



Aluminium Dross Processing Facility



Scoping Report

TAC Pty Ltd

15 July 2022

→ The Power of Commitment



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1. Introduction

1.1 Background

Tomago Aluminium Corporation Pty Ltd (TAC) has been operating at its Tomago Aluminium Smelter since 1983 and has approval to produce up to 600,000 saleable tonnes of aluminium product per year as ingots, billets and slabs. The site operates subject to two development consents DA 391-80 (1981) and DA 4908-90 (1991) and subsequent modifications (see Section 3.2).

Aluminium production at TAC creates a solid by-product called dross during the casting stage of the smelting process. The dross is separated from the aluminium by scraping the material off the top of the casting furnace prior to the casting of the metal. Dross contains a significant proportion of aluminium, the bulk of which is screened out before the remainder is managed as a waste product.

Historically TAC has relied on offsite facilities to process its dross. TAC proposes to construct a permanent facility within its Tomago site for the dross processing required for operation of the Aluminium Smelter (the project). TAC therefore seeking a modification to the existing Development Consent. This would include:

- Construction and operation of a new dross processing facility within the existing TAC site on Tomago Road, Tomago.
- Internal modifications to processes and infrastructure to allow the on-site management of dross and process dross within the site.
- Renew provisions for the transport of processed dross waste off site.
- Review the licensing for hazardous materials able to be stored on site.

1.2 Need for the project

TAC has historically transported dross to an offsite location for processing by Weston Aluminium. A change at the Weston Aluminium facility in late 2021 has meant that the Weston Aluminium site is no longer able to accept and process dross. Prior to that time, the procedure at the Tomago site involved screening the dross to separate the portion over 70mm (around 10%) for re-melting on site and transporting the remaining -70mm (around 90%) of the dross off site to Weston Aluminium for processing. Around half of the reprocessed dross could be reclaimed and was returned to Tomago for re-melting. Re-melting takes place in the casthouse, where aluminium is formed into final products. The other half of the dross residue was retained by Weston Aluminium for distribution to secondary markets.

TAC has been storing dross both off site (at Hydro Aluminium Environment Protection Licence (EPL) No. 1548) and on site (EPL No.6163) as a temporary solution while assessing alternative processing options to Weston Aluminium. As production at the Tomago smelter is ongoing, the current temporary storage solution is constrained by the available storage volume.

With the absence of an external provider, the project is needed to provide an essential function and resilience to the current operation by incorporating the capacity for dross processing in full on site. Due to the lead time required to obtain the dross processing equipment and apply for the necessary approvals and any modifications to permits and licenses, the project is subject to strict timeframes for completion due to the finite current storage capacity for dross.

1.3 Alternatives

Alternative options to establishing an onsite processing facility were assessed by TAC. The following options were considered and discounted by TAC for the following reasons:

- Do-nothing option – The do-nothing option would continue to see the stockpiling of dross material to the extent where existing storages are at capacity. These existing storages are considered a temporary solution until a processing option is identified. The inability to temporarily store and find a subsequent processing solution for stored dross will lead to a business continuity risk if such a solution is not identified. Therefore the do nothing option was discounted.
- Weston Aluminium (WA) – Weston Aluminium previously provided dross processing services to TAC. After a fire at WA it no longer has the capacity to treat TAC's dross. This option is no longer currently available to TAC for dross processing.
- Bell Bay Aluminium (BBA), Tasmania – An existing processing facility exists at BBA. Review of this facility identified it would not have the processing capacity to process all of TAC's dross. In addition, there are licencing complexities transporting dross material through three states and transportation costs are prohibitive. Therefore, this option was discounted.
- Tellus Holdings, Western Australia – Tellus Holdings operate a hazardous materials waste storage facility located approximately 240 km northwest of Kalgoorlie in Western Australia. In addition to logistical issues and associated costs, this facility can only accept residues from processed dross so some level of pre-processing would be required regardless. Therefore, this option was discounted.
- New dross processing facility at TAC (the preferred option). A new dross processing facility would overcome the issues associated with the above listed options as has been chosen by TAC as the preferred option.

1.4 Purpose of this report

This report has been prepared for the Department of Planning and Environment (DPE) as a scoping document, to support the preparation of the Environmental Assessment Requirements and the lodgement of a modification application to the development consents.

This report provides an overview of the proposed dross processing facility and identifies the matters for future assessment to support a modification application to the consent to the existing aluminium smelter at Tomago, in the Port Stephens local government area. The report is intended to identify areas that may require further technical assessment based on a likelihood of change in previously assessed conditions on the site and/or the surrounds.

1.5 Limitations

This report: has been prepared by GHD for TAC Pty Ltd and may only be used and relied on by TAC Pty Ltd for the purpose agreed between GHD and TAC Pty Ltd as set out in section 1.3 of this report.

GHD otherwise disclaims responsibility to any person other than TAC Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 1.3 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

2. Site location and context

2.1 Location and site access

The project site is located at 638 Tomago Road, Tomago, about 600 metres north of the Hunter River and seven kilometres north of the Newcastle CBD. The project would be sited on Lot 104, Deposited Plan (DP) 1125747. Large vehicle access to the site is via Old Punt Road from the southbound Pacific Highway. The site and locality are shown in Figure 2.1.

2.2 Land uses

Land use in the surrounding locality is a mixture of industrial, rural-residential and infrastructure including water supply. Other land uses near and adjacent to the project location include:

- North – Bushland incorporating AGL's Newcastle gas storage facility and Tomago Sand Beds groundwater aquifer and water supply infrastructure managed by Hunter Water Corporation
- South – A NSW Department of Corrective Services training facility on Tomago Road 450 metres south-west of the project, the Hunter River, Kooragang Island
- East – Tomago industrial area, Tomago Sand Beds groundwater aquifer, water supply infrastructure managed by Hunter Water Corporation, and open space connecting to Fullerton Cove
- West – The Tomago industrial area and the Hunter River

The subject site is zoned as IN1 General Industrial under the *Port Stephens Local Environmental Plan 2013* (LEP 2013) and comprises three land allotments including Lot 202 of DP 1173564, and Lot 3 DP 808004. The subject allotment for this project is Lot 104 DP 1125747. The adjoining land to the east and north is zoned Special Purpose (SP1) Hunter Water Corporation as well as IN1 further east. To the west and south, other than Tomago Road zoned SP2, the zoning remains IN1, with areas of Zone E2 Environmental Conservation and SP2 Infrastructure. Zoning is shown in Figure 4.1.

3. Existing operation and approvals

3.1 Current operations

TAC currently manufactures up to 600,000 saleable tonnes per annum (tpa) of aluminium product, which is primarily exported. Aluminium manufacturing is an energy-intensive process due to the power required to separate aluminium from other constituents in the smelting process. For this, the facility operates three potlines that are connected to an onsite electricity substation, a casthouse, paste plants, bake ovens as well as ancillary operations and storage facilities. The processes at the Tomago smelter site include:

- Receiving of raw materials
- Potlines
- Anode production, baking and rodding
- Casting
- Dross preliminary processing – including grinding and separation of primary dross materials within existing building
- Electricity supply and distribution
- Yard storage areas
- Heavy vehicle manoeuvring areas
- Environmental management including air quality controls (dry scrubbing) and surface water management
- Aluminium processing waste storage and management

Figure 3.1 describes Tomago Aluminium’s aluminium production process.

3.2 Approval history

TAC currently holds two Development Approvals for the site; DA 391/80 (1981) and DA 4980/90 (1991). These consents have been modified eight times as detailed in Table 3.1. A copy of the consolidated conditions of consent is attached at Appendix A.

Table 3.1 Approval history

Mod no.	Modification	Approval date
DA 391-80 (1981)	Tomago Aluminium Smelter	March 1981
DA 4980-90 (1991)	Tomago Aluminium Smelter Expansion Expand the existing smelter capacity from 220,000 tpa to 380,000 tpa, and the construction of an additional third pot line.	11 January 1991
DA 391/80-Mod-1	Modified to be consistent with DA 4908/90 to permit the expansion of potlines 1 and 2 and increase total aluminium production capacity to 440,000 tpa.	11 January 1991
DA 391/80-Mod-2 & DA 4908/90 Mod-1	Minor modifications to the consents relating to the management of the buffer zone properties.	14 February 1995
DA 391/80-Mod-3 & DA 4908/90 Mod-2	Upgrade of all three potlines to new pot design and increasing the total aluminium production from 440,000 to 530,000 tpa.	23 August 2001
DA 391/80-Mod-4 & DA 4908/90 Mod-3	Increase the total aluminium production capacity from 530,000 to 575,000 tpa.	7 December 2009
DA 391/80-Mod-5 & DA 4908/90 Mod-4	Increase the total aluminium production capacity from 575,000 to 585,000 tpa.	12 October 2015

Mod no.	Modification	Approval date
DA 391/80-Mod-6 & DA 4908/90 Mod-5	Increase the total aluminium production capacity from 585,000 to 600,000 tpa.	9 November 2016
DA 391/80-Mod-7 & DA 4908/90 Mod-6	No change in aluminium production throughput proposed. Modification sought for an increase in the total sulfur dioxide emission limit from the smelter potlines from 11,900 to 13,500 tpa.	Application withdrawn.
DA 391/80-Mod-8 DA 4908/90 Mod-7	Amend several environmental monitoring conditions in its current development consents relating to water quality and biodiversity monitoring requirements	23 October 2020

3.3 Other approvals and licences

The site holds two licences relevant to this project regulated by the NSW EPA.

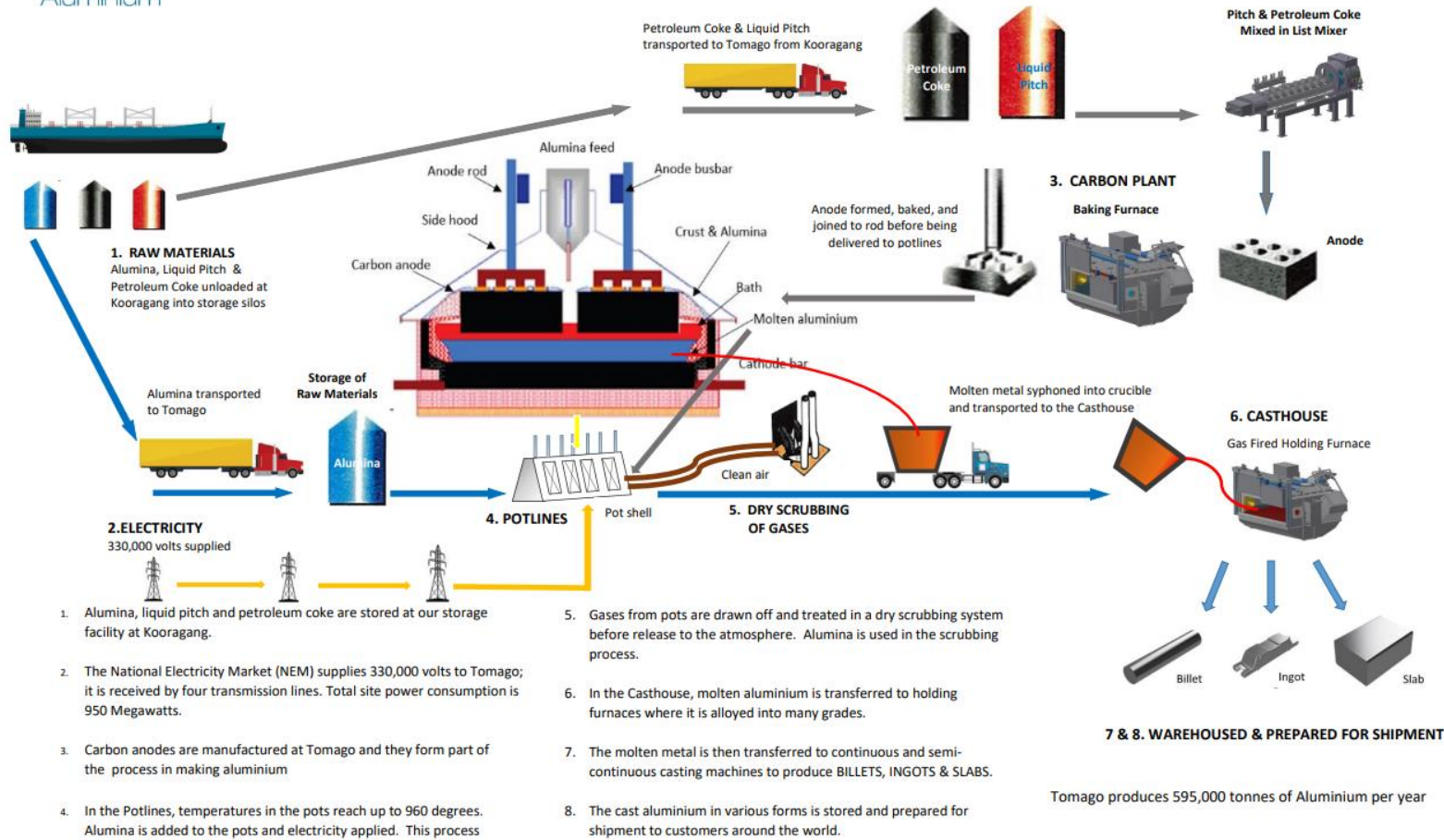
- Environment Protection Licence (EPL) 6163
- Environmentally Hazardous Chemical (EHC) Licence 03

The EHC Licence 003 also includes:

- Chemical Control Order: *Chemical Control Order in Relation to Aluminium Smelter Wastes Containing Fluoride and/or Cyanide Wastes, 1986*
- Declared Chemical Waste: Aluminium smelter wastes containing fluoride and/or cyanide
- Prescribed Activities: The processing, keeping, selling, distributing, conveying, using or disposal of aluminium smelter wastes containing fluoride and/or cyanide



PROCESS OF MAKING ALUMINIUM



- Alumina, liquid pitch and petroleum coke are stored at our storage facility at Kooragang.
- The National Electricity Market (NEM) supplies 330,000 volts to Tomago; it is received by four transmission lines. Total site power consumption is 950 Megawatts.
- Carbon anodes are manufactured at Tomago and they form part of the process in making aluminium
- In the Potlines, temperatures in the pots reach up to 960 degrees. Alumina is added to the pots and electricity applied. This process separates the aluminium from its oxide. The molten aluminium is syphoned into a crucible for transportation to the Casthouse. The carbon anode is consumed in the pots.
- Gases from pots are drawn off and treated in a dry scrubbing system before release to the atmosphere. Alumina is used in the scrubbing process.
- In the Casthouse, molten aluminium is transferred to holding furnaces where it is alloyed into many grades.
- The molten metal is then transferred to continuous and semi-continuous casting machines to produce BILLETS, INGOTS & SLABS.
- The cast aluminium in various forms is stored and prepared for shipment to customers around the world.

2020

Figure 3.1 TAC aluminium production process

4. Proposed modification

The project would be located centrally within the existing TAC site as shown in Figure 4.1. It would be situated between the caphouse and the existing dross facility that is used for primary separation (see Figure 4.2). Construction and initial operation would be undertaken by a contractor who operates similar facilities at other smelters. The smelter would continue to operate in accordance with the approved development and there is no overall change proposed to production volumes or dross throughput at the site. Construction and operational details of the project are provided in Sections 4.1 and 4.2 respectively.

4.1 Construction

4.1.1 Construction hours

Where practical, and subject to the final construction timetable, construction will be carried out during the following construction hours:

- Monday to Friday: 7.00 am to 6.00 pm
- Saturday: 7.00 am to 6.00 pm
- Sundays and public holidays: no work

Construction activities may be carried out, outside standard hours where they are not audible at the nearest sensitive receivers.

4.1.2 Construction schedule

It is anticipated that construction would take approximately 13 months to complete, and subject to the approval process, it is anticipated that this would commence in late 2022. Construction activities would include:

1. Site establishment and preparation (1 month)
2. Civil works (2 months)
3. Dross processing building construction (6 months)
4. Building fit out and installation of dross processing equipment, controls and environmental management systems (2 months)
5. Testing and commissioning (2 months)

4.1.3 Construction workforce

It is anticipated that labour requirements for the project will be modest and mostly satisfied by local contractors. Across the duration of the project, a workforce of approximately 20 - 30 full-time equivalent (FTE) workers will be required.

4.1.4 Construction plant and equipment

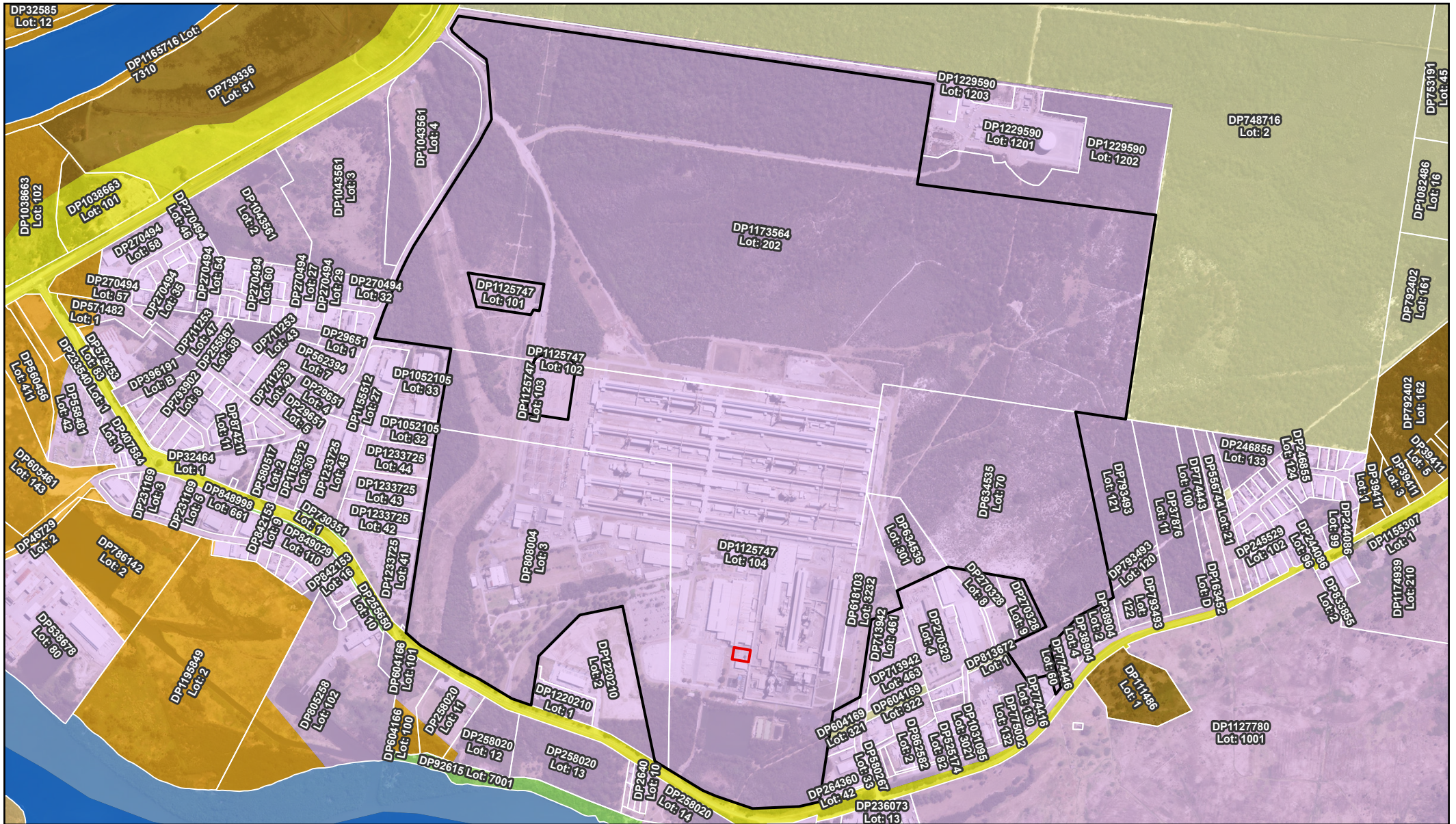
Much of the equipment and materials required for the project have a long lead time for procurement. Specific types and quantities of equipment and materials will be determined during project planning. An indicative list of equipment that may be required for the project is provided in Table 4.1.

Table 4.1 *Indicative construction equipment*

Construction equipment		
Excavators- Various Sizes	Concrete Trucks	Welding machines
Bulldozers	Contractor service vehicles	Site Sheds
Dump Trucks	Rollers	Asphalting machines
Mobile Cranes – various sizes	Piling Rigs	Rock breakers
Elevated Work Platforms	Semi-Trailers	Hand tools
Concrete pumps	Vacuum Trucks	-

4.1.5 Capital expenditure

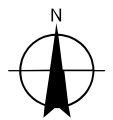
The estimated capital cost of the project is \$16 million.



Legend

- Proposed facility
- Tomago Aluminium Site Cadastre
- E2, Environmental Conservation
- E1, National Parks and Nature Reserves
- SP1, Special Activities
- SP2, Infrastructure
- W1, Natural Waterways
- W2, Recreational Waterways
- IN1, General Industrial
- RE1, Public Recreation
- RU2, Rural Landscape

Paper Size ISO A4
 0 0.1 0.2 0.3 0.4
 Kilometres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA2020
 Grid: GDA2020 MGA Zone 56



Tomago Aluminium Company Pty Ltd
Tomago Dross Processing Modification
Scoping Report

Project No. 12583275
 Revision No. -
 Date 14/07/2022

Site location plan

FIGURE 3-1

4.2 Operation

4.2.1 Description

TAC proposes to locate the facility adjacent to the existing dross processing building on site. The project would be contained within a new enclosed building (see Figure 4.2 and detailed building plans attached in Appendix B). Following construction, the project would involve the following key steps as part of the processing of dross:

1. Transfer dross for primary screening process, as currently undertaken
2. Redirection of separated aluminium to casthouse, as currently undertaken
3. Processing remaining dross in a rotary furnace
4. Redirection of further separated aluminium to casthouse
5. Bagging of residue products from rotary furnace for transport off site

Steps 3, 4 and 5 were previously undertaken off site (see Section 1.1), and as part of this project dross residue would now be managed on site, under arrangements with a contractor that would operate the facility on behalf of TAC. As also undertaken during the existing dross processing arrangements, recovered metal joins the existing aluminium scrap waste stream that is remelted in the casthouse. There is no change in total dross production at TAC. The total volume of dross material would remain on site for longer while being processed, until the residual portion is transported off site.

The key operational difference to the existing process is the addition of a natural gas fired rotary furnace housed in the new building. Other than this building there is no additional modification considered necessary for any other infrastructure or services on site. The development envelope for the project and the proposed additional plant remains within the existing site, and no additional land clearing or ground disturbance outside the already built upon envelope is required.

4.2.2 Environmental controls

The project is expected to generate negligible additional air emissions above the existing smelter operations. Dross screening, furnace treatment and bagging processes would be connected to an independent dust collection baghouse, with dry scrubbing of emissions to manage fluoride that may be generated. There is an identified need for a new air emission stack for this facility, and air quality management would follow existing clearly defined and regulated processes on site.

No new procedures or waste constituents would be introduced as part of this project that are different from current processes. Air quality would be subject to further assessment (see Section 6.2).

4.2.3 Workforce and operating hours

No change to TAC operating hours are proposed. The dross processing facility would seek approval to operate 24 hour per day seven days per week in line with existing TAC operations. Despite this, depending on dross generation and therefore demand the project will typically operate during standard hours once the backlog of stored dross was processed.

During operation, it is anticipated that approximately 16 FTE workers would be required.

4.2.4 Traffic and access

Operationally the project is only expected to generate approximately 20 light vehicle movements compared to current operations. As historically dross material was trucked offsite for processing, now it is proposed to be processed onsite prior to removal of any residue material by truck. This is expected to result in a negligible change in heavy vehicle movements to and from TAC. Further detail regarding potential traffic impacts is located in Section 6.5.

4.2.5 Other changes

Other minor elements of the modification would be required to integrate the new plant with the approved facility and to clarify elements of the current development application and related licences and permits. These would include:

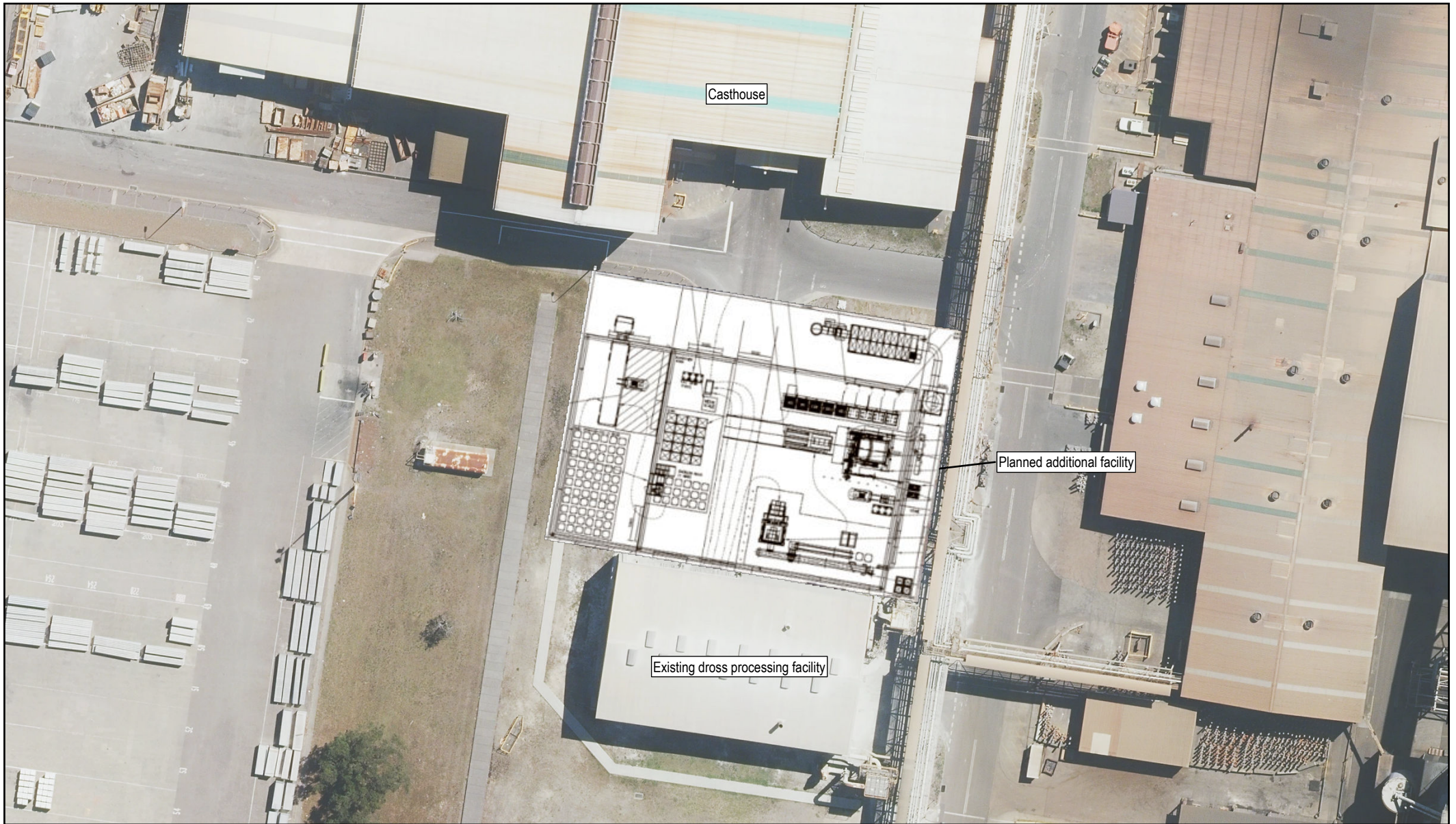
- Connection to existing site utilities and infrastructure
- Applying for variations to existing licences and permits
- Renew provisions for the licensed transport of processed dross waste off site for reuse or disposal at a licensed facility
- Review the quantity of hazardous materials able to be stored on site

Benefits of the modification include fewer movements of hazardous materials, as well as reduced vehicle fuel use.

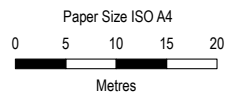
Table 4.2 compares the approved operations to the project.

Table 4.2 *Approved project and proposed modification, comparison of key aspects*

Aspect of project	Approved	Proposed
Aluminium production	600,000tpa	No change
Hours of operation	24 hours, 7 days	No change
Site personnel	No approval limit however there are currently 970 staff employed by TAC, with an additional approx. 200 contractors on site.	Additional 20 staff. Minor change compared to existing TAC staffing.
Air quality	<ul style="list-style-type: none"> – The facility undertakes monitory of stack emissions as a requirement of EPL 6163 – 20 point-source air monitoring locations (discharge points) 	<ul style="list-style-type: none"> – Additional 1 stack, air quality controls (dry scrubbing) and monitoring point – No significant change anticipated. TAC can accommodate AQ controls with minimal impact
Waste	<ul style="list-style-type: none"> – Non-thermal waste processing – No upper limit for metallurgical and smelter wastes – Waste is managed under EPL 6163 	<ul style="list-style-type: none"> – Added activity: thermal treatment of waste – Additional waste generated from air quality control management, i.e. used baghouse bags, would be minor in the context of current operations
Transport	Noted in 2016 SEE report, although not in any development consent: 139 truck movements / day for various uses	<ul style="list-style-type: none"> – No change to site access conditions – Final dross waste by-product would be transported off site – Truck movements (in/out) per day would remain consistent with current numbers



Legend



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56



Tomago Aluminium Company Pty Ltd
Tomago Dross Processing Modification
Scoping Report

Project No. **12583275**
Revision No. **-**
Date **14/07/2022**

Key features

FIGURE 4-1

5. Legislative framework

The primary instruments considered for the purpose of this scoping report are reviewed in this section. A detailed assessment of relevant legislation and environmental planning instruments and plans would be included in any future application where necessary.

5.1 Environmental Planning and Assessment Act 1979

5.1.1 Overview

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) provide the framework for environmental planning in NSW and include provisions to ensure that proposals that have the potential to impact on the environment are subject to detailed assessment and provide opportunity for public involvement.

As detailed in Section 3.2 the original development consent was issued in 1981 pursuant to then Section 101 of the EP&A Act. Section 101 formerly related to determination of applications where the Minister was of the opinion that the development was of state or regional significance and therefore called in by the Minister for Determination. Under transitional provisions such projects are now considered to be State Significant Development (SSD). As with previous modifications for the site have largely been under Part 4 of the EP&A Act, with assessment as SSD notably for modifications relating to an increase in smelter production capacity. It has been demonstrated through this scoping report that the additional processing of dross by the existing facility would not fundamentally alter the scale or nature of the existing development and would be consistent with the land use characterisation of the existing TAC. No increase to annual processing tonnage limits is being sought.

The project is permissible under Port Stephens Local Environmental Plan 2013, discussed in Section 5.2.

5.1.2 Modification

Section 4.55 of the EP&A Act relates to modifications of development consents by a consent authority. Section 4.55(2) addresses modifications where the development is substantially the same but additional assessment is required to address the potential impacts of a project.

Section 4.55(2) addresses modifications where the development is substantially the same and where concurrence may be required. The particulars of the section are:

(2) Other modifications

A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:

- a) it is satisfied that the development to which the consent as modified relates **is substantially the same development as the development for which consent was originally granted** and before that consent as originally granted was modified (if at all), and*
- b) it has consulted with the relevant Minister, public authority or approval body (within the meaning of Division 4.8) in respect of a condition imposed as a requirement of a concurrence to the consent or in accordance with the general terms of an approval proposed to be granted by the approval body and that Minister, authority or body has not, within 21 days after being consulted, objected to the modification of that consent, and*
- c) it has notified the application in accordance with—*
 - i. the regulations, if the regulations so require, or*
 - ii. a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and*

d) it has considered any submissions made concerning the proposed modification within the period prescribed by the regulations or provided by the development control plan, as the case may be.

The substantially the same development test is discussed further in Section 5.1.3.

5.1.3 Substantially the same development

The development is considered to be substantially the same development as there is no proposed increase in throughput, or substantially different or new processes that would be facilitated by the proposed additional plant. The site use will continue to be an aluminium smelter, as approved in the original consent and subsequent modifications.

With regard to the nature of the original development and the related Environmental Impact Statements, dross processing has been previously addressed as part of site operations:

- The plant's original EIS (Environmental Impact Statement for an Aluminium Smelter at Tomago, N.S.W., Volume 1 & 2, prepared by James B. Croft & Associates, Newcastle) made the following reference under "Casting Facilities": "*Cast house dross will be cooled prior to grinding and separation of saleable aluminium granules*".
- Subsequent EIS's describe similar activities, for example: July, 1990, prepared by Crooks Michell Peacock and Stewart Pty Limited (July 1990) "Dross from the casthouse furnaces is transported to the dross treatment plant where it is ground and screened to separate usable aluminium granules".

The smelter would continue to operate substantially in accordance with the approved development (Port Stephens Council DA 391/80 and DA 4908/90), with the modification providing added value and resilience to the current operation by incorporating the capacity for dross processing in full on site. No changes to the quantities of aluminium produced at TAC are proposed as part of the modification.

5.2 Port Stephens Local Environmental Plan 2013

The site is situated within the Port Stephens local government area and is zoned General Industrial (IN1). The adjoining land to the east and north is zoned Special Purpose (SP1) Hunter Water Corporation. To the west and south, other than Tomago Road zoned SP2, the zoning remains IN1. The objectives of the zone are to:

- To provide a wide range of industrial and warehouse land uses
- To encourage employment opportunities
- To minimise any adverse effect of industry on other land uses
- To support and protect industrial land for industrial uses

Activities permitted with consent include heavy industries. With regard to land use zone and permissibility, the project is entirely consistent with the land use definitions applicable to the existing operations on the site.

5.3 Protection of the Environment Operations Act 1997

Under the *Protection of the Environment Operations Act 1997* (POEO Act), it is an offence to cause water, air or noise pollution without authorisation for such under an Environment Protection Licence (EPL). Additionally, Schedule 1 of the POEO Act identifies "scheduled activities" which are required to be licensed by the EPA.

TAC holds EPL No. 6163. The scheduled activities authorised by this licence are included in Table 5.1.

Table 5.1 Existing scheduled activities under NSW EPL 6163

Scheduled Activity	Fee Based Activity	Scale
Metallurgical activities	Aluminium production (alumina)	Any capacity
Metallurgical activities	Metal waste generation	> 100 T annual volume of waste generated or stored
Waste processing (non-thermal treatment)	Non-thermal treatment of hazardous and other waste	Any annual processing capacity
Waste storage	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Any listed waste type stored

The project would include the treatment of dross via the rotary furnace. The modification would not alter the throughput quantities or change the nature of waste storage at the site. All dross would be sourced from existing on site activities at existing approved production levels, and it is also currently subject to non-thermal treatment at the same volume. Dross management including processing would fall under Schedule 1 (26) of the Act, that is:

26 Metallurgical activities

metal waste generation, meaning any activity that involves—

(a) the refinement, processing or coating of metal, and

(b) having on site any prescribed waste (that is, hazardous waste, restricted solid waste or liquid waste, or any combination of them).

The licence also identifies required air emissions monitoring at various points on the site including dry scrubber stacks. The project would utilise additional dry scrubbing air quality controls that are similar to the existing site controls. In addition, the licence requires ambient air quality monitoring at a number of locations around the site. Surface water on site and off site, vegetation and ground water quality are also subject to monitoring and reporting conditions.

Further assessment of the existing EPL and any need for a licence variation in relation to this project would be undertaken as part of the detailed assessment of the modification.

5.4 Application type and consent authority

Given the nature of the proposed modification, it is recommended that this modification be assessed under section 4.55 (2) of the EP&A Act as a modification to TAC’s existing development consent, with the environmental impact assessment prepared as a modification report submitted to DPE for approval.

5.5 Other legislation

Table 5.2 provides a summary of other legislation and environmental planning instruments relevant to the project.

Table 5.2 Summary of other legislation relevant to the Project

Instrument	Comment
POEO (Clean Air) Regulation 2022	The assessment would be carried out with regard to the requirements set out in the POEO Clean Air Regulation particularly Part 5 and Schedule 3, which address air quality from activities and plant at scheduled premises.
Environmentally Hazardous Chemicals (EHC) Act 1985	<p>The EHC Act is regulated by the NSW EPA and provides a mechanism for the regulation of chemicals of environmental concern throughout their entire lifecycle including when they are classed as waste products. The constituents of Aluminium dross are classed as Dangerous Goods Class 4.1, 4.3 and 5.1 and Packing Group III in accordance with the <i>Australian Dangerous Goods Code (2020)</i>.</p> <p>TAC currently holds EHC licence No. 003 for the processing, keeping, selling, distributing, conveying or using of aluminium smelter wastes containing fluoride or cyanide. No change is proposed to the volumes of materials on site, or how the materials would be kept, stored, distributed or used on site. The dross would be subject to further processing in a rotary furnace, and while the total balance of constituents would not change, this step in processing may require an administrative amendment to the existing EHC Licence to provide for this modification and any related approvals.</p> <p>The site would continue to comply with the existing <i>Chemical Control Order in Relation to Aluminium Smelter Wastes containing Fluoride and/or Cyanide, 1986</i> and other conditions of EHC Licence 003.</p>
State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021	<p>The Resilience and Hazards SEPP aims to ensure that the consent authority has sufficient information regarding a proposal to determine whether the development meets the criteria for hazardous or offensive development. Conditions to minimise or reduce adverse effects can then be imposed with any consent issued. This SEPP requires applications for potentially hazardous or offensive industry to be accompanied by a preliminary hazard screening (PHA).</p> <p>Assessments of the hazards and risks will be conducted for the site with regard to the project, to evaluate the potential off-site risk implications and the use of suitable risk mitigation measures. A Preliminary Hazard Screening study will be prepared to evaluate hazards associated with the project and any change to the existing risk profile.</p>

6. Environmental issues

The following section identifies and considers the potential impacts on of the project on the environment.

6.1 Overview

TAC has undertaken a review of the potential environmental impacts and aspects associated with the project. This review was based on TACs extensive history of operating the Tomago Smelter, secondary aluminium smelting and management of smelting by-products. This review identified the key and other environmental aspects that would need to be considered in the assessment of the modification:

- Key aspects:
 - Air quality
 - Noise and vibration
 - Hazards and risk
 - Traffic and transport
- Other aspects:
 - Biodiversity
 - Soils and contamination
 - Water
 - Waste
 - Greenhouse gas
 - Aboriginal heritage
 - Non-Aboriginal heritage
 - Services and utilities.

The proposed assessment approach for each of the key and other aspects are outlined below.

6.2 Air quality

6.2.1 Existing environment

Local meteorological data was obtained from the Newcastle Nobbys Signal Station (Site No. 061055). Mean monthly maximum temperatures range between 16.8 °C in July to 25.6 °C in January. Mean monthly minimum temperatures range from 8.5 °C in July to 19.4 °C in February. Autumn and spring are generally mild.

Mean monthly rainfall in the area ranges from 119.7 mm in March to 91.9 mm in July, with most of the mean annual 1118.0 mm of rainfall occurring between February and June (autumn). Mean monthly wind speeds are typically higher during spring and summer, from 35.3 km/h in November to 26.1 km/h in May (mean 3pm wind speeds). Winds are predominantly from the northwest and west in the morning, and the east, south and south east in the afternoon.

EPL 6163 currently identifies 32 air monitoring points, as dry scrubber stacks, roof vents, ambient air locations, and plant monitoring (Table 6.1). TAC is required to conduct air monitoring at identified emissions locations for gaseous and total fluoride, sulfur dioxide and solid particles. Monitoring of nitrogen oxides and polycyclic aromatic hydrocarbons (PAHs) is also required for some emissions points. Air emissions at the site as a whole are subject to annual pollutant load limits (see Table 6.2).

Table 6.1 TAC air monitoring types and locations (EPL 6163)

Type of monitoring	Location	Number of monitoring locations
Discharge point	Dry scrubber stack	9
Discharge point	Roof vent	6
Discharge point	Plant stacks and dust filter	5
Ambient air monitoring	10 off-site locations	10
Weather monitoring	On site	1 (shared location with ambient air monitoring)
Discharge total	No location, but a data point to record sum of all point source emissions	1

Table 6.2 Assessable Pollutant Load limit (EPL 6163)

Assessable Pollutant Load limit (air)	kg (annual)
Coarse Particulates	192,045
Fine Particulates	174,685
Fluoride	298,000
Lead	(blank)
Nitrogen Oxides	186,620
Sulfur Oxides	11,900,000

In addition to load limits, concentration limits apply for these constituents, measured as a percentile concentration average over a one hour measurement period.

The EPL also requires monthly reporting on air emissions and pollution control equipment, focusing on stack and roof vent emission monitoring. The pollution control equipment reporting includes “*all scrubber systems installed on Points 1,2,3,4,5,6,7, 8 and 9 for the purpose of removing fluoride, solid particles and polycyclic aromatic hydrocarbons from emissions to atmosphere*”.

A wide range of industry sources of air emissions in the Tomago air-shed include industrial operations in the vicinity of the site, as well as shipping and logistics operations and coal storage at Kooragang Island, about four kilometres south of the site.

6.2.2 Potential impacts

During construction, localised air quality may potentially experience impacts associated with dust generation from materials handling, and machinery and truck movements. Construction traffic and machinery will also generate exhaust emissions.

During operation, air quality impacts have the potential to arise via emissions from the proposed rotary furnace. The key potential pollutants requiring assessment and mitigation measures are expected to be fluoride and particulate matter associated with further processing of aluminium dross.

As per current management and mitigation measures, these emissions would be directed to a new furnace stack via a baghouse to control and manage air quality. The handling of bulk materials prior to being treated in the furnace would be entirely with the proposed sealed shed and therefore providing minimal opportunity for fugitive dust emissions to occur as a result of materials handling.

Trucks and machinery operating within the site will also generate exhaust emissions however these would be negligible in the context of the overall TAC operation.

6.2.3 Proposed assessment approach

Construction air quality impacts will be assessed qualitatively and will largely be limited to dust generated from machinery movement and ground disturbance and vehicle emissions.

An operational air quality impact assessment in accordance with *the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2016) will be undertaken as part of the SEE to assess potential impacts on nearby sensitive receptors. The assessment will include:

- Defining the existing air quality environment at the site, including the identification of sensitive receivers.
- Review of project information related to sources of air emissions during operation.
- Identification of all likely sources of air emissions associated with the project and development of emission inventory.
- Preparation of dispersion models for current and proposed activities at the site, including comparison against EPA criteria.
- Quantification of potential impacts.
- Recommendations on mitigation and management strategies.

6.3 Noise and vibration

6.3.1 Existing environment

The ambient noise environment in the vicinity of the project is influenced by operational activities at TAC and surrounding industrial activities. Traffic noise from local road network including Tomago Road and the Pacific Highway are also present. Other regional influencers of noise include air traffic from RAAF Base Williamtown and associated Newcastle Airport.

The nearest sensitive receiver, the Tomago House Chapel, is located approximately 1100m to the south-east of the project site.

TAC was required to undertake a noise audit and reporting in 2014 for the purposes of a production increase, however the EPL does not impose operational noise conditions or require ongoing noise monitoring. Despite this TAC undertake annual noise monitoring though at three locations around the smelter to maintain an understanding of the local noise environment.

6.3.2 Potential impacts

During construction, the project has the potential to generate noise emissions from a variety of sources, including as a result of the following:

- Civil and structural construction activities from associated plant and equipment
- Movement of heavy vehicles to and from the project site
- Construction traffic on local roads
- Piling activities

During operation, the project has the potential to generate noise emissions from sources including:

- The proposed furnace and ancillary activity
- Movement of heavy vehicles within the project site

6.3.3 Proposed assessment approach

A noise and vibration impact assessment will be prepared for the SEE with regard to the *Noise Policy for Industry* (EPA, 2017), *Interim Construction Noise Guideline* (DECC, 2009) and *Road Noise Policy* (DECCW, 2011), including the following tasks:

- Review of background information to inform the assessment including meteorological data
- Establish background noise levels
- Development of a noise model for the project including identification of additional noise sources
- Identification of noise trigger levels and criteria for assessment
- Identification of the likely noise and vibration impacts from construction and operational activities
- Identification of noise management strategies and mitigation measures, as required

6.4 Hazard and risk

6.4.1 Existing environment

The project is located centrally within the footprint of the existing Tomago Aluminium industrial precinct, with existing hazardous or potentially hazardous activities currently being undertaken as part of ongoing operations. Notably the operation of the existing three pot lines which a total of 840 pots which are charged at temperatures of up to 960 degrees Celsius which causes a separation of the alumina from its oxides. The molten liquid metal is then transported to the casthouse where it is maintained in a molten state prior to casting into billets, ingots or slabs for offsite transportation.

The existing potential hazards or activities onsite include:

- Storage and transportation of dangerous goods, hazardous substances and chemicals
- Management of air emissions and maintenance of environmental controls
- Mechanical failures due to degradation or failure of mechanical systems
- High voltage electrical system hazards
- Vehicle and plant movements within TAC

6.4.2 Potential impacts

Materials required to construct the project are generally benign and are not expected to generate hazards other than those of the kind generated by current site activities, though there may be some exceptions due to specific requirements of construction.

Potential impacts would be assessed with regard to operational elements including:

- Hazardous properties of materials, in particular dross
- Hazardous incidents such as:
 - Water contamination
 - Dust management
 - Spills (liquids or solids)
 - Failure of air quality controls
 - Weather or storm damage to structures
- Consequence analysis, such as secondary impacts related to a hazardous incident

TAC will where necessary adapt its existing hazard management strategies for the operation and maintenance of both new and related infrastructure from the project. For example:

- Contact of raw materials with water (and potential flammable gas generation) will be prevented by coordinating deliveries during dry weather conditions only and by conducting all operations within purpose-built and enclosed buildings
- The risk of furnace explosion and resultant expulsion of material is considered to be negligible. Nevertheless, furnace charging, melt, mixing and casting techniques established for dross processing will also be adopted. This includes loading the furnace with burners off, lowering furnace doors during the processing phase, and idling burners during mixing and casting.

TAC will also update its Fire Safety Study, Construction Safety Study, Safety Management System, Incident Reporting procedures, and Emergency Response Plan to accommodate the project and define appropriate operational and management strategies.

A range of general safeguards would also be included and monitored at the TAC site alongside existing monitoring procedures such as:

- Dust control – dust extraction on all equipment and storage bays, baghouse units and dust control curtains in front of the storage bays
- Bag-House Units – fitted with high differential pressure alarms, spare bags sets, pulse jet cleaning of bags, bag breakthrough detection (real-time, continuous particulate monitoring devices) and alarms
- Furnace – continuous monitoring
- Spill Retention – fully sealed and bunded buildings for dross storage (no releases outside the buildings in the event of a spill)

6.4.3 Proposed assessment approach

An initial risk screening will be undertaken using criteria and guidance in DPE's *Applying SEPP 33* (DPIE 2011b), and relevant Hazardous Industry Planning Advisory Papers (HIPAPs) as published by DPE, to confirm whether the project is classified as potentially hazardous, requiring a preliminary hazard analysis (PHA) and if so, the level of assessment required. The screening criteria relate to factors such as the types and quantities of hazardous materials to be stored on-site, how and where they will be stored, and the anticipated frequency of road movements of this material to and from the site.

If a PHA is required, it will be conducted in accordance with SEPP 33 requirements, following relevant DPE guidance. The PHA will identify potential hazards associated with the project and estimate the likelihood and consequences of them occurring, taking into account TACs proposed controls. This information will then be reviewed to assess the level of off-site risk to people, property and the environment.

Additional risk mitigation measures will be incorporated into the project design if required.

6.5 Traffic

6.5.1 Existing environment

Operations have remained at consistent levels since the 2016 modification. Existing truck movements were assessed at that time with regard to that most recent production increase are shown in Table 6.3.

The approved site access is via the Pacific Highway, Hexham Bridge and Old Punt Road, with access via Tomago Road only permitted in the event of a road closure or accident preventing the use of Hexham Bridge and the approved route (as stated in DA 391-80). Tomago Road and Old Punt Road are included on the approved B-double route network provided by Transport for NSW.

Table 6.3 Truck movements at TAC site (source: Project description and Statement of Environmental Effects, Tomago Aluminium 2016)

Truck movements / day	Total vehicle movements at site (2016)
Alumina	80
Coke / pitch	18
Finished product	35
Other heavy vehicle (incl. Dross transport)	6

6.5.2 Potential impacts

As the project would permit dross processing on site, fewer truck movements would be required to transport the primary separated dross, and separated aluminium following treatment in the rotary furnace, to and from the site. The only heavy vehicle movements associated with dross transport would be the residual product for reuse in other industries (as currently takes place).

Truck movements will be generally consistent with existing activities at TAC and traffic management procedures will be implemented to manage the associated hazards and risks. The existing transport routes would be retained.

6.5.3 Proposed assessment approach

Traffic and transport impacts will be assessed qualitatively in the environmental assessment including:

- Identifying the predicted number of heavy and light vehicles during construction
- Identifying the predicted number of heavy and light vehicles during operation
- Comparison of proposed operational traffic against the existing base case
- Identification and assessment of potential impacts to the surrounding road network from project generated traffic
- Identification of management strategies and mitigation measures, as required

6.6 Other issues

A range of other environmental aspects have been considered as part of this scoping report. These other aspects are considered to have negligible to minor impacts as a result of the project. Consideration of these aspects is provided in Table 6.4.

Table 6.4 Other environmental aspects for consideration

Environmental aspect	Review
Biodiversity	The project is located centrally within the already disturbed footprint of the smelter. The site is predominantly sealed hardstand area and some maintained grass, and no clearing or disturbance of native vegetation or potential fauna habitat would take place as a result of the project. A desktop biodiversity assessment would be undertaken as part of the SEE.
Soils and contamination	The nearest registered contaminated site is at 25 School Drive, about 400 metres east of the TAC site (former Hydromet site). Its regulation status under the <i>Contaminated Land Management Act 1997</i> is currently under assessment. Groundwater monitoring is required as a condition of EPL 6163 which requires TAC to monitor fluoride, pH and conductivity levels of groundwater both on site and at the site boundaries. Existing groundwater monitoring data will be reviewed. The modification is not considered to pose a risk to existing groundwater conditions. A desktop soil and contamination assessment would be undertaken.

Environmental aspect	Review
Water	<p>As outlined in Section 6.4, when dross is mixed with water it has the potential to generate gaseous emissions. This reaction has the potential to be explosive. For this reason the project proposes an entirely enclosed and sealed building. Stormwater drainage will be designed to direct water away from the proposed building. The project does not generate and process water streams that require speciality treatment. Potable water will be connected to staff amenity areas in a manner that eliminates the risk of exposing dross to moisture.</p> <p>With regard to the 2016 modifications assessment undertaken for the most recent production increase, no additional changes to surface water or stormwater processes or management are anticipated as a result of the proposed facility. A desktop surface water and groundwater assessment would be undertaken.</p>
Waste	<p>Some waste would be created by the construction of the project. When operational the project would process dross as a by-product (not waste) of the aluminium smelting process. By processing the dross usable materials can be recovered for reuse in the circular economy. Relatively minor quantities of waste would be generated during operation such as used or broken bulka-bags and bag house filter material as well as general waste from staff amenities. A qualitative waste assessment would be undertaken for the SEE.</p> <p>TAC's existing pollution control, waste handling and storage procedures will be employed to ensure appropriate management of waste throughout all production steps, and these would continue to be implemented as part of the project. All site waste generated would continue to be managed in accordance with TAC's licence conditions, the POEO Act and POEO (Waste) Regulation and TACs established waste handling procedures.</p>
Greenhouse gas (GHG) generation	<p>The proposed rotary furnace will be operated using natural gas as a fuel source and the new dross processing facility will use a variety of electrically operated equipment. Whilst the facility represents a new energy use it is in fact replacing dross processing at an offsite location (Weston Aluminium). In this regard, on balance, the amount of energy required to process the dross would be similar to the previous offsite processing scenarios. Therefore a qualitative assessment of GHG is considered adequate and would be conducted as part of the SEE.</p>
Aboriginal heritage	<p>The proposed works are to be located within an already heavily disturbed area of the site and would not be affecting any undisturbed areas of land. An AHIMS desktop search identified 23 Aboriginal sites recorded in the vicinity of the site, with the nearest items located near the site perimeter, approximately 500 metres from the project location. Land forms, view points and water ways are not anticipated to be modified as a result of the project. A heritage impact assessment is not considered to be necessary for the project, however a due diligence desktop assessment would be undertaken.</p>
Non-Aboriginal heritage	<p>The nearest heritage items to the project footprint are the Tomago House and Tomago House Chapel (Items I103 and I104 on the LEP 2013 respectively). These are both located approximately 1.4 km to the south east of the project footprint. A desktop assessment would be included in the SEE.</p> <p>The proposed works are to be located within an already heavily disturbed area of the site containing active operations with very limited potential to encounter or affect heritage processes or structures. A heritage impact assessment is not considered to be necessary.</p>
Services	<p>All services, including telecommunications, water, sewer and electricity are available on the site. Gas connection may require evaluation to supply the proposed furnace to be located within the processing facility.</p> <p>It is not expected that the project will require any other additional capacity in these services.</p>

7. Stakeholder engagement

TAC has initiated stakeholder consultation during the project scoping phase and proposes to undertake further consultation during the environmental assessment phase. A summary of consultation undertaken to-date and future proposed consultation to be undertaken during the environmental assessment is provided in Table 7.1.

Table 7.1 Stakeholder consultation

Stakeholder	Completed engagement	Proposed engagement
DPE	Initial engagement undertaken prior to preparation and lodgement of the Scoping Report	TAC will keep in regular contact with DPE during the scoping and environmental assessment phases.
NSW EPA	TAC Advised EPA of intent to seek modification approval for the project. DPE have also discussed the project with the EPA.	It is envisaged that DPE will engage with the EPA during the development of environmental assessment requirements for the project. TAC will also provide a project specific briefing meeting with EPA during the environmental assessment phase. TAC are also in regular contact with the EPA
Port Stephens Council	-	TAC will provide an initial briefing to relevant staff regarding the project and seek feedback regarding matters Council require to be incorporated into the SEE. When the SEE is on public exhibition TAC will offer Council the opportunity for a second briefing to allow Council to review the exhibited SEE and provide any feedback or questions to TAC.
Hunter Water Corporation	Hunter Water have been notified of the project.	Hunter Water will continue to be consulted with during the environmental assessment for the project. The outcomes of this consultation, including a summary of any issues raised by Hunter Water and how they have been addressed would be included in the environmental assessment.
Community	-	TAC keeps a contact register of surrounding and neighbour sites to allow for communication with its neighbours on an as-needs basis. During the environmental assessment TAC will provide information through this distribution list with project information and allow for comment. The outcomes of this consultation would be included in the environmental assessment. This is consistent with the consultation process TAC have undertaken for past modifications without issue.

When considering the consultation activities detailed in Table 7.1 TAC notes that it would be happy to accommodate enquiries from interested stakeholders at any time. TAC would retain records of all enquiries and stakeholder consultations and document the outcomes on this consultation in the environmental assessment.

8. Conclusion

This Scoping Report has been prepared to support a request for environmental assessment requirements for a proposed modification of the existing approved DA's for the Tomago Aluminium Smelter located in Tomago (Lot 104 DP 112577, 638 Tomago Road).

This report has outlined the following items for the department's consideration:

- A review of the subject site and surrounding locality
- A description of the existing operations and the proposed modification
- A review of the relevant statutory context relevant to the proposed development
- A preliminary assessment of the key issues relevant to the modification
- Identification of the proposed assessment approach for key issues and other issues identified in this report
- An outline of the previous consultation undertaken and additional consultation intended to be undertaken for the preparation of the modification

Accordingly, it is requested that the department issue project specific Environmental Assessment Requirements to guide the preparation of the environmental assessment for the proposed modified development.

Appendices

Appendix A

Consolidated Development Consent

Red type represents 14 February 1995 modification
Blue type represents 23 August 2001 modification
Orange type represents 7 December 2009 modification
Purple type represents 12 October 2015 modification
Gray type represents 9 November 2016 modification
Green type represents 23 October 2020 modification

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

DETERMINATION OF A DEVELOPMENT APPLICATION PURSUANT TO SECTION 101

I, the Minister for Planning, pursuant to Section 101 of the Environmental Planning and Assessment Act 1979 ("the Act"), determine the development application for the expansion of the Tomago Aluminium Smelter ("the smelter expansion") referred to in Schedule 1 by granting consent to the application subject to the conditions set out in the attached Schedule 2.

The reasons for the imposition of the conditions are:

- i) to protect the environment and minimise the adverse impact the development may cause through noise, traffic generation, and air and water pollution;
- ii) to provide for environmental monitoring and reporting;
- iii) to provide for an expanded buffer zone, and
- iv) to provide consistency between the instruments of approval covering the existing aluminium smelter and the smelter expansion, the subject of this application.

DAVID HAY
Minister for Local Government and
Minister for Planning

Sydney, 11th January, 1991

Schedule 1

APPLICATION MADE BY: Mr W Brooks on behalf of Tomago Aluminium Company Pty Limited.

TO: Port Stephens Shire Council.

IN RESPECT OF: Expansion of the Tomago Aluminium Smelter on land described below.

FOR THE CARRYING OUT OF: Construction and operation of a third potline containing 280 pots, an additional anode baking furnace and paste plant, extension of the two existing potlines each from 240 to 280 pots and all necessary support facilities and buildings on the properties listed below on the schedule of properties and being described in the Environmental Impact Statement, and the Appendices to the Environmental Impact Statement dated July, 1990 prepared by Crooks Michell Peacock Stewart Pty Limited accompanying the Development Application.

SCHEDULE OF PROPERTIES

35 Tomago Road, TOMAGO.
Lot 16 DP 258020

45 Tomago Road, TOMAGO.
Lot 15 DP 258020

Land to the north of numbers 35 and 45 Tomago Road being part of portion 6, Parish of Stockton and being the remainder of the land in Certificate of Title Volume 6352 Folio 184 after the excision of land for the Old Punt Road deviation.

36 Tomago Road, TOMAGO
Lot 100 DP 604166
and located on the south side of Tomago Road.

50, 52 and 76 Tomago Road, TOMAGO, located on the south side of Tomago Road.

Lots in DP 258020 and more particularly:
Lot 12, Lot 13 and Lot 14.

35 School Drive, TOMAGO
Lot 70 DP 634535

13 McIntyre Road, TOMAGO
Lot 3232 DP 618103

21a Tomago Road, TOMAGO
Lot 301 DP 634536

43 School Drive, TOMAGO
Lot 3 DP 38904

NOTES:

- (1) To ascertain the date on which this consent becomes effective refer to section 101(9) of the Act.
- (2) To ascertain the date upon which this consent is liable to lapse, refer to section 99 of the Act.

SCHEDULE 2

CONDITIONS OF DEVELOPMENT CONSENT TOMAGO ALUMINIUM SMELTER EXPANSION DA 4908/90 DATED 2 AUGUST 1990 SUBMITTED TO PORT STEPHENS SHIRE COUNCIL

Section 91(3)(b)

1. The Applicant (Tomago Aluminium Company Pty Limited) shall arrange, prior to submitting a Building Application for the smelter expansion to Port Stephens Shire Council, for the completion and lodgement of the attached Form 5 of the Environmental Planning and Assessment Regulation, 1980, in respect of the modifications set out in Schedule 3 to this consent.

General

2. The Applicant shall carry out the expansion of the Tomago Aluminium Smelter generally in accordance with the Environmental Impact Statement (EIS) and Appendices, dated July 1990, prepared by Crooks Mitchell Peacock Stewart Pty Limited and certified by James J. Varjavandi on 27 July 1990; as modified by the Statement of Environmental Effects (SEE) titled Modification of Development Consent for the proposed Production Capacity Increase at Tomago Aluminium Smelter, dated April 2001; as modified by the Statement of Environmental Effects entitled "Production Capacity Increase Statement of Environmental Effects Tomago Aluminium Smelter", prepared by ENSR Australia Pty Ltd, dated May 2009; as modified by the project proposal titled *Tomago Aluminium Company Pty Ltd Production Capacity Increase 575,000 to 585,000 Tonnes Saleable Production*, and as may be modified by the project proposal titled *Tomago Aluminium Company Pty Ltd Production Capacity Increase 585,000 to 600,000 Tonnes Saleable Production*, and as may be modified by the following conditions.

Statutory Requirements

3. The Applicant shall meet the requirements of all public authorities having statutory responsibilities in respect of the proposed development and shall negotiate with all relevant authorities with a view to meeting their reasonable requirements.

Requirements of the State Pollution Control Commission

4. The Applicant shall obtain from the State Pollution Control Commission ("the Commission") all statutory approvals required under the Clean Air, Clean Waters, Noise Control, and Environmentally Hazardous Chemicals Acts.

In the event of emissions exceeding the approved levels, or in the event that there are adverse effects on the environment beyond those anticipated at the time of approval and which can be reasonably attributed to emissions from the smelter expansion, the Applicant shall comply with the conditions, directions or notice issued under the foregoing Acts aimed at achieving the approved levels of emissions or at mitigating or eliminating the adverse effects.

5. The Applicant at its own expense shall expand, including, if so required, the establishment of additional monitoring stations, and operate the existing monitoring programs for ambient air and water quality and noise pollution in accordance with any

reasonable requirements of the Commission, whether these monitoring programs are carried out by the Applicant, the Commission or an agent of the Commission. Further, the information collected and recorded at the monitoring stations shall be forwarded to the Commission at such intervals as required by the Commission.

Water Management Plan

6. The Applicant shall prepare and implement, an updated Water Management Plan for the development to the satisfaction of the Director-General. This plan must:
 - a) be prepared in consultation with DECCW and Hunter Water;
 - b) be submitted to the Director-General for approval within 12 months of the approval of DA 4908-90 MOD 3;
 - c) include a detailed water balance for the development;
 - d) describe the developments water management system in detail, including:
 - i. the measures that would be implemented to improve water efficiency on site, and reduce the use of potable water;
 - ii. the stormwater management system on site;
 - iii. the treatment and control of wastewater; and
 - iv. the irrigation of effluent to the irrigation area and the management of soil and groundwater in this area.
 - e) include a description of:
 - i. the relevant statutory requirements; and
 - ii. the measures that would be used to judge the performance of the water management system, and trigger the implementation of any contingency plans.
 - f) include a comprehensive program to monitor and report:
 - i. the water efficiency of the development;
 - ii. the effectiveness of the stormwater management system;
 - iii. the volume of effluent discharged and irrigated on site;
 - iv. the quality of the effluent discharged from the site;
 - v. the effects of the effluent discharges on the ecology of the Hunter River;
 - vi. the effects of the irrigation scheme on the irrigation areas; and
 - vii. on groundwater quality, including the Tomago Sandbeds Water Supply Works.
 - g) identify the contingency measures that would be implemented should the impacts of the development approach or exceed the relevant standards or performance measures referred to in f) above;
 - h) include a protocol for managing and reporting incidents and complaints; and
 - i) include a protocol for periodic review of the plan.
7. The Applicant at its own expense shall complete, prior to the commencement of the expanded smelter operations forming part of the development, all drainage, paving, materials handling and storage systems and the effluent treatment plant with ancillary liquid effluent disposal systems, in accordance with the requirements of the Commission and the Hunter Water Board ("the Board").

Waste Management Plan

8. The Applicant shall prepare and implement, a Waste Management Plan for the site in consultation with DECCW and to the satisfaction of the Director-General. This plan must:
 - a) be submitted to the Director-General for approval within 12 months of the approval of DA 4908-90 MOD 3;

- b) characterise all waste imported, exported and re-used on site according to the current waste classification guidelines, and include procedures for classifying each of the waste materials;
 - c) include details of the quantities and destinations of all waste materials;
 - d) describe the measures in place to minimise and manage waste;
 - e) describe a system for the treatment of spent pot linings and provide an approximate timeline for the treatment of stockpiled material;
 - f) describe the options available to further reduce and reuse waste;
 - g) ensure that all waste materials are sent to sites that can lawfully accept waste; and
 - h) describe the waste monitoring program, detail the results of this monitoring and prepare a monitoring and reporting program.
9. The Applicant at its own expense shall install, and maintain in good working order, in accordance with the requirements of the Commission, adequate stand-by emission collection and treatment facilities to meet possible machine or plant failure for the expansion, including failure involving potlines and carbon bake furnaces.

Requirements of the Hunter Water Board

10. The Applicant at its own expense shall establish and operate revised monitoring systems as may be required by the Board.
- (a) On the land the subject of the application and on any of the Board's lands, at Grahamstown, ~~Nelson Bay Anna Bay~~ and Tomago, which constitute part of the Board's catchment areas, for the purposes of providing information on the changes in fluoride concentration and determining, from time to time, the level of fluoride concentration therein in groundwater, surface water, rainwater, and in fauna and flora in those catchment areas; and
 - (b) At or adjacent to the liquid effluent disposal area on the land for the purposes of checking the level of chemical or bacteriological contamination reaching groundwater and on the movement of the infiltration effluent relative to local groundwater flow.
11. The Applicant shall continue the monitoring and reporting program as currently agreed with the Board and the Commission, in the vicinity of the smelter expansion and shall only vary the program if agreed by these two authorities.
12. The Applicant shall immediately inform the Board of any action or occurrence on the site which may affect the Board's water supply. Further, the Applicant shall, in order to remedy any defect arising out of the action or occurrence, comply forthwith with the requirements of the Board.
13. The Applicant shall, in the event of any deleterious effect to the Board's water supply which effect can be attributed to the expanded smelter operations, re-examine the water management scheme and shall make such adjustments to that scheme as may be required by the Commission and the Board.
- Further, the Applicant shall bear any costs incurred by the Board to remedy the defect in the water supply.
14. The Applicant shall install additional monitoring bores in the vicinity of the proposed stormwater surge basin (shown on Figure 5.1 of the 1990 EIS as a stormwater retention pond to the north of the new potline and located within the gazetted

catchment area), test samples from these bores every month or as agreed, and supply the results to the Board and Commission. If the results are not satisfactory to the Board, the Applicant shall take remedial action as agreed by the Board.

15. The Applicant shall ensure that the storage areas for spent pot linings are secure and do not allow contaminants to reach groundwater. If such contamination is detected, the Applicant shall immediately remove the spent pot linings to a secure location and satisfactorily remove the contamination.
16. The Applicant shall install additional monitoring points, as required by the Board, if contamination becomes evident within the catchment area.
17. The Applicant shall, as required by the Board, replace any existing sampling points affected by the smelter expansion to an agreed location nearby, and establish an adequate correlation of results by taking samples from the original and the relocated sampling points.
18. The Applicant shall, prior to the commencement of the expanded smelter operations, complete the integration of both the construction and the start-up phases to ensure that all pollution control measures meet the requirements of the Commission and the Board.
19. The Applicant shall, prior to the commencement of the expanded smelter operations, provide for the safe storage or disposal of all waste materials from the site, including combustible, solid and hazardous wastes, waste oils and effluent wastes, in accordance with the requirements of the Commission, the Council and the Board. Further, the applicant shall:
 - a) ensure that all storage for spent pot linings and other hazardous wastes associated with the smelter expansion, in addition to being roofed, shall be 'hard sealed', concreted, kerbed and guttered in order to prevent ingress of rainwater, and shall comply with the requirements of the Commission; and
 - b) ensure, in accordance with the requirements of the Commission, the Board and the Council, that there is control of pollution from human wastes, oils and other waste materials produced during construction of the proposed smelter expansion.
20. [DELETED]
21. The Applicant shall excavate and revegetate the proposed borrow areas for construction fill material in accordance with the Board's requirements, and shall enter into an agreement with the Board before commencing clearing and excavation on the borrow areas.
22. The Applicant shall restrict excavation to a depth which is at least 1 metre above the highest groundwater level. This minimum distance of 1 metre is not to be reduced unless agreed by the Board.
23. The Applicant shall remove and store the topsoil and vegetation for use in restoration of borrow areas.
24. The Applicant shall restore the cleared and excavated areas with local endemic species to a standard nominated by the Board, which shall be not less than that adopted by the Board for mineral sands mining activities. Respreading of topsoil and revegetation shall as far as possible be completed progressively after excavation.

25. The Applicant shall take all reasonable steps to ensure there is no spillage of contaminated material within the Grahamstown and Tomago catchment areas. The Applicant shall adopt all practical means, including the use of sealed trucks to avoid spillage. Any spillage must be immediately cleaned up to the satisfaction of the Board.
26. The Applicant shall extend the Deed of Indemnity with the Board to include the plant extension.
27. The Applicant shall meet the normal water supply amplification charges imposed by the Board for additional demand placed on the water supply system.
28. The Applicant shall protect the Board's trunk watermains where they are crossed by the proposed construction access road, by means of a bridge or other structure agreed by the Board.

Affected Lands and Residences

29. The Applicant shall, in accordance with the requirements of the Commission, provide filtering and purifying systems or such other alternatives, such as reticulated water, as approved by the Commission, to existing farm and residential properties which depend on tank or dam water for domestic and stock purposes, provided that such farms and residential properties are within 2 kilometres of the site of the development or at such other distance as determined by the Commission, to prevent the concentration of fluoride in these water supplies exceeding:
 - (a) In the case of water for human consumption, 1.0 mg/litre; and
 - (b) In the case of water for stock, crop and other domestic uses, a level prescribed by New South Wales Agriculture and Fisheries.
30. The Applicant upon receipt of a request from an owner of land within the buffer area described in this condition to purchase that land shall:
 - (a) take all reasonable steps to acquire the property; and
 - (b) subject to agreement on the purchase price, acquire such property,for the purpose of establishing an expanded buffer areas around the proposed expanded smelter within the boundaries as shown on Map "1" attached to these conditions, except for
 - (c) land zoned "general industrial" under the Port Stephens Local Environmental Plan - Shire of Port Stephens, unless the lands are subject to non-conforming uses;
 - (cc) land zoned "general industrial" under the Port Stephens Local Environmental Plan - Shire of Port Stephens, subject to non-conforming uses where the Applicant was the registered proprietor at any time since 1 January 1980;
 - (d) lands zoned "Special Uses";
 - (e) land which is in ownership of the State Government, a State authority or instrumentality at the date of this consent, land which subsequently comes into such ownership and the Hunter River; and

(f) the Caravan Park situated on the southern side of Tomago Road.

If agreement cannot be reached regarding the acquisition price, then the land owner may refer the matter to the Secretary of the Department of Planning for determination by an independent panel.

Upon receipt of the matter, the Secretary shall arrange for the constitution of a panel to determine the acquisition price. The panel shall consist of:

- (g) The Director of Planning or her nominee;
- (h) The President of the Law Society of New South Wales or his nominee;
- (i) The President of the NSW Division of the Australian Institute of Valuers and Land Managers (Inc), or his nominee.

In determining the acquisition price, the panel shall have regard to –

- (j) The current market value of the property at the date on which the matter is referred to the panel but on the basis that the more valuable of either the use of the property as conducted at 6 March, 1981, or the use as at the date of this consent, had continued.
- (k) The cost to the land owner of disturbance and relocation if the land owner elects to relocate his existing activity, PROVIDED THAT for the purpose of assessing this cost, the land owner will be deemed to be relocating within the sub-region known as the Lower Hunter.
- (l) Following the determination by the Panel the Applicant shall offer to purchase the relevant property at a price not less than that determined by a majority of the panel.
- (m) The Applicant shall meet the costs of providing the panel and any costs associated therewith unless otherwise determined by the panel.
- (n) In the event that the landowner does not accept within 12 months the offer of the Applicant, then the Applicant's obligations under this clause shall lapse. Non-acceptance or refusal by the landowner shall not prejudice any rights under condition number 31.

Nothing in this clause shall remove, limit or prejudice the rights of any owner of land within the buffer zone existing prior to the date of this consent.

Pending acquisition of all properties included in the proposed expanded buffer area the Applicant shall provide on January each year until 1994 a report to the Department of Planning indicating the progress of acquisition, and upon request thereafter.

31. The Applicant shall expeditiously seek to reach agreement, in the event of claims for compensation or requests for acquisition of property being received by the Applicant from land owners or occupiers of land within 4 kilometres of the site, claiming that their property is affected by emissions from the development. If agreement cannot be reached, the claim or request may be referred to the Secretary of the Department of Planning for determination by an independent panel.

Upon receipt of the matter, the Secretary shall arrange for the constitution of a panel to determine the claim or request. The panel shall consist of:

- (a) The Director of Planning or her nominee;
- (b) The President of the Law Society of New South Wales or his nominee;
- (c) The President of the NSW Division of the Australian Institute of Valuers and Land Managers (Inc), or his nominee.

The panel shall determine:–

- (d) Whether the claimant has a claim resulting from emissions from the proposed development;
- (e) If so, whether the claim can be settled by payment of compensation without acquisition of the claimant's property;
- (f) If so, the amount of such compensation; or
- (g) If the claim cannot be settled by compensation, the acquisition price for the property; and
- (h) The costs, if any, to be awarded to the claimant in respect of expenses for legal advice and representation and expert witnesses.
- (i) In the case of any publicly owned lands within 4 kilometres of the site the panel shall consider whether a claim can be settled by the provision of an equivalent replacement habitat which is not environmentally affected by the smelter operation.

In determining the price for acquisition referred to above, if the panel decides that acquisition is warranted, the panel shall have regard to:–

- (j) The market value of the claimant's land unaffected by the Tomago Aluminium Smelter and having regard to the existing use of the land;
- (k) The length of time which has elapsed since the granting of development approval and completion of the development, if relevant; and
- (l) The cost to the claimant of disturbance and relocation if the claimant elects to relocate his existing activity, PROVIDED THAT for the purpose of assessing this cost, the claimant will be deemed to be relocating within the sub-region known as the Lower Hunter.

The decision of the panel shall be binding on the Applicant.

The Applicant will meet the costs of providing the panel and any costs associated therewith.

Upgrading Roads and Provision of Facilities

32. The Applicant shall comply with its undertaking to the Port Stephens Shire Council regarding:

(a) the upgrading of approximately 1.7 kilometres of Tomago Road from the Smelter to the Pacific Highway; and

(b) the costs of providing sports, recreational community facilities,

in accordance with the exchange of correspondence between the Applicant and the Council dated 27 November, 1990 and 5 December, 1990, respectively.

33. The Applicant shall meet the costs of those improvements made necessary by the proposed development to the following intersections, as agreed with the Roads and Traffic Authority:

(i) SH10 and Old Punt Road,

(ii) Old Punt Road and Airstrip Road; and

(iii) Tomago Road and McIntyre Road.

34. All designs and specifications associated with improvement work shall be submitted to Council's Local Traffic Committee for its concurrence prior to the commencement of work.

Transport

35. Construction traffic at the eastern boundary of the development shall only use the existing service road from the Industrial Estate. Access is denied directly to MR302, even on a temporary basis.

36. The Applicant shall ensure that trucks carrying raw and unfinished materials to and from the expanded smelter only use Tomago Road in the event of a road closure or accident on the approved regular transport route (i.e. via Hexham Bridge).

Safety Studies and Hazard Management

37. Not less than one month prior to the commencement of construction of the proposed development, except for preliminary works that will not be affected by study results, or within such further period as the Director of Planning or her nominee ("the Director") may agree, the Applicant shall prepare and submit for the approval of the Director the following studies:

(Construction Safety Study)

(i) Comprehensive organisational and operational safety procedures proposed to be implemented on the development site during the construction period for the proposed development. This report should cover, inter alia, any demolition and the commissioning of plant. Further, the Applicant shall comply with the reasonable requirements of the Director in respect of the implementation of any measures, arising from the subject approval, during the construction period.

(Hazard and Operability Study)

(ii) A Hazard and Operability Study (HAZOP) for the proposed development to be carried out at the Applicant's expense and conducted by an independent qualified person approved by the Director.

(Final Hazard Analysis)

- (iii) A hazard analysis and risk assessment of the detailed design layout of the proposed development as well as the existing development to be prepared at the Applicant's expense. Measures to reduce the quantities of chlorine used and stored shall be considered. Alternatives to air tempered LPG shall be considered for backup fuel.

(Fire Safety Study)

- (iv) A fire safety study for the proposed development as well as the existing development. This study shall cover all aspects detailed in the Department's Hazardous Industry Planning Advisory Paper No. 2 Fire Safety Study Guidelines. This study shall also be submitted for the approval of the New South Wales Fire Brigades.

Emergency Plan

- 38. Not less than two months prior to the commencement of operation of the proposed development, or within such further period as the Director may agree, the Applicant shall prepare and submit for the approval of the Director a comprehensive emergency plan and detailed emergency procedures for the proposed development as well as the Applicant's existing currently approved development.

This plan should include detailed procedures for the safety of people in areas outside the development and potentially affected by the development. The plan should be in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 1 Industry Emergency Planning Guidelines.

Hazard Audit

- 39. Within 12 months of the approval of DA 4908-90 MOD 3, and then as directed by the Director-General, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
 - a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;
 - b) include a Hazard Audit in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines. The audit shall include a review of the Safety Management System and of all incidents recorded and be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, justification must be included;
 - c) assess the environmental performance of the development, and its effects on the surrounding environment and sensitive receivers;
 - d) assess whether the development is complying with the conditions, relevant standards, performance measures, and statutory requirements;
 - e) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - f) recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this approval.
- 39A. Within 6 weeks of completing this audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General with a response to any recommendations contained in the audit report.

- 39B. Within 3 months of submitting an audit report to the Director-General, the Applicant shall review and if necessary revise the strategy/plans/programs required under this approval to the satisfaction of the Director-General.

Compliance with Safety Studies and Hazard Management Requirements

40. The Applicant at its own expense shall comply with all the reasonable requirements of the Director in respect of the implementation of any measures arising from the approvals given in respect of conditions 37 to 39 above, within such time as the Director may agree. Such compliance, where applicable, shall be prior to the commencement of operations of the proposed development and shall bring to the Director's notice those matters which the Applicant considers may require further investigation. Further, that upon the receipt of the Director's reasonable instructions, the Applicant shall proceed to implement those instructions to the satisfaction of the Director within such time as the Director may approve.

Landscaping and Carparking

41. Prior to lodging a building application, the Applicant shall cause to be prepared detailed landscaping plans by a qualified landscape architect to the satisfaction of Council. The landscaping shall provide as far as reasonably practicable, a barrier of suitable fast growing, fluoride resistant trees, with a view to minimising impact, particularly from airborne fluoride emissions, on the Botanic Gardens.
42. The Applicant shall, prior to the commencement of the development prepare a plan showing the design and layout of the car parking area on the land and shall submit a plan for approval by the Council. All car parking spaces shall be separately accessible, clearly marked, adequately paved and drained and shall comply with the requirements of the Council.

Requirements of the National Parks and Wildlife Service

43. Should evidence of Aboriginal occupation be uncovered during excavation and construction, the Applicant shall cease work in the area concerned and inform the National Parks and Wildlife Service (NPWS) immediately and take action in accordance with the requirements of the NPWS.
44. The Applicant at its own expense shall comply with the requirements of the Director of National Parks and Wildlife for making good damage to the Kooragang Nature Reserve and Hexham Swamp Nature Reserve where the damage is found to be attributable to emissions from the expanded smelter and comply with the reasonable requirements of the Commission to mitigate or eliminate the cause of damage.
45. [DELETED]

Hunter Region Botanic Gardens Ltd

46. The Applicant shall establish a fluoride monitoring system within the Gardens and the results obtained shall be made available to the Chairman of the Gardens or his representative.

Energy Conservation

47. The applicant in respect of the development shall minimise energy usage and conserve heat and energy, such as by the use of thermal energy recovery from the

gases evolved during the smelting operation, heat recovery measures in anode baking, and minimisation of heat loss from electrolytic cells, where technically and economically practicable, in the design and construction of the smelter expansion.

Environmental Monitoring and Reporting

48. The Applicant shall ensure that, unless already included in the environmental monitoring program required under condition number 5, the following requirements are met to the satisfaction of NSW Agriculture and Fisheries, the Commission, the Board, NPWS, and the Director:
- (a) Monitoring of stormwater discharge from the Applicant's property to establish levels of possible pollutants, including fluoride, heavy metals and cyanide, discharged to the Hunter River, to be undertaken at a point or points to be selected and agreed upon by the Applicant and the authorities referred to above.
 - (b) A bio-accumulation and sediment monitoring program for fluoride and other relevant substances be established at the nearest feasible location or locations downstream from the point where the stormwater discharge enters the Hunter River with the experimental design being developed in consultation with NSW Agriculture and Fisheries.

Flora and Fauna Monitoring Plan

- c) The Applicant shall prepare and implement, a revised Flora and Fauna Monitoring Plan for the site in consultation with the DECCW to the satisfaction of the Director-General. This Plan must:
 - i. be submitted to the Director-General for approval within 12 months of the approval of DA 4908-90 MOD 3;
 - ii. include an ecosystem monitoring program to measure the impacts of fluoride and other contaminants on flora and fauna including farm animals and livestock (If any) within the vicinity of the smelter; and
 - iii. include a monitoring program for the effects of fluoride on vegetative communities, with provision to be made for compensatory mechanisms for replanting if mangroves or wetlands are adversely affected.
49. The Applicant shall expand and operate the existing programme designed for monitoring of employee health and medical examination, to include the additional employees in positions created by the smelter expansion, to the satisfaction of the Health Department of New South Wales.
50. The Applicant shall provide to the Department of Planning, NSW Agriculture and Fisheries, the Commission, the Board, NPWS, and the Council the results and analyses of environmental monitoring undertaken in pursuance of the provisions of conditions number 5 and 48. Such results and analyses shall be provided on a quarterly basis, for review by the responsible government bodies in order to identify any areas of non-compliance so that the necessary remedial action can be instituted. The Applicant shall agree to Council making the reports available on request for public inspection.
51. The Applicant shall bear the costs associated with the establishment and operation of all monitoring programmes referred to in these conditions, the analysis of data, recording results and providing information required to all relevant authorities.

Annual Report

52. The Applicant shall, within six (6) months of the commencement of construction of the proposed development, ascertain the requirements of the Director in relation to an annual report to be submitted at the Applicant's expense to the Director, the Commission and the Council in respect of the performance of the development. Each report shall be in respect of the calendar year ending 31 December and the first such report shall be submitted by 31 March in the following year. The Applicant shall agree to Council making the reports available on request for public inspection.
53. The annual report shall provide the following information:
- (a) the performance of the development;
 - (b) the stage of implementation reached and the effectiveness of the environmental controls and conditions relating to the development;
 - (c) results of environmental monitoring in respect of air, water and noise pollution and the effects on flora and fauna;
 - (d) production levels for operations undertaken during the preceding 12 months;
 - (e) modifications made or intended to be made to operations, if any, to mitigate any adverse environmental impacts; and to meet the reasonable requirements of the Director, the Commission or the Council.

Informing Council

54. The applicant shall forward to the Council copies of all approvals and requirements of authorities related to the development.

Dispute resolution

55. Any dispute arising between any of the parties in respect of the above conditions, including a conflict between the above conditions and conditions attached to the consent for the original smelter, shall be referred to the Minister for Planning for resolution.
56. Until the proposed modification is fully implemented, the Applicant shall include an Annual Progress Report on the proposed expansion program in the Annual Report (see Condition 52). The Annual Progress Report must:
- (a) Describe the status of the implementation of the expansion program;
 - (b) Assess the environmental impacts of the expansion program against the goals identified in the SEE for the proposed expansion; and
 - (c) Outline the proposed program for the implementation of the remainder of the expansion.
57. The Applicant shall:
- (a) Install continuous real time monitoring of gaseous fluoride emissions from the roof vents in each potline; and
 - (b) Maintain and operate an ambient air quality monitoring network, including sulphur dioxide monitoring in the vicinity of the smelter to the satisfaction of the EPA.
58. The Applicant shall prepare and implement, an Air Quality Monitoring Program for the development to the satisfaction of the Director-General. This program must:

- a) be prepared in consultation with DECCW;
- b) be submitted to the Director-General for approval by 1 May 2010;
- c) include:
 - i. three additional SO₂ monitoring sites; ensuring sufficient monitoring points around “the Farm” precinct;
 - ii. mapping of all monitoring points;
 - iii. a description of the monitoring to be undertaken including pollutants, units of measure, frequency and sampling method;
 - iv. a program to monitor the ongoing performance of the development; and
 - v. a description of the contingency measures that would be implemented should the monitoring identify any non-compliances/exceedances.

58A. The Applicant shall prepare and submit an Air Quality Verification Report to the satisfaction of the Director-General and the DECCW by 30 May 2013 or once the facility is operational at full capacity, whichever comes sooner. The Air Quality Verification Report shall include:

- a) a validation of the predictions made in the SEE titled “Production Capacity Increase Statement of Environmental Effects Tomago Aluminium Smelter”, prepared by ENSR Australia Pty Ltd, dated May 2009;
- b) monitoring data required by the EPL;
- c) comparison of monitoring results with any limits or conditions in the EPL; and if necessary
- d) additional measures that would be implemented to comply with the requirements of the EPL.

Noise

59. The Applicant shall ensure that the noise from the operation of the development does not exceed any noise limits specified in the EPL for the facility.

Noise Auditing and Reporting

60. The Applicant must undertake pre and post modification noise audits to ensure the expansion does not increase noise emissions from the transformers. The auditing must be undertaken by a suitably qualified and experienced person whose appointment has been endorsed by the Director-General, and include:

- a) a pre modification noise audit and report which must:
 - i. be provided to DECCW and the Department and approved by the Director-General prior to the commencement of the expansion;
 - ii. be undertaken during a period when the facility is operating under normal operating conditions;
 - iii. identify the existing noise levels produced by the transformers; and
 - iv. report any noise complaints received in the last 12 months.
- b) a post modification noise audit and report which must:
 - i. be provided to DECCW and the Department and approved by the Director-General;
 - ii. be undertaken within 5 years of the date of this modification approval or once the facility is operational at full capacity, whichever comes sooner;
 - iii. identify the noise levels produced by the transformers;
 - iv. compare the transformer noise levels with the levels identified in the pre modification noise audit in a) above;
 - v. report any noise complaints received since undertaking the previous noise audit;
 - vi. assess whether any noise management or mitigation measures are required;

- vii. describe any measures proposed to be implemented, including a timetable for the implementation; and
- viii. detail how the effectiveness of these measures would be assessed and reported.

61. In consultation with the NPWS, the Applicant shall assist in the development of, and participate in, a periodic monitoring program targeting specific areas/species within Kooragang Island Nature Reserve.
62. The Applicant shall obtain a Section 50 certificate under the *Hunter Water Act 1991* for any increases in potable water demand associated with the proposed expansion.
63. At least 1 month before commencing the construction of any component of the modification, or within such further period as the Director may agree, the Applicant shall submit the following studies to the Director for approval:
 - a) A Fire Safety Study covering all aspects detailed in the Department's *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Study Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall focus on the alterations to the existing development, which are the subject of this modification. The Applicant shall also submit the Study for the approval of the NSW Fire Brigades.
 - b) A Construction Safety Study prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*. The Study shall detail specific measures to address hazards associated with construction activities on an operating development. The Applicant may seek the Director's approval to stage submission of the Study, consistent with staging of construction.Construction shall not commence until the Director has approved both studies, and the Commissioner of the NSW Fire Brigades has approved the Fire Safety Study.
64. Within 12 months of commencing the construction of any component of the modification, or within such further period as the Director may agree, the Applicant shall submit the following studies to the Director for approval:
 - a) An Updated Emergency Plan and detailed emergency procedures for the site, prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*. The Plan shall be an update of the existing emergency plan for the site.
 - b) A Safety Management System, covering all operations on-site and associated transport activities involving hazardous materials. The System shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for adherence to procedures and managing change. Records shall be kept on site and shall be available for inspection by the Director-General upon request. The Safety Management System shall be an update of the existing system for the site and be prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*.
65. Within 24 hours of any incident with actual or potential significant off-site impacts on people or the biophysical environment, a report shall be supplied to the Director outlining the basic facts. A further detailed report shall be prepared and submitted following investigations into the causes and identification of additional preventative measures. That report must be submitted to the Director no later than 14 days after the incident. The Applicant shall maintain a register of accidents, incidents and potential incidents. The register shall be made available for inspection at any time by the Director.

66. [DELETED]

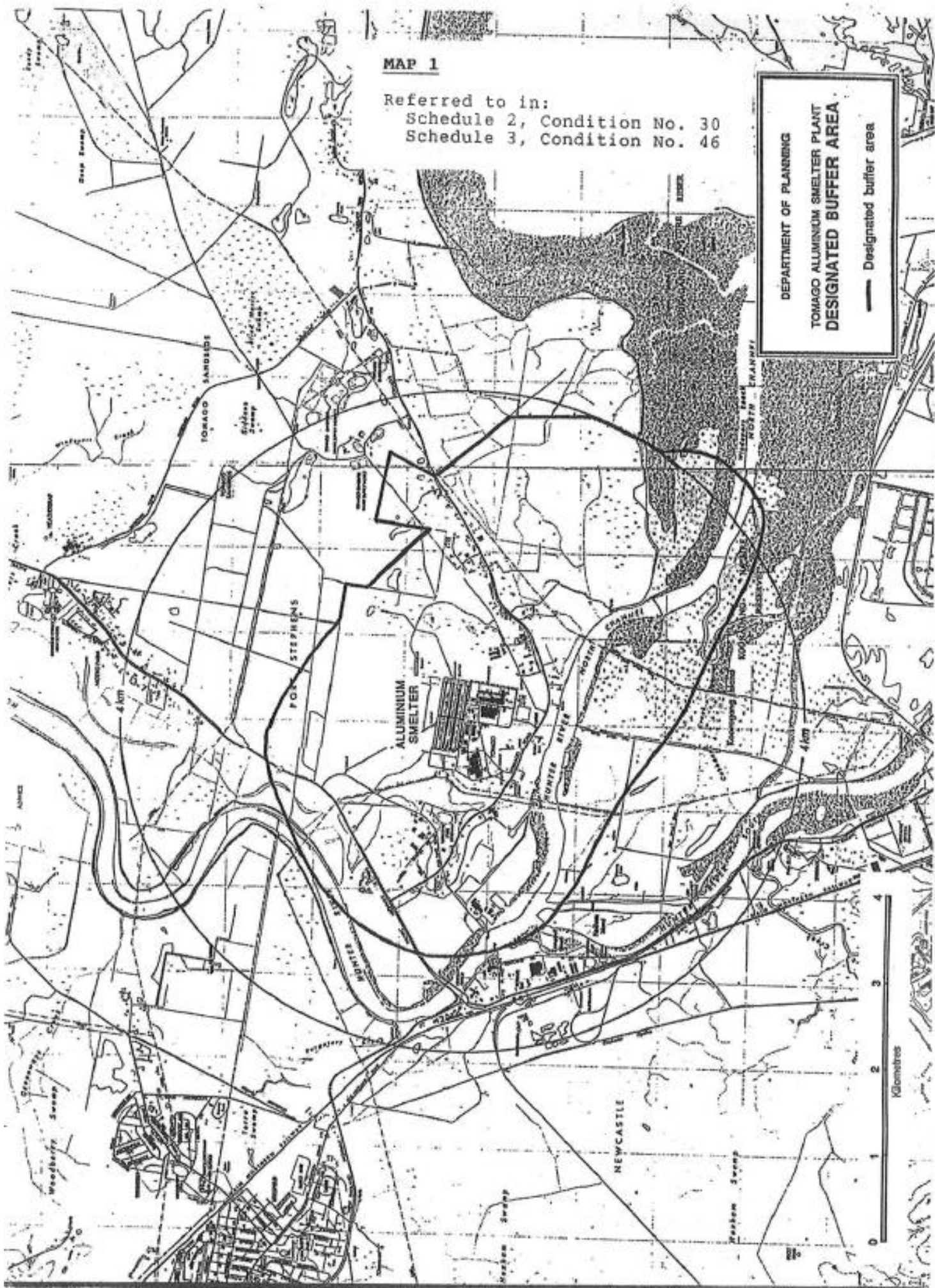
NOTE:

This approval does not relieve the applicant of the obligation to obtain any other approval under the Local Government Act, 1919, as amended, the ordinances made thereunder (including approval of building plans), or any other Act.

MAP 1

Referred to in:
Schedule 2, Condition No. 30
Schedule 3, Condition No. 46

DEPARTMENT OF PLANNING
TOMAGO ALUMINIUM SMELTER PLANT
DESIGNATED BUFFER AREA
— Designated buffer area



FORM 5
Referred to in:
Schedule 2, Condition No. 1.

ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION, 1980

FORM 5.

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979.

MODIFICATION OF A CONSENT GRANTED UNDER THE ACT OR A RIGHT
CONFERRED BY DIVISION 2 OF PART IV OF THE ACT.

I,, of
being the owner of the land described in Column A of the following Table do, by this memorandum, modify *the consent/the right (having effect in relation to that land) specified in Column B of the Table in the manner and to the extent indicated in Column C of the Table.

TABLE

Column A	Column B	Column C
Description of land	Particulars of *the consent/the right that is modified	Manner and extent of the modification of *the consent/the right
ALL THOSE pieces or parcels of land situate at Tomago, Shire of Port Stephens, Parish of Stockton and County of Gloucester being Lot 100, Deposited Plan 604166 in Certificate of Title Volume 13997 Folio 58, Lots 12, 13, 14, 15 and 16, Deposited Plan 258020 in Certificates of Title Volume 13767 Folios 91, 92, 93, 94 and 95, respectively, Lot 3, Deposited Plan 38904 in Certificate of Title Volume 13811 Folio 196, the whole of the land in Certificate of Title Volume 6353 Folio 184, And the whole of the land secondly described in Conveyance No. 269 Book 2018 but excepting Lots 1, 2, 3, 4, 5 and 6 in Deposited Plan 38904.	Consent to a Development Application for the development of an aluminium smelter made by Tomago Aluminium Company Pty Limited to Port Stephens Shire Council, determined pursuant to section 101 of the Environmental Planning and Assessment Act, 1979 by Eric Bedford, as Minister for Planning and Environment, dated 6 March, 1981 with Annexure, as modified by the Minister's letter of 16 August, 1983 (File 80/10069).	As set out on the attached Schedule 3.

Red type represents 3 January 1991 modification
Green type represents 14 February 1995 modification
Blue type represents 23 August 2001 modification
Orange type represents 7 December 2009 modification
Purple type represents 12 October 2015 modification
Grey type represents 9 November 2016 modification
Pink type represents 23 October 2020 modification

THE ANNEXURE

ANNEXURE TO LETTER FROM THE MINISTER FOR ENVIRONMENT AND PLANNING IN CONNECTION WITH THE INSTRUMENT OF APPROVAL FOR THE PROPOSED TOMAGO SMELTER DATED 6TH MARCH, 1981

- Nature reserves (a) Company at its own cost shall comply with the reasonable requirements of the Director of National Parks and Wildlife for making good damage to the existing or proposed nature reserves at Fullerton Cove, Kooragang Island and Hexham Swamp where the damage is found to be attributable to emissions from the smelter and comply with the reasonable requirements of the State Pollution Control Commission to mitigate or eliminate the cause of damage.
- Financial assistance to Council (b) Provide financial assistance to the Port Stephens Shire Council for sports and recreational facilities the amount to be agreed between the developer and Council.
- Council inquiry costs (c) Reimburse the Council for all costs incurred in association with appearing before the Commission of Inquiry.
- (d) [DELETED]

DEPARTMENT OF ENVIRONMENT AND PLANNING
OF NEW SOUTH WALES

PROPOSED ALUMINIUM SMELTER AT TOMAGO

CONSENT TO A DEVELOPMENT APPLICATION REFERRED FOR
DETERMINATION PURSUANT TO SECTION 101 OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979.

APPLICANT'S NAME AND ADDRESS: Tomago Aluminium Company
Pty. Limited,
3rd Floor,
4 O'Connell Street,
SYDNEY N.S.W. 2000.

WHEREAS:

- (a) The Minister for Planning and Environment (hereinafter called the "Minister") gave a direction (hereinafter called the "direction") in writing in accordance with Section 101(1) of the Environmental Planning and Assessment Act, 1979, (hereinafter called the "Act") dated the 5th November, 1980, to the Council of the Shire of Port Stephens (hereinafter called the "Council") to refer to the Secretary of the Department of Environment and Planning (hereinafter called the "Department") for determination by the Minister of all development applications specified in the direction in relation to certain lands in the Schedule to the direction;
- (b) a development application (hereinafter called the "application") for the development of an aluminium smelter (hereinafter called the "proposed development") on lands described as ALL THOSE pieces or parcels of land situate at Tomago, Shire of Port Stephens, Parish of Stockton and County of Gloucester being Lot 100, Deposited Plan 604166 in Certificate of Title Volume 13997 Folio 58, Lots 12, 13, 14, 15 and 16, Deposited Plan 258020 in Certificates of Title Volume 13767 Folios 91, 92, 93, 94 and 95, respectively, Lot 3, Deposited Plan 38904 in Certificate of Title Volume 13811 Folio 196, the whole of the land in Certificate of Title Volume 6353 Folio 184, And the whole of the land secondly described in Conveyance No. 269 Book 2018 but excepting thereout Lots 1, 2, 3, 4, 5 and 6 in Deposited Plan 38904 (hereinafter called the "land"), and being an application to which the direction applies, was received by the Council from Tomago Aluminium Company Pty. Limited (hereinafter called the "applicant") and referred to the Secretary of the Department in accordance with the Act;
- (c) persons referred to in Section 101(3) of the Act in accordance with Section 101(4) of the Act, required to be afforded the opportunity of a hearing before the Minister determined the application;
- (d) the Minister directed that an inquiry be held in accordance with Section 119 of the Act, by a Commission of Inquiry appointed in

accordance with Section 119(2) of the Act (hereinafter called the "Commission of Inquiry");

- (e) the Director of Environment and Planning has concurred in the proposed development;
- (f) and whereas the Commission of Inquiry was held accordingly;

Now, I, the Minister for Planning and Environment, after consideration of the findings and recommendations of the Commission of Inquiry, do hereby determine the application by granting consent to the application for the proposed development, generally in accordance with the Environmental Impact Statement for an Aluminium Smelter at Tomago, N.S.W., Volume 1 & 2, prepared by James B. Croft & Associates, Newcastle, and marked "Submission 36", and Environmental Impact Statement for an Aluminium Smelter at Tomago, N.S.W., Volume 3 Figures, prepared by James B. Croft & Associates, Newcastle, and marked "Submission 36A", **as modified by the environmental impact statement for the proposed expansion of the Tomago Aluminium Smelter, Tomago, NSW, dated July, 1990, prepared by Crooks Michell Peacock and Stewart Pty Limited and the Appendices to that EIS (the 1990 Smelter Expansion EIS), and as modified by the Statement of Environmental Effects (SEE) titled "Modification of Development Consent for the Proposed Production Capacity Increase at Tomago Aluminium Smelter", prepared by HLA-Envirosciences, and certified by Gary Freeland on 3 April 2001, and the Statement of Environmental Effects entitled "Production Capacity Increase Statement of Environmental Effects Tomago Aluminium Smelter", prepared by ENSR Australia Pty Ltd, dated May 2009; as modified by the project proposal titled *Tomago Aluminium Company Pty Ltd Production Capacity Increase 575,000 to 585,000 Tonnes Saleable Metal* and accompanied by a letter dated 5 August 2015 from the Tomago Aluminium Company Pty Limited; and as modified by the project proposal titled *Tomago Aluminium Company Pty Ltd Production Capacity Increase 585,000 to 600,000 Tonnes Saleable Metal* (which Environmental Impact Statements are hereinafter called the "Statement")**, the development application for aluminium smelter at Tomago, N.S.W. dated the 20th August, 1980 and marked "Submission 36C", the Statement entitled "National Economic Impact of the Proposed Tomago Aluminium Smelter dated February, 1981 and marked "Submission 36E", And the Plan entitled Tomago Aluminium Company Pty. Limited Aluminium Smelter Project, Tomago, N.S.W., Extent of Property Controlled as at September, 1980 endorsed K41568 and marked "Submission 36G" all of which are deposited in the office of the Department, subject to the following conditions:–

Statutory requirements

1. that the applicant shall meet the requirements of all public authorities having statutory responsibilities in respect of the proposed development and shall negotiate with all relevant authorities with a view to meeting their reasonable requirements;

S.P.C.C. licences

2. that the applicant shall obtain from the State Pollution Control Commission all statutory approvals required under the Clean Air, Clean Waters, **Environmentally Hazardous Chemicals** and Noise Control Acts. In the event of emissions exceeding the approved levels, or in the event that there are adverse effects on the environment beyond those anticipated at the time of approval and which can be reasonably attributed to emissions from the smelter, the developer

shall comply with the conditions, directions or notice issued under the foregoing Acts aimed at achieving the approved levels of emissions or at mitigating or eliminating the adverse effects;

Operating/
monitoring
controls

3. that the applicant shall carry out all those operating and monitoring measures as described and specified in the Statement to prevent, minimise or ameliorate adverse environmental, social and economic impact except where there is inconsistency with the conditions of this development consent, **the consent for the smelter expansion the subject of DA 4908/90 dated 2 August, 1990, submitted to Port Stephens Shire Council**, or the requirements of authorities referred to, the conditions of approval or the authorities' requirements shall prevail;

Monitoring
programme

4. that the applicant shall, subject as hereinafter provided, establish monitoring stations to collect relevant information on air and water quality and noise pollution. Further, that the applicant shall prepare a programme for the purposes of air and water quality and noise pollution and shall submit such a programme and details of the location of the installations to the State Pollution Control Commission (hereinafter called the "Commission") for approval prior to the commencement of the programme. Further, the information collected and recorded at the monitoring stations shall be forwarded to the Commission at such intervals as required by the Commission and to any monitoring committee which may be established for the purposes indicated above;

Monitoring
surface
water

5. that the applicant shall enter into licence agreements with the owners of land within 4 kilometres of the potlines for the purposes of conducting monthly analysis of surface water sites for fluoride levels. Further, the applicant shall obtain the prior consent of the Commission and the Hunter District Water Board (hereinafter called the "Board") to enter upon the Board's lands situate within the Board's catchment area for the purposes of conducting monthly analysis of surface water sites for fluoride levels. Further, the results shall be made available on the first day of each month to the Commission and to the Board and to any monitoring committee which may be established for the purposes of monitoring fluoride emission from the proposed development;

Monitoring
water supply

6. that the applicant shall establish and operate monitoring systems as may be required by the Board (including those referred to in Condition 5 above):—
- (a) on the land the subject of the application and the Board's land at Grahamstown, ~~Nelson Bay-Anna Bay~~ and Tomago which lands constitute part of the Board's Catchment Area for the purposes of providing information on the changes in fluoride concentration and determining, from time to time, the level of fluoride concentration therein in groundwater, surface water, rainwater, and on fauna and flora in those catchment areas; and
 - (b) at or adjacent to the liquid effluent disposal area on the land for the purposes of checking the level of chemical or bacteriological contamination reaching groundwater and on the movement of the infiltrated effluent relative to local groundwater flow;

Water Management Plan

7. The Applicant shall prepare and implement, an updated Water Management Plan for the development to the satisfaction of the Director-General. This plan must:
- a) be prepared in consultation with DECCW and Hunter Water;
 - b) be submitted to the Director-General for approval within 12 months of the approval of DA 391-80 MOD 4;
 - c) include a detailed water balance for the development;
 - d) describe the developments water management system in detail, including:
 - i. the measures that would be implemented to improve water efficiency on site, and reduce the use of potable water;
 - ii. the stormwater management system on site;
 - iii. the treatment and control of wastewater; and
 - iv. the irrigation of effluent to the irrigation area and the management of soil and groundwater in this area.
 - e) include a description of:
 - i. the relevant statutory requirements; and
 - ii. the measures that would be used to judge the performance of the water management system, and trigger the implementation of any contingency plans.
 - f) include a comprehensive program to monitor and report:
 - i. the water efficiency of the development;
 - ii. the effectiveness of the stormwater management system;
 - iii. the volume of effluent discharged and irrigated on site;
 - iv. the quality of the effluent discharged from the site;
 - v. the effects of the effluent discharges on the ecology of the Hunter River;
 - vi. the effects of the irrigation scheme on the irrigation areas; and
 - vii. on groundwater quality, including the Tomago Sandbeds Water Supply Works.
 - g) identify the contingency measures that would be implemented should the impacts of the development approach or exceed the relevant standards or performance measures referred to in f) above;
 - h) include a protocol for managing and reporting incidents and complaints; and
 - i) include a protocol for periodic review of the plan.

Spillage

8. that the applicant shall, prior to commencement of the smelter operations:–
- (a) ensure, to the satisfaction of the Board, that any spillage and/or dust from material handling operations does not pollute the Tomago sandbeds; and
 - (b) prepare a programme, in accordance with the requirements of the Board, to ensure that spillages are removed forthwith from roadways, surfaces, parking areas and other areas on the land the subject of the proposed development and to provide for the regular cleaning and sweeping of same;

Acts affecting

9. that the applicant shall immediately inform the Board of any action or occurrence on the site which may affect the Board's water supply.

water supply	<p>Further, the applicant shall, in order to remedy any defect arising out of the action or occurrence, comply forthwith with the requirements of the Board;</p> <p>10. that the applicant shall, in the event of any deleterious effect to the Board's water supply which effect can be attributed to the smelter operations, re-examine the water management scheme and shall make such adjustments to that scheme as may be required by the Commission and the Board. Further, that the applicant shall bear any costs incurred by the Board to remedy the defect in the water supply;</p> <p>11. that the applicant shall, prior to the commencement of the smelter operations, enter into a Deed of Indemnity with the Board, whereby the applicant shall indemnify and keep indemnified the Board for all costs and expenses which the Board may incur in the event of the proposed development requiring the Board to provide, operate and maintain a treatment system for defluoridation of water drawn from the Tomago sandbeds and the Lake Grahamstown Catchment Area;</p>
Drainage and effluent disposal	<p>12. that the applicant shall, prior to the commencement of the smelter operations, complete all drainage, paving, materials handling and storage systems and effluent treatment plant with ancillary liquid effluent disposal systems, in accordance with the requirements of the Commission and the Board;</p>
Start up	<p>13. that the applicant shall, prior to the commencement of the smelter operations, complete the integration of both the construction and the start-up phases to ensure that all pollution control measures meet the requirements of the Commission and the Board;</p>
Waste Management Plan	<p>14. The Applicant shall prepare and implement, a Waste Management Plan for the site in consultation with DECCW and to the satisfaction of the Director-General. This plan must:</p> <ul style="list-style-type: none"> a) be submitted to the Director-General for approval within 12 months of the approval of DA 391-80 MOD 4; b) characterise all waste imported, exported and re-used on site according to the current waste classification guidelines, and include procedures for classifying each of the waste materials; c) include details of the quantities and destinations of all waste materials; d) describe the measures in place to minimise and manage waste; e) describe the system for the treatment of spent pot linings and provide an approximate timeline for the treatment of stockpiled material; f) describe the options available to further reduce and reuse waste; g) ensure that all waste materials are sent to sites that can lawfully accept waste; and h) describe the waste monitoring program, detail the results of this monitoring and prepare a monitoring and reporting program.
Water to farms and residences	<p>15. that the applicant shall, in accordance with the requirements of the Commission, provide filtering and purifying systems or such other alternatives, such as reticulated water, as approved by the Commission, to existing farm and residential properties which depend on tank or dam water for domestic and stock purposes provided that</p>

such farms and residential properties are within 2 kilometres of the site of the proposed development or at such other distance as determined by the Commission, to prevent the concentration of fluoride in these water supplies exceeding:–

- (a) in the case of water for human consumption 1.0 mg/litre;
- (b) in the case of water for stock, crop and other domestic uses, a level prescribed by the New South Wales Department of Agriculture;

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| Stand-by measures | 16. | that the applicant shall, in accordance with the requirements of the Commission:– <ul style="list-style-type: none">(a) install adequate stand-by emission collection and treatment facilities to meet possible machine or plant failure;(b) ensure that the facilities are in good working order and condition at all times; and(c) ensure that the bakehouse and potline dry scrubbing systems have adequate stand-by equipment for all rotating and mechanised devices, such as fans, pumps and feeders;(d) install an additional bakehouse emission scrubber, generally in accordance with the 1990 smelter expansion EIS. |
| Stacks | 17. | that the applicant shall comply with the requirements of the Commission and the Department regarding stacks associated with the plant and the height of stacks; |
| Flora and Fauna Monitoring Plan | 18. | The Applicant shall prepare and implement, a revised Flora and Fauna Monitoring Plan for the site in consultation with the DECCW to the satisfaction of the Director-General. This Plan must: <ul style="list-style-type: none">a) be submitted to the Director-General for approval within 12 months of the approval of DA 391-80 MOD 4;b) include an ecosystem monitoring program to measure the impacts of fluoride and other contaminants on flora and fauna including farm animals and livestock (if any) within the vicinity of the smelter; andc) include a monitoring program for the effects of fluoride on vegetative communities, with provision to be made for compensatory mechanisms for replanting if mangroves or wetlands are adversely affected. |
| Fauna | 19. | that the applicant shall, within 12 months of the date of this Consent, report to the Director of the National Parks and Wildlife Service on the applicant's programmes designed to protect and preserve koalas and other native fauna inhabiting the area in and around the land the subject of this Consent and shall comply with all requirements of the Director of the National Parks and Wildlife Service for their preservation, protection and relocation; |
| Nature reserves | 20. | that the applicant shall at its own cost comply with the requirements of the Director of National Parks and Wildlife for making good damage to |

the existing or proposed nature reserves at Fullerton Cove, Kooragang Island and Hexham Swamp where the damage is found to be attributable to emissions from the smelter and comply with the reasonable requirements of the Commission to mitigate or eliminate the cause of damage;

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| Financial assistance to Council | 21. | that the applicant shall contribute to the Council towards the costs of the provision of sports and recreational facilities, such amount to be agreed to between the applicant and the Council; |
| Council enquiry costs | 22. | that the applicant shall reimburse the Council for all costs incurred by the Council arising out of the Council's appearing before the Commission of Inquiry; |
| On site car parking | 23. | that the applicant shall, prior to the commencement of the smelter construction, prepare a plan showing the design and layout of the car parking area on the land and shall submit a plan for approval by the Council. All car parking spaces shall be separately accessible, clearly marked, adequately paved and drained and shall comply with the requirements of the Council; |
| On site council facilities | 24. | that the applicant shall provide a satisfactory on-site office for the sole use of Council employees, such office to be supplied with telephone, plan filing facilities, and catalogue sets of approved plans and details. Adequate safety equipment shall be provided for use by Council's employees; |
| Inform council | 25. | that the applicant shall forward to the Council copies of all approvals and requirements of authorities related to the development; |
| Monitoring health | 26. | that the applicant shall prepare and operate a programme designed for monitoring of employee health and medical examination, to the satisfaction of the Health Commission of New South Wales and of the Division of Inspection Services of the Department of Industrial Relations; |
| Energy conservation | 27. | that the applicant shall minimise energy usage and conserve heat and energy such as by the use of thermal energy recovery from the gases evolved during the smelting operation, heat recovery measures in anode baking and, minimisation of heat loss from electrolytic cells where technically and economically practicable in the design and construction of the smelter; |
| Fire | 28. | that the applicant shall comply with all requirements of the Board of Fire Commissioners before construction commences, in relation to on-site and off-site fire fighting facilities. |
| Roads and traffic | 29. | that the applicant shall, prior to commencement of construction of the proposed development, meet the reasonable requirements of: <ul style="list-style-type: none"> (a) the Department of Main Roads and the New South Wales Traffic Authority relating to traffic likely to be generated by construction work; (b) the Council relating to on-site parking and access to the site during |

construction;

- (c) the Council and the Commission regarding construction working hours, noise control, and night work illumination during construction;

Roads and traffic	30.	that the applicant shall bear all the direct costs of upgrading roads and roadworks directly required as a result of the development in accordance with the requirements of the Department of Main Roads and the Council, namely: (a) at the intersection of the Pacific Highway, Old Punt Road, and a new on-site road to be constructed along a disused airfield; (b) at access to the site on Tomago Road.
“Airfield” road	31.	that the applicant shall, prior to commencement of construction of the proposed development, construct an on-site road along the site of the disused airfield from the plant to the intersection of the site with Pacific Highway;
Internal roads	32.	that the applicant shall submit to and obtain the Council’s approval to design plans and specifications for all internal roads. Further, the applicant shall before he submits the design plans and specifications obtain the concurrence of the Hunter District Water Board and the Commission to those plans and specifications. The roads related to each stage of the proposed development shall be constructed before commencement of that stage of proposed development commences operations. The road along the disused airfield is to be constructed prior to commencement of construction work on the proposed development (but not including work related to preparation of the site.)
Restriction on trucks – Tomago Road	33.	The Applicant shall ensure that trucks carrying raw and unfinished materials to and from the expanded smelter only use Tomago Road in the event of a road closure or accident on the approved regular transport route (i.e. via Hexham Bridge).
Workforce	34.	Within six months of the date of this consent, submit a programme of workforce development to the satisfaction of the Minister for Industrial Relations for approval. This programme shall include: (a) a training scheme for apprentices per intake, including the number from each trade, starting and completion times, and allocation of apprentices to employers in both the short and long term; (b) training schemes for construction staff, process operators, foremen and supervisors and other employees.
	35.	Employ: (a) persons to provide counselling and other support services to women and to disadvantaged groups employed by the applicant and to assist in fostering community relations between the developer, its staff and the community; and

		(b) a senior environmental officer and sufficient staff to the satisfaction of the Council who will be responsible for environmental monitoring and analysis, pollution control, and environmental studies and research.
Dep. landscaping	36.	Within six months of the date of this consent, cause to be prepared detailed landscaping plans by a qualified landscape architect to the satisfaction of the Department.
Monitoring costs	37.	Bear the costs associated with the establishment and operation of all monitoring programmes referred to in these conditions, the analysis of data, recording results and providing information required to all relevant authorities including any monitoring committee that may be established and in the event of a monitoring committee being established, make a final contribution towards the cost of establishing and operating that committee, the amount to be agreed with the Department.
	38.	[DELETED]
Landholder's information service	39.	Establish an information and advice service for landholders within 4 km of the proposed development to advise them of any precautions necessary to preserve the health of their plants and stock, together with an educational programme to keep landowners informed of likely problems in growing and using sensitive crops, or grazing susceptible animals.
	40.	[DELETED]
Shift times	41.	Negotiate with the relevant trade unions on shift starting and ending times, with the object of minimising: <ul style="list-style-type: none"> (a) noise generated during nightshift changeover in the late night/early morning; (b) road traffic congestion during morning and afternoon peaks; (c) the conflict of shift change time with other major industry in Newcastle and Port Stephens Local Government areas, if feasible.
Housing construction workforce	42.	Ensure that adequate accommodation is available for the construction workforce during the course of construction of the proposed development. In this regard, the developer shall: <ul style="list-style-type: none"> (a) liaise with caravan park owners, mobile home-site owners and others concerned with the provision of housing, both temporary and permanent, in the sub-region; (b) negotiate with owners of local caravan parks and assist with provision of additional caravan sites; (c) negotiate with developers and assist in providing mobile homes in the Fern Bay area; (d) negotiate with property and housing developers to provide

additional housing stock;

- (e) on the 1st day of June and December each year until the completion of the proposed development, report to the Department of Environment and Planning and Port Stephens Shire Council on availability of accommodation;
- (f) comply with the reasonable requirements of the Council and the Department relating to construction of workforce accommodation.

43. Obtain any necessary approval of the Height of Buildings Committee.

44. Any disputes arising between any of the parties in respect of the above conditions, including a conflict arising between the conditions of this consent and the conditions attached to the consent for the smelter expansion, shall be referred to the Minister for Planning for resolution.

45. This approval does not relieve the applicant of the obligation to obtain any other approval required under the Local Government Act, 1919, (as amended) the Ordinances (including approval of building plans) or any other Act.

(File: 80/10069)

46. The Applicant upon receipt of a request from an owner of land within the buffer area described in this condition to purchase that land shall:

- (a) take all reasonable steps to acquire the property; and
- (b) subject to agreement on the purchase price, acquire such property,

for the purpose of establishing an expanded buffer area around the smelter within the boundaries as shown on Map "1" attached to these conditions, except for

- (c) land zoned "general industrial" under the Port Stephens Local Environmental Plan - Shire of Port Stephens, unless the lands are subject to non-conforming uses;
- (cc) land zoned "general industrial" under the Port Stephens Local Environmental Plan - Shire of Port Stephens, subject to non-conforming uses where the Applicant was the registered proprietor at any time since 1 January 1980;
- (d) lands zoned "Special Uses";
- (e) land which is in ownership of the State Government, a State authority or instrumentality at the date of this consent, land which subsequently comes into such ownership and the Hunter River; and
- (f) the Caravan Park situated on the southern side of Tomago Road.

If agreement cannot be reached regarding the acquisition price, then

the land owner may refer the matter to the Secretary of the Department of Planning for determination by an independent panel.

Upon receipt of the matter, the Secretary shall arrange for the constitution of a panel to determine the acquisition price. The panel shall consist of:

- (g) The Director of Planning or her nominee;
- (h) The President of the Law Society of New South Wales or his nominee;
- (i) The President of the NSW Division of the Australian Institute of Valuers and Land Managers (Inc), or his nominee.

In determining the acquisition price, the panel shall have regard to –

- (j) The current market value of the property at the date on which the matter is referred to the panel but on the basis that the more valuable of either the use of the property as conducted at 6 March, 1981, or the use as at the date of this amendment, had continued.
- (k) The cost to the land owner of disturbance and relocation if the land owner elects to relocate his existing activity, PROVIDED THAT for the purpose of assessing this cost, the land owner will be deemed to be relocating within the sub-region known as the Lower Hunter.
- (l) Following the determination by the Panel the Applicant shall offer to purchase the relevant property at a price not less than that determined by a majority of the panel.
- (m) The Applicant shall meet the costs of providing the panel and any costs associated therewith unless otherwise determined by the panel.
- (n) In the event that the landowner does not accept within 12 months the offer of the Applicant, then the Applicant's obligations under this clause shall lapse. Non-acceptance or refusal by the landowner shall not prejudice any rights under condition number 47.

Nothing in this clause shall remove, limit or prejudice the rights of any owner of land within the buffer zone existing prior to the date of this amendment.

Pending acquisition of all properties included in the proposed expanded buffer area the Applicant shall provide on January each year until 1994 a report to the Department of Planning indicating the progress of acquisition, and upon request thereafter.

47. The Applicant shall expeditiously seek to reach agreement, in the event of claims for compensation or requests for acquisition of property being received by the Applicant from land owners or

occupiers of land within 4 kilometres of the site, claiming that their property is affected by emissions from the development. If agreement cannot be reached, the claim or request may be referred to the Secretary of the Department of Planning for determination by an independent panel.

Upon receipt of the matter, the Secretary shall arrange for the constitution of a panel to determine the claim or request. The panel shall consist of:

- (a) The Director of Planning or her nominee;
- (b) The President of the Law Society of New South Wales or his nominee;
- (c) The President of the NSW Division of the Australian Institute of Valuers and Land Managers (Inc), or his nominee.

The panel shall determine:—

- (d) Whether the claimant has a claim resulting from emissions from the proposed development;
- (e) If so, whether the claim can be settled by payment of compensation without acquisition of the claimant's property;
- (f) If so, the amount of such compensation; or
- (g) If the claim cannot be settled by compensation, the acquisition price for the property; and
- (h) The costs, if any, to be awarded to the claimant in respect of expenses for legal advice and representation and expert witnesses.
- (i) In the case of any publicly owned lands within 4 kilometres of the site the panel shall consider whether a claim can be settled by the provision of an equivalent replacement habitat which is not environmentally affected by the smelter operation.

In determining the price for acquisition referred to above, if the panel decides that acquisition is warranted, the panel shall have regard to:—

- (j) The market value of the claimant's land unaffected by the Tomago Aluminium Smelter and having regard to the existing use of the land;
- (k) The length of time which has elapsed since the granting of development approval and completion of the development, if relevant; and
- (l) The cost to the claimant of disturbance and relocation if the claimant elects to relocate his existing activity, PROVIDED THAT for the purpose of assessing this cost, the claimant will be deemed to be relocating within the sub-region known as the Lower Hunter.

The decision of the panel shall be binding on the Applicant.

The Applicant will meet the costs of providing the panel and any costs

associated therewith.

48. Until the proposed modification is fully implemented, the Applicant shall submit an Annual Progress Report on the proposed expansion program to the Director and the EPA. This report must:
 - (a) Describe the status of the implementation of the expansion program;
 - (b) Assess the environmental impacts of the expansion against the goals identified in the SEE for the proposed expansion; and
 - (c) Outline the proposed program for the implementation of the remainder of the expansion.

49. The Applicant shall:
 - (a) Install continuous real time monitoring of gaseous fluoride emissions from the roof vents in each potline; and
 - (b) Maintain and operate an ambient air quality monitoring network, including sulphur dioxide monitoring in the vicinity of the smelter, to the satisfaction of the EPA.

50. The Applicant shall prepare and implement, an Air Quality Monitoring Program for the development to the satisfaction of the Director-General. This program must:
 - a) be prepared in consultation with DECCW;
 - b) be submitted to the Director-General for approval by 1 May 2010;
 - c) include:
 - i. three additional SO₂ monitoring sites; ensuring sufficient monitoring points around “the Farm” precinct;
 - ii. mapping of all monitoring points;
 - iii. a description of the monitoring to be undertaken including pollutants, units of measure, frequency and sampling method;
 - iv. a program to monitor and report on the ongoing performance of the development; and
 - v. a description of the contingency measures that would be implemented should the monitoring identify any non-compliances/exceedances.

- 50A. The Applicant shall prepare and submit an Air Quality Verification Report to the satisfaction of the Director-General and the DECCW by 30 May 2013 or once the facility is operational at full capacity, whichever comes sooner. The Air Quality Verification Report shall include:
 - a) a validation of the predictions made in the SEE titled “Production Capacity Increase Statement of Environmental Effects Tomago Aluminium Smelter”, prepared by ENSR Australia Pty Ltd, dated May 2009;
 - b) monitoring data required by the EPL;
 - c) comparison of monitoring results with any limits or conditions in the EPL; and if necessary
 - d) additional measures that would be implemented to comply with the requirements of the EPL.

- Noise 51. The Applicant shall ensure that the noise from the operation of the development does not exceed any noise limits specified in the EPL for the facility.

Noise
Auditing and
Reporting

52. The Applicant must undertake pre and post modification noise audits to ensure the expansion does not increase noise emissions from the transformers. The auditing must be undertaken by a suitably qualified and experienced person whose appointment has been endorsed by the Director-General, and include:
- a) a pre modification noise audit and report which must:
 - i. be provided to DECCW and the Department and approved by the Director-General prior to the commencement of the expansion;
 - ii. be undertaken during a period when the facility is operating under normal operating conditions;
 - iii. identify the existing noise levels produced by the transformers; and
 - iv. report any noise complaints received in the last 12 months.
 - b) a post modification noise audit and report which must:
 - i. be provided to DECCW and the Department and approved by the Director-General;
 - ii. be undertaken within 5 years of the date of this modification approval or once the facility is operational at full capacity, whichever comes sooner;
 - iii. identify the noise levels produced by the transformer;
 - iv. compare the transformer noise levels with the levels identified in the pre modification noise audit in a) above;
 - v. report any noise complaints received since undertaking the previous noise audit;
 - vi. assess whether any noise management or mitigation measures are required;
 - vii. describe any measures proposed to be implemented, including a timetable for the implementation; and
 - viii. detail how the effectiveness of these measures would be assessed and reported.
53. In consultation with the NPWS, the Applicant shall assist in the development of, and participate in, a periodic monitoring program targeting specific areas/species within Kooragang Island Nature Reserve.
54. The Applicant shall obtain a Section 50 certificate under the *Hunter Water Act 1991* for any increases in potable water demand associated with the proposed expansion.
55. At least 1 month before commencing the construction of any component of the modification, or within such further period as the Director may agree, the Applicant shall submit the following studies to the Director for approval:
- a) A Fire Safety Study covering all aspects detailed in the Department's *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Study Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall focus on the alterations to the existing development, which are the subject of this modification. The Applicant shall also submit the Study for the approval of the NSW Fire Brigades.
 - b) A Construction Safety Study prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 -*

Construction Safety Study Guidelines. The Study shall detail specific measures to address hazards associated with construction activities on an operating development. The Applicant may seek the Director's approval to stage submission of the Study, consistent with staging of construction.

Construction shall not commence until the Director has approved both studies, and the Commissioner of the NSW Fire Brigades has approved the Fire Safety Study.

56. Within 12 months of commencing the construction of any component of the modification, or within such further period as the Director may agree, the Applicant shall submit the following studies to the Director for approval:
- a) An Updated Emergency Plan and detailed emergency procedures for the site, prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*. The Plan shall be an update of the existing emergency plan for the site.
 - b) A Safety Management System, covering all operations on-site and associated transport activities involving hazardous materials. The System shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for adherence to procedures and managing change. Records shall be kept on site and shall be available for inspection by the Director-General upon request. The Safety Management System shall be an update of the existing system for the site and be prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*.
57. Within 24 hours of any incident with actual or potential significant off-site impacts on people or the biophysical environment, a report shall be supplied to the Director outlining the basic facts. A further detailed report shall be prepared and submitted following investigations into the causes and identification of additional preventative measures. That report must be submitted to the Director no later than 14 days after the incident. The Applicant shall maintain a register of accidents, incidents and potential incidents. The register shall be made available for inspection at any time by the Director.
58. Within 12 months of the approval of DA 391-80 MOD 4, and then as directed by the Director-General, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
- a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;
 - b) include a Hazard Audit in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 5 – Hazard Audit Guidelines*. The audit shall include a review of the Safety Management System and of all incidents recorded and be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, justification must be included;
 - c) assess the environmental performance of the development, and its

- effects on the surrounding environment and sensitive receivers;
- d) assess whether the development is complying with the conditions, relevant standards, performance measures, and statutory requirements;
 - e) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - f) recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this approval.
59. Within 6 weeks of completing this audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General with a response to any recommendations contained in the audit report.
60. Within 3 months of submitting an audit report to the Director-General, the Applicant shall review and if necessary revise the strategy/plans/programs required under this approval to the satisfaction of the Director-General.

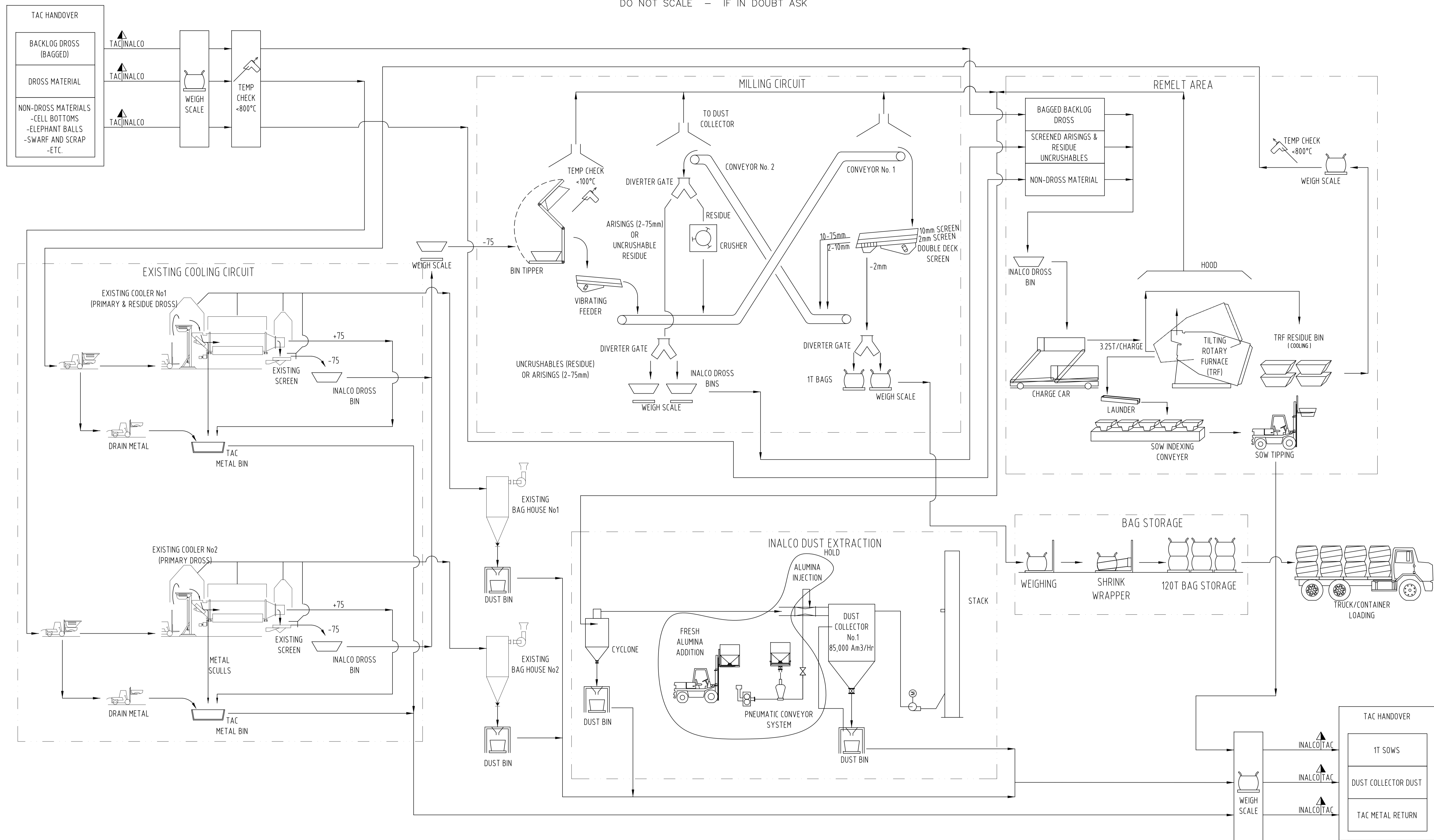
Signed at Sydney this sixth
day of March, 1981.

ERIC BEDFORD
Minister for Planning
and Environment

Appendix B

Site diagrams

DO NOT SCALE - IF IN DOUBT ASK



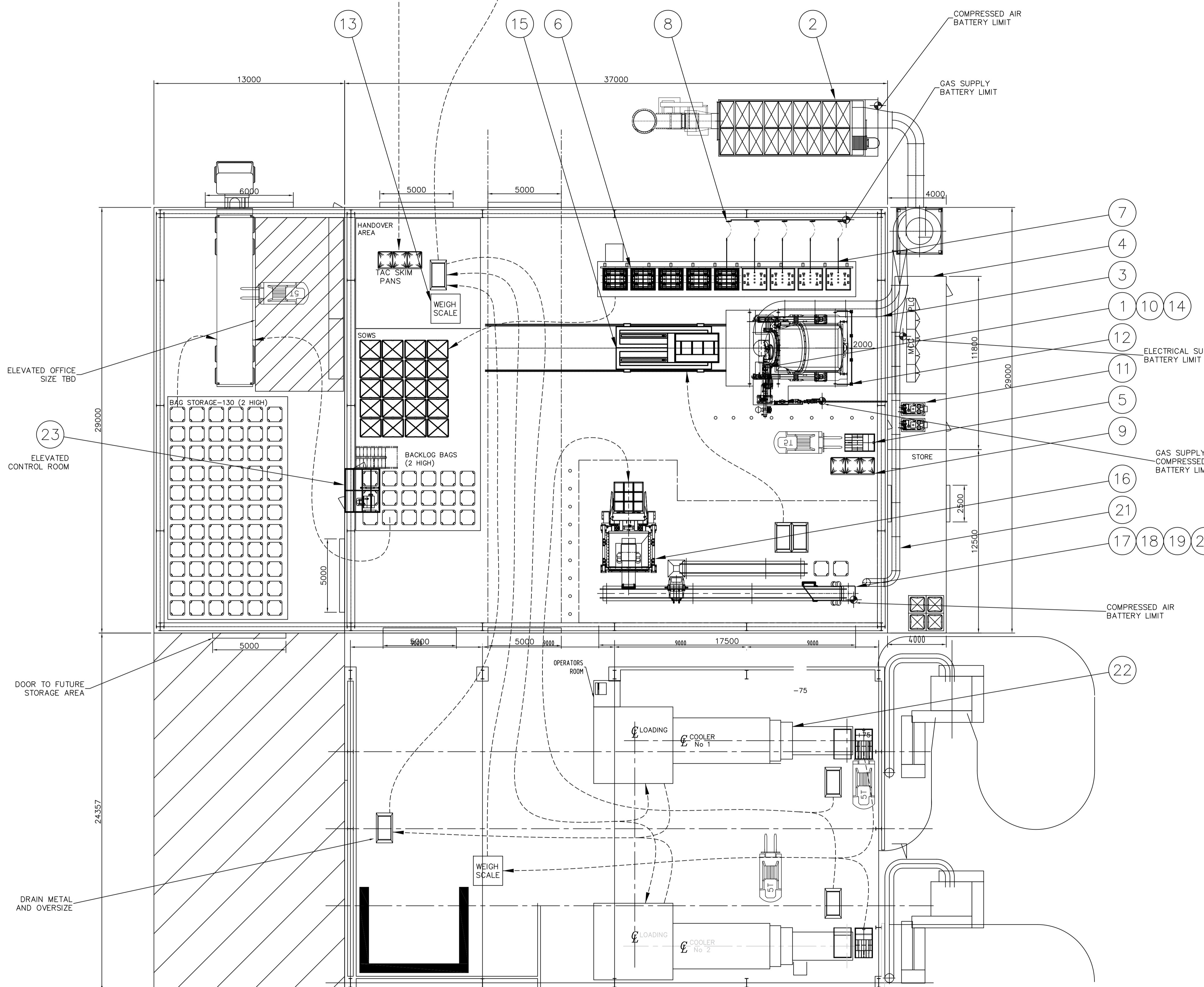
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1	REFERENCE DRAWINGS	©KEMPE (ABN: 23 118 446 110)	GENERAL NOTES	TOLERANCES—U.N.O.	THIRD ANGLE PROJECTION	DATE	ENG: J.CAIRNCROSS	21.4.22		P.O. BOX 874, GEELONG VICTORIA, AUSTRALIA, 3220 PHONE - +61 3 5225 2900 FAX - +61 3 5225 2950 INTERNET www.kempe.com.au	
	THIS DRAWING, INCLUDING TEXT IS COPYRIGHT. NO PART OF THIS DRAWING MAY BE REPRODUCED BY ANY PROCESS WITHOUT THE SPECIFIC WRITTEN PERMISSION OF THE COPYRIGHT OWNER. THIS DRAWING, INCLUDING TEXT IS THE CONFIDENTIAL INFORMATION OF THE COPYRIGHT OWNER. IT MUST NOT BE DISCLOSED TO OTHERS WITHOUT THE WRITTEN CONSENT OF THE COPYRIGHT OWNER. THIS DRAWING IS PROVIDED SOLELY FOR THE PURPOSE OF THE TRANSACTION TO WHICH IT PERTAINS AND MUST NOT BE USED FOR ANY OTHER PURPOSE WHATSOEVER. IT MUST BE RETURNED TO THE COPYRIGHT OWNER IMMEDIATELY ON REQUEST.	1. ALL PARTS TO BE CLEAN AND FREE FROM BURRS. 2. ALL WELDS TO BE 6 CONTINUOUS WELDS UNLESS SHOWN OTHERWISE. 3. ALL EXPOSED SURFACES TO BE PAINTED IN ACCORDANCE WITH "KEMPE" STANDARD SPECIFICATIONS, OR AS DIRECTED BY THE ENGINEER. 4. SURFACE FINISH TO BE 3.2 UNLESS SHOWN OTHERWISE. 5. ALL STEEL TO COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING AUSTRALIAN STANDARDS UNLESS NOTED OTHERWISE: AS 1163 STRUCTURAL STEEL HOLLOW SECTIONS. AS 1594 HOT ROLLED STEEL FLAT PRODUCTS. AS 3678 HOT ROLLED STRUCTURAL STEEL PLATES, FLOOR PLATES AND SLABS AS 3679 HOT ROLLED STRUCTURAL STEEL BARS AND SECTIONS	M/C AND SMALL FAB. UNDER 75 ±0.2 75 TO 300 ±0.4 300 TO 600 ±0.5 OVER 600 ±0.6 STRUCTURAL UNDER 1000 ±1 1000 TO 5000 ±1.5 5000 TO 10000 ±3	22.4.22 DATE A REV PRELIMINARY FOR REVIEW REVISION RECORD	JC DR JC CHK JH APP	SCALE: NTS	INALCO/TAC INALCO/TAC INALCO/TAC WEIGH SCALE 1T SOWS DUST COLLECTOR DUST TAC METAL RETURN	A1 DRAWING NUMBER 7133-001			

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BILL OF MATERIAL FOR ONE ASSEMBLY

ITEM No.	QTY	PART DESCRIPTION	DWG/PART No.	MATERIAL/SPECIFICATION	MASS EACH (kg)
1	1	TILTING ROTARY FURNACE (TRF)	-	-	-
2	1	DUST COLLECTOR	-	-	-
3	1	FURNACE DUCTING	-	-	-
4	1	MCC, PLC	-	-	-
5	4	FURNACE CHARGE BINS	-	-	-
6	5	SOW MOULDS (WITH SPILL TRAYS)	-	-	-
7	1	SOW MOULD INDEXER	-	-	-
8	5	SOW MOULD PREHEATER BURNERS	-	-	-
9	12	FURNACE RESIDUE PANS	-	-	-
10	1	RESIDUE POURING TABLE	-	-	-
11	1	HYDRAULIC POWER UNIT (HPU)	-	-	-
12	1	FACILITY BOLLARDS, FENCING AND GURADING	-	-	-
13	1	WEIGH SCALE	-	-	-
14	1	FURNACE CLEANING SCRAPER	-	-	-
15	1	FURNACE CHARGE CAR	-	-	-
16	1	BIN TIPPER AND CONVEYOR FEEDER	-	-	-
17	2	MILLING CONVEYORS	-	-	-
18	1	DOUBLE DECK SCREEN	-	-	-
19	1	ROTARY IMPACTOR (CRUSHER)	-	-	-
20	2	BAGGING STATION	-	-	-
21	1	MILLING DUCTING	-	-	-
22	2	DROSS COOLERS	-	-	-
23	1	OPERATOR ROOM	-	-	-
APPROXIMATE TOTAL MASS					-



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Appendix C

Environment Protection Licence 6163

Environment Protection Licence



Licence - 6163

Licence Details

Number:	6163
Anniversary Date:	29-October

Licensee

TOMAGO ALUMINIUM COMPANY PTY LTD

PO BOX 405

RAYMOND TERRACE NSW 2324

Premises

TOMAGO ALUMINIUM COMPANY PTY LIMITED

35 & 45 TOMAGO ROAD

TOMAGO NSW 2322

Scheduled Activity

Metallurgical activities

Waste Processing (non-thermal treatment)

Waste Storage

Fee Based Activity

Scale

Aluminium production (alumina)	> 10000 T processed
Metal waste generation	> 100 T generated or stored
Non-thermal treatment of hazardous and other waste	Any T treated
Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	> 0 T stored

Region

North - Hunter

Ground Floor, NSW Govt Offices, 117 Bull Street
NEWCASTLE WEST NSW 2302

Phone: (02) 4908 6800

Fax: (02) 4908 6810

PO Box 488G NEWCASTLE

NSW 2300

Environment Protection Licence

Licence - 6163



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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

TOMAGO ALUMINIUM COMPANY PTY LTD

PO BOX 405

RAYMOND TERRACE NSW 2324

subject to the conditions which follow.

Environment Protection Licence

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Metallurgical activities	Aluminium production (alumina)	> 10000 T processed
Metallurgical activities	Metal waste generation	> 100 T generated or stored
Waste Processing (non-thermal treatment)	Non-thermal treatment of hazardous and other waste	Any T treated
Waste Storage	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	> 0 T stored

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
TOMAGO ALUMINIUM COMPANY PTY LIMITED
35 & 45 TOMAGO ROAD
TOMAGO
NSW 2322
LOT 3232 DP 618103, LOT 301 DP 634536, LOT 3 DP 808004, LOT 104 DP 1125747
EXCLUDES AREA LEASED TO REGAIN SERVICES PTY LTD SHOWN ON THE PLAN TITLED "SITE LAYOUT AND SERVICES", DRAWING NUMBER 0010M22-001, WHICH IS FILED ON EPA FILE LIC07/2263-06.

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
Sewage Treatment Systems

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A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and

b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Dry scrubber stack	Dry scrubber stack	Line 1 West
2	Dry scrubber stack	Dry scrubber stack	Line 1 East
3	Dry scrubber stack	Dry scrubber stack	Line 2 west
4	Dry scrubber stack	Dry scrubber stack	Line 2 east
5	Anode Plant 1 - Dry scrubber stack	Anode Plant 1 - Dry scrubber stack	Anode plant 1
6	Anode Plants 2 & 3 - Dry scrubber stack	Anode Plants 2 & 3 - Dry scrubber stack	Anode plant 2 & 3
7	Dry scrubber stack	Dry scrubber stack	Line 3 west
8	Dry scrubber stack	Dry scrubber stack	Line 3 east
9	Dry scrubber stack	Dry scrubber stack	Line 1 & 2 extension
10	Roof vent	Roof vent	Potroom A manifold
11	Roof vent	Roof vent	Potroom B manifold
12	Roof vent	Roof vent	Potroom C manifold
13	Roof vent	Roof vent	Pot room D manifold
14	Roof vent	Roof vent	Potroom E manifold
15	Roof vent	Roof vent	Potroom F manifold
18	Weather monitoring and sulphur dioxide monitoring		Meteorological monitoring station
20	Ambient fluoride monitor		Site 80 - HWC Offices
21	Ambient fluoride monitor		Site 84 - 6 Old Punt Road Tomago, 1.25 km West of smelter
22	Ambient fluoride and sulphur dioxide monitors		Site 179 - Lot D Tomago Road (374 Tomago Rd, Tomago) 1.75 km E of smelter.

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23	Ambient fluoride monitor		Site 188 - Woodbury, 5 km NW of smelter
24	Ambient fluoride and sulphur dioxide monitors		Site 181 The Farm 1.5 km SE of smelter
25	Ambient fluoride monitor		Site 122 - Botanic Gardens, 2.5 km N of smelter
26	Ambient fluoride monitor		Site 83 - Detention Centre, 1 km S of smelter
27	Ambient fluoride and Sulphur Dioxide monitor		Site 85 - Pacific Highway Tomago, 1.5 km NW of smelter
30	Total smelter emissions sum of point sources	Total smelter emissions sum of point sources	Total smelter emissions, sum of point sources
31	Stack emissions from the No1 paste plant.	Stack emissions from the No1 paste plant.	Pitch circuit stack
32	Stack emission from the No1 paste plant.	Stack emission from the No1 paste plant.	Proportioning circuit stack
33	Stack emission from the No2 paste plant	Stack emission from the No2 paste plant	Pitch circuit stack
34	Stack emission from the No2 paste plant	Stack emission from the No2 paste plant	Proportioning circuit stack
36	Ambient Monitoring - Sulphur Dioxide		Laverick Ave (378600E 6467200N)
38	Discharge to air and monitoring	Discharge to air and monitoring	Deline/Regain Spent Potliner Dust Filter

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
16	Stormwater discharge quality and volume monitoring Discharge to waters	Stormwater discharge quality and volume monitoring Discharge to waters	The point of discharge to the Hunter River from the stormwater pond ref Drawing 0040 0C0 500
17	Effluent quality and volume monitoring Discharge to utilisation area	Effluent quality and volume monitoring Discharge to utilisation area	Utilisation area
35	Stormwater overflow		Overflow from first flush system

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

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L2 Load limits

L2.1 The actual load of an assessable pollutant discharged from the premises during the reporting period must not exceed the load limit specified for the assessable pollutant in the table below.

Note: An assessable pollutant is a pollutant which affects the licence fee payable for the licence.

L2.2 The actual load of an assessable pollutant must be calculated in accordance with the relevant load calculation protocol.

Assessable Pollutant	Load limit (kg)
Coarse Particulates (Air)	192045.00
Fine Particulates (Air)	174685.00
Fluoride (Air)	298000.00
Lead (Air)	
Nitrogen Oxides (Air)	186620.00
Sulfur Oxides (Air)	11900000.00

Note: On 7 December 2009, the Minister for Planning granted development consent to authorize a continued increase in aluminium production at the smelter from 530,000 tpa to 575,000 tpa. To protect air quality it was negotiated at this time that the maximum annual Fluoride load limit for the premises must not exceed 298 tpa.

L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table.

L3.4 Air Concentration Limits

POINT 1,2,3,4,5,6,7,8,9

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Total Solid Particles	milligrams per cubic metre	50	dry, 273 K, 101.3 kPa		1 hour

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Nitrogen Oxides	grams per cubic metre	2.0	dry, 273 K, 101.3 kPa	1 hour
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POINT 30

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Fluoride	kilograms of Fluoride per tonne of Aluminium produced	0.8	dry, 273 K, 101.3 kPa		

POINT 31,32,33,34

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Total Solid Particles	milligrams per cubic metre	50	dry, 273 K, 101.3 kPa		1 hour
Benzo(a)pyrene	milligrams per cubic metre	0.05	dry, 273 K, 101.3 kPa		1 hour
Total PAHs	milligrams per cubic metre	2.0	dry, 273 K, 101.3 kPa		1 hour

POINT 38

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Total Solid Particles	milligrams per cubic metre	20			
Fine Particulates	milligrams per cubic metre	10			

L3.5 Water and/or Land Concentration Limits

POINT 16

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Fluoride	milligrams per litre				40
Total suspended solids	milligrams per litre				50

L4 Volume and mass limits

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- L4.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
- liquids discharged to water; or;
 - solids or liquids applied to the area;
- must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
16	kilolitres per day	4320
17	millimetres per week	30

- L4.2 The discharge limit for Point 16 in condition L4.1 may be exceeded under wet weather conditions provided that all practical measures are taken to minimise additional pollution caused by the wet weather.

- L4.3 Total fluoride emissions from the smelter must not exceed:

The equivalent of 0.8 kilogram of total fluoride per tonne of aluminium produced as a monthly average.

The equivalent of 0.56 kilograms of total fluoride per tonne of aluminium produced as an annual average.

and

The equivalent of 0.6 kilograms of total fluoride per tonne of aluminium produced, as an annual average, for more than one year out of every five years.

L5 Waste

- L5.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Dross		Metallurgical Activities	NA
NA	Spent Pot Lining		Metallurgical Activities	NA
NA	Oily Water		Metallurgical Activities	NA
NA	Filter Bags		Metallurgical Activities	NA
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation	As specified in each particular resource recovery exemption	NA

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		2005		
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA
NA	Aluminium Casting Waste and By-products		Metallurgical Activities	NA
NA	Aluminium Smelter Maintenance Waste		Metallurgical Activities	NA
NA	Waste Water and Sludges		Metallurgical Activities	NA
NA	Smelter Waste	Smelter waste generated on the premises	Metallurgical Activities	NA
NA	Smelter Waste	Smelter wastes generated on the premises of Hydro Kurri Kurri Smelter Pty Ltd.	Waste processing (non-thermal treatment)	NA
NA	Carbon Dust		Metallurgical Activities	NA
NA	Oil Absorbent Materials		Metallurgical Activities	NA
NA	Pitch Waste		Metallurgical Activities	NA
NA	Iron Contaminated Bath		Metallurgical Activities	NA
NA	Aluminium Potline Wastes and By-products		Metallurgical Activities	NA
NA	Electrode Manufacture Waste and By-products		Metallurgical Activities	NA

L5.2 Asbestos.

The licensee must comply with the conditions as specified in this licence or where no specific conditions are outlined in this licence, the licensee must comply with the Protection of the Environment Operations (Waste) Regulation 2005.

L6 Potentially offensive odour

L6.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L7 Other limit conditions

L7.1 Polychlorinated Biphenyls (PCBs)

The licensee must comply with the conditions as specified in this licence or where no specific conditions

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are outlined in this licence, the licensee must comply with the "Chemical Control Order in Relation to Materials and Wastes Containing Polychlorinated Biphenyl, 1997".

L7.2 Sulphur Content of Pitch

The sulphur content of the pitch used in anode manufacture must not exceed 0.5% by weight.

L7.3 Sulphur Content of Coke

The sulphur content of the coke used in anode manufacture must not exceed 3.5 % by weight.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Effluent application to land

O3.1 The quantity of effluent/solids applied to the utilisation area must not exceed the capacity of the area to effectively utilise the effluent/solids.

For the purposes of this condition, 'effectively utilise' includes the use of the effluent/solids for pasture or crop production, as well as the ability of the soil to absorb the nutrient, salt, hydraulic load and organic material.

O3.2 Effluent application to the utilisation area(s) must not occur in a manner that causes surface run-off from the utilisation area(s).

O3.3 Spray from effluent application to the utilisation area(s) must not drift beyond the boundary of the utilisation area(s) to which it has been applied.

O4 Emergency response

O4.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the

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requirements in Part 5.7A of the *Protection of the Environment Operations* (POEO) Act 1997 and POEO regulations. The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

- O4.2 The licensee must nominate to the EPA a representative of the licensee that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager- Hunter at hunter.region@epa.nsw.gov.au or to PO Box 488G, Newcastle NSW 2300.

O5 Processes and management

- O5.1 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.
- O5.2 Bunds must:
- have walls and floors constructed of impervious materials;
 - be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed);
 - have floors graded to a collection sump; and
 - not have a drain valve incorporated in the bund structure,

or be constructed and operated in a manner that achieves the same environmental outcome.

O6 Waste management

- O6.1 The licensee must ensure that any liquid and/or non liquid waste for generating, processing, storage, resource recovery or disposal at the premises is assessed and classified in accordance with EPA Waste Classification Guidelines as in force from time to time.
- O6.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.
- O6.3 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.
- O6.4 The licensee must ensure that suitable measures (e.g. high/low alarms, control valves with interlock control, one way valves) are installed on all tanks, ponds or clarifiers and associated pipes and hoses to prevent the spillage of waste.
- O6.5 a) Aluminium smelter waste containing fluoride and/or cyanide must be kept on the Premises in such a manner that no leachate nor wind borne material can escape from the Premises and in the manner detailed in the Licensee's Environmental Impact Statement of 21 August, 1983.

b) The storage site for the aluminium smelter waste must be maintained in good order and condition.

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c) The Premises must be provided with physical security to prevent unauthorised access to the aluminium smelter waste containing leachable fluoride and/or leachable cyanide.

d) No visible dust is to be generated to atmosphere from any storage of aluminium smelter waste containing fluoride or cyanide. To avoid any uncertainty this condition does not apply to waste stored within buildings but does apply to any dust generated from any storage buildings to atmosphere external to the building.

O6.6 a) Aluminium smelter waste containing fluoride and/or cyanide may be processed for the purpose of research into, and development of, environmentally acceptable methods for reducing the levels of leachable fluoride and/or leachable cyanide in such wastes.

b) Aluminium smelter waste containing fluoride and/or cyanide may be processed on the Premises, for the recovery of components, the making of other products or to reduce the leachable fluoride and/or leachable cyanide content.

c) Aluminium smelter waste containing fluoride and/or cyanide may be processed on the Premises, by treatment with any waste, with water, or, other with any material so as to facilitate handling and, except for wastes with leachable fluoride and/or leachable cyanide, to facilitate disposal.

O6.7 Fluoridated smelter wastes deposited at the Tomago Aluminium Company Pty Ltd Solid Waste Class 2 landfill at Wallaroo must be immobilised with gypsum to reduce leachable fluoride to less than 150 mg/l prior to being transported from the premises.

For determining leachable fluoride in approved smelter wastes, distilled water is the approved leachant.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- a) the date(s) on which the sample was taken;
- b) the time(s) at which the sample was collected;
- c) the point at which the sample was taken; and
- d) the name of the person who collected the sample.

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M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 1,2,3,4,7,8,9

Pollutant	Units of measure	Frequency	Sampling Method
Gaseous fluoride	milligrams per cubic metre	Continuous	In line instrumentation
Sulphur dioxide	milligrams per cubic metre	Quarterly	TM-4
Total Fluoride	kilograms of Fluoride per tonne of Aluminium produced	Special Frequency 1	TM-9
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15

POINT 5,6

Pollutant	Units of measure	Frequency	Sampling Method
Gaseous fluoride	milligrams per cubic metre	Continuous	In line instrumentation
Nitrogen Oxides	grams per cubic metre	Yearly	TM-11
Sulphur dioxide	milligrams per cubic metre	Yearly	TM-4
Total Fluoride	kilograms of Fluoride per tonne of Aluminium produced	Special Frequency 1	TM-9
Total PAHs	milligrams per cubic metre	Yearly	OM-6
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15

POINT 10,11,12,13,14,15

Pollutant	Units of measure	Frequency	Sampling Method
Total Fluoride	kilograms of Fluoride per tonne of Aluminium produced	Monthly	TM-10

POINT 18,22,24,27,36

Pollutant	Units of measure	Frequency	Sampling Method
Sulphur dioxide	parts per hundred million	Continuous	AM-20

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POINT 20,21,22,23,24,25,26,27

Pollutant	Units of measure	Frequency	Sampling Method
Fluoride	micrograms per cubic metre	Weekly	AM-8

POINT 31,32,33,34

Pollutant	Units of measure	Frequency	Sampling Method
Total PAHs	milligrams per cubic metre	Yearly	OM-6
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15

POINT 38

Pollutant	Units of measure	Frequency	Sampling Method
Fine Particulates	milligrams per cubic metre	Yearly	OM-5
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15

M2.3 Water and/ or Land Monitoring Requirements**POINT 16**

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Daily during any discharge	Grab sample
Fluoride	milligrams per litre	Daily during any discharge	Grab sample
pH	pH	Daily during any discharge	Grab sample
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample

POINT 17

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Quarterly	Grab sample
Fluoride	milligrams per litre	Weekly	Grab sample
pH	pH	Weekly	Grab sample
Total suspended solids	milligrams per litre	Quarterly	Grab sample

POINT 35

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Pollutant	Units of measure	Frequency	Sampling Method
Fluoride	milligrams per litre	Each overflow event	Grab sample
pH	pH	Each overflow event	Grab sample

M2.4 For the purposes of the tables above, Special Frequency 1 mean samples are to be collected and analysed twice per quarter.

M2.5 For the purposes of sampling at Point 16, daily sampling means samples collected at a minimum of twelve hourly intervals during any discharge event.

M3 Testing methods - concentration limits

- M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
 - if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
 - if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Testing methods - load limits

M4.1

Note: Division 3 of the *Protection of the Environment Operations (General) Regulation 2009* requires that monitoring of actual loads of assessable pollutants listed in L2.2 must be carried out in accordance with the relevant load calculation protocol set out for the fee-based activity classification listed in the Administrative Conditions of this licence.

M5 Environmental monitoring

M5.1 The licensee must conduct a monitoring program capable of measuring the environmental impact of emissions from the smelter on the surrounding environment.

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- M5.2 The licensee must maintain a list of the monitoring sites and sampling frequency used to assess the impact of the smelter on surface water, groundwater, native vegetation and a map showing the locations of the smelter and the monitoring sites used.
- M5.3 Copies of the list(s) of monitoring sites and the map(s) showing their locations must be presented as part of the licensee's annual report.
- M5.4 Copies of the list of monitoring sites and the map showing their locations must be made available to any authorised officer of the EPA who ask to see them.
- M5.5 Data must be presented in time series that allows year to year comparison.
- M5.6 The environmental monitoring program must include the following:
- a) The licensee must monitor fluoride levels in native vegetation within 10 kilometres of the smelter. Monitoring results must be reported every two years (each odd numbered year).
 - b) The licensee must monitor fluoride and visual assessment of foliar damage during the growing season at commercial orchards, vineyards and market gardens within 10 kilometres of the smelter. Monitoring results must be reported every two years (each odd numbered year).
 - c) The licensee must monitor fluoride levels in pasture grasses and forage crops within 10 kilometres of the smelter. Monitoring results must be reported every two years (each odd numbered year).
 - d) The licensee must monitor fluoride, pH and conductivity levels of surface waters within 16.5 kilometres of the smelter. Monitoring results must be reported annually.
 - e) The licensee must monitor fluoride pH and conductivity levels of groundwaters within 16.5 kilometres of the smelter. Monitoring results must be reported annually.
- M5.7 **Ecological Monitoring**
The licensee must undertake a program of ecosystem monitoring relevant to the discharge of atmospheric emissions. This program must include an ecological study of the major ecosystems within the influence of the smelter to the satisfaction of the EPA.
- The ecological study must include an assessment of vegetation species composition and vigour.
- The monitoring and the results of the monitoring must be reported every two years (each odd numbered year).
- M6 Weather monitoring**
- M6.1 For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

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Point 18

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Wind direction at 10m	°	Continuous	1 hour	AM-2 & AM-4
Wind speed at 10m	m/s	Continuous	1 hour	AM-2 & AM-4
Ambient Temperature at 5m	°C	Continuous	1 hour	AM-4
Wind direction at 30m	°	Continuous	1 hour	AM-2 & AM-4
Sigma Theta at 10m	°	Continuous	1 hour	AM-2 & AM-4
Ambient temperature at 30m	°C	Continuous	1 hour	AM-4
Additional requirements				
Siting				AM-1 & AM-4
Measurement				AM-1 & AM-4

M7 Recording of pollution complaints

M7.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M7.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

M7.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M7.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M8 Telephone complaints line

M8.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

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- M8.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M8.3 The preceding two conditions do not apply until 3 months after:
- the date of the issue of this licence or
 - if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M9 Requirement to monitor volume or mass

- M9.1 For each discharge point or utilisation area specified below, the licensee must monitor:
- the volume of liquids discharged to water or applied to the area;
 - the mass of solids applied to the area;
 - the mass of pollutants emitted to the air;
- at the frequency and using the method and units of measure, specified below.

POINT 16

Frequency	Unit of Measure	Sampling Method
Daily	kilolitres per day	No method specified

POINT 17

Frequency	Unit of Measure	Sampling Method
Weekly	millimetres per week	No method specified

POINT 35

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	Weir structure and level sensor

- M9.2 For the purposes of the table/s above Special Frequency 1 and Measure 1 means:
- Measuring the total flow to sewage treatment plant daily in kL/day;
 - Measuring the available capacity in stormwater detention basin three times weekly in kilolitres; and
 - Measuring the volume of effluent applied to the irrigation area weekly in mm/week.

- M9.3 Mass emissions of fluoride are to be calculated from fluoride concentration and production data for primary and secondary emissions for each pot room group and the anode plant monthly. The relevant aluminium production figures for each pot room group based on total daily aluminium production from the smelter and the calculated aluminium equivalent corresponding to anode production used in the above calculation must be supplied to the satisfaction of the EPA.

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6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date. The notification must specify:
a) the assessable pollutants for which the actual load could not be calculated; and
b) the relevant circumstances that were beyond the control of the licensee.

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

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R2 Notification of environmental harm

- R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
 - d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
 - e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
 - f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
 - g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 Monthly Emission and Pollution Control Equipment Reporting

Within four weeks of the end of each month the stack and roof vent emission monitoring results for that

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month shall be forwarded to the EPA. This data must be presented as a time series that shows the level of emission and the trend.

R4.2 The licensee must monitor and record the availability of pollution control equipment installed on the premises and report the results this monitoring as part of the monthly emission report.

The report must include the date, time, duration and reason for every outage of pollution control equipment, a cumulative total of outage times for each piece of equipment during the licence period and details of any action taken to prevent a recurrence of the pollution control equipment outage.

Note: The pollution control equipment specified in this requirement includes all scrubber systems installed on authorised discharge points 1,2,3,4,5,6,7, 8 and 9 for the purpose of removing fluoride, solid particles and polycyclic aromatic hydrocarbons from emissions to atmosphere.

Note: For the purpose of this condition an outage means any period of time exceeding 20 minutes when the pollution control equipment is not available for its intended purpose, for any reason.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Pollution Studies and Reduction Programs

U1 PRP 2 - Noise Auditing and Reporting

U1.1 The licensee must undertake a pre and post modification noise audits to ensure the production increase to 575,000 tpa does not increase noise emissions from the transformers. The auditing must be undertaken by a suitably qualified and experienced person, and include:

a) a pre modification noise audit and report which must:

i) be provided to the EPA prior to commencement of the expansion;

ii) be undertaken during a period when the facility is operating under normal operating conditions;

iii) identify the existing noise levels produced by the transformers; and

iv) report any noise complaints received in the past 12 months.

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b) a post modification noise audit and report which must:

i) be provided to the EPA;

ii) be undertaken by 7 December 2014, or once the facility is operational at a capacity of 575,000 tpa production, whichever comes sooner;

iii) identify the noise levels produced by the transformers;

iv) compare the transformer noise levels with the levels identified in the pre modification noise audit in (a) above;

v) report any noise complaints received since undertaking the pre modification noise audit;

vi) assess whether any noise management or mitigation measures are required;

vii) describe any measures proposed to be implemented, including a timetable for the implementation; and

viii) detail how the effectiveness of these measures would be assessed and reported.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Grahame Clarke

Environment Protection Authority

(By Delegation)

Date of this edition: 20-April-2000

Environment Protection Licence

Licence - 6163



End Notes

- 1 Licence varied by notice V/M upgrade, issued on 08-Jul-2000, which came into effect on 08-Jul-2000.
- 2 Licence varied by notice 1014382, issued on 25-Jan-2002, which came into effect on 19-Feb-2002.
- 3 Licence varied by notice 1016532, issued on 18-Apr-2002, which came into effect on 13-May-2002.
- 4 Licence varied by notice 1018042, issued on 05-Nov-2003, which came into effect on 30-Nov-2003.
- 5 Licence varied by notice 1041989, issued on 12-Nov-2004, which came into effect on 07-Dec-2004.
- 6 Licence varied by notice 1044367, issued on 08-Mar-2005, which came into effect on 02-Apr-2005.
- 7 Licence varied by notice 1056839, issued on 17-Mar-2006, which came into effect on 11-Apr-2006.
- 8 Licence varied by notice 1061531, issued on 31-Aug-2006, which came into effect on 31-Aug-2006.
- 9 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 10 Licence varied by notice 1097536, issued on 24-Apr-2009, which came into effect on 24-Apr-2009.
- 11 Licence varied by notice 1102846, issued on 11-Aug-2009, which came into effect on 11-Aug-2009.
- 12 Licence varied by notice 1107277, issued on 01-Jul-2010, which came into effect on 01-Jul-2010.
- 13 Licence varied by notice 1119919, issued on 11-Feb-2011, which came into effect on 11-Feb-2011.
- 14 Licence varied by notice 1501708 issued on 26-Oct-2011
- 15 Licence varied by notice 1504909 issued on 15-May-2012
- 16 Licence varied by notice 1509839 issued on 05-Nov-2012
- 17 Licence varied by notice 1517795 issued on 30-Oct-2014



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