Tomago Aluminium SPL Processing Facility

Stormwater Management Plan

Contents

1. Introduction

1.1. Context

This Stormwater Management Plan (SMP) covers the requirements for stormwater management at the Spent Potlining (SPL) Processing Facility located on the Tomago Aluminium Smelter site.

The SPL Processing Facility operates under the following regulatory approval and licences:

NSW Department of Planning, Housing and Infrastructure (DPHI) Major Project Approval MP06_0050 dated 7th August 2009 with modifications as follows:

- Modification 1 – MP06_0050-MOD-1 granted on 6 November 2016
- Modification 2 – MP06_0050-MOD-2 granted on 22 August 2019
- Modification 3 – MP06_0050-MOD-2 granted on 11 April 2025
- Modification 4 – MP06_0050-MOD-4 granted on 14 November 2024.

This SMP operates within the context of the Tomago Aluminium Water Management Program and the Regain SPL Processing Facility Operational Environmental Management Plan.

Under the Tomago Aluminium Water Management Program, stormwater runoff is directed to a separate collection pond, which accepts the first flush of a 1 in 10-year storm event. The first flush collection is later discharged at a controlled rate to the Hunter River after the quality of the water has been verified. This ensures that fluoride levels entering the river are within EPA approved limits. The process of stormwater discharge is controlled by the terms of the EPL 6163 for the smelter. Under the licence, TAC monitors conductivity, fluoride total suspended solids and pH during discharge. Key facilities in the overall stormwater management system for the Tomago aluminium site are depicted in figure 1.

Figure 1 – Tomago Aluminium Site

1.2. Objectives

The objectives of implementing this SMP are:

- Appropriate management of stormwater at the Tomago SPL Processing Facility
- Compliance with planning Approval and Environmental Protection Licence requirements.

2. References

The SPL Processing Facility operates under the following regulatory approval and licences:

- NSW Department of Planning, Industry and Environment (DPIE) Major Project Approval MP06_0050 dated 7th August 2009 with modifications as follows:
  - Modification 1 – MP06_0050-MOD-1 granted on 6 November 2016
  - Modification 2 – MP06_0050-MOD-2 granted on 22 August 2019
  - Modification 3 – MP06_0050-MOD-2 granted on 11 April 2025
  - Modification 4 – MP06_0050-MOD-4 granted on 14 November 2024.
- Environment Protection Licence No 13269
- Environmental Planning and Assessment Act 1979
- Protection of the Environment Operations Act 1997
- AECOM Environmental Assessment – Capacity Increase at the Regain Spent Potlining Facility, Tomago NSW (December 2018).
- Tomago Aluminium Water Management Program (TA Document ES.EMS.0016)
- Tomago SPL Processing Facility Operational Environmental Management Plan (Regain Document 116C004)
- Australian New Zealand Standard AS/NZ ISO 14001 Environmental Management Systems Standard

3. Regulatory Requirements

Schedule 3 of the Project Approval MP06_0050 references specific environmental conditions. Table 1 sets out the relevant condition in the approval documents, the requirements to be met and the approach to meeting each requirement.

Table 1 - Development Approval Requirements

Condition ***Regain Code***	**Requirement**	**Approach to Meeting Requirement**
condition 15A.	Prior to the commencement of Stage 1 operations and the operation of the container cleaning station approved under MOD 4, the Applicant must design, install and operate a stormwater management system (SMS) for the project. The SMS must: a) be designed by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Planning Secretary; b) be in accordance with the Project as modified by MOD 2 and MOD 4 and the plans at Appendix A and Appendix A1 of this approval; c) be in accordance with applicable Australian Standards; and d) ensure that the system capacity has been designed in accordance with Australian Rainfall and Runoff (Engineers Australia, 2016) and Managing Urban Stormwater: Council Handbook (EPA, 1997) guidelines. e) Demonstrate that the first-flush system is adequately sized to accommodate all catchment areas that would report to the system.	**Section 5.4** describes the SMS design.
Condition 15B	Prior to the commencement of Stage 1 operations and the container cleaning station approved under MOD 4 operations, works-as-executed drawing signed by a registered surveyor must be submitted to the certifying authority demonstrating the stormwater and drainage and finished ground levels have been constructed as approved.	**Section 5.4** refers to the requirement for certification of the SWMS as constructed.

Condition *Regain Code*	Requirement	Approach to Meeting Requirement
Condition 15C	The surface water management system must be operated and maintained for the duration of the project	**Section 5.5** refers to operation and maintenance of the SMS
Condition 15D	**Container Cleaning Station and Container Transit Area** The hardstand area of the Container Cleaning Station must be impervious and fully bunded, to container any contaminated liquids and solids	**Section 5,4** refers to requirements relating to the design of the SWMS

4. Organisational Responsibilities

The key roles and responsibilities in the Regain organisation are shown in table 2 and figure 2.

Table 2 – Key Roles and Responsibilities of Regain Personnel

Role	Responsibilities
Regain Operations Manager	• Commissioning the SMS • Operating and maintaining the SMS • Ensuring that personnel are properly trained and competent in the operations and maintenance activities required for the SMS • Liaison with Tomago Aluminium personnel to verify that the SPL Processing Facility SMS is working in conjunction with the overall Tomago Aluminium site stormwater system • Reinforcing awareness for Regain Operations personnel of the environmental risk presented by stormwater run-off and how the risk is controlled • Reporting and investigating any incidents where the SMS fails to perform as planned • Ongoing improvement of operational level stormwater management
Management and Systems Support Leader	• Administration of the Regain Management System including accreditation to International Standards Organisation standards. • Administering of regulatory licences along with compliance requirements and co-ordinate periodic returns, reports and licence renewals.
Safety, Environmental and Quality Systems Officer	• Reviewing site operation procedures to ensure the requirements of this SWMP are adequately covered • Auditing of operations for compliance with this SWMP
NSW Regional Manager	• Liaison with NSW Government regulatory authorities • Review operational plans for compliance with approval and licence requirements • Arranging independent audits
Regain Managing Director	• Conducting periodic management reviews of this SWMP to ensure its ongoing relevance and effectiveness • Ongoing improvement of Regain organisational systems with respect to stormwater management

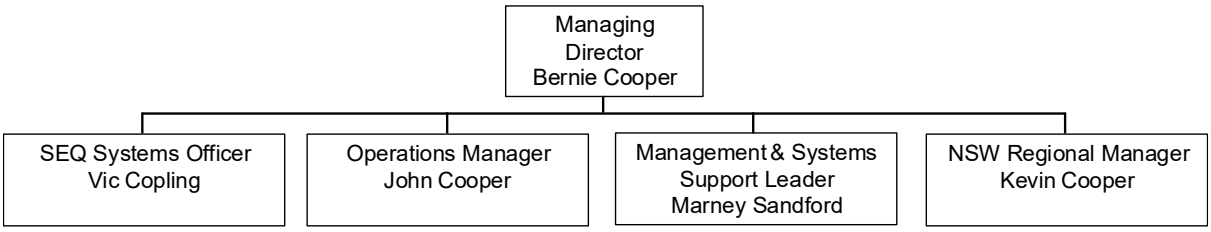


Figure 2 – Regain Organisation Structure

5. Stormwater Management System

5.1. SPL Processing Facility Layout

The SPL Recycling Facility is comprised of two buildings, a courtyard between the buildings, an area south of the courtyard and buildings and SPL processing plant. Key aspects of stormwater flow for the open areas are set out on figure 3. A more detailed site layout showing the elements of the stormwater management system is provided in Appendix A.

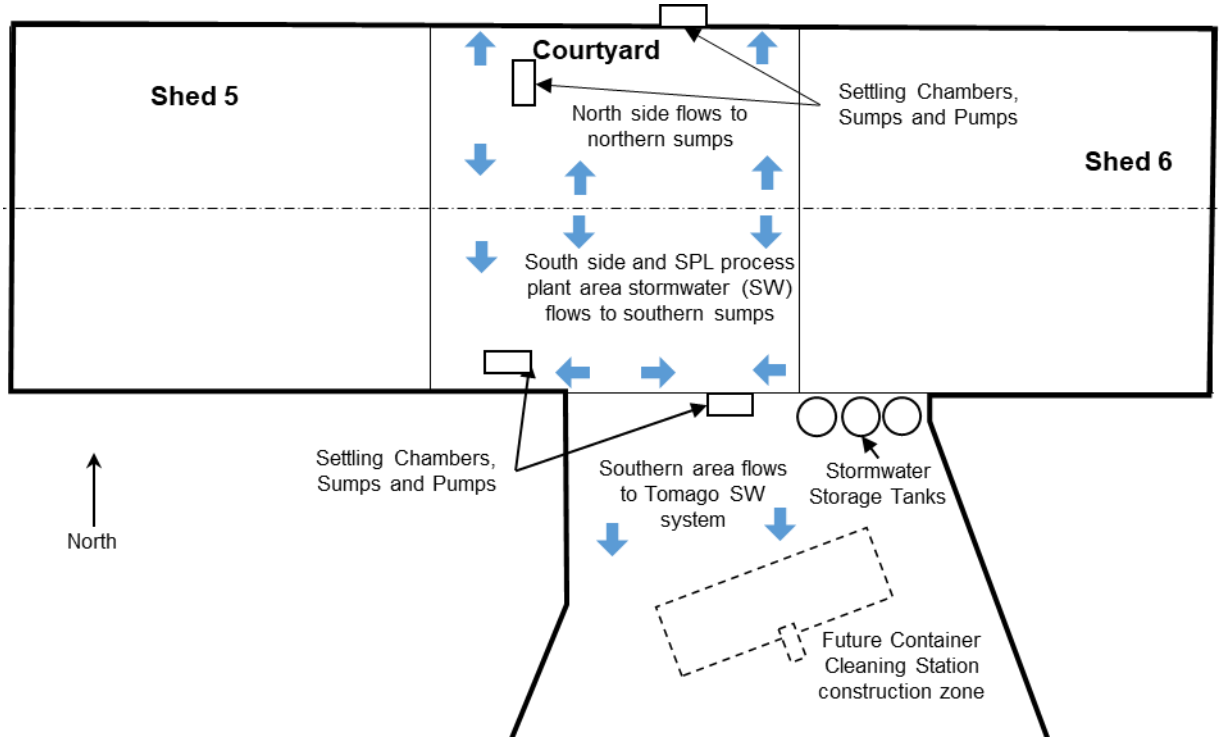


Figure 3 – SPL Processing Facility Layout

SPL is stored in Shed 5 and treated material is stored in Shed 6. These buildings are enclosed buildings that enable the undercover and contained storage of SPL and the products manufactured at the SPL Processing Facility.

SPL is prepared in Shed 5 and transferred in enclosed conveyors to the SPL thermal treatment plants for treatment and then in enclosed conveyors to Shed 6. The thermal treatment process involves heating the SPL in a rotary kiln and then reacting with water to generate a chemical reaction.

Rainwater that falls on the roofs of Shed 5 and Shed 6 is not contaminated and is captured in roof gutters and transferred directly to the Tomago Aluminium site stormwater management system (TSMS) which has stormwater drains running west to east on the northern and southern sides of the SPL Processing Facility.

There is a paved courtyard area under the thermal treatment plants and extending to the western wall of Shed 6 and future paved container cleaning station as shown in figure 3.

5.2. First Flush Capture

A first flush capture system collects potentially contaminated water from the paved courtyard area and the future container cleaning station. The water is captured in concrete stormwater sumps (SW sumps), Each SW sump is comprised of a screen to capture debris, a settling chamber for periodic recovery of sediment and a pump chamber. Each SW sump is fitted with an electric sump pump which is activated by a level switch to pump first flush water to the first flush stormwater storage tanks. Each storage tank includes a mesh screen at the inlet to collect oversize material and to prevent ingress of mosquitos and breeding.

Stormwater that follows after the first flush has been captured enters the TSMS at an entry pits near the north west, north east and south east SW sumps. The south west SW sump overflows to enter the TSMS near the south east SW sump. The container cleaning station sump overflows to open ground and the site-wide water capture system.

5.3. Handling of First Flush Stormwater

The first flush water is drawn from the first flush stormwater storage tanks and used as process water for the SPL processing plant. The process water is consumed in three ways:

(a) consumed in a chemical reaction in the thermal treatment process;
(b) emitted as water vapour from the cooling of hot material thermal treatment process; or
(c) contained within the products of the SPL Recycling Facility.

Solid material collected in the sumps is recovered and incorporated into the treated products.

5.4. SMS Design and Certification

The SMS is designed by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Planning Secretary. The design brief includes the requirements of conditions 5A and 15D of the Development Approval.

Demonstration that the first-flush system is adequately sized to accommodate all catchment areas that would report to the system is achieved by verification of the design through field inspection of contributing areas, runoff flow directions to each stormwater capture sump and measurement of the actual capacity of each sump pump.

Prior to commencement of operation of the increased capacity plant the works-as-executed drawing signed by a registered surveyor is to be submitted to the certifying authority demonstrating the stormwater and drainage and finished ground levels have been constructed as approved.

5.5. Operation and Maintenance of the Stormwater Management System

Operation of the SMS is automated with sump pumps started automatically when level switches are triggered by rising water levels in the sumps. The operation of the SMS is continuously monitored by the Process Control Software supervisory control and data acquisition (SCADA) software.

Monitoring and maintaining SMS equipment integrity is achieved through a formal configuration management system to ensure that the equipment is installed as designed and a documented preventive maintenance (PM) program. The condition of the SW sumps, piping and storage tanks is monitored as part of regular housekeeping and maintenance inspections.

5.6. Site Monitoring

The process of stormwater discharge is controlled by the terms of the EPL 6163 for the smelter. Tomago Aluminium monitors conductivity, fluoride total, suspended solids and pH during discharge of stormwater.

6. Audit and Review

6.1. Audit

Periodic audits of the operational SMS are carried out on not less frequent than six monthly cycle. Annual audits are conducted for compliance of this Plan with Tomago Aluminium, statutory and regulatory requirements and for overall operational compliance with this SMP.

An Independent Audit conducted in accordance with the methodology set out in Independent Audit Post Approval Requirements (Department 2018) must be carried out at intervals no greater than three years. The scope of the Independent Audits includes this SMP.

6.2. Management Review

Management reviews of this SMP including its appropriateness and effectiveness are conducted on not less than a three-year cycle, within six months of a significant issue being identified with regard to stormwater management and otherwise, within three months of:

- Submission of a Compliance Report under Condition 28C (MP06_0050 MOD 2)
- Submission of an incident report under Condition 27 (MP06_0050 MOD 2)
- Submission of an Independent Audit under Condition 29 (MP06_0050 MOD 2)
- The approval of any modification of the conditions of approval (MP06_0050 MOD 2)
- In response to a direction from the Planning Secretary under Condition 26I requiring review (MP06_0050 MOD 2).

Any Management review associated with the above events is notified to the DPHI in accordance with condition 26F and H of the MP06_0050 MOD 2 and a new revision of this SMP is issued and be submitted to the planning secretary. Reviews of this SMP in addition to the above reviews may be conducted and a new version of this document may be issued.

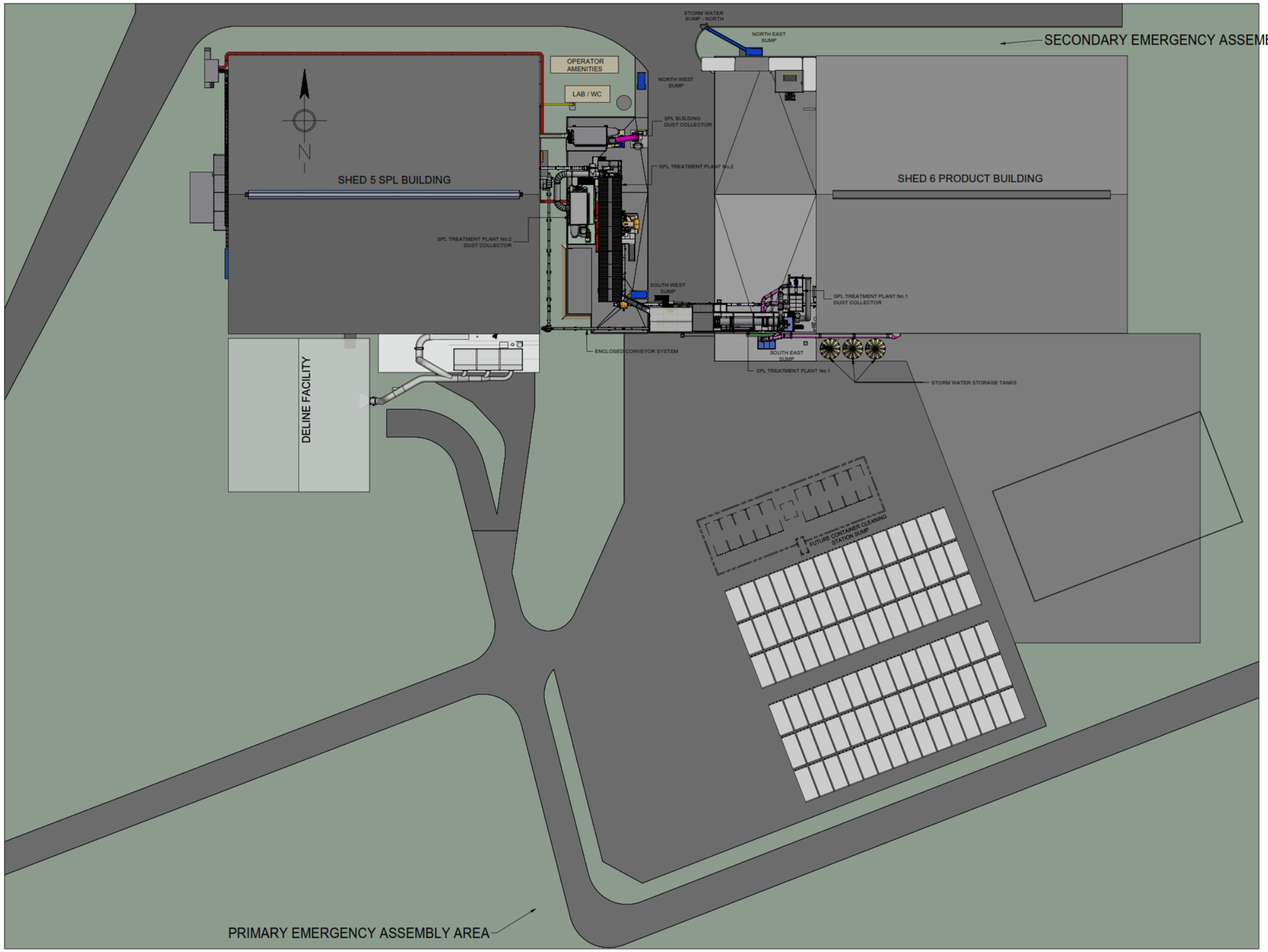
Document Control

The major updates of this SMP are listed in the following table.

Table 3 – Stormwater Management Plan – Issue History

Revision	Date	Purpose			
1.1	3 Mar 2015	Issued with commissioning of stormwater recovery plant for demonstration SPL Processing Plant			
2.0	18 July 2017	Updated and re-issued			
2.1	12 April 2018	Updated and re-issued after review of Environmental Management Plan			
3.1	5 June 2020	Revised to reflect requirements of MOD 2 and to reflect the increased capacity plant new SMS design	Columns added a following recommendation from 2025 Hazard Audit		
4.1	17 Jan 23	Issued after Management Review			
5.0	14 Aug 2025	Updated and re-issued following development approval modification 4	M. Sandford	B. Cooper	14 Aug 2028

Appendix A – Stormwater Management System Layout Drawing



DWG NOS	REFERENCE DRAWINGS	DWG NOS	REFERENCE DRAWINGS

Rev	Date	Prepared	Reviewed	Approved	Description
4	24-Apr-25	NRD	AD	BC	GENERAL UPDATE
3	05-May-22	Htc	Regain	B Cooper	CONTAINER DECONTAMINATION AND STORAGE AREA ADDED
2	05-Jun-20	Htc	Regain	K Cooper	ISSUED FOR APPROVAL TANKS RELOCATED
1	06-Apr-20	Htc	Regain	K Cooper	ISSUED FOR APPROVAL

Inventor File: 116000-00.iam

Regain

		DATE
DESIGNED	Regain	
DRAWN	Htc	06-Apr-20
CHECKED	B Cooper	06-Apr-20
APPROVED		

TOMAGO ALUMIMIUM SPL REPROCESSING FACILITY
STORM WATER MANAGEMENT SYSTEM LAYOUT

SCALE AS STATED | DRAWING NO 116TD162 SHT 1 OF 1 | REVISION 4 | A1