha and be limited to a maximum catchment area of 5ha.

Design details for the SRPs will be provided in Appendix B with the ESC drawings.

The SRPs will be sized in respect to their contributing catchment area and slope steepness (unless otherwise appropriately justified and approved by WRC):

- Where slopes are less than 10% and less than 200m in length, the SRP will be constructed with a minimum volume of 2% of the contributing catchment.
- Where slopes are greater than 10% and/or more than 200m in length, the SRP will be constructed with a minimum volume of 3% of the contributing catchment.

An additional 10% of this volume is to be used as a forebay.

The SRPs will be located to allow access for removing sediment from the pond.

Any pumping of sediment laden water required throughout the duration of the earthworks will be to a SRP forebay prior to being discharged from the site. Refer to Section 3.8 for pumping management.

3.3. Decanting Earth Bunds

Decanting earth bunds (DEBs) may be used to capture runoff from earthwork areas of up to approximately 0.3ha (or as otherwise stated DEBs will be sized in accordance with TR2009/02 in respect to their contributing catchment area and slope steepness (unless otherwise appropriately justified and approved by WRC):

- Where slopes are less than 10% and less than 200m in length, the DEB will be constructed with a minimum volume of 2% of the contributing catchment.
- Where slopes are greater than 10% and/or more than 200m in length, the DEB will be constructed with a minimum volume of 3% of the contributing catchment.

The total storage volume of a DEB will be split into 50% live storage and 50% dead storage.

3.4. Chemical Treatment

The Chemical Treatment Management Plan (CTMP) provided as Appendix A of the Erosion and Sediment Control Assessment Report provides the methodology for determining the effectiveness and dose rates for chemical treatment to enhance the sediment retention efficiency of SRPs, DEBs and other water impoundment devices that will be used throughout the project. It is intended that all SRPs and DEBs will be chemically treated if necessary and monitored in accordance with the CTMP.

Confirmation of the dose rate, and specific sizing details for each chemical dosing system will be provided with each SRP and DEB as-built.

Chemical treatment will be undertaken in accordance with the CTMP.

3.5. Silt Fences and Super Silt Fences

Silt fences or Super Silt Fences may be used to capture runoff from small areas that cannot actively drain to a SRP, DEB, Permanent Collection or Silt Pond.

Silt fences will be installed below the footprint of all SRPs to capture any runoff during the construction phase of these devices. Once the device is constructed the silt fence will either be returned up either side of the emergency spillway or removed. If removed, the external batters of the SRP will be stabilised.

3.6. Stabilisation

Progressive stabilisation will be undertaken throughout the earthwork operations. Both temporary and permanent stabilisation measures will be employed on site. Common stabilisation measures include spreading of aggregate, grassing (with a full cover of grass), applying mulch and the use of geotextiles.

Once the catchment area for a particular ESC device is stabilised in accordance with TR2009/02, or the runoff directed to a different water management system (i.e. the Water Treatment Plant) then the ESC monitoring and maintenance will cease, and the ESC device could be decommissioned.

3.7. Dust Management

Dust will be managed in accordance with the Air Quality Management Plan.

3.8. Dewatering and Pumping

Dewatering (pumping) will be required during the Project. Any required dewatering or pumped dirty water will be discharged to an SRP for treatment. Where possible this should be to the forebay and pump outlet should be to a stabilised surface (e.g. geotextile) to minimise erosion.

Prior to pumping the SRP will be checked to ensure that it has sufficient capacity for the water to be pumped. The T-bars will also be raised to prevent discharge during pumping.

As the water is being pumped to the SRP it will be batch dosed, if required (clarity <100mm).

Once the required clarity (>100mm) and pH (5.5-8.8) is achieved, the T-bars will be lowered and water discharged.

Pumping operations must ensure that the ponds are not overwhelmed (i.e. water does not spill over the primary or emergency spillway) and that the pond has sufficient time to drain down before the next rain event.

Dewatering operations will be carried out under a monitoring and review schedule specific to the activity. All dewatering or dirty water pumping activities must be approved and signed off by the Project Manager or senior Fulton Hogan management prior to commencement.

3.9. General

Prior to bulk earthworks commencing, as-builts for the erosion and sediment controls will be provided to the WRC. The as-built certification will confirm that the controls have been constructed in accordance with the approved SSESCP.

This SSESCP is intended to be a live document and if the earthworks methodologies or erosion and sediment control measures for the anticipated work changes then an update / review of the SSESCP drawings will be made before the earthworks commence. Any changes to the SSESCP will be confirmed in writing and provided to the Council for certification, prior to the implantation of any changes proposed.

3.10. Monitoring and Maintenance

All erosion and sediment control measures will be maintained in accordance with TR2009/02 throughout the works until the site is stabilised against erosion.

All erosion and sediment control measures and methodologies will be monitored during the works in accordance with the Erosion and Sediment Control Monitoring Plan (ESCMP). Monitoring will be undertaken at least weekly, and before and immediately after rain events as well as during heavy rainfall events. Any required maintenance or improvements to control measures will be undertaken immediately.

Sediment deposits and bulges against the silt fences and super silt fences will be removed when sediment accumulation reaches 20% of the fabric height.

The SRPs will be cleaned out before accumulated sediment volume reaches 20% of the total volume. Forebays will be cleaned out if there is any evidence of sediment deposition.

Once an area is stabilised, or placement of PAF material is underway, the operational requirements commence and monitoring under the ESCMP will cease.

4. APPENDIX

4.1. Appendix A – Erosion and Sediment Control Design Details

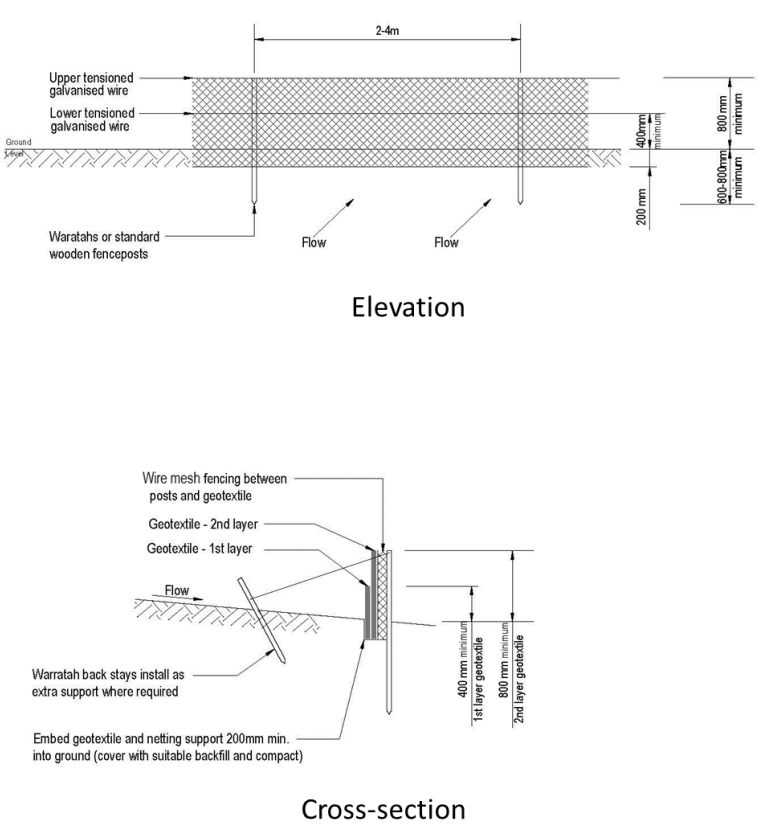


Figure 7: Schematic of a super silt fence

Table 4: Super silt fence design criteria.

Slope steepness %	Slope length (m) (maximum)	Spacing of returns (m)	Super silt fence length (m) (maximum)
0 – 10%	Unlimited	60	Unlimited
10 – 20%	60	50	450
20 – 33%	30	40	300
33 – 50%	30	30	150
> 50%	15	20	75

4.2. Appendix B - Erosion and Sediment Control Drawings

Drawing number	Drawing title	Date	Revision
ESCP-WR-001-00	Erosion and Sediment Control Plan – Willows Road Overview	09.01.26	B
ESCP-WR-001-01	Erosion and Sediment Control Plan – Surface Facilities Area	14.01.26	B
ESCP-WR-001-02	Erosion and Sediment Control Plan – Surface Facilities Area	14.01.26	B
ESCP-WR-001-SRP-3A	Erosion and Sediment Control Plan - SRP-3A design details	09.01.26	A
ESCP-WR-001-SRP-3B	Erosion and Sediment Control Plan - SRP-3B design details	09.01.26	A
ESCP-WR-002-01	Erosion and Sediment Control Plan – Willows Road – Waste Rock Stack	16.01.26	B
ESCP-WR-002-02	Erosion and Sediment Control Plan – Willows Road – Waste Rock Stack	16.01.26	B
ESCP-WR-002-03	Erosion and Sediment Control Plan – Willows Road – Waste Rock Stack	23.01.26	B
ESCP-WR-002-04	Erosion and Sediment Control Plan – Willows Road – Waste Rock Stack	28.01.26	B
ESCP-WR-002-SRP-1	Erosion and Sediment Control Plan – SRP-1	14.01.26	A
ESCP-WR-002-SRP-2A	Erosion and Sediment Control Plan – SRP-2A	14.01.26	B
ESCP-WR-002-SRP-2B	Erosion and Sediment Control Plan – SRP-2B	07.01.26	B
ESCP-WR-003-01	Erosion and Sediment Control Plan – Topsoil Stockpile	20.11.25	A
ESCP-WR-003-SRP-4	Erosion and Sediment Control Plan – SRP-4	20.11.25	A