APPENDIX 9
REGULATORY FRAMEWORK

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Hydro has undertaken a review of the key legislation and regulations that apply to the preferred management option for the Capped Waste Stockpile (the onsite Containment Cell). This appendix describes the application of the following:

- *Environmentally Hazardous Chemicals Act 1985 (EHC Act)*
- *Protection of the Environment Operations Act 1997 (POEO Act)*
- *Protection of the Environment Operations (Waste) Regulation 2014 (POEO Regulation)*
- *Environmental Planning and Assessment Act 1979 (EP&A Act)*

This appendix presents the application of the legislation and regulation as determined by Hydro and its Project Team. Feedback received from the EPA during consultation regarding the application of the legislation and regulation is also presented.

A9.1 Environmentally Hazardous Chemicals Act 1985

A9.1.1 Current Application

The EHC Act establishes the procedure for the declaration and management of environmentally hazardous chemicals and chemical wastes. The EPA can make and implement a Chemical Control Order (CCO) for such declared chemicals or wastes.

A CCO has been issued under the EHC Act that is applicable to aluminium smelter waste containing fluoride and/ or cyanide (the ASW CCO). The ASW CCO requires a licence for, among other matters, the: (i) keeping or processing of aluminium smelter wastes containing leachable fluoride above 150 mg/ Land/or leachable cyanide above 10 mg/ L; and (ii) the disposal of approved aluminium smelter wastes (those containing leachable fluoride and/or leachable cyanide below the prescribed concentrations).

The key requirements of the ASW CCO are:

- Materials kept on-site must be: secured so that no waste and/ or leachate can escape from the site; in a facility that is maintained in good condition; and in a secure manner that prevents unauthorized access;
- Materials can be processed: to research environmentally acceptable methods that reduce levels of leachable fluoride and/or cyanide; at the Smelter for the recovery of components, the making of other products, or to reduce levels of leachable fluoride and/or cyanide; at the Smelter with waste, water or other materials (except those with leachable fluoride and/or cyanide) to facilitate disposal;
- Materials can be conveyed (following EPA approval) to another location for treatment to reduce levels of leachable fluoride and/or cyanide; and
- Materials can be disposed: if certified as approved aluminium smelter waste; and in accordance with POEO Act.

Hydro manages the applicable aluminium smelter waste at the Smelter (including that within the Capped Waste Stockpile) in accordance with a Licence (Licence Number 05) issued under the EHC Act.

The spent pot lining stored in buildings at the Smelter and other aluminium smelter waste covered by the CCO is intended to be transported to a licensed recycling facility. This complies with the conditions of Licence Number 05.

A9.1.2 Potential Application

As previously communicated to the EPA, it is Hydro's position that the proposed placement of the Capped Waste Stockpile material in the Containment Cell is permitted as "keeping" under the ASW CCO. Hydro maintains this position. However, for the purpose of this report, Hydro understands that it is the EPA's position that:

- The EHC Act and the ASW CCO apply to the Capped Waste Stockpile material when placed in the Containment Cell; and

- The placement of the Capped Waste Stockpile material directly into the Containment Cell without treatment is not permitted under the ASW CCO (as it would be deemed the disposal of aluminium smelter waste with leachable fluorides above the threshold limits in the ASW CCO).

Based on the EPA's position, one of the following mechanisms could be implemented to allow the Containment Cell to proceed in compliance with the EHC Act (and applicable environmental laws):

1. The development of a new regulation under the POEO Act, or amendment of the existing POEO Regulation, that specifically addresses any issues with compliance with the ASW CCO.

   Section 5 of the *Environmentally Hazardous Chemicals Act 1985* (EHC Act) states:

   '(3) Nothing in this Act affects the operation of the Radiation Control Act 1990 or the ***Protection of the Environment Operations Act 1997*** (POEO Act) ***or any regulations made under those Acts****.'*

   Section 7(2) of the POEO Act states:

   '(a) this Act prevails over any other Act or statutory rule to the extent of any inconsistency, and

   (b) a regulation made under this Act prevails over any other statutory rule to the extent of any inconsistency.'

   As such a new regulation under the POEO Act (as described under Section 323 of the POEO Act) or the existing Protection of the Environment Operations (Waste) Regulation 2014 could be implemented to address the CCO compliance issues. The option of such a regulation under the POEO Act was identified by the EPA in a meeting with Hydro on 7 February 2017.

2. A regulation can be granted under Section 58(2)(d) of the EHC Act that has the effect of exempting the Project from the application of the ASW CCO.

   Section 58(2)(d) states that:

   "*(2) Without affecting the generality of subsection (1), a regulation may:*

   (d) ***exempt persons****, or persons of a prescribed class, either absolutely or subject to conditions or in prescribed circumstances or for prescribed periods of time,* ***from any provision of this Act or the regulations*** *or of any order made under this Act*"

   A regulation can be developed by the EPA to exempt the proponent of the Project from complying with the ASW CCO (or specific elements of the ASW CCO).

3. Creation of a new CCO. A new CCO applicable to mixed aluminium smelter waste (or similar as applicable to the Capped Waste Stockpile material) and the proposed Containment Cell could be developed and implemented. Under Section 11of the EHC Act "*The Authority may at any time make a chemical control order in relation to a declared chemical waste*".

   A new CCO can be created through the implementation of the following under the EHC Act:

   - Hydro submits an application to the EPA for a prescribed activity (the Containment Cell) in relation to an environmentally hazardous chemical (mixed aluminium smelter waste or similar) or a declared chemical waste (aluminium smelter waste) (in accordance with Section 13);
   - The EPA considers the prescribed activity and/ or chemical. The EPA may choose to request the Hazardous Chemicals Advisory Committee (the Committee) to consider the prescribed activity and/ or chemical and make a recommendation, but is not required to do so (in accordance with Section 15);
   - The EPA makes an assessment of the prescribed activity and/ or chemical and determine if a new chemical control order is required (in accordance with Section 20).
   - The EPA determines whether to approve the prescribed activity unconditionally or make it subject to conditions under the CCO (in accordance with Section 23),

4. Amendments to the ASW CCO. Amendments could include the inclusion of treating as an approved prescribed activity (and an appropriate definition of treating), and having the ASW CCO reflect the definitions and criteria as defined under the POEO Regulation. Amendment of the ASW CCO would require a similar process to the creation of a new CCO.
5. Revocation of the ASW CCO. Hydro is aware that a review of the EHC Act and the ASW CCO has been underway since 2015. During the public consultation period regarding potential changes to the ASW CCO, Hydro recommended revocation of the CCO, so as to avoid the conflicts between the EHC Act and the POEO Act. Hydro understands this review is still underway as of 6 September 2017.

In addition to the current review of the EHC Act and the ASW CCO, Hydro is aware that the EPA has undertaken several previous reviews of the ASW CCO since 1998. These reviews identified the duplication of regulation between the EHC Act and the POEO Act (and previously the repealed *Waste Minimisation and Management Act 1995*). The repeal of the ASW CCO was considered and recommended on a number of occasions.

The EPA advised in its submission on the Remediation Project EIS dated 4 January 2017 that "*it is possible to pursue each of these three options* (Options 2, 4 and 5 listed above) *however appropriate processes need to be followed and final decision is at the discretion of the EPA. The EPA would need to consider whether any of these options is desirable from a policy perspective*".

A key purpose of the Options Study is to provide the EPA with sufficient evidence to demonstrate that the Containment Cell is the best option for the Capped Waste Stockpile material and, as a result, provide the EPA with sufficient justification to exercise its discretionary powers to regularise the proposal pursuant to one of the options set out above.

A9.2 Protection of the Environment Operations Act 1997

A9.2.1 Current Application

Hydro holds an Environment Protection Licence (EPL) (No. 1548) that covers the Smelter and parts of the Hydro Land. The EPL permits the following scheduled activities:

- Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste; and
- Waste storage - other types of waste.

A9.2.2 Potential Application

It is anticipated the existing EPL would continue to apply to the Smelter and parts of the Hydro Land throughout the remediation activities. In addition to the existing scheduled activities, it is expected that the following scheduled activities would be included to regulate the remediation activities and the construction and filling of the Containment Cell:

- Contaminated soil treatment. The definition of contaminated soil treatment under Clause 15 of Schedule 1 of the POEO Act includes "*the on-site or off site treatment of contaminated soil (including, in either case, incineration or **storage** of **contaminated soil** but excluding excavation for treatment at another site) … where it treats contaminated soil originating exclusively on site, it has a capacity… to treat (otherwise than by incineration) and **store** more than **30,000 cubic metres of contaminated soil***".

This option would require the storage of more than 30,000 cubic metres of contaminated soil in the Containment Cell. As such it would trigger this scheduled activity.

- Chemical storage. The definition of chemical storage under Clause 9 of Schedule 1 of the POEO Act includes "**general chemicals storage**, meaning the **storage** or packaging in containers, bulk storage facilities **or stockpiles** of any chemical substance classified as a **dangerous good** in the Transport of Dangerous Goods Code". It also includes "**on-site generated chemical waste storage** means the **storage** of any chemical substance **produced on site** that is prescribed waste (that is, hazardous waste, restricted solid waste or liquid waste, or any combination of them)".

This option would require the storage of aluminium smelter wastes that are classified under the Dangerous Goods Code, as well as hazardous wastes and restricted solid wastes.

The POEO Act and its regulations do not include a definition of storage. However the Capped Waste Stockpile material (which would classify as "chemical waste") would be stored in the same facility and conditions as the contaminated soils (in the Containment Cell).

The EPA advised in its submission on the Remediation Project EIS dated 4 January 2017 that it believed that the contaminated soil treatment scheduled activity would apply. It has also previously verbally advised that the chemical storage scheduled activity could be applied to the aluminium smelter waste.

A number of monitoring and management measures to be implemented during and following completion of construction of the Containment Cell would also be included within a revised EPL.

In addition to the additional scheduled activities and associated monitoring and management requirements, the EPA can add conditions that relate to the management of the completed Containment Cell:

- Financial assurance to secure the performance of the environmental obligations set out in the EPL (in accordance with section 70 of the POEO Act;
- A policy of insurance for the payment of costs for clean-up action, and for claims for compensation or damages, resulting from pollution caused by the scheduled activity (in accordance with section 72 of the POEO Act); and
- Arrangement of a positive covenant under section 88E of the *Conveyancing Act 1919* (in accordance with section 74 of the POEO Act).

Under Section 80 of the POEO Act the EPA can determine that the EPL can be surrendered if it believes that the scheduled activity/ activities have ceased and there will not be an ongoing environmental impact from the activity after the activity has ceased. The surrender of the EPL can be unconditional or, under Section 81 of the POEO Act, the surrender can be subject to conditions that the EPA deems appropriate. This can include conditions that were imposed when the EPL was operational or new conditions considered appropriate based on the operational performance of the Containment Cell.

A9.3 Protection of the Environment Operations (Waste) Regulation 2014

The Protection of the Environment Operations (Waste) Regulation 2014(the POEO Waste Regulation) describes the regulatory processes for waste management in accordance with the POEO Act.

Under Clause 98 of the POEO Waste Regulation, the EPA can grant an immobilised contaminants approval, which permits reassessment and reclassification of a waste to enable its placement in a Containment Cell or landfill appropriate to its reclassification. This reclassification may be based on treatment that the material has received. The *Waste classification guidelines Part 2: Immobilisation of waste* (EPA, 2014) states that "There are several ways to immobilise contaminants in waste:

- Natural immobilisation where the contaminant(s) are already present in an immobilised form and the waste is suitable for landfilling without additional treatment
- Chemical fixation where the contaminant(s) are chemically converted to a stable form
- Micro-encapsulation where the waste is treated to physically lock up the contaminant(s) in the structure of the treated waste
- Macro-encapsulation where an enduring physical barrier is placed between the contaminated waste and the surrounding landfill environment."

In granting an immobilised contaminants approval for a given waste, the EPA may attach special conditions and/or disposal restrictions to the Approval in accordance with the hazardous and/or toxic properties of the waste.

A general immobilised contaminants approval can be granted to cover a particular type of material or waste. Where a material is not covered by an existing general approval a specific immobilised contaminants approval would be required.

In applying for an immobilised contaminants approval the applicant is to investigate alternative to immobilisation and show that "it is not practical to reuse, recycle or reprocess the waste" (EPA, 2014).

This report considers the alternatives to the macro-encapsulation (containment) of the material and it is concluded that it is the viable option for the material.

In addition to this information, the immobilised contaminants approval application is required to include the following:

- Details of the proposed immobilisation methodology.
- Details on quantity, form, background information and chemical composition of the waste.
- The equipment to be used and evidence of quality assurance/quality control.
- A description of the nature of the physical barrier to be established between the waste and the surrounding environment.
- Demonstration that the means by which the contaminants are immobilised will be maintained over time.

The immobilised contaminants approval application would be assessed in parallel with the assessment and determination of the State Significant Development Application for the Containment Cell.

Under the POEO Waste Regulation an immobilised contaminants approval would only be required for the containment of the Capped Waste Stockpile material due to the concentrations of total polycyclic aromatic hydrocarbons and benzo(a)pyrene resulting in the material being deemed hazardous waste. Due to the nature of these contaminants within the Capped Waste Stockpile material (these have been vitrified) they are naturally immobilised and no further treatment is required. An application for a specific immobilised contaminants approval addressing the information requirements listed above would need to be submitted to, and approved by, the EPA.

A9.4 Environmental Planning and Assessment Act 1979

The placement of the Capped Waste Stockpile material in the Containment Cell is permitted under the EP&A Act. The Remediation Project EIS (Ramboll Environ, 2016) was prepared as the placement of the material in the Containment Cell is a State Significant Development.

Clause 8(1)(b) of the *State Environmental Planning Policy (State and Regional Development) 201*1 (S&RD SEPP) provides that development is declared to be State Significant Development for the purposes of the EP&A Act if the development is specified in Schedule 1 or 2 to the S&RD SEPP.

Schedule 1 to the S&RD SEPP identifies 'waste and resource management facilities' as a category of State Significant Development, including:

> *"(5) Development for the purpose of hazardous waste facilities that transfer, store or dispose of solid or liquid waste classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste that handles more than 1,000 tonnes per year of waste*."

The Capped Waste Stockpile includes material (spent pot lining) which is deemed a dangerous good under the Australian Dangerous Goods Code.

Approval of the current State Significant Development Application would allow the Capped Waste Stockpile material to be placed in the Containment Cell (subject to the required approvals and licences required from the EPA).