SHOALHAVEN STARCHES ENVIRONMENTAL MANAGEMENT PLAN

TITLE:	Erosion and Sediment Control Plan
PURPOSE:	To protect and maintain surface and groundwater quality around construction sites by minimising discharges of sediment containing runoff from entering nearby waterways.
SCOPE:	Shoalhaven Starches Factory and Environmental Farm To meet the requirements of Shoalhaven Starches Development Consent 06_0228.
ACTION ON NON- CONFORMANCE:	Notify Environmental Coordinator Notify Project Site Supervisor Notify Project Manager
REFERENCES:	Stormwater Management Plan (Including Erosion and Sediment Control), Stephenson Environmental Management, July 2009.
	Surrace water Management Site Plan <u>FMEN039</u>
	Stormwater Management Plan EN-P-0180
	Erosion & Sediment Control Plan, Temporary Car Park & Demolition of Moorhouse Building, Cowman Stoddart Pty Ltd, October 2016
	Dust Erosion & Sediment Control Plan – Packing Plant Construction, ENRS Pty Ltd, 28 th April 2016.
	Shoalhaven Starches Development Consent 06_0228

REVISION HISTORY

Rev	Date	Description	Prepared By	Authorised By
Original	Jul 2009	Stormwater Management Plan (Including Erosion and	S. Lonergan	P. Stephenson
		Sediment Control), prepared by Stephenson		
		Environmental Management Australia. Approved by the		
		Department of Planning in September 2009.		
1.0.A	28-5-13	Plan revised & transferred into Shoalhaven Starches	J. Studdert	J. Studdert
		format.		
1.0.B	22-6-15	Inclusion of Introduction & addition of Figures 1 & 2.	J. Studdert	J. Studdert
1.0.C	25-11-16	Additional reference & information relating to ESCP for	J. Studdert	J. Studdert
		Moorhouse Building (MOD 6)		
1.0.D	19-2-20	Updated to include additional management measures	J. Studdert	J. Studdert
		associated with MOD 16 (Appendix B - H). Inclusion of		
		revision history & table of contents.		

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1. Introduction

This Erosion and Sediment Control Plan (ESCP) has been prepared to ensure best management practices are employed to protect and maintain surface and groundwater quality during earthworks and construction activities associated with Shoalhaven Starches Development Consent 06_0228 (the 'Consent') and subsequent modification (MOD) approvals.

The ESCP has been developed in accordance with Condition 19 of the Consent which states:

The Applicant shall prepare an Erosion and Sediment Control Plan for the development to the satisfaction of the Secretary. This plan must:

a. be submitted to the Secretary before the commencement of construction on site;

b. be prepared in accordance with Landcom's Managing Urban Stormwater: Soils and Construction manual;

c. identify the works that could cause soil erosion and generate sediment;

d. describe the location, function, and capacity of the erosion and sediment controls that would be implemented; and

e. describe the measures that would be implemented to maintain these controls during the construction period.

Note: the provisions of this plan shall be implemented for all construction works associated with the development and/or modification approved thereafter.

The ESCP has been developed based on the information contained in the *Stormwater Management Plan (Including Erosion and Sediment Control)*, Revision B, 3 July 2009 prepared by Stephenson Environmental Management Australia, which has been approved in accordance with condition 19 of the Consent by the NSW Department of Planning & Environment (DPE) in September 2009.

References to where each relevant condition of the Consent has been addressed in this plan is shown in Table 1 below.

Condition 19	Section in Plan
a. be submitted to the Secretary before the commencement of construction on site;	N/A
<i>b.</i> be prepared in accordance with Landcom's Managing Urban Stormwater: Soils and Construction manual;	Section 3
c. identify the works that could cause soil erosion and generate sediment;	Section 3
d. describe the location, function, and capacity of the erosion and sediment controls that would be implemented	Section 3.1 to 3.4 and Appendices
e. describe the measures that would be implemented to maintain these controls during the construction period.	Section 3 & 4
Condition 19A	
Prior to the commencement of works associated with MOD 6, the Applicant shall implement the Erosion and Sediment Control Plan included in the EA for MOD 6	Section 2
Condition 19B	
The Applicant shall update the Erosion and Sediment Control Plan required under Condition 19 to detail management measures for construction works associated with MOD 16. The updated plan must be provided to the Secretary, prior to the commencement of construction of MOD 16.	Section 3 and Appendices

 Table 1 Conditions of Consent

2. Site Specific Erosion & Sediment Control Plans

A site specific ESCP has been developed and implemented for the *Temporary Car Park & Demolition* of *Moorhouse Building Consent (MOD 6), dated October 2015, by Cowman & Stoddart Pty Ltd*, in accordance with condition 19A of the Consent which states:

19A Prior to the commencement of works associated with MOD 6, the Applicant shall implement the Erosion and Sediment Control Plan included in the EA for MOD 6.

A further site specific ESCP has been developed for the Packing Plant site (MOD 9) titled Dust Erosion & Sediment Control Plan – Packing Plant Construction, prepared by ENRS Pty Ltd, on 28th April 2016.

Further modifications to the Consent (MOD 16) were approved by the DPE in June 2019 which includes the following Condition19B:

19B The Applicant shall update the Erosion and Sediment Control Plan required under Condition 19 to detail management measures for construction works associated with MOD 16. The updated plan must be provided to the Secretary, prior to the commencement of construction of MOD 16.

An overall site plan including the proposed MOD 16 infrastructure (in red) is shown in Appendix B.

3. Erosion and Sediment Control Management Practices

Soil erosion and sediment discharges on site must be managed to prevent contaminated runoff flowing into nearby waterways. Activities that may cause soil erosion and generate sediment include:

- Tree & vegetation removal to expose soil.
- Piling activities including the formation of stockpiled material;
- Excavations and site levelling
- Earthworks associated with the laying of pipelines and installation of services.

The construction works associated with MOD 16 that could cause soil erosion and generate sediment include:

- Specialty Products Building & Product Dryer Building (Gluten Dryer #8)
- Boiler #8, Generator Set & Lime Silos
- Indoor Substation
- Grain Intake Pit & Bucket Elevator
- Extension to Existing Main Substation

This plan has been prepared in accordance with the 'Blue Book' *Managing urban stormwater: soils* and construction 4th Edition Landcom (2004). A selection of construction diagrams is shown in Figures 1-3 and best management practices adopted from this manual are outlined in section 3.1.to 3.4.

The erosion and sediment control (ESC) measures to be implemented are described below and the location of the controls are detailed in individual site plans for the relevant projects as shown in Appendix B to Appendix H.

3.1 Stockpiles

- Material stockpiles on site to be designed and located to prevent any loss of sediment, or other materials, to the River in the event of heavy or prolonged rain.
- Where possible, stockpiles are not be located within 50 m of a watercourse.
- Temporary sediment fences to be installed around the perimeter of any stockpiles near waterways or stormwater drains (refer to Figure 1 and Figure 2) prior to works commencing.
- Stockpiles are to be transported off site as soon as possible; consult with the Environmental Coordinator for advice on disposal.

3.2 Excavations

- Where appropriate, the use of reverse superelevations shall be applied during excavations near the banks of water courses to minimise and prevent any sediment loss.
- Constructing berms along the edge of the construction site.
- Dust generation shall be minimised by dampening down all surfaces likely to generate dust when conditions require it.
- Landscaping and revegetation to occur as soon as practical after completion of earthworks and construction activities.

3.3 Sediment (Silt) Fencing

- Installing sedimentation fencing around construction sites and along watercourses (refer to Figure 1) prior to the commencement of works.
- Regular inspection and maintenance of fencing by Project Site Supervisor to ensure integrity and effectiveness.
- Sediment protection around stormwater drains that flow direct to a waterway (refer to Figure 2 and 3)

3.4 Site Run-off / Stormwater

- All site works must drain into the existing site stormwater management system. No runoff shall discharge direct to the River or River banks.
- Refer to Shoalhaven Starches Stormwater Management Plan <u>EN-P-0180</u> and Surface Water Management Site Plan <u>FMEN039</u> (attached as Appendix A).
- Any site dewatering to be conducted using a sump excavated at the lowest point on site. All water dewatered from the site must be discharged to the existing site stormwater management system.

4. Monitoring

The Project Manager and Project Site Supervisor (or nominated representative) are responsible for ensuring the above management practices are implemented to minimise the potential for soil and sediment erosion during construction projects. This includes regular inspection and maintenance of the erosion and sediment controls to ensure they are in good working order and fit for purpose.

The ESC measures are to be inspected immediately prior to anticipated run-off producing rainfall and daily during periods of runoff producing rainfall, and de-silted and repaired as required to maintain their effectiveness.

Any incident or failure of the ESC must be immediately reported to the Project Site Supervisor and corrective actions implemented to rectify the issue. Consult with the Environmental Coordinator for advice on any issues or concerns related to stormwater quality release.

Figure 1. Sediment Fencing Guidelines



Construction Notes

- 1. Construct sediment fence as close as possible to parallel to the contours of the site.
- 2. Drive 1.5 metre long star pickets into ground, 3 metres apart.
- Dig a 150 mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
- 4. Backfill trench over base of fabric.
- Fix self-supporting geotextile to upslope side of posts with wire ties or as recommended by geotextile manufacturer.
- 6. Join sections of fabric at a support post with a 150 mm overlap.

Figure 2. Geotextile Inlet Filter



Construction Notes

- 1. Fabricate a sediment barrier made from geotextile or straw bales.
- 2. Support geotextile with mesh tied to posts at 1 metre centres.
- 3. Do not cover inlet with geotextile.
- Construction details are similar to Standard Drawing 6-6 and Standard Drawing 6-7.

Figure 3. Erosion & Sediment Control - General Construction Notes



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APPENDIX A – Surface Water Management Site Plan





APPENDIX B – Overall Site Plan Including Proposed MOD 16 Infrastructure







APPENDIX D – Specialty Products Building & Product Dryer (MOD 16) Site Plan



APPENDIX E – Boiler 8, Generator Set, Lime Silos & Boiler 7 Re-location (MOD 16) Site Plan



APPENDIX F – Indoor Substation (MOD 16) Site Plan

APPENDIX G - Grain Intake Pit & Bucket Elevator (MOD 16) Site Plan



APPENDIX H – Main Substation Extension (MOD 16) Site Plan

