future generation

webuild | clough | lane

MANAGEMENT PLAN

SNOWY 2.0 MAIN WORKS – POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

S2-FGJV-ENV-PLN-0091

REV E

MAY 2025

ABSTRACT

The Plan is a requirement of the Main Works EPL and outlines the procedures in place to minimise the risk of a pollution incident occurring on the premises of the Main Works Project site including notification, action and communication procedures to manage pollution incidents.

Revision Record

E	13.05.2025	Revised based on findings of the annual review	J Vivian	E Porter	F Lazzarin
Rev.	Date	Reason for Issue	Responsible	Accountable	Endorsed

Document Verification

RACIE Record

R esponsible:	Name: Jemma Vivian Job Title: Environmental Coordinator Signed:  Date: 27.05.2025
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I nformed:	See distribution list on Page 3.
E ndorsed:	Name: Fabrizio Lazzarin Job Title: Project Director Signed: DocuSigned by: 7CBEEE718ACA458... Date: 28 May 2025

RACIE Terms

R	**Responsible** The person who actually produces the document.
A	**Accountable** The person who has the answer for success or failure of the quality and timeliness of the document.
C	**Consulted** Those who must be consulted before the document is published.
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15.05.2025	EC	Peter Cowen	SHL	Cooma
15.05.2025	EC	Nicola Fraser	SHL	Cooma

NOTE:

***(1) OHC** – Original Hard Copy / **EC**–Electronic Copy / **HC** – Hard Copy / **Aconex** –Electronic Document Management System*

Revision Tracking

Rev.	Date	Description of Revision
A	19.08.2020	Rev A for SHL review
B	21.09.2020	Rev B incorporating SHL comments
C	31.05.2023	Revised based on findings of the annual review
D	02.04.2023	Revised based on findings of the annual review
E	19.05.2025	Revised based on findings of the annual review

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TABLES

ABBREVIATIONS AND DEFINITIONS

Acronym	Definition
AfL	Agreement for Lease with NPWS
ANZECC	Australian and New Zealand Environment and Conservation Council
APZ	Asset Protection Zone
AS/NZ	Australian Standard/New Zealand Standard
BC Act	*Biodiversity Conservation Act 2016*
BCD	Biodiversity and Conservation Division (part of Department of Planning, Industry and Environment)
BMP	Biodiversity Management Plan
BMS	Future Generation Business Management System
BoM	Bureau of Meteorology
CNMP	Construction Noise Management Plan – Rock Forest
Contractor	WeBuild (formerly Salini Impregilo), Clough and Lane have formed the Future Generation Joint Venture (Future Generation). Future Generation is the contractor who will be carrying out the Snowy 2.0 Main Works on behalf of Snowy Hydro Limited. References to the Contractor in this Environmental Management Strategy refers to Future Generation and includes all its sub-contractors.
Construction envelope	The envelope within which the disturbance area of the development may be located.
CSSI	Critical State significant infrastructure
Cth	Commonwealth
DAWE	The Commonwealth Department of Agriculture, Water and the Environment which is responsible for administering the *Environment Protection and Biodiversity Conservation Act 1999.*
Development	The development of the Exploratory Works and Main Works as modified by the conditions of this approval
Disturbance area	The area within the construction envelope where the development may be carried out.
DPIE or Department	NSW Department of Planning, Industry and Environment
DPI Fisheries	Department of Primary Industries – Fisheries
EIS	*Snowy 2.0 Main Works - Environmental Impact Statement*
EMS	Environmental Management Strategy
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve
Environmental policy	Statement by an organisation of its intention and principles for environmental performance
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPA	NSW Environment Protection Authority

Acronym	Definition
EPL	Environment Protection Licence
ERMP	Emergency Response Management Plan
ESCP	Erosion and Sediment Control Plan
Exploratory Works	The development of an exploratory tunnel and associated infrastructure described in the Environmental Impact Statement for the Snowy 2.0 Exploratory Works (CSSI 9208) dated July 2018, and modified by the: • Submissions Report dated October 2018 and additional information provide to the Department on 17 October 2018, 19 November 2018 and 23 January 2019; • Modification Report dated 6 June 2019, associated Submissions Report dated 2 September 2019 and amendment letter dated 4 October 2019; and • Modification Report dated 17 October 2019 and associated Submissions Report dated 10 January 2020.
Exploratory Works EIS	*Environmental Impact Statement Exploratory Works for Snowy 2.0*
FAB	Fresh Air Base
FRNSW	NSW Fire and Rescue
Future Generation	Future Generation Joint Venture
GWMP	Groundwater Management Plan
HMP	Heritage Management Plan
HV	Heavy Vehicle
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance (*Infrastructure Approval – CSSI 9687*).
ISO	International Standards Organisation
KNP	Kosciusko National Park
Main Works	The development of an underground power station and associated infrastructure described in the Environmental Impact Statement for the Snowy 2.0 Main Works (CSSI 9687) dated September 2019, and modified by the: • Preferred Infrastructure Report and Response to Submissions – Snowy 2.0 Main Works, dated February 2020; and • Additional information provided to the Department by EMM on 24 March 2020 and 7 April 2020.
Main Works EIS	*Snowy 2.0 Main Works - Environmental Impact Statement*
MNES	Matters of national environmental significance under the *EPBC Act 1999*
NATA	National Association of Testing Authorities
NEM	National Electricity Market
NPW Act	*National Parks and Wildlife Act 1974*
NPWS	National Parks and Wildlife Services
NSW	New South Wales
NSW DPI	The NSW Department of Primary Industries within Regional NSW
OSOM	Oversize Overmass
Occupier, the	the person who has the management or control of the premises (Future Generation)
PIRMP	Pollution Incident Response Management Plan (this plan)
Planning Secretary	Planning Secretary under the EP&A Act, or nominee

Acronym	Definition
POEO Act	*Protection of the Environment Operations Act 1997*
POEO(G) Reg	*Protection of the Environment Operations (General) Regulation 2009*
POEO Reg Amendment	*Protection of the Environment Operation Amendment Regulation 2012*
PoM	Plan of Management
Project, the	Snowy 2.0 Main Works
Project area	The broader region within which Snowy 2.0 will be built and operated, and the extent within which direct impacts from Snowy 2.0 Main Works are anticipated.
RTS or Submissions Report	Snowy 2.0 Main Works – Response to Submissions
SAP	Sensitive Area Plans
Snowy 2.0	A pumped hydro-electric expansion of the Snowy Scheme that will link the two existing reservoirs of Tantangara and Talbingo through underground tunnels, and include a new underground power station with pumping capabilities
Snowy Hydro	Snowy Hydro Limited
SES	State Emergency Services
SMP	Spoil Management Plan
SWMP	Surface Water Management Plan
TARP	Trigger Action Response Plan
TBM	Tunnel Boring Machine
TfNSW	Transport for NSW
Waste MP	Waste Management Plan
WMP	Water Management Plan

1. INTRODUCTION

1.1. Project Description

1.1.1. Overview

Snowy Hydro Limited (Snowy Hydro) is constructing a pumped hydro-electric expansion of the Snowy Mountains Hydro-electric Scheme (Snowy Scheme), called Snowy 2.0. Snowy 2.0 is being built in two stages: Exploratory Works (which is completed) and Snowy 2.0 Main Works (which commenced in October 2020).

Snowy 2.0 is a pumped hydro-electric project that will link the existing Tantangara and Talbingo reservoirs through a series of new underground tunnels and a hydro-electric power station. Most of the project's facilities will be built underground, with approximately 27 kilometres of concrete-lined tunnels constructed to link the two reservoirs and a further 20 kilometres of tunnels required to support the facility. Intake and outlet structures will be built at both Tantangara and Talbingo Reservoirs.

Snowy 2.0 will increase the generation capacity of the Snowy Scheme by an additional 2,000 MW, and at full capacity will provide approximately 350,000 MWh of large-scale energy storage to the National Electricity Market (NEM). This will be enough to ensure the stability and reliability of the NEM, even during prolonged periods of adverse weather conditions.

WeBuild (formerly Salini Impregilo), Clough and Lane have formed the Future Generation Joint Venture (Future Generation) and have been engaged to deliver Snowy 2.0 Main Works. This Pollution Incident Response Management Plan (PIRMP, and this plan) has been prepared for Snowy 2.0 Main Works.

1.1.2. Main Works Construction Activities and Program

The Snowy 2.0 project includes, but is not limited to, construction of the following:

- pre-construction preparatory activities including dilapidation studies, survey, investigations, access etc;
- Exploratory Works including:
  - an exploratory tunnel to the site of the underground power station;
  - horizontal and test drilling;
  - a portal construction pad;
  - an accommodation camp;
  - barge access infrastructure;
- an underground pumped hydro-electric power station complex;
- water intake structures at Tantangara and Talbingo reservoirs;
- power waterway tunnels, chambers and shafts;
- access tunnels;
- new and upgraded roads to allow ongoing access and maintenance;
- power, water and communication infrastructure, including:

- a cable yard to facilitate connection between the NEM electricity transmission network and Snowy 2.0;
- permanent auxiliary power connection;
- permanent communication cables;
- permanent water supply to the underground power station; and

- post-construction revegetation and rehabilitation.

The Snowy 2.0 construction program is summarised in Figure 1-1.

HIGH SUMMARY PROGRAMME AS OF SEP 2024

ID	Task Name	Forecast_24 Start	Forecast_24 Finish	AUG-24 Start	AUG-24 Finish	Variance (FOR-24) In Months
1	**Milestones**					
2	Notice to Proceed for Main Works		28 Aug '20		28 Aug '20	0
3	Notice of Commencement for Main Works		21 Oct '20		21 Oct '20	0
4	**Access Adit & Tunnels**					
5	**Main Access Tunnel**					
6	Portal + Cradle Works	11 Nov '19	15 Oct '20	11 Nov '19	15 Oct '20	0
7	Assembly of TBM	15 Oct '20	18 Mar '21	15 Oct '20	18 Mar '21	0
8	Substation Rectification / TBM SAT / Blind Ring Installation	8 Apr '21	4 Jun '21	8 Apr '21	4 Jun '21	0
9	Employer's Notice for Work Stoppage at MAT	4 Jun '21	22 Jun '21	4 Jun '21	22 Jun '21	0
10	Main Access Tunnel to Crown of Machine Hall	22 Jun '21	15 Jun '23	22 Jun '21	15 Jun '23	0
11	**ECVT**					
12	ECVT Portal + Cradle Works	26 Oct '20	20 Aug '21	26 Oct '20	20 Aug '21	0
13	Assembly of TBM	17 Jul '21	3 Dec '21	19 Jul '21	3 Dec '21	0
14	ECVT to Crown of Machine Hall	16 Dec '21	1 Sep '23	16 Dec '21	1 Sep '23	0
15	**Tantangara Portal**					
16	Tantangara Portal + Cradle Works	14 Nov '20	26 Sep '21	16 Nov '20	26 Sep '21	0
17	Assembly of TBM	26 Sep '21	21 Mar '22	27 Sep '21	21 Mar '22	0
18	**Waterways Tunnels**					
19	Tail Race Tunnel (Including TBM Dismantling)	18 Jul '23	7 Aug '25	18 Jul '23	22 Oct '25	-2.53
20	Tail Race Tunnel - D&B Tunnel + Lining (with Junction + Adit Plug)	5 Jul '23	23 Mar '27	5 Jul '23	18 Mar '27	0.17
21	Upstream Surge Shaft	18 Oct '22	26 Nov '27	18 Oct '22	10 Dec '27	-0.47
22	Talbingo Intake	24 Jan '22	23 Jul '27	24 Jan '22	3 Aug '27	-0.37
23	Tantangara Intake	23 Feb '22	1 Aug '27	23 Feb '22	11 Jul '27	0.7
24	Inclined Pressure Shaft + HRT upto Ch. 17+000 (including TBM Dismantling)	17 May '23	16 May '26	17 May '23	29 May '26	-0.43
25	Head Race Tunnel (Tantangara & TBM3 + Tant. Junction + Adit Plug)	6 Dec '23	12 Nov '27	6 Dec '23	17 Feb '28	-3.23
26	Head Race Tunnel (Marica Adit & TBM 04 Tunneling + TBM Dismantling + D. Chamber)			17 Jan '25	12 Jul '27	
27	Head Race Tunnel (Secondary Lining + Marica Junction + Adit Plug)			8 Feb '27	17 Feb '28	
28	**Power Station Complex**					
29	**Construction**					
30	Machine Hall Excavation	16 Jun '23	6 Aug '25	16 Jun '23	27 Oct '25	-2.73
31	Concrete + E&M Installation works (Dry Commisisoned)	28 Jul '25	25 Jul '28	1 Apr '25	16 Jul '28	0.3
32	Commissioning - All Units	17 Dec '27	11 Apr '29	23 Mar '28	31 Dec '28	3.37
33	Demobilization	11 Apr '29	9 Oct '29	1 Jan '29	30 Jun '29	3.37
34	Project Completion		9 Oct '29		30 Jun '29	3.37

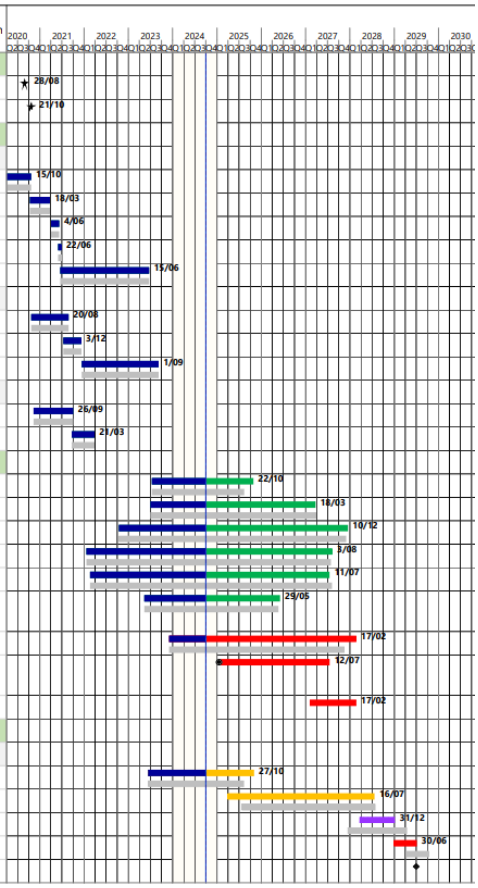


Figure 1-1: Indicative Timing of Snowy 2.0 Main Works

1.2. Purpose

The works required to be undertaken for Snowy 2.0 Main Works include scheduled activities, which require licensing under the *Protection of the Environment Operations Act 1997* (POEO Act).

Environment Protection Licence (EPL) 21266 has been issued for the project for the scheduled activity of extractive activities for the Exploratory Works and the construction of the Main Works phases. The premises boundary for the Exploratory Works EPL has been expanded to encompass both Exploratory Works and Main Works. The governing scheduled activity for Main Works was revised to electricity generation.

All scheduled activities licensed by the Environment Protection Licence (EPL) will be subject to this Pollution Incident Response Management Plan (PIRMP or plan), including the remainder of Exploratory Works and the duration of Main Works. Revision of this PIRMP will be undertaken on annual basis.

This plan has been prepared in accordance with the legislative requirements for a PIRMP prescribed in the POEO Act, the *Protection of the Environment Operations (General) Regulation 2009* (POEO(G) Reg), the *Protection of the Environment Operation Amendment Regulation 2012* (POEO Reg Amendment) and the conditions in the EPL (21266).

There is no external agency or regulatory approval required for the PIRMP.

This plan outlines the procedures in place to minimise the risk of a pollution incident occurring on the premises including notification, action and communication procedures to manage pollution incidents.

Construction personnel will be required to undertake works in accordance with this plan.

The objectives of this plan are to:

- ensure comprehensive and timely communication of a pollution incident;
- minimise and control the risk of a pollution incident through identification of risks and the development of planned actions to minimise and manage those risks;
- ensure responsibilities are assigned and training in pollution incident response is undertaken; and
- ensure the plan is implemented, tested and reviewed.

2. ENVIRONMENTAL REQUIREMENTS

2.1. Legislation

Legislation relevant to PIRMP includes:

- *Protection of the Environment Operations Act 1997* (POEO Act);
- *Protection of the Environment Operations (General) Regulation 2009* (POEO(G) Reg); and
- *Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012* (POEO(G) Reg Amendment).

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in Appendix A2 of the EMS. Compliance of this document with relevant sections of the POEO Act and project EPL are demonstrated in Appendix A.

2.2. Guidelines

The plan has been developed in accordance with the NSW EPA *Preparation of Pollution Incident Response Management Plans* (2022).

3. RESPONSIBILITIES

In the event of an incident, the personnel who are immediately involved on-site or witness the event are responsible to act appropriately by way of immediately notifying the event or the observation of a potential event to the Site Supervisor, the Emergency Response Team (ERT) and a member of the Quality, Health, Safety, Security and Environment (QHSE) Team.

The personnel immediately involved are also required to act appropriately by, only if safe to do so, attend the event to try and cease the event or minimise its impact.

The Site Supervisor, ERT and/or QHSE Team must report the event or potential event to the relevant response personnel including the QHSE Director, Emergency Response Manager, Project Manager, Construction Manager and Environment Manager. These response personnel are responsible for:

- managing the response to a pollution incident, and
- activating the PIRMP including notifying external relevant authorities.

Table 3-1 details the names, position titles and 24-hour contact details of the key response personnel.

Table 3-1: Response personnel contact details

Position	24-Hour Contact
QHSE Director – David Drummond	0477 754 142
Environment Manager – Ellen Porter Deputy Environment Manager – Nathan Jones	0466 876 865 0456 863 725
Emergency Response Manager – Christopher Cowan	0458 005 259
Operations Safety Manager - Peter Ford Operations Safety Manager – Christopher Stephens	0437 414 239 0439 060 423
Project Manager Lobs Hole – Gianluca Pianezze Project Manager Marica TBM 4 – Tim Dean Project Manager Marica Surge Shaft – Peter Benson Project Manager Tantangara – Matteo Passarani	0415 756 819 0411 111 476 0430 217 197 0481 917 629
Deputy Construction Manager Talbingo – Jose Flores Basilio Deputy Construction Manager Talbingo – Dmytro Khokholkov Deputy Construction Manager Tantangara – Mario Markovic	0456 977 775 0499 188 965 0428 218 292
General Superintendent Lobs Hole – Mitchell Coustley General Superintendent Marica – Ashley Robinson General Superintendent Tantangara – Paul Rogan	0437 149 255 0428 399 581 0400 394 174
Security Manager – Graham Bennett Security Coordinator – Brendan Barnes	0498 345 199 0475 635 654
ERT Shift Phone – Lobs Hole Mechanical Shift Phone – Lobs Hole Environment Shift Phone – Lobs Hole	0447 276 669 0428 202 506 0407 187 255

Note: Contact details will be updated on a regular basis on the site environmental incident response contact sheet.

4. DESCRIPTION OF HAZARD AND LIKELIHOOD

Hazards to human health or the environment, the likelihood of the hazards occurring and the mechanisms to manage that risk were assessed as part of the Main Works EMS environmental (aspects and impacts) risk assessment. This risk assessment details the environmental aspects identified for the project, the initial risk category prior to appropriate management strategies, and reference to the appropriate document which detailing proposed mitigation strategies. A copy of the (aspects and impacts) risk register is presented in Appendix B.

The ongoing determination of environmental aspects and impacts will be achieved through the risk management processes outlined in Section 4.3 of the EMS, which results in the maintenance of a list of environmental risks (aspects and impacts), corresponding risk mitigation strategy and risk ranking for each risk. Each environmental risk is categorised, based on the following:

- the environmental aspect;
- type of potential impact (or consequence); and
- likelihood of occurrence.

A risk matrix for the initial HSSE risk assessment is provided in Table 4-1.

Table 4-1: HSSE Risk Matrix - Rating

	Descriptor	Actual / Potential Consequence				
		Insignificant (5)	Minor (4)	Moderate (3)	Major (2)	Catastrophic (1)
Probability	Has Occurred /Almost Certain	9	16	18	23	25
	Likely	4	11	17	20	24
	Possible	3	10	13	19	22
	Unlikely	2	6	12	14	21
	Rare	1	5	7	8	15

Key			HSSE Risk Response Guide
Risk Level	Rating Range		
Low	1	8	Confirm no further control measures are required to demonstrate the risk ALARP. Responsible Supervisor to ensure all identified control measures are in place prior to the work progressing.
Moderate	9	15	Action is required to identify control measures to reduce the risk to ALARP. Work can only progress at this risk level with approval of Project Management.
High	16	22	Immediate action is required to identify control measures to reduce the risk to ALARP. Risk must be added to Project Risk Register for monitoring. Work can only progress at this risk level with approval of the Project Manager or Future Generation Senior Management.
Very High	23	25	This denotes unacceptable event or level of risk. Immediate action is required to identify control measures to reduce the risk to ALARP. Risk must be added to Project Risk Register for monitoring.

*The HSSE Risk Matrix and Guidelines DO NOT replace the requirements for risk assessment and treatment carried out in accordance with the Risk Management and Assurance Operating Standard (CORP-RA-OS-G-0003) and should only be used when performing HSSE Risk Assessment at a Project Level.

**The HSSE Risk Matrix shall be used to determine the level and timing of incident notification, classification and investigation. Events rated 19 or above (highlighted by shading and bold border) are considered High Potential Incidents and shall be reported accordingly.

Descriptions provided in Table 4-2 were used to determine the probability and consequence of an event.

Table 4-2: Likelihood table

HSSE Consequence / Severity Table

Consequence	Health & Safety	Environmental Impact	Security	Business Risk	Financial impact	Murray & Roberts Injury Consequences
Catastrophic	Multiple fatalities, Multiple serious disabling injuries.	Release of pollutants capable of causing irreversible environmental harm requiring national / international resources for remediation.	One or more fatalities Terrorists attacks. Inability to conduct any business.	Company prosecuted. Loss of future work. Project shutdown. Violation of Company policy. Widespread dissatisfaction resulting in legal action.	>$30 Million	**Critical (Level 5)** Fatal injury. Incident has the potential for more than one fatal injury.
Major	Single fatality, serious injury resulting in permanent disability. Multiple injured parties.	Release of pollutants to sensitive areas; Immediate off-site contamination requiring state / regional external resource for remediation. Long term impact (6-12 months)	Deliberate attacks on staff and family resulting in severe injuries. Kidnapping. Severe delays to business operations. Rape.	Adverse national media coverage. Significant reduction in customer satisfaction. Threat to project success with potential for legal action.	$10M - $30M	
Moderate	Lost Time Injury Restricted Duties Injuries Injury reportable to Regulatory body	Environmental harm reportable to Government authority. Breach of licence conditions / lease. Onsite contamination with the potential to cause offsite contamination. Medium term impact (1-6 months)	Threat and intimidation of staff. Assault resulting in minor/no injury. Theft/vandalism/ sabotage of equipment that cannot easily be replaced. Short delays or interruptions to operations.	Local media coverage. Failure causing customer dissatisfaction with moderate delay, rework or extra work requiring additional resource. Client forced to impose penalties.	$2M - $10M	**Major (Level 4)** Incident has the potential for fatal injury **Serious (Level 3)** Lost time injuries. Incident has the potential for permanent disablement.
Minor	Medical Treatment	Minor onsite pollution not within confines of protected area. No long term impact. Clean up within 1 month.	Crime with minimal impact. Theft / Vandalism of nuisance value only. No lasting impact on business operations	Telephone or written complaints. Failure causing slight customer concern and inconvenience, resolved with current levels of resource.	$50K – $2M	**Minor (Level 2)** Medical treatment injuries
Insignificant	First Aid Treatment No treatment required	Localised / Contained impact / Immediate complete fix	Insignificant crime Theft of insignificance. No impact on business operations.	Minimal or no impact to project delivery.	Less than $50K	**Low (Level 1)** First aid treatment injuries

Probability

Probability	Description
Almost Certain	This event is expected to occur or is known to have occurred frequently at Future Generation in similar situations.
Likely	This event may occur or is known to have occurred at Future Generation in similar circumstances.
Possible	This event might occur or is known to have occurred at Future Generation in additional circumstances.
Unlikely	This event could occur or is known to have occurred in the industry but not at Future Generation.
Rare	This event may only occur in exceptional circumstances or is not known to have occurred in the industry.

5. PRE-EMPTIVE ACTIONS TO BE TAKEN

Future Generation will undertake pre-emptive measures including training, inspections and monitoring outlined in the EMS and supporting sub-plans, summarised below, to minimise or prevent any risk of harm to human health or the environment arising out of the scheduled activities conducted by Future Generation.

5.1. Inspections

Control measures will be inspected on a weekly basis by Future Generation's HSE Team. The purpose of the weekly checklist is to:

- provide a surveillance tool to ensure that safeguards are being implemented and housekeeping is maintained;
- identify where problems might be occurring;
- identify where sound environmental practices are not being implemented; and
- facilitate the identification and early resolution of problems.

Improvements and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed. Any non-conformances identified through the checklist process will be highlighted and an environmental inspection report (minor issues) or an environmental incident report completed.

The issue will remain 'open' until:

- the issue has been resolved;
- a new or revised procedure has been established and implemented; or
- training has been provided to relevant personnel/ sub-contractors.

The findings of inspections will be discussed at toolbox meetings and issues raised will be considered by the Future Generation project management team for review or improvement of the environment procedures.

An inspection schedule is provided in Table 5-1.

Table 5-1: Inspection schedule summary

Activity	Frequency	Responsibility	Record
Environmental site inspection	Weekly	Future Generation Environmental Manager or nominated representative. Snowy Hydro to be invited at the discretion of Future Generation.	Site inspection checklist.
Environmental pre-post rainfall inspection	Before and after rain event	Future Generation Environmental Manager or nominated representative. Snowy Hydro to be invited at the discretion of Future Generation.	Site inspection checklist.

5.2. Monitoring Programs

Monitoring will be undertaken for environmental aspects of the project to confirm the adequacy of implementation of the management measures and will highlight any non-conformances or potential non-conformances during construction of the project. Specific monitoring programs have been developed for high-risk aspects of the project, and these are included within the relevant management plans.

The monitoring programs have been developed to address the requirements of the conditions of Approval and project EPL. In general, these require that:

- baseline data available, additional data to be obtained and timing;
- the parameters to be monitored and the location and frequency;
- the reporting of monitoring and analysis results against relevant criteria;
- methods that will be used to analyse the monitoring data; and
- procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and
- any consultation to be undertaken in relation to the monitoring programs.

The timing, frequency, methodology, locations and responsibilities for the proposed environmental monitoring programs are specified in the respective management plans and summarised in Table 5-2. The monitoring programs range from those involving formal sample collection, analysis and measurement, to those involving a more qualitative assessment. This table is subject to update based on developments of the EMS and associated sub-plans relevant to each monitoring item.

Table 5-2: Monitoring programmes summary

Activity	Management Plan	Frequency	Responsibility	Record	Timing
EPL required					
Receiving surface water monitoring Comprehensive Sampling (in accordance with EPL 21266)	Surface Water Management Plan (SWMP) Spoil Management Plan (SMP)	In accordance with the approved SWMP	Future Generation Environmental Team	Field sampling (survey 123) records and laboratory tests reports; Monthly water reports	In-situ – Weekly Comprehensive – Monthly TARP – Outside of Expected range
Waste Management (Construction Waste, Contaminated Soils, Oily Waste & General Waste)	Waste management Plan (WMP)	In accordance with the approved WMP	Future Generation Waste Services Team	Waste Dockets, Waste Management Record	Daily, Weekly & On-call basis
Air quality & Dust Monitoring	Air Quality Management Plan	In accordance with the approved AQMP	Future Generation Drill & Blast / TBM Teams HSE Team	D&B - Air and Dust & Lux Monitoring	Continuous inside the tunnels and at the accommodation camps
Groundwater quality monitoring	Groundwater Management Plan (GMP) Spoil Management Plan (SMP)	In accordance with the approved GMP	Future Generation Environmental Team	Field sampling and testing records and NATA tests reports; Quarterly groundwater reports Field sampling and testing records and NATA tests reports;	Quarterly In-situ – Weekly Comprehensive – Monthly TARP – Outside of Expected range
Noise	Construction Noise Management Plan	In accordance with approved CNMP	Future Generation Environmental Team	Noise Monitoring records	Monthly
Extreme weather monitoring and TARP	Emergency Response Management Plan Surface Water Management Plan (SWMP)	In accordance with the approved SWMP	Future Generation HSE Team/ Site Supervisors	ESC Checklists Pre-rainfall Inspection records Post-rainfall Inspection records	As per rain events. Weekly during normal construction hours; Prior to forecast rainfall (>50% chance

Activity	Management Plan	Frequency	Responsibility	Record	Timing
	Erosion and Sediment Control Plan			Field sampling (survey 123) records and laboratory tests reports	of 10mm or more in 24 hours), Daily during rain events (if safe to do so).
Spoil Monitoring (Excavated rocks)	Spoil Management Plan	In accordance with the approved SMP	Future Generation Spoil Management Team/ Site Supervisors	Inspection report Laboratory test report	Lobs Hole: TBM – 1 sample every 5 rings or 10m D&B – 1 sample every 8m Marica: 2 samples every 1m depth. Tantangara: 1 sample every 1000m^3
Spoil Emplacement (PSE)	Spoil Management Plan Surface Water Management Plan (SWMP) Groundwater Management Plan (GMP)	In accordance with the Surface and Groundwater Management Plan	Future Generation Spoil Management Team/ Site Supervisors / Site Engineers	Field sampling and testing records and NATA tests reports; Quarterly groundwater reports	Quarterly In-situ – Weekly Comprehensive – Monthly TARP – Outside of Expected range

6. INVENTORY OF POLLUTANTS

An inventory of potential pollutants kept on the premises or used in carrying out activities at the premises is presented in Appendix C. The pollutant inventory will be maintained by relevant teams assisted by the HSE and copies provided to the Medical Teams. The inventory includes the pollutant type, maximum quantity that is likely to be held and the details of the pollutant storage locations.

7. SAFETY EQUIPMENT

Equipment will be available and implemented proactively and reactively to an incident to minimise harm to human health and the environment. Storages of physical environmental equipment to minimise the harm of an event are shown on the Sensitive Area Plans (SAPs) which are updated over time to reflect current works being undertaken.

Environmental equipment includes:

- Maintaining areas of avoidance (No-Go Zones) for sensitive environments;
- Designated storage areas with bunding for hazardous chemicals (with Safety Data Sheets held online and on site for ready access by project personnel); and
- Spill kits;
- Spill containments bunds;
- Major spill response trailer:
  - to be stocked with sufficient spill response equipment to manage large spills up to 1000L;
  - will be stationed at the environment team laydown area for prompt deployment on location;

Other administrative environmental controls include:

- Progressive erosion and sediment controls, and permanent drainage control infrastructure. Note that these controls are shown on progressive Erosion and Sediment Control Plans (ESCP), separate to this PIRMP;
- Plant pre-starts;
- Regular pre-rainfall inspections

Physical human health equipment available to minimise the harm of an event to both personnel and the environmental, will include:

- Emergency Response Bases: Located at Future Generation project sites, Emergency Response Bases (ERB) will be the assembly and staging areas for the emergency team and the principal emergency response equipment storage areas. Satellite emergency response facilities (ERF) are kept centrally at the ERT base and will be used when necessary.
- Emergency response equipment associated with a helicopter emergency will be provided adjacent to helicopter landing sites (HLS) located at Lobs Hole, Tantangara and Marica Trail camps;
- Work Boat: The project will be equipped with a work boat for use in emergencies and will be on standby when marine activities are being undertaken.
- Firefighting equipment (surface):
- Work sites and camp areas will include:

- Exploratory Camp: firefighting water line with electric (diesel backup) pumps connected to two (2) dual purpose 500kL tanks to service hydrants and hose reels;
- Main Yard: firefighting water line with electric (diesel backup) pumps connected to two (2) dual purpose 500kL tanks to service hydrants and hose reels;
- Marica Camp: firefighting water line with electric (diesel backup) pumps connected to two (2) dual purpose 110kL tanks to service hydrants and hose reels;
- Tantangara Camp: firefighting water line with electric (diesel backup) pumps connected to a dual purpose 500kL tank to service hydrants and hose reels;

- All accommodation, offices and buildings associated with the construction facilities will be fitted with smoke alarms and fire extinguishers and there will be a minimum 20,000L dedicated fire water supply (rainwater roof collected, topped up by water cart) fitted with Storz bushfire couplings at the camps to enhance the early detection of fires and local firefighting capability;
- All construction facilities such as the fabrication warehouse and slurry treatment plant will be assessed and fitted with specific firefighting equipment with a local water supply (e.g. tank) provided;
- Fire response trucks with a minimum 1000L water supply tank. Water supply for surface fires will be provided using project water trucks. All mobile plant, HV and LV on the project will be fitted with portable fire extinguishers to enable prompt initial response to vehicle fires;
- Firefighting equipment (underground): During the construction of the underground tunnels, the tunnels will be supplied with:
- water for firefighting via a pipeline from the surface fitted with 40mm firehose connectors that are 50m apart;
- the tunnel boring machine (TBM) will be fitted with an integrated refuge chamber for use by the operational team in the case of fire or another emergency. The refuge chamber has a capacity for 24 workers for a period of 24 hours when disconnected from the tunnel air line.
- 6kg dry chemical portable fire extinguishers will be positioned on the TBM at identified fire-risk areas, e.g. the power switch boards;
- the TBM will be contain sprinkles all along gantries and a water curtain at the final gantry to confine smoke and dust;
- the TBM will also contain, automatic fire and gas detectors and an automatic fire suppression system at emergency generators, hydraulic tanks, and cabinets.
- Emergency response personnel: Future Generation have an experienced team responsible for managing and coordinating responses to emergencies.

8. NOTIFICATION

8.1. What is a pollution incident

A pollution incident is defined in *Section 147* of the POEO Act as:

a) harm to the environment is material if:

(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

For the purposes of section 147, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

8.2. Types of Incidents to be Notified.

Table 8-1 details examples of incidents required to be reported. The emission of odour from the premises is not required to be reported under the POEO Act Part 5.7 clause 148(7).

Table 8-1: Pollution Incident Types

Incident Type	Description
Works occurring beyond the EPL premised boundary	Where scheduled activities occur beyond the EPL premised boundary without prior approval from the EPA and the event meets the definition of pollution incident.
Air quality	Where the emission of dust from the EPL premised boundary occurs as a result of activities being carried out in a manner that does not minimise or prevent the emission and meets the definition of pollution incident.
Chemical spills	Where a chemical spill occurs either within or beyond the premised boundary where that cannot easily be remediated and the event meets the definition of pollution incident.
Waste disposal	Where waste is known to have been transported and/or transported to a place that cannot lawfully accept the waste, and the event meets the definition of pollution incident.
Water discharge from premises	Any results of in situ monitoring within the licensed premises listed in the EPL that exceed the maximum values, or are outside the range of, a relevant 'predicted discharge water quality characteristic' specified in Section 2 of the Main Works Surface Water Monitoring Program (Appendix B of the Main Works Surface Water Management Plan) and the event meets the definition of pollution incident. Discharge of treated process and/or sewage wastewater that does not meet the treatment criteria within the Section 2 of the Main Works Surface Water Monitoring Program (Appendix B of the Main Works Surface Water Management Plan) and the event meets the definition of pollution incident. Discharge of treated surface water that does not meet the discharge criteria within the Section 2 of the Main Works Surface Water Monitoring Program (Appendix B of the Main Works Surface Water Management Plan) where an overflow rain event has not occurred and the event meets the definition of pollution incident.
Surface and ground water monitoring	Any results of in situ monitoring that exceed the maximum value, or are outside the range of, a relevant 'receiving water quality objective' specified in Section 2 of the Main Works Surface Water Monitoring Program (Appendix B of the Main Works Surface Water Management Plan), Groundwater Management Plan (S2-FGJV-ENV-PLN-0026-6 Table 6-2 Groundwater quality trigger value)and the event meets the definition of pollution incident.
	[Any other as specified in revised EPL]

Note: Reference to the project management plans and project EPL are subject to change.

8.3. Notification Process

Future Generation and Snowy Hydro Limited will jointly notify the EPA of pollution incidents within the EPL Licence premises via the EPA Environment Line (telephone 131 555) immediately after becoming aware of the incident, in accordance with Part 5.7 of the POEO Act. If Snowy Hydro

personnel cannot be contacted, Future Generation will carry out the notification to EPA independently.

Table 8-2 details the relevant authorities who will be notified verbally in the event of a potential or actual pollution incident in compliance with POEO Act Part 5.7A clause 153C and any persons identified by Part 5.7. Table 8-3 identifies other agency contacts that Future Generation may notify in the event of a pollution incident, where it is appropriate and when it is practical to do so.

Co-ordination of any action taken in minimising the pollution caused by the incident will be undertaken between Future Generation and relevant authorities where appropriate, upon notification.

Either Future Generation (as the Employee under the legislation) or Snowy Hydro Limited (as the Employer, licensee and occupier under the legislation) will undertake notification of the relevant authorities. The Employee's (Future Generation) notification responsibilities can extend as an agent to the responsibilities of the Employer and/or Occupier under POEO Act Part 5.7 clause 148(6).

The Future Generation Environment Manager, QHSE Director, Project Director or an approved delegate are responsible for contacting the relevant authorities. Notification will occur as soon as feasibly possible immediately after an incident has occurred and the approved persons become aware of the incident. Notification will not occur if the person notifying of the incident is aware that the incident has already been reported to the relevant authorities.

Under Part 5.7 of the POEO Act Section 151 (2), any pollution caused during the clean-up or subsequent actions required to rectify an incident is not required to be notified.

Future Generation will comply with a direction from the EPA, in any form, to notify other persons of the pollution incident. Future Generation will undertake notification in writing within seven days of the date on which the incident occurred and submit to the EPA in response to the verbal notification of the incident. Future Generation will provide a report to the EPA in accordance with the EPL where required.

Table 8-2: PIRMP Agency Notification Contact Details

Organisation / Agency	Contact Details
Owners or occupiers of premises in the vicinity of the project	
Snowy Hydro Limited[1]	Environmental Assurance Officers
National Parks and Wildlife Services[2]	1800 629 104 (24/7) (02) 6450 5550 (Duty Officer) (Major projects portal also for incidents which require reporting under the Infrastructure Approval).
Local authority(s)	
Emergency Services: • Fire and Rescue NSW • NSW Police • NSW Ambulance	000 (24/7)
Snowy Monaro Regional Council (Cooma)	1300 345 345 (24/7)
Snowy Valleys Council (Tumut)	1300 275 782 (24/7)
Appropriate regulatory authority(s)	
Environment Protection Authority (NSW Pollution Hotline)	Phone 131 555 (24/7)
NSW Ministry of Health, Goulburn Public Health Unit	(02) 4824 1837

Organisation / Agency	Contact Details
	(02) 6080 8900 (after hours)
NSW Ministry of Health, Albury Public Health Unit	(02) 6080 8900 (24/7)
SafeWork NSW	13 10 50 (24/7)
Fire and Rescue NSW	(02) 6947 1202 (Tumut) (02) 6452 2037 (Cooma) (if 000 not already called)
Department of Planning, Housing and Infrastructure and Environment[3]	Major projects portal.
Department of Primary Industries – Fishers' Watch Phoneline	1800 043 536

Notes:

1. Whilst not listed as being notifiable under the POEO Act SHL hold EPL 21266 and, as an employer, also bear responsibility for notifications under the Act.
2. Whilst not listed as being notifiable under the POEO Act, NPWS are responsible for activities within Kosciuszko National Park.
3. Whilst not listed as being notifiable under the POEO Act, CSSI 9687 Sch 4 Cond 6 requires notification to the Department and NPWS via the Major Projects Portal immediately after it becomes aware of an incident as defined within the Infrastructure Approval. The notification will occur in accordance with section 7 of the EMS.

Table 8-3: Other Agencies

Organisation / Agency	Contact Details
State Emergency Service (SES)	13 25 00 (Cooma)
NSW Rural Fire Service	(02) 6981 4229 (Tumut)

8.4. Information to be Reported

All relevant, known information regarding the incident will be communicated at the time of notification. This includes:

- the time the incident occurred;
- the date that the incident occurred;
- the nature of the incident;
- the duration the incident occurred;
- the location of the incident;
- the location of the place where pollution is occurring or is likely to occur;
- the estimated quantity or volume and the concentration of any pollutants involved, if known;
- the circumstances in which the incident occurred including the cause, if known;
- the potential risk or impact to the environment and
- the action(s) taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known.

A report, in compliance with the EPL, will be provided to the NSW EPA within the required time frames stipulated in the Condition.

9. COMMUNICATING WITH NEIGHBOURS AND LOCAL COMMUNITY

The project is in a remote location and the identified hazards and potential pollution incidents (in Appendix B) are not generally expected to impact any surrounding neighbours or local communities. Minor disruptions to the use of Tantangara and Talbingo Reservoirs will be managed through clear and regular community updates about project progress and impacts and targeted communications to park users to advise of reservoir access changes and alternatives. Potential noise impacts at the Rock Forest logistics yard will be managed in accordance with the Construction Noise Management Plan – Rock Forest and will include consultation with affected landholders.

Should incident communications be required, early warnings for affected or potentially affected community members for any pollution incident will be communicated to those members via phone calls and / or a door knock process.

For air pollution incidents that may affect community members, those community members may be asked to either close their doors and windows and stay indoors until further notice or vacate the premises. For water pollution incidents that may affect community members, those community members may be asked to avoid use of the water until further notice.

Future Generation may provide updates to the external community in consultation with SHL if required. Updated may be via letterbox drop, notices in local papers and/or via door knocks as required.

All other communications with interested parties and individuals within the neighbouring communities of the project, other than the relevant authorities detailed in Section 8, will be managed in accordance with the Community and Stakeholder Engagement Plan (CSEP) and will be coordinated with Snowy Hydro.

10. MINIMISING HARM TO PERSONS ON THE PREMISES

A pollution incident will trigger the enaction of this PIRMP and the processes it contains. The emergency response process includes:

- raising the alarm
- seeking assistance
- responding and controlling the incident.

Measures to minimise harm to persons on the premises include initiation and use of the following:

- Emergency Response Team
- Site medical centre and staffing
- Medical response
- Work boat
- Firefighting equipment – underground and surface
- Refuge chambers
- Refuge chamber and Fresh Air Bases (FAB) equipment
- Direction to refuge chambers, FAB and lighting
- Emergency escape and breathing devices
- Grab bags
- Self-descent devices
- Lifebuoys
- Line throwing devices
- Safety showers and eye wash stations
- Helicopter crash rescue equipment (resourced externally)
- Spill kits
- Gas detectors
- TBM firefighting system
- Extreme weather monitoring

- Helicopter search and rescue
- Incident control centre
- Emergency alarm systems – underground
- Escape routes and exits
- Muster arrangements
- Site specific evacuation plans.

11. ACTIONS TO BE TAKEN DURING OR IMMEDIATELY AFTER A POLLUTION INCIDENT

In the event of an incident, Future Generation will immediately implement this PIRMP.

If a pollution incident occurs during an activity at the premises so that actual or potential material harm to the environment is caused, Future Generation personnel will immediately implement the Incident Response Process as shown in Figure 11-1. This process will be followed regardless of if the event remains within or exists beyond the EPL premise boundary for Future Generation.

The emergency response process will implement corrective measures. Following an incident Future Generation will:

- undertake an investigation to attempt to determine the cause of the event and where appropriate:
  - establish and complete actions to rectify the identified catalyst(s) that contributed to the cause of the incident.
  - these actions will implement corrective and preventative measures.
- review and update the PIRMP one month following an incident.

The licensee will make all reasonable inquiries in relation to the incident and supply the required report to the EPA within seven days of the initial incident verbal notification.

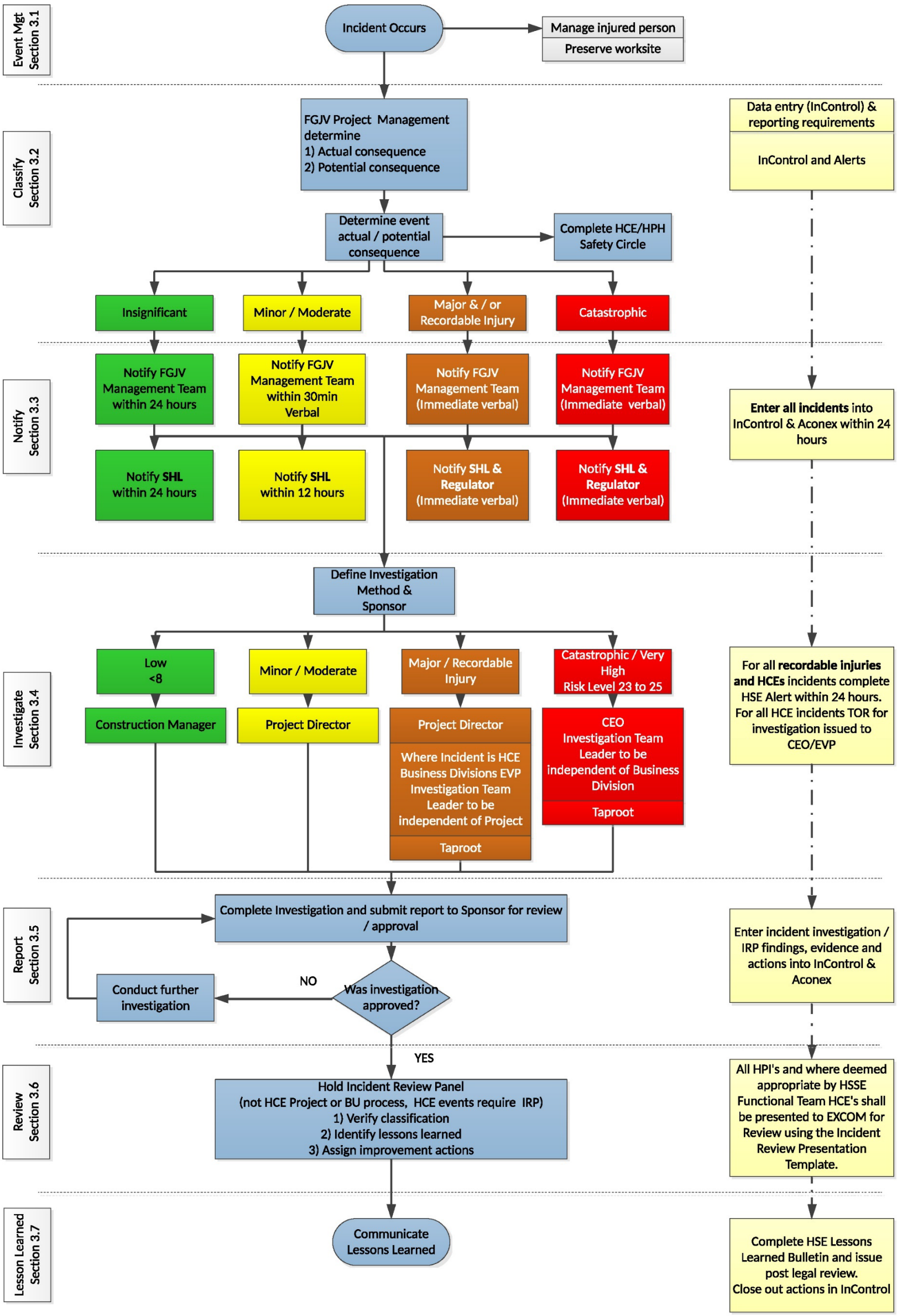


Figure 11-1: Incident Response Process

12. TRAINING

Training programs on the project are set out in Section 5 of the EMS and include:

- Site Induction: All personnel (including sub-contractors) will be required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. The induction is done to ensure all personnel involved in the project are aware of project requirements and to ensure the implementation of environmental management measures, including incident response and reporting, emergency response and evacuation.
- Toolbox Talks: Toolbox talks, environmental awareness training and construction methodology briefings will be delivered by Future Generation as necessary to achieve a suitable level of workforce awareness and competence appropriate to the activities. Toolbox talks will be tailored to specific environmental issues relevant to upcoming works or previous incidents.
- Daily Pre-start Meetings: Daily pre-starts will be conducted by the Future Generation Supervisors prior to the start of work each day to inform workers of key safety, environmental and activity coordination considerations and other information that may be relevant in the performance of the day's work.

In addition to the above, training will include annual testing of this PIRMP, involving desktop simulations and practical exercises or drills, as set out in Section 14.

Training records will be retained within project files.

13. AVAILABILITY

The PIRMP will be:

- kept at the premises (i.e. Lobs Hole, Tantangara and Marica as a minimum) to which the EPL relates for the duration of the Project;
- on FGJV and Project websites (PIRMP Summary only)
- on Project document control system (Aconex)
- made available to any EPA authorised officer on request;
- provided a physical copy to any project personnel or regulator.

14. TESTING AND REVIEW

This PIRMP will be tested in accordance with the regulations whereby:

- the PIRMP will be routinely tested at least once every 12 months;
- the PIRMP will be reviewed within one (1) month of any pollution incident occurring and updated based on lessons learnt from the recent incident.

The PIRMP testing is to be carried out in such a manner that the information included in the PIRMP is:

- accurate;
- up to date; and
- can be implemented in a workable and effective manner.

Usual methods of testing include undertaking desktop simulations and practical exercises or drills. Testing will cover all elements of the PIRMP, including the effectiveness of training. Table 14-1 will be progressively updated following annual testing and any incidents that occur.

A Statement of Compliance of the PIRMP will be provided to the EPA as part of the EPL 21266 Annual Return.

Table 14-1: Testing Elements Tracking

Date Tested	Reason for Testing	Personnel involved in Testing (name, role and company)	Method of Testing	Outcomes and Updates	Subsequent Plan Revision Number
25/04/2022	Annual Test	Dirk McNicoll – Lobs Hole Environmental Coordinator Morgan Pinkerton – Lobs Hole Environmental Advisor	Desktop Scenario	Overall plan satisfied the relevant requirements. Minor administrational amendments to plan required.	-
22.04.2023	Annual Test	Jima Okori – Environmental Coordinator, FGJV Jemma Vivian – Enviro Advisor, FGJV Oluwatobi Aina – Environmental Advisor, FGJV Donald Mackinnon – HSE Coordinator, FGJV	Desktop Scenario	Overall plan satisfied the relevant requirements. Minor administrational amendments to plan required.	C
02.04.2024	Annual Test	Jima Okori – Environmental Coordinator, FGJV Jemma Vivian – Enviro Coordinator, FGJV Samuel Babalola – Enviro Advisor, FGJV Ian Newton – HSE Coordinator, FGJV Drew Butters – ERT Team Coordinator Ylber Kacina – ECVT Superintendent	Desktop Scenario – Simulated Drill with all stakeholders	Overall Plan satisfied the relevant requirements. Some administration amendments to the plan required. Such as ERT response time to contain spill on the river.	D

Date Tested	Reason for Testing	Personnel involved in Testing (name, role and company)	Method of Testing	Outcomes and Updates	Subsequent Plan Revision Number

15.04.2025	Annual Test	Jemma Vivian – Environmental Coordinator, FGJV
		Mitchell Thomas – Environmental Advisor, FGJV
		Samuel Babalola Environmental Advisor, FGJV
		Allan Meihana – HS Coordinator, FGJV
		Drew Butters – ERT
		Jason Scotton – Emergency Response Duty Commander
			Debrief post Incident #117664 and desktop scenario	• The PIRMP was implemented effectively during activation during incident #117664 specifically response and reporting.
				• Other department (environment, mechanical, safety) leads should be in proximity to radios tuned to the emergency channel (CH16) so that they can prepare to respond to incidents.
				• A shift phone should be made available for relevant departments, so that prompt contact can be made instead of trying to reach individuals on RnR or no longer employed on the project.
				• Contact for external hazard response company should be included in the PIRMP.
				• Set up hazard/spill response trailers/containers at designated high-risk locations:
				  ○ Yarrangobilly Bridge
				  ○ Wallaces Creek Bridge
				  ○ Middle Creek Bridge
				  ○ Talbingo Boat Ramp
					E

Date Tested	Reason for Testing	Personnel involved in Testing (name, role and company)	Method of Testing	Outcomes and Updates	Subsequent Plan Revision Number
				• Additional equipment (i.e. oil recovery trailers, hazard response/spill response trailers). • There is a need to confirm if we have vacuum trucks available on site to assist with containment/clean-up of a potential pollution incident. • Have a physical copy of the PIRMP in each work front. • Distribute a site wide toolbox about the PIRMP for site awareness. • Consider having mobile spill response kits in each of the incident response teams vehicles (i.e. safety, environment and ERT). • Consider having a secondary radio in the environment and safety teams vehicles that is permanently on channel 16. This will ensure prompt notification of potential pollution incidents if relevant staff aren't in the offices.	
05.05.2025	Annual Test - Tantangara	Ashley Oldham – Environmental Coordinator, FGJV Pat Joyce – Enviro Advisor, FGJV	Desktop Scenario	• Arrange appropriate marine spill containment training for ERT and Environmental personnel and relevant	E

Date Tested	Reason for Testing	Personnel involved in Testing (name, role and company)	Method of Testing	Outcomes and Updates	Subsequent Plan Revision Number
		Richard King – HSE Coordinator, FGJV Brett Hyde – HSE Coordinator, FGJV Scott Belo – ERT Richard Williams – ERT Darren Butler – Senior Supervisor Construction		personnel from safety, construction and contractors. • Investigate solution(s) to having boat access on both sides of the silt curtain(s). • Order more marine spill kit material and equipment and supply ERT. • Ensure the PIRMP notification process is Tool boxed to all departments 6 monthly. • Update Risk Matrix in the Management Plan. • Tantangara boat needs to be back in service before works near water commence.	
14.04.2025	Annual Test – Marica	Jima Okori – Environmental Coordinator Robert McCann – Environmental Advisor Gabriel McGhee – Environmental Advisor Murray Richardson – Safety Coordinator Adam (Billy) Hickson – Emergency Response Team (ERT)	Desktop Scenario	Reevaluate and enhance regular maintenance checks to prevent critical failures that could lead to chemical spills. Streamline contact procedures with external HAZMAT responders to ensure even faster deployment and coordination. Expand regular training sessions and simulation exercises specifically for hazardous chemical incident to strengthen on-site readiness.	E

Date Tested	Reason for Testing	Personnel involved in Testing (name, role and company)	Method of Testing	Outcomes and Updates	Subsequent Plan Revision Number
				Enhance the detail and accuracy of site maps, particularly regarding drainage channels, to allow for precise containment strategies. Regularly update contact details and incident response documentation as part of ongoing safety reviews, ensuring all information remains current.	

15. MAPS

Physical environmental equipment to minimise the harm of an event are shown on the SAPs which are updated over time to reflect current works being undertaken.

Maps detailing the applicable location of the premises relevant to the PIRMP are the premise maps titled ‘Snowy 2.0 EPL21266 - Licensed Premise Boundary’. The premise maps relevant to this PIRMP will be the latest approved maps for Future Generation works.

APPENDIX A – COMPLIANCE MATRIX

POEO Act Legislative Requirements

Legislation	Reference	Requirement	Where addressed
Protection of the Environment Operations Act 1997	Part 5.7A Section 153A	The holder of an environment protection licence must prepare a pollution incident response management plan that complies with this Part in relation to the activity to which the licence relates.	This plan
	Part 5.7A Section 153C	A pollution incident response management plan must be in the form required by the regulations and must include the following: (a) The procedures to be followed by the holder of the relevant environment protection licence, or the occupier of the relevant premises, in notifying a pollution incident to: (i) The owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and (ii) The local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and (iii) Any persons or authorities required to be notified by Part 5.7,	Section 8
		(b) A detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant environment protection licence, or the occupier of the relevant premises, to reduce or control any pollution,	Section 11
		(c) The procedures to be followed for co-ordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and, in particular, the persons through whom all communications are to be made,	Section 8
		(d) Any other matter required by the regulations	This plan
	Part 5.7A Section 153D	A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is kept at the premises to which the relevant environment protection licence relates, or where the relevant activity takes place, and is made available in accordance with the regulations.	Section 13
	Part 5.7A Section 153E	A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is tested in accordance with the regulations	Section 14
	Part 5.7A Section 153F	If a pollution incident occurs in the course of an activity so that material harm to the environment (within the meaning of section 147) is caused or threatened, the person carrying on the activity must immediately implement any pollution incident response management plan in relation to the activity required by this Part.	Section 11
	Part 5.7 Section 147	(1) For the purposes of this Part: (a) harm to the environment is material if: (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and	Section 1.4
		(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.	Section 1.4
		(2) For the purposes of this Part, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.	Section 1.4
	Part 5.7 Section 148	Pollution incidents causing or threatening material harm to be notified: (1) Kinds of incidents to be notified This Part applies where a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened.	Section 8.1
		Duty of person carrying on activity to notify (2) A person carrying on the activity must, immediately after the person becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it.	Section 8
		Duty of employee engaged in carrying on activity to notify (3) A person engaged as an employee in carrying on an activity must, immediately after the person becomes aware of the incident, notify the employer of the incident and all relevant information about it. If the employer cannot be contacted, the person is required to notify each relevant authority	Section 8
		(3A) Duty of employer to notify Without limiting subsection (2), an employer who is notified of an incident under subsection (3) or who otherwise becomes aware of a pollution incident which is related to an activity of the employer, must, immediately after being notified or otherwise becoming aware of the incident, notify each relevant authority of the incident and all relevant information about it.	Section 8
		Duty of occupier of premises to notify (4) The occupier of the premises on which the incident occurs must, immediately after the occupier becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it.	Section 8

Legislation	Reference	Requirement	Where addressed
		Duty on employer and occupier to ensure notification (5) An employer or an occupier of premises must take all reasonable steps to ensure that, if a pollution incident occurs in carrying on the activity of the employer or occurs on the premises, as the case may be, the persons engaged by the employer or occupier will, immediately, notify the employer or occupier of the incident and all relevant information about it.	Section 8
		Extension of duty to agents and principals (6) This section extends to a person engaged in carrying on an activity as an agent for another. In that case, a reference in this section to an employee extends to such an agent and a reference to an employer extends to the principal.	Section 8
		Odour not required to be reported (7) This section does not extend to a pollution incident involving only the emission of an odour.	Section 8
		(8) Meaning of “relevant authority” In this section: relevant authority means any of the following:	Section 8
		(a) the appropriate regulatory authority,	Section 8
		(b) if the EPA is not the appropriate regulatory authority—the EPA,	Section 8
		(c) if the EPA is the appropriate regulatory authority—the local authority for the area in which the pollution incident occurs,	Section 8
		(d) the Ministry of Health,	Section 8
		(e) the WorkCover Authority,	Section 8
		(f) Fire and Rescue NSW.	Section 8
	Part 5.7 Section 149	(1) If the regulations prescribe the manner or form of notifying pollution incidents under section 148, the notification is to conform to the requirements of the regulations.	Section 8
		(2) Without limiting subsection (1), the regulations: (a) may require that verbal notification be followed by written notification, and	Section 8.2
		(b) may provide that notification to a designated person or authority is taken to be notification to the relevant person or authority under section 148.	Section 8
	Part 5.7 Section 150	(1) The relevant information about a pollution incident required under section 148 consists of the following:	Section 8.3
		(a) the time, date, nature, duration and location of the incident,	Section 8.3
		(b) the location of the place where pollution is occurring or is likely to occur,	Section 8.3
		(c) the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known,	Section 8.3
		(d) the circumstances in which the incident occurred (including the cause of the incident, if known),	Section 8.3
		(e) the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known,	Section 8.3
		(f) other information prescribed by the regulations.	Section 8.3
		(2) The information required by this section is the information known to the person notifying the incident when the notification is required to be given	Section 8.3
		(3) If the information required to be included in a notice of a pollution incident by subsection (1) (c), (d) or (e) is not known to that person when the initial notification is made but becomes known afterwards, that information must be notified in accordance with section 148 immediately after it becomes known.	Section 8.3
	Part 5.7 Section 151	(1) A person is not required to notify a pollution incident under section 148 if the person is aware that the incident has already come to the notice of each person or authority required to be notified.	Section 8.2
		(2) A person is not required to notify a pollution incident under section 148 if the incident is an ordinary result of action required to be taken to comply with an environment protection licence, an environment protection notice or other requirement of or made under this Act.	Section 8.2
	Part 5.7 Section 151A	(1) This section applies to the occupier of premises where a pollution incident has occurred in the course of an activity so that material harm to the environment is caused or threatened.	Section 8.2
		(2) The EPA may direct a person to whom this section applies to notify such other persons of the incident as the EPA requires.	Section 8.2
		(3) The direction is not required to be given in writing.	Section 8.2
		(4) The direction may specify the manner or form of notifying the pollution incident and the information that must be provided.	Section 8.2
		(5) The direction may require that an initial verbal notification be followed by written notification.	Section 8.2
		(6) A person must not fail to comply with a direction given under this section.	Section 8.2
		(7) This section does not extend to a pollution incident involving only the emission of an odour	Section 8.2

Legislation	Reference	Requirement	Where addressed
		(8) If a direction under this section is given to a person who is carrying out an activity, is engaged as an employee in carrying out an activity, or is the employer of such a person, the obligations under this section are in addition to, and not in derogation of, the obligations under section 148 (except as provided by section 151 (1)).	Section 8.2
POEO (General) Regulation 2009	Chapter 7 Part 4 Clause 101	For the purposes of section 149 of the Act, a pollution incident that is required to be notified to the EPA under Part 5.7 of the Act is to be notified verbally to the EPA by telephoning the EPA environment line, followed by notification in writing within 7 days of the date on which the incident occurred.	Section 8
POEO (General) Amendment (PIRMP) Regulation 2012	Schedule 1 Part 3A Clause 98B	(1) A plan is to be in written form.	This plan
		(2) A plan may form part of another document that is required to be prepared under or in accordance with any other law so long as the information required to be included in the plan is readily identifiable as such in that other document	This plan
	Schedule 1 Part 3A Clause 98C	(1) The matters required under section 153C (d) of the Act to be included in a plan are as follows: (a) a description of the hazards to human health or the environment associated with the activity to which the licence relates (the relevant activity),	Section 4
		(b) the likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood,	Section 4
		(c) details of the pre-emptive action to be taken to minimise or prevent any risk of harm to human health or the environment arising out of the relevant activity,	Section 5
		(d) an inventory of potential pollutants on the premises or used in carrying out the relevant activity,	Section 6
		(e) the maximum quantity of any pollutant that is likely to be stored or held at particular locations (including underground tanks) at or on the premises to which the licence relates,	Section 6
		(f) a description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident,	Section 7
		(g) the names, positions and 24-hour contact details of those key individuals who: (i) are responsible for activating the plan, and (ii) are authorised to notify relevant authorities under section 148 of the Act, and (iii) are responsible for managing the response to a pollution incident,	Section 3
		(h) the contact details of each relevant authority referred to in section 148 of the Act,	Section 8.2
		(i) details of the mechanisms for providing early warnings and regular updates to the owners and occupiers of premises in the vicinity of the premises to which the licence relates or where the scheduled activity is carried on,	Section 5
		(j) the arrangements for minimising the risk of harm to any persons who are on the premises or who are present where the scheduled activity is being carried on,	Section 5
		(k) a detailed map (or set of maps) showing the location of the premises to which the licence relates, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of any stormwater drains on the premises,	Section 15
		(l) a detailed description of how any identified risk of harm to human health will be reduced, including (as a minimum) by means of early warnings, updates and the action to be taken during or immediately after a pollution incident to reduce that risk,	Section 5
		(m)the nature and objectives of any staff training program in relation to the plan	Section 12
		(n) the dates on which the plan has been tested and the name of the person who carried out the test,	Section 14
		(o) the dates on which the plan is updated,	This plan, document revision history
		(p) the manner in which the plan is to be tested and maintained.	Section 14
	Schedule 1 Part 3A Clause 98D	(1) A plan is to be made readily available:	Section 13
		(a) to an authorised officer on request, and	Section 13
		(b) at the premises to which the relevant licence relates, or where the relevant activity takes place, to any person who is responsible for implementing the plan.	Section 13
		(2) A plan is also to be made publicly available in the following manner within 14 days after it is prepared:	Section 13
		(a) in a prominent position on a publicly accessible website of the person who is required to prepare the plan,	Section 13
		(b) if the person does not have such a website— by providing a copy of the plan, without charge, to any person who makes a written request for a copy.	Section 13
		(3) Subclause (2) applies only in relation to that part of a plan that includes the information required under:	
		(a) section 153C (a) of the Act, and	Section 8
		(b) clause 98C (1) (h) and (i) or (2) (b) and (c) (as the case requires).	Section 8 and 5
		(4) Any personal information within the meaning of the Privacy and Personal Information Protection Act 1998 is not required to be included in a plan that is made available to any person other than a person referred to in subclause (1).	Section 8.2

Legislation	Reference	Requirement	Where addressed
	Schedule 1 Part 3A Clause 98E	(1) The testing of a plan is to be carried out in such a manner as to ensure that the information included in the plan is accurate and up to date and the plan is capable of being implemented in a workable and effective manner	Section 14
		(2) Any such test is to be carried out: (a) routinely at least once every 12 months, and (b) within 1 month of any pollution incident occurring in the course of an activity to which the licence relates so as to assess, in the light of that incident, whether the information included in the plan is accurate and up to date and the plan is still capable of being implemented in a workable and effective manner.	Section 14

EPL Requirements Relevant to this PIRMP [Note: References to EPL 21266 as subject to change upon future EPL variation]

Condition	Requirement	Where addressed
1 Administrative Conditions		
A1 What the licence authorises and regulates		
A.1.1	This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2: Main Works - Electricity Generation.	
A1.2	There are seven (7) main stages to the scheduled development works at the premises listed in A2.	

A1.3	Prior to commencing each stage (or subsection of that stage), the licensee must receive written approval from the EPA. The stages and their subsections are: 1. Process and sewage treatment plants (including diffuser installation): (a) Lobs Hole (b) Tantangara (c) Marica 2. Construction facilities and internal access: (a) Talbingo portal and construction support area (b) Lobs Hole main yard (c) ECVT portal (including cable yard and substations) (d) MAT portal and construction support area (e) Marica construction support areas (f) Tantangara portal and construction support areas 3. Tunnelling and subsurface works: (a) Talbingo adit and tailrace tunnel (b) MAT (c) ECVT (d) Tailrace surge tank (e) Headrace surge tank (f) Headrace tunnel (g) Tantangara adit 4. Reservoir works: (a) Talbingo water intake and associated structures (b) Talbingo barge launch (c) Tantangara water intake and associated structures (d) Tantangara barge launch 5. Spoil emplacement areas: (a) Ravine Bay (b) GFO1 (c) Lobs Hole (d) Tantangara (e) Rock Forest 6. Communication lines: (a) MAT portal to Marica to Snowy Mountains Highway (b) Snowy Mountains Highway to Tantangara Reservoir (c) Tantangara Reservoir to Tantangara Road (d) Link Road (e) Link Road to Cabramurra 7. Road and bridge works: (a) Lobs Hole Road North (b) Ravine Road (c) Tantangara Road (d) Marica Road West (e) Marica Trail Note: For the purposes of Licence Condition A1.3, the following stages and subsections are deemed to have been approved by the EPA: 1. Process and sewage treatment plants (including diffuser installation): (a) Lobs Hole; (b) Tantangara; (c) Marica. 2. Construction facilities and internal access: (a) Talbingo portal and construction support area;	

<table>
<tr><th>Condition</th><th>Requirement</th><th>Where addressed</th></tr>
<tr><td></td><td>(b) Lobs Hole main yard;
(c) ECVT portal (including cable yard and substation);
(d) MAT portal and construction support areas;
(e) Marica portal and construction support areas;
(f) Tantangara portal and construction support areas.
3. Tunnelling and subsurface works:
(a) Talbingo adit and tailrace tunnel;
(b) MAT;
(c) ECVT;
(d) Tailrace surge tank;
(e) Headrace surge tank;
(f) Headrace surge tank;
(g) Tantangara adit;
(h) Marica adit.
5. Spoil emplacement areas:
(a) Ravine Bay;
(b) GF01;
(c) Lobs Hole;
(d) Tantangara;
(e) Rock Forest.
6. Communication lines:
(a) MAT portal to Marica to Snowy Mountains Highway;
(b) Snowy Mountains Highway to Tantangara Reservoir;
7. Road and bridge works:
(a) Lobs Hole Road North;
(b) Ravine Road;
(c) Tantangara Road;
(d) Marica Road West;
(e) Marica Trail.</td><td></td></tr>
<tr><td>A1.4</td><td>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.
<table>
<tr><th>Scheduled Activity</th><th>Fee Based Activity</th><th>Scale</th></tr>
<tr><td>Electricity generation</td><td>Generation of electrical power otherwise than from coal, diesel or gas</td><td>> 4000 GWh annual generating capacity</td></tr>
</table></td><td></td></tr>
<tr><td colspan="2">A2 Premises or plant to which this licence applies</td><td></td></tr>
<tr><td>A2.1</td><td>The licence applies to the following premises:
<table>
<tr><th>Premises Details</th></tr>
<tr><td>SNOWY 2.0 PUMPED HYDRO POWER STATION TALBINGO AND TANTANGARA</td></tr>
<tr><td>KOSCIUSZKO NATIONAL PARK AND ROCK FOREST</td></tr>
<tr><td>KOSCIUSZKO</td></tr>
<tr><td>NSW 2642</td></tr>
<tr><td></td></tr>
<tr><td>PREMISES DEFINED BY:
SNOWY 2.0 MAIN WORKS INFRASTRUCTURE APPROVAL CSSI 9687 (20 MAY 2020): APPENDIX 1 – SCHEDULE OF LAND.</td></tr>
</table></td><td></td></tr>
</table>

Condition	Requirement	Where addressed
A3 Other activities		
A3.1	This licence applies to all other activities carried on at the premises, including: **Ancillary Activity** Chemical Storage Concrete Batching Extractive Activities Process Water Treatment Road Construction and Maintenance Sewage Treatment	
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	For the purpose of the monitoring/discharge points tables below, “the Plan” refers to the plan titled ’Snowy Hydro 2.0 EPL Premises Plan’ Version A, dated October 2024 and provided to the EPA on 6 December 2024 (DOC24/1008555).	
P1.2	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.	

P1.3 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.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Groundwater Bore LOBS HOLE		Wallace Creek Bridge, west of ECVT portal, labelled EPL001 in "the Plan".
2	Groundwater Bore LOBS HOLE		Wallace Creek Bridge, west of ECVT portal, labelled EPL002 in "the Plan".
4	Groundwater Bore LOBS HOLE		Lobs Hole Portal Access, west of MAT portal, labelled EPL004 in "the Plan"
5	Surface Water LOBS HOLE		Yarrangobilly River, upstream of the exploratory tunnel and construction pad, labelled EPL005 in "the Plan".
6	Surface Water LOBS HOLE		Wallaces Creek, upstream of the confluence of Yarrangobilly River and Wallaces Creek, labelled EPL006 in "the Plan".
8	Surface Water LOBS HOLE		Yarrangobilly River, downstream of Lick Hole Gully labelled EPL008 in "the Plan".
9	Surface Water LOBS HOLE		Yarrangobilly River, downstream of the accommodation camp and upstream of Talbingo Reservoir labelled EPL009 in "the Plan".
10	Surface Water TALBINGO RESERVOIR		Talbingo Reservoir, upstream of Lobs Hole STP/WTP diffuser outlet and water intake point labelled EPL010 in "the Plan".
11	Surface Water TALBINGO RESERVOIR		Talbingo Reservoir, downstream of Lobs Hole STP/WTP diffuser outlet labelled EPL011 in "the Plan".
12	Surface Water LOBS HOLE		Yarrangobilly River, immediately downstream of portal pad labelled EPL012 in "the Plan".
14	Surface Water LOBS HOLE		Yarrangobilly River, upstream of MY/LHG PSE labelled EPL014 in "the Plan".
15	Surface Water LOBS HOLE		Yarrangobilly River, downstream of road construction areas labelled EPL015 in "the Plan".
16	Surface Water LOBS HOLE		Yarrangobilly River, downstream of road construction areas labelled EPL016 in "the Plan".
24	Surface Water LOBS HOLE		Yarrangobilly River unnamed tributary, downslope of GFO1 PSE, labelled EPL024 in "the Plan".
25	Groundwater Bore LOBS HOLE		Monitoring well, downslope of MAT portal, labelled EPL025 in "the Plan".
26	Surface Water MARICA		Eucumbene River, downstream of Marica Road, labelled EPL026 in "the Plan".
27	Surface Water MARICA		Eucumbene River, upstream of Marica Road, labelled EPL027 in "the Plan".
28	Surface Water TANTANGARA		Tantangara Reservoir, upstream in the mouth of the Murrumbidgee River. Variable location dependent on tide and reservoir levels. Labelled EPL028 in "the Plan".
29	Surface Water TANTANGARA		Tantangara Reservoir, downstream of works area and upstream of lower Murrumbidgee River, labelled as EPL029 in "the Plan".

30	Surface Water TANTANGARA		Kellys Plain Creek, downstream of accommodation camp and laydown areas, labelled EPL030 in "the Plan".
31	Surface Water TANTANGARA		Kellys Plain Creek, upstream of accommodation camp and laydown areas, labelled EPL031 in "the Plan".
32	Surface Water TANTANGARA		Tantangara Intake, downstream of construction works, labelled EPL032 in "the Plan".
33	Surface Water TANTANGARA		Murrumbidgee River, downstream of Tantangara reservoir outlet labelled EPL033 in "the Plan".
34	Surface Water TANTANGARA		Nungar Creek, upstream of Tantangara Road labelled EPL034 in "the Plan".
35	Surface Water TANTANGARA		Nungar Creek, downstream of Tantangara Road labelled EPL035 in "the Plan".
36	Surface Water ROCK FOREST		Camerons Creek, upstream of works in Rock Forest, labelled EPL036 in "the Plan".
37	Surface Water ROCK FOREST		Camerons Creek, downstream of works in Rock Forest, labelled EPL037 in "the Plan".
38	Surface Water TANTANGARA		Tantangara Reservoir, between emplacement area and ancillary facilities for emplacement activities. Variable location dependant on tide and reservoir levels. Labelled EPL038 in "the Plan".
39	Surface Water TANTANGARA		Confluence of Nungar Creek and Tantangara Reservoir, upstream of Tantangara construction works. Variable location dependent on tide and reservoir levels. Labelled EPL039 in "the Plan".
40	Surface Water TANTANGARA		Confluence of the upper Murrumbidgee River and Tantangara Reservoir, upstream of works. Variable location dependent on tide and reservoir levels. Labelled EPL040 in "the Plan".
41	Reverse Osmosis Plant TALBINGO		Lobs Hole Reverse Osmosis Plant Final Effluent Quality Monitoring Point. Downstream of final treatment, prior to discharge to Talbingo Reservoir. Labelled EPL041 in "the Plan".
42		Discharge to waters LOBS HOLE STP/PWTP TALBINGO	Diffuser outlet discharging into Talbingo Reservoir from Lobs Hole STP/WTP, labelled EPL042 in "the Plan".

43	Volume outflow TALBINGO		Lobs Hole STP/WTP Final Volume Monitoring Point, downstream of final treatment, prior to discharge to Talbingo Reservoir. Labelled EPL043 in "the Plan".
44	Volume Inflow - PWTP TALBINGO		Lobs Hole WTP Inflow Volume Monitoring Point, labelled EPL044 in "the Plan".
45	Volume Inflow - Ex-Camp STP TALBINGO		Lobs Hole Ex-Camp STP Inflow Volume Monitoring Point, labelled EPL045 in "the Plan".
46		Discharge to waters TANTANGARA RESERVOIR	Diffuser outlet discharging into Tantangara Reservoir from Tantangara STP/PWTP, labelled EPL046 in "the Plan".
47	Volume Inflow - Main Camp STP TALBINGO		Talbingo Main Camp STP Inflow Monitoring Point, labelled EPL047 in "the Plan".
48	Volume Inflow STP TANTANGARA		Tantangara STP Inflow Volume Monitoring Point, labelled EPL048 in "the Plan".
49	Volume Inflow PWTP TANTANGARA		Tantangara WTP Inflow Volume Monitoring Point, labelled EPL049 in "the Plan".
50	Reverse Osmosis Plant TANTANGARA		Tantangara Reverse Osmosis Plant final effluent quality and volume monitoring point, downstream of final treatment, prior to discharge to Tantangara reservoir. Labelled EPL050 in "the Plan".
51	Surface Water TANTANGARA		Tantangara Reservoir, downstream of Tantangara STP/WTP diffuser outlet. Labelled EPL051 in "the Plan".
52	Surface Water LOBS HOLE		Talbingo Reservoir, upstream of GF01 emplacement area GFO1 Leachate Basin, labelled EPL052 in "the Plan".
53	Surface Water LOBS HOLE		Talbingo Reservoir, upstream east of GF01 emplacement area, labelled EPL053 in "the Plan".
54	Surface Water LOBS HOLE		Talbingo Reservoir, upstream west of GF01 emplacement area, labelled EPL054 in "the Plan".
55	Surface Water LOBS HOLE		Yarrangobilly River, surface water downstream of GF01 emplacement area, labelled EPL055 in "the Plan".
56	Groundwater LOBS HOLE		Groundwater upstream east from GF01 emplacement area, labelled EPL056 in "the Plan".
57	Groundwater LOBS HOLE		Groundwater upstream west from GF01 emplacement area, labelled EPL057 in "the Plan".
58	Groundwater LOBS HOLE		Groundwater downgradient from GF01 emplacement area, labelled EPL058 in "the Plan".

59	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB1, labelled EPL059 in "the Plan".
60	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB2, labelled EPL060 in "the Plan".
61	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB3, labelled EPL061 in "the Plan".
62	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB4, labelled EPL062 in "the Plan".
63	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB5, labelled EPL063 in "the Plan".
64	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB6, labelled EPL064 in "the Plan".
65	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-SB7, labelled EPL065 in "the Plan".
66	Surface Water TANTANGARA	Tantangara Leachate Basin Tan-SW-DSE, labelled EPL066 in "the Plan".
67	Surface Water TANTANGARA	Nungar Creek surface water downstream west from Tantangara emplacement area, labelled EPL067 in "the Plan".
68	Groundwater TANTANGARA	Groundwater downgradient east from Tantangara emplacement area, labelled EPL068 in "the Plan".
69	Groundwater TANTANGARA	Groundwater downgradient west from Tantangara emplacement area, labelled EPL069 in "the Plan".
70	Groundwater TANTANGARA	Groundwater upgradient from Tantangara emplacement area, labelled EPL070 in "the Plan".
71	Surface Water MARICA	Surface water downstream from Marica emplacement area, labelled EPL071 in "the Plan".
72	Groundwater MARICA	Groundwater upgradient from Marica emplacement area, labelled EPL072 in "the Plan".
73	Groundwater MARICA	Groundwater downgradient from Marica emplacement area, labelled EPL073 in "the Plan".
76	Surface Water ROCK FOREST	Rock Forest Leachate Basin, labelled EPL076 in "the Plan".
80	Groundwater LICK HOLE GULLY	Lick Hole Gully groundwater monitoring upgradient from Lick Hole Gully, labelled EPL080 in "the Plan".
81	Groundwater LICK HOLE GULLY	Lick Hole Gully groundwater monitoring downgradient from Lick Hole Gully, labelled EPL081 in "the Plan".

82	Groundwater MAIN YARD	Main Yard groundwater monitoring upgradient from Main Yard emplacement area, labelled EPL082 in "the Plan".
83	Groundwater MAIN YARD	Groundwater monitoring downgradient from Main Yard emplacement area, labelled EPL083 in "the Plan".
84	Surface Water Main Yard	Main Yard leachate basin F8, labelled EPL084 in "the Plan".
85	Surface Water MAIN YARD	Main Yard leachate basin MY07, labelled EPL085 in "the Plan".
86	Surface Water LICK HOLE GULLY	Lick Hole Gully leachate basin LHG01, labelled EPL086 in "the Plan".
87	Groundwater MAIN YARD	Main Yard groundwater monitoring downgradient from Main Yard emplacement area, labelled EPL087 in "the Plan".
88	Groundwater MAIN YARD	Main Yard groundwater monitoring downgradient from Main Yard emplacement area, labelled EPL088 in "the Plan".
89	Groundwater LICK HOLE GULLY	Lick Hole Gully groundwater monitoring downgradient from GF01 emplacement area, labelled EPL089 in "the Plan".
90	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL090 in "the Plan".
91	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL091 in "the Plan".
92	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL092 in "the Plan".
93	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL093 in "the Plan".
94	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL094 in "the Plan".
95	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL095 in "the Plan".
96	Groundwater GF01	GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL096 in "the Plan".

Condition	Requirement	Where addressed
	97 Groundwater GF01 — GF01 groundwater monitoring downgradient from GF01 emplacement area, labelled EPL097 in "the Plan". 98 Surface Water GF01 — Rock blanket diversion monitoring under GF01 Liner, labelled EPL098 in "the Plan". 99 Surface Water MARICA — Marica Leachate basin - Turkey's Nest, labelled EPL099 in "the Plan". 100 Surface Water MARICA — Marica Lower Leachate Basin USS Shaft, labelled EPL100 in "the Plan". 101 Surface Water MARICA — Marica Leachate Basin Spoil Pad, labelled EPL101 in "the Plan". 102 Groundwater MARICA — Groundwater monitoring associated with the Marica emplacement area on Marica Trail, adjacent MT06, labelled EPL102 in "the Plan". 103 Groundwater TANTANGARA — Upstream groundwater monitoring west of the Tantangara emplacement area, labelled EPL103 in "the Plan". 104 Groundwater TANTANGARA — Downslope groundwater monitoring east of the Tantangara emplacement area, labelled EPL104 in "the Plan". 105 Groundwater TANTANGARA — Downslope groundwater monitoring west of the Tantangara emplacement area, labelled EPL105 in "the Plan". 106 Surface Water RAVINE BAY — Ravine Bay Leachate basin 1, labelled EPL106 in "the Plan". 107 Surface Water RAVINE BAY — Upstream monitoring of Ravine Bay emplacement area within Yarrangobilly River, labelled EPL107 in "the Plan". 108 Surface Water RAVINE BAY — Monitoring of Ravine Bay emplacement area (centre of PSE) within Yarrangobilly River, labelled EPL108 in "the Plan". 109 Surface Water RAVINE BAY — Upstream monitoring of Ravine Bay emplacement area within Yarrangobilly River, labelled EPL109 in "the Plan". 110 Surface Water RAVINE BAY — Upstream monitoring of Ravine Bay emplacement area, labelled EPL110 in "the Plan". 111 Surface Water RAVINE BAY — Upstream monitoring of Ravine Bay emplacement area rock mattress, labelled EPL111 in "the Plan". 112 Surface Water RAVINE BAY — Downstream monitoring of Ravine Bay emplacement area rock mattress, labelled EPL112 in "the Plan". 113 Groundwater RAVINE BAY — Upstream east monitoring of Ravine Bay emplacement area, labelled EPL113 in "the Plan". 114 Groundwater RAVINE BAY — Upstream west monitoring of Ravine Bay emplacement area, labelled EPL114 in "the Plan". 115 Groundwater RAVINE BAY — Downstream east monitoring of Ravine Bay emplacement area, labelled EPL115 in "the Plan". 116 Groundwater RAVINE BAY — Downstream west monitoring of Ravine Bay emplacement area, labelled EPL116 in "the Plan". 117 Groundwater RAVINE BAY — Downstream monitoring of the Ravine Bay emplacement area, labelled EPL117 in "the Plan". 118 Surface Water RAVINE BAY — Ravine Bay Leachate basin 2, labelled EPL118 in "the Plan". 119 Surface Water RAVINE BAY — Ravine Bay Leachate basin 3, labelled EPL119 in "the Plan". 120 Surface Water RAVINE BAY — Ravine Bay Leachate basin 4, labelled EPL120 in "the Plan". 122 Surface Water GFO1 — GFO1 Drainage Line (formerly EPL 55b), labelled EPL122 in "the Plan".	

<table>
<tr><th>Condition</th><th>Requirement</th><th>Where addressed</th></tr>
<tr><td colspan="2">3 Limit Conditions</td><td></td></tr>
<tr><td colspan="2">L1 Pollution of waters</td><td></td></tr>
<tr><td>L1.1</td><td>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.</td><td></td></tr>
<tr><td colspan="2">L2 Concentration limits</td><td></td></tr>
<tr><td>L2.1</td><td>For each monitoring/discharge point or utilisation area specified in the table/s 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.</td><td></td></tr>
<tr><td>L2.2</td><td>Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.
<table>
<tr><th>Pollutant</th><th>Units of Measure</th><th>50 Percentile concentration limit</th><th>90 Percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr>
<tr><td>pH</td><td>pH</td><td></td><td></td><td></td><td>6.5-8.5</td></tr>
</table></td><td></td></tr>
<tr><td>L2.3</td><td>To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.</td><td></td></tr>
<tr><td>L2.4</td><td>Water and/or Land Concentration Limits
POINT 41
<table>
<tr><th>Pollutant</th><th>Units of Measure</th><th>50 Percentile concentration limit</th><th>90 Percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr>
<tr><td>Electrical conductivity</td><td>microsiemens per centimetre</td><td></td><td></td><td></td><td>700</td></tr>
</table>
POINT 41,50
<table>
<tr><th>Pollutant</th><th>Units of Measure</th><th>50 Percentile concentration limit</th><th>90 Percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr>
<tr><td>Faecal Coliforms</td><td>colony forming units per 100 millilitres</td><td></td><td>10</td><td></td><td>100</td></tr>
<tr><td>Nitrogen (ammonia)</td><td>milligrams per litre</td><td></td><td>0.2</td><td></td><td>2</td></tr>
<tr><td>Nitrogen (total)</td><td>milligrams per litre</td><td></td><td>0.35</td><td></td><td></td></tr>
<tr><td>Oil and Grease</td><td>milligrams per litre</td><td></td><td>2</td><td></td><td>5</td></tr>
<tr><td>BOD</td><td>milligrams per litre</td><td></td><td>2</td><td></td><td>5</td></tr>
<tr><td>Phosphorus (total)</td><td>milligrams per litre</td><td></td><td>0.1</td><td></td><td>0.3</td></tr>
<tr><td>Total suspended solids</td><td>milligrams per litre</td><td></td><td>5</td><td></td><td>10</td></tr>
</table>
POINT 50
<table>
<tr><th>Pollutant</th><th>Units of Measure</th><th>50 Percentile concentration limit</th><th>90 Percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr>
<tr><td>Electrical conductivity</td><td>microsiemens per centimetre</td><td></td><td></td><td></td><td>200</td></tr>
</table></td><td></td></tr>
<tr><td colspan="2">L3 Volume and mass limits</td><td></td></tr>
<tr><td>L3.1</td><td>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
(a) liquids discharged to water; or;
(b) solids or liquids applied to the area; must not exceed the volume/mass limit specified for that discharge point or area.
<table>
<tr><th>Point</th><th>Unit of Measure</th><th>Volume/Mass Limit</th></tr>
<tr><td>43,50</td><td>megalitres per day</td><td>4.32</td></tr>
<tr><td>44,45,47,48,49</td><td>megalitres per day</td><td></td></tr>
</table></td><td></td></tr>
</table>

<table>
<tr><th>Condition</th><th>Requirement</th><th>Where addressed</th></tr>
<tr><td>L3.2</td><td>For each discharge point or utilisation area specified below (by a point number), the flow rate of:
(a) liquids discharged to water; or
(b) solids or liquids applied to the area; must not exceed the flow rate specified by that discharge point or area.
<table><tr><th>Point</th><th>Unit of Measurement</th><th>Flow rate</th></tr><tr><td>43, 50</td><td>litres per second</td><td>50 litres per second</td></tr></table></td><td></td></tr>
<tr><td colspan="2">4 Operating Conditions</td><td></td></tr>
<tr><td colspan="2">O1 Activities must be carried out in a competent manner</td><td></td></tr>
<tr><td>O1.1</td><td>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.</td><td></td></tr>
<tr><td colspan="2">O2 Maintenance of plant and equipment</td><td></td></tr>
<tr><td>O2.1</td><td>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.</td><td></td></tr>
<tr><td colspan="2">O3 Dust</td><td></td></tr>
<tr><td>O3.1</td><td>All operations and activities occurring at the premises must be carried out in a manner that minimises or prevents the emission of dust from the premises.</td><td></td></tr>
<tr><td colspan="2">O4 Waste Management</td><td></td></tr>
<tr><td>O4.1</td><td>The licensee must assess, classify and manage any waste generated at the premises in accordance with the Waste Classification Guidelines 2014 and the Act. Waste need to be transported to a place that can lawfully accept that waste.</td><td></td></tr>
<tr><td colspan="2">O5 Other operating conditions</td><td></td></tr>
<tr><td colspan="2">Spoil Characterisation</td><td></td></tr>
<tr><td>O5.1</td><td>The Licensee must ensure that all samples collected for spoil characterisation are:
(a) representative of the material currently being extracted from the specific area of the tunnel;
(b) representative of the material contained in the 10m advance (currently defined block);
(c) is not skewed by veins; and
(d) corresponds to the material placed on the emplacement area.</td><td></td></tr>
<tr><td colspan="2">Spoil Treatment</td><td></td></tr>
<tr><td>O.5.2</td><td>All treatment of spoil including but not limited to the temporary storage of spoil, and treatment of
Potentially Acid Forming (PAF) material and material at risk of resulting in Acid Mine Drainage or Neutral
Mine Drainage, must be undertaken in a manner that:
(a) achieves permanent neutralisation of the material
(b) prevents pollution of waters; and
(c) prevents contamination of land.</td><td></td></tr>
<tr><td>O5.3</td><td>The Licensee must validate that all treated spoil material meets the requirements of condition O5.2</td><td></td></tr>
<tr><td colspan="2">Spoil Emplacement</td><td></td></tr>
<tr><td>O5.4</td><td>All spoil material must be emplaced in a manner that minimises air flow capacity and maximises neutralisation.</td><td></td></tr>
<tr><td colspan="2">Spoil Leachate Management</td><td></td></tr>
<tr><td>O5.5</td><td>Prior to emplacing spoil on a particular spoil emplacement area, the Licensee must develop a leachate detection system which characterises the quality of any leachate being generated from within the emplacement areas.</td><td></td></tr>
<tr><td>O5.6</td><td>Within 2 weeks of developing the leachate detection system, the Licensee must provide a report detailing the findings and recommendations for the leachate detection system/s required by Condition O5.5 to info@epa.nsw.gov.au.</td><td></td></tr>
<tr><td colspan="2">Spoil Management Contingencies</td><td></td></tr>
<tr><td>O5.7</td><td>The Licensee must maintain and implement a contingency plan in the event that characterisation, treatment, emplacement or leachate management does not meet the appropriate thresholds within the QAQC plan.</td><td></td></tr>
<tr><td colspan="2">5 Monitoring and Recording Conditions</td><td></td></tr>
</table>

Condition	Requirement	Where addressed
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.	
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

Water and/ or Land Monitoring Requirements

POINT 1,2,4,25

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	micrograms per litre	Quarterly	Grab sample
Copper (dissolved)	micrograms per litre	Quarterly	Grab sample
Dissolved Oxygen	percent saturation	Quarterly	In situ
Electrical conductivity	microsiemens per centimetre	Quarterly	In situ
Iron (dissolved)	micrograms per litre	Quarterly	Grab sample
Lead (dissolved)	micrograms per litre	Quarterly	Grab sample
Manganese (dissolved)	micrograms per litre	Quarterly	Grab sample
Nickel (dissolved)	micrograms per litre	Quarterly	Grab sample
Nitrogen (total)	micrograms per litre	Quarterly	Grab sample
Oxidation Reduction Potential	millivolts	Quarterly	In situ
Reactive Phosphorus	micrograms per litre	Quarterly	Grab sample
Silver (dissolved)	micrograms per litre	Quarterly	Grab sample
Turbidity	nephelometric turbidity units	Quarterly	In situ
Zinc	micrograms per litre	Quarterly	Grab sample

POINT 5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,50,51,52,53,54,5 5,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,76,80,81,82,83,84,85,86,87,88,89,90,9 1,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115 ,116,117,118,119,120,122

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	milligrams per litre	Monthly	Grab sample
Copper (dissolved)	micrograms per litre	Monthly	Grab sample
Electrical conductivity	microsiemens per centimetre	Monthly	In situ
Iron (dissolved)	micrograms per litre	Monthly	Grab sample
Manganese (dissolved)	micrograms per litre	Monthly	Grab sample
Nickel (dissolved)	micrograms per litre	Monthly	Grab sample
Nitrogen (total)	micrograms per litre	Monthly	Grab sample
pH	pH	Monthly	In situ
Reactive Phosphorus	micrograms per litre	Monthly	Grab sample
Silver (dissolved)	micrograms per litre	Monthly	Grab sample
Zinc (dissolved)	micrograms per litre	Monthly	Grab sample

POINT 5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,50,51,52,53,54,5 5,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,76,80,81,82,83,84,85,86,87,88,89,90,91,92,9 3,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,1 17,118,119,120,122

Pollutant	Units of measure	Frequency	Sampling Method
Arsenic (dissolved)	micrograms per litre	Monthly	Grab sample
Chromium (dissolved)	micrograms per litre	Monthly	Grab sample
Cyanide (total)	micrograms per litre	Monthly	Grab sample
Hardness (as calcium carbonate)	milligrams per litre	Monthly	Grab sample
Oil and Grease	milligrams per litre	Monthly	Grab sample
Phosphorus (total)	micrograms per litre	Monthly	Grab sample
Total Kjeldahl Nitrogen	micrograms per litre	Monthly	Grab sample

POINT 5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,50,51,52,53,54,5 5,59,60,61,62,63,64,65,66,67,71,76,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,9 9,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,12 2

Pollutant	Units of measure	Frequency	Sampling Method
Total suspended solids	milligrams per litre	Monthly	Grab sample

POINT **5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,50,51,52,53,54,55,59,60,61,62,63,64,65,66,67,71,76,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,106,107,108,109,110,111,112,118,119,120,122**

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	micrograms per litre	Monthly	Grab sample

POINT **5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,50,51,52,53,54,55,59,60,61,62,63,64,65,66,67,71,76,84,85,86,98,99,100,101,106,107,108,109,110,111,112,118,119,120,122**

Pollutant	Units of measure	Frequency	Sampling Method
Turbidity	nephelometric turbidity units	Monthly	In situ

POINT **5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,50,51,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,122**

Pollutant	Units of measure	Frequency	Sampling Method
Oxidised nitrogen	micrograms per litre	Monthly	Grab sample

POINT **5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,76**

Pollutant	Units of measure	Frequency	Sampling Method
Oxidation Reduction Potential	millivolts	Monthly	In situ
Temperature	degrees Celsius	Monthly	In situ

POINT **5,6,8,9,10,11,12,14,15,16,24,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,76,84,85,86**

Pollutant	Units of measure	Frequency	Sampling Method
Dissolved Oxygen	percent saturation	Monthly	In situ

POINT **10,11,28,41,50,51**

Pollutant	Units of measure	Frequency	Sampling Method
BOD	milligrams per litre	Monthly	Grab sample
Faecal Coliforms	colony forming units per 100 millilitres	Monthly	Grab sample

POINT **36,37,52,53,54,55,59,60,61,62,63,64,65,66,67,71,76,84,85,86,106,107,108,109,110,111,112,118,119,120,122**

Pollutant	Units of measure	Frequency	Sampling Method
Nitrate + nitrite (oxidised nitrogen)	micrograms per litre	Monthly	Grab sample

POINT **50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,76,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,122**

Pollutant	Units of measure	Frequency	Sampling Method
Lead (dissolved)	micrograms per litre	Monthly	Grab sample

POINT **52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70**

Pollutant	Units of measure	Frequency	Sampling Method
Arsenic (total)	micrograms per litre	Monthly	Grab sample
Chromium (total)	micrograms per litre	Monthly	Grab sample
Copper (total)	micrograms per litre	Monthly	Grab sample
Lead (total)	micrograms per litre	Monthly	Grab sample
Nickel (total)	micrograms per litre	Monthly	Grab sample
Silver (total)	micrograms per litre	Monthly	Grab sample
Total Iron	micrograms per litre	Monthly	Grab sample
Total manganese	micrograms per litre	Monthly	Grab sample
Zinc (total)	micrograms per litre	Monthly	Grab sample

POINT **52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,72,73**

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (total)	micrograms per litre	Monthly	Grab sample

<table>
<tr><th>Condition</th><th>Requirement</th><th>Where addressed</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="2">M3 Testing methods - concentration limits</td><td></td></tr>
<tr><td>M3.1</td><td>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.</td><td></td></tr>
<tr><td>M3.2</td><td>Condition M3.1 also applies to the monitoring of any points identified in Condition M2.2</td><td></td></tr>
<tr><td colspan="2">M4 Recording of pollution complaints</td><td></td></tr>
<tr><td>M4.1</td><td>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.</td><td></td></tr>
<tr><td>M4.2</td><td>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.</td><td></td></tr>
<tr><td>M4.3</td><td>The record of a complaint must be kept for at least 4 years after the complaint was made.</td><td></td></tr>
<tr><td>M4.4</td><td>The record must be produced to any authorised officer of the EPA who asks to see them.</td><td></td></tr>
<tr><td colspan="2">M5 Telephone complaints line</td><td></td></tr>
<tr><td>M5.1</td><td>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</td><td></td></tr>
<tr><td>M5.2</td><td>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.</td><td></td></tr>
<tr><td>M5.3</td><td>The preceding two conditions do not apply until immediately the date of the issue of this licence</td><td></td></tr>
<tr><td colspan="2">M6 Requirement to monitor volume or mass</td><td></td></tr>
<tr><td>M6.1</td><td>For each discharge point or utilisation area specified below, the licensee must monitor:
(a) the volume of liquids discharged to water or applied to the area;
(b) the mass of solids applied to the area;
(c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below.
POINT 43,50
<table><tr><th>Frequency</th><th>Unit of Measure</th><th>Sampling Method</th></tr><tr><td>Continuous</td><td>megalitres per day</td><td>Ultrasonic flow meter</td></tr></table>POINT 44,45,47,48,49
<table><tr><th>Frequency</th><th>Unit of Measure</th><th>Sampling Method</th></tr><tr><td>Continuous</td><td>megalitres per day</td><td>Ultrasonic flow meter</td></tr></table></td><td></td></tr>
<tr><td colspan="2">6 Reporting Conditions</td><td></td></tr>
<tr><td colspan="2">R1 Annual return documents</td><td></td></tr>
<tr><td>R1.1</td><td>The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance – Licence Conditions,
4. a Statement of Compliance – Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance – Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance – Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.</td><td>Section 15</td></tr>
</table>

Condition	Requirement	Where addressed
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 via eConnect *EPA* or 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	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.	
R1.7	Within the Annual Return, the Statements 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.	
R2 Notification of environmental harm		
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555. 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.	Section 9.2
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.	Section 9.2
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.	Section 9.2
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.	Section 9.2 and Section 12
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	Section 9.2
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.	Section 9.2
R4 Other reporting conditions		
R4.1	The licensee must notify the EPA within 24 hours by phone or in writing of any results of monitoring required by condition M2 that exceed the Australian and New Zealand Environment Conservation Council Guidelines and NSW Water Quality Objectives and caused by activities carried out by or on behalf of the Licensee.	Section 9.2

Condition	Requirement	Where addressed
Environmental Monitoring Report		
R4.2	By 30 June each year, the Licensee must submit an Environmental Monitoring Report which covers the preceding period of 1 December - 31 May, unless otherwise agreed in writing by the EPA.	
R4.3	By 15 January each year, the Licensee must submit an Environmental Monitoring Report which covers the preceding period of 1 June - 30 November, unless otherwise agreed in writing by the EPA.	
R4.4	The Environmental Monitoring Report must be prepared by a suitably qualified and experienced person and include, but not be limited to: (a) results of all water quality monitoring undertaken in the relevant preceding period nominated in Condition R4.2 and R4.3; (b) results of all weather monitoring undertaken in the relevant preceding period nominated in Condition R4.2 and R4.3; (c) assessment of historical trends in all water sampling data for each monitoring point inclusive of the relevant preceding period nominated in Condition R4.2 and R4.3; (d) identification of instances where the water quality objective triggers for each relevant pollutant were exceeded at receiving water locations and/or where the predicted discharge water quality was exceeded at sediment basin discharge points; (e) include details of any actions taken by the Licensee in response to exceedances identified under point (d), including but not limited to: i. additional monitoring ii. remedial actions; and iii. activation of trigger, action, response plans (TARPs); (f) recommendations for future actions in relation to monitoring and/or management (g) identification of any water quality monitoring that was not completed in compliance with Condition M2.2. This must include an appropriate justification for the non-compliance.	
Quarterly Spoil Monitoring Report		
R4.5	For each emplacement area (Main Yard, GF01, Tantangara, Rock Forest, Marica and Ravine Bay), the Licensee must provide a quarterly spoil monitoring report (The Spoil Monitoring Report). The Spoil Monitoring Report must be provided by: 1. 30 April each year for Quarter 1 of the calendar year (1 January - 31 March) 2. 31 July each year for Quarter 2 of the calendar year (1 April - 30 June) 3. 31 October each year for Quarter 3 of the calendar year (1 July - 30 September) 4. 31 January each year for Quarter 4 of the calendar year (1 October - 31 December)	
R4.6	The Spoil Monitoring Report must be prepared by a suitably qualified and experienced person and include, but need not be limited to: (a) Quantities of spoil that has been emplaced (in m3) (b) Results of all spoil characterisation that has occurred in the quarter. Including but not limited to quantities of: i. Non-acid forming material (NAF) ii. Acid neutralisation capacity material (ANC) iii. Potentially acid forming material (PAF) iv. Any other relevant spoil streams (c) Treatment undertaken on the emplaced spoil following the characterisation (d) Proof of validation of all treated spoil (e) Cumulative total volumes of spoil emplaced, including but not limited to: i. Non-acid forming material (NAF) ii. Acid neutralisation capacity material (ANC) iii. Potentially acid forming material (PAF) iv. Any other relevant spoil streams (f) Details of any actions taken by the Licensee in response to characterisation results to ensure appropriate emplacement or disposal of spoil. This may include but need not be limited to: i. Additional treatment undertaken prior to emplacement ii. Additional controls undertaken prior to emplacement iii. Transporting spoil offsite to a lawful facility iv. Activation of a relevant Trigger, Action, Response Plan (TARP) v. Any other remedial actions (g) Leachate generated from the spoil emplacement area. This should include, but need not be limited to: i. Volumes of leachate generated ii. Quality of leachate generated (consistent with the parameters listed in condition M2.2 iii. Actions taken to manage the leachate generated (h) Recommendations for future actions in relation to characterisation, monitoring, treatment, and management of spoil, including leachate management.	
R4.7	The Spoil Monitoring Report must identify if any emplacement area nominated under Condition R4.5 has not had any spoil emplacement in the relevant quarter (i.e. emplacement has not yet commenced, has not occurred in the quarter or the emplacement has ceased in that area).	
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.	

<table>
<tr><th>Condition</th><th>Requirement</th><th>Where addressed</th></tr>
<tr><td>G1.2</td><td>The licence must be produced to any authorised officer of the EPA who asks to see it.</td><td></td></tr>
<tr><td>G1.3</td><td>The licence must be available for inspection by any employee or agent of the licensee working at the premises.</td><td></td></tr>
<tr><td colspan="2">G2 Signage</td><td></td></tr>
<tr><td>G2.1</td><td>Each monitoring point in condition P1.2 must be clearly marked by a sign that indicates the EPA point identification number.</td><td></td></tr>
<tr><td colspan="2">G3 Other general conditions</td><td></td></tr>
<tr><td>G3.1</td><td>Completed Programs
<table><tr><th>Program</th><th>Description</th><th>Completed Date</th></tr><tr><td>PRP 1 - Assessment of the water and contaminant management system at MAT spoil stockpile area</td><td>PRP to assess the water management system at MAT spoil stockpile area with a view of improving water management outcomes. PRP identified all CoC associated with TBM and stockpile placement and both short and long-term controls to be implemented in the future.</td><td>29-April-2022</td></tr><tr><td>PRP 2 - Diffuse Source Water Pollution Management</td><td>Licensee must undertake an assessment of all controls employed to manage the risk of diffuse source water pollution across the Premises.</td><td>24-January-2024</td></tr><tr><td>PRP 3 - Generator emission improvements program</td><td>A program to improve emissions from generators or decommission generators in accordance with the Clean Air Regulation.</td><td>09-February-2024</td></tr><tr><td>PRS 4 - Review of Process Water Treatment Plant</td><td>Program requires the Licensee to undertake an assessment of the PWTPs at the premises and make recommendations on improvements</td><td>03-July-2024</td></tr><tr><td>PRS 5 - Sampling Quality Assurance Quality Control Program</td><td>Program requires the Licensee to undertake an assessment of current water quality sampling methodology and make improvements. Includes provisions for a QAQC program.</td><td>29-May-2024</td></tr></table></td><td></td></tr>
<tr><td colspan="2">8 Special Conditions</td><td></td></tr>
<tr><td colspan="2">E1 Verification of Mixing Zone Modelling</td><td></td></tr>
<tr><td>E1.1</td><td>The licensee must engage a suitably qualified and experienced person(s) to prepare a Mixing Zone Verification Program.</td><td></td></tr>
<tr><td>E1.2</td><td>At least 4 weeks prior to the first discharge of each of the sewage treatment plants and process water treatment plants, the licensee must submit a written plan for the Mixing Zone Verification Program to the info@epa.nsw.gov.au. The plan for the Mixing Zone Verification Program must include, but need not be limited to:

(a) <u>Sampling locations</u>
Sampling locations must be comparable to the key locations identified in Attachment F Waste and Process Water Mixing Zone Assessment (7 February 2020) of the “Snowy 2.0 - Main Works - Response to Submissions Main Report - Appendix J Revised Water Management Report” and capture ambient water quality;

(b) <u>Sampling frequency and duration</u>
The frequency and duration of sampling must be adequate to capture the full range of receiving waterway conditions, including but not limited to, winds, current, temperature and rainfall, to allow modelling predictions under a range of scenarios to be verified;

(c) <u>Sampling depth</u>
Sampling must allow for variations at depth under a range of scenarios (i.e. thermal stratification); and

(d) <u>Sampling parameters</u>
The parameters must include, but need not be limited to:
i. Total nitrogen;
ii. Total phosphorus;
iii. pH;
iv. Biological Oxygen Demand;
v. Nitrogen (ammonia);
vi. Turbidity; and
vii. Electrical Conductivity.</td><td></td></tr>
</table>

Condition	Requirement	Where addressed
E1.3	Within 6 weeks of the first discharge from each sewage treatment plant and the process water treatment plants, the licensee must submit a **written progress report** for the Mixing Zone Verification Program to info@epa.nsw.gov.au.	
E1.4	Upon completion of the Mixing Zone Verification Program (as per Condition E1.2 (b)), the licensee must submit a **written final report** detailing the results of the Mixing Zone Verification Program for each of the sewage treatment plants and process water treatment plants to info@epa.nsw.gov.au.	
E1.5	The written progress report and final reports referred to in Condition E1.3 and E1.4 above must include, but need not be limited to: (a) a statement of the ambient NSW Water Quality Objectives (WQOs) of the receiving waters (Talbingo/Tantangara Reservoir) relevant to the discharge, including the associated indicators and guideline values or criteria for the identified environmental values; (b) a description of the ambient water quality of Talbingo/Tantangara Reservoir in relation to the relevant WQOs, to determine whether the WQOs are being achieved; (c) ambient conditions (e.g. currents, temperature, density, storage level and thermal stratification processes); (d) discharge and release conditions including but not limited to: i. rate of discharge; ii. timing; iii. total volume; iv. water quality of discharge; (e) a description of the mixing zone, including the extent and shape of the mixing zone; (f) a comparison of point e. above with the modelled predications from Attachment F Waste and Process Water Mixing Zone Assessment (7 February 2020) of the "Snowy 2.0 - Main Works - Response to Submissions Main Report - Appendix J Revised Water Management Report" including discussion of the mixing zone modelling and whether the relevant guideline values are being met at the edge of the near-field mixing zone; and (g) a continuous improvement plan for managing wastewater discharge over time, so as to reduce the extent and impact of the mixing zone Note: This program has been developed to verify the modelled water quality impacts on the Talbingo and Tantangara reservoir of the proposed discharge of treated effluent from the sewage treatment and process water treatment plants. The EPA intends to use this information to refine discharge criteria in this licence.	
E2 Correlation Assessment – Faecal Coliforms		
E2.1	The Licensee is permitted to undertake an assessment to trial the use of a membrane filtration method (in-field) for monitoring of faecal coliforms in the field. The assessment must: 1. Ensure that the in-field and laboratory samples are taken concurrently over a period of time that is sufficient to derive a statistically robust correlation between methods. Samples may be taken more frequently than the licence requires in order to achieve this if desired 2. Derive a statistical correlation between the membrane filtration method and the method currently used in compliance with the Approved Methods Publication 3. Ensure that appropriate quality control procedures are followed 4. Demonstrate the accuracy and reliability of the membrane filtration method; and 5. Provide recommendations on an appropriate frequency of monitoring for the membrane filtration method	
E2.2	The Licensee must provide a written report detailing compliance with the above requirements to info@epa.nsw.gov.au following completion of the assessment.	
E3 Lining and Capping requirements for the Ravine Bay and Tantangara Permanent Spoil Emplacement Areas		
E3.1	Prior to the emplacement of spoil at Ravine Bay and Tantangara Permanent Spoil Emplacement Areas (PSE), the Licensee must install a suitable engineered liner and drainage system that achieves a safe, stable and non-polluting landform, and separates any potential leachate from groundwater. The Licensee must: 1. evaluate and identify a suitable engineered liner and drainage system that achieves the aforementioned outcomes; 2. provide the EPA with the drainage design and technical liner specifications, including Construction Quality Assurance (CQA) plan and detailed design prior to installation; 3. design, construct, install and operate the liner and drainage system in accordance with the design specifications; and 4. following liner and drainage construction and installation, provide the CQA report prepared by a suitably qualified person to the EPA verifying achievement of the design specifications.	
E3.2	Prior to the rehabilitation of the Ravine Bay and Tantangara Permanent Spoil Emplacement Areas (PSE), the Licensee must install a suitable capping layer which fully encapsulates the PSEs, and minimises ingress of water into the PSEs. The capping layer must achieve a safe, stable and non-polluting landform. The Licensee must: 1. evaluate and identify a suitable capping methodology that achieves the aforementioned outcomes; 2. provide the EPA with the final technical capping design specifications, including appropriate Quality Assurance (QA) and Quality Control (QC) plans and detailed design specifications prior to installation; 3. design, construct, and install the capping system in accordance with the design specifications; and, 4. provide QA/QC reports prepared by a suitably qualified person to the EPA following completion of the capping layer verifying achievement of the design specifications.	
E4 Nitrogen Management Plan		

Condition	Requirement	Where addressed
E4.1	The licensee must prepare a Nitrogen Management Plan when undertaking blasting operations on the premises using Ammonium Nitrate Fuel Oil (ANFO) explosives or emulsions.	
E4.2	The Nitrogen Management Plan must be developed in consultation with the EPA and must: 1. Specify how ANFO explosives will be selected, handled and used at the premises to minimise the impact of nitrate residues upon the surrounding environment; 2. Specify how nitrate residues from blasting activities will be monitored and managed by the licensee; 3. Specify arrangements for a suitable water sampling regime of surface water and ground water in the vicinity of all waste rock emplacement areas; 4. Specify how waste rock emplacement areas will be monitored, characterised and managed by the licensee; and 5. Specify how surface and groundwater impacts will be monitored and managed by the licensee. 6. Specify what remediation measures will be undertaken by the licensee in relation to any elevated nitrate residue levels. 7. Consider and include monitoring for all forms of nitrogen residues is soils, water and groundwater.	
E4.3	The licensee must comply with the Nitrogen Management Plan.	
E4.4	The licensee must monitor its compliance performance with the Nitrogen Management Plan and report any non-compliances to the EPA immediately.	

APPENDIX B – ENVIRONMENTAL ASPECTS AND IMPACTS REGISTER

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
1	Vegetation Clearing	Biodiversity	Injury/mortality of fauna	Removal of occupied habitat, including hollow-bearing trees, shrubs, nests, ground cover, rocks	- Reputational impacts - Potential regulatory action from agencies	3 - Moderate	4 - Likely	12 - High	- Biodiversity Management Plan - Pre-clearing procedure - Ecologists supervision during clearing operations	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
2	Vegetation Clearing	Biodiversity	Removal of vegetation/habitat not permitted to be impacted by the project approval	Vegetation clearing outside of construction envelope	- Unauthorised impact to flora / National Park - Project delays - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
3	Vegetation Clearing	Biodiversity	Removal of vegetation/habitat not permitted to be impacted by the project approval	Vegetation clearing that results in impacts additional to the total area in condition 5 of schedule 2	- Unauthorised impact to flora / National Park - Project delays - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Exclusion zones, defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
4	Earthworks/ Roadworks	Biodiversity	Removal of vegetation/habitat not permitted to be impacted by the project approval	Vegetation clearing outside of construction envelope	- Unauthorised impact to flora / National Park - Project delays - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Spoil Management Plan - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones - Sensitive Area Plans / GIS mapping	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
5	Earthworks/ Roadworks	Biodiversity	Impacts on vegetation/habitat beyond the construction envelope	Improper stockpiling of excavated material and engineered fill	- Unapproved impacts beyond construction envelope - Potential regulatory action from agencies - Project delays - Financial penalties - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Spoil Management Plan - Biodiversity Management Plan - Training of contractors on environmental exclusion zones - Sensitive Area Plans / GIS mapping	3 - Moderate	1 - Rare	3 - Low	Future Generation
6	Construction of waterway crossings	Biodiversity	Loss of aquatic habitat not permitted to be impacted by the construction envelope	Clearing outside the project footprint, plant operation and excavation outside project footprint	- Unapproved impacts beyond construction envelope - Potential regulatory action from agencies - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	3 - Moderate	1 - Rare	3 - Low	Future Generation
7	Construction of waterway crossings	Biodiversity	Injury/mortality of aquatic fauna	Earthworks/clearing and construction at waterway crossings without proper ecological supervision and procedures.	- Unauthorised impact to fauna (and potentially threatened fauna) - Potential regulatory action from agencies	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan - Pre-clearance procedure - Ecologist supervision during clearing - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	2 - Minor	2 - Unlikely	4 - Low	Future Generation
8	Construction of Barge Access Infrastructure	Biodiversity	Injury/mortality of aquatic fauna	Earthworks/Clearing in riparian habitats adjacent to the Talbingo Reservoir	- Unauthorised impact to fauna (and potentially threatened fauna) - Potential regulatory action from agencies	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan	2 - Minor	2 - Unlikely	4 - Low	Future Generation
9	Construction of Barge Access Infrastructure	Biodiversity	Loss of aquatic habitat not permitted to be impacted by the project approval	Earthworks/Construction within Talbingo Reservoir beyond the approved construction envelope	- Unauthorised impact to fauna (and potentially threatened fauna) - Unapproved impacts beyond construction envelope - Potential regulatory action from agencies	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan - Training for contractors - Sensitive Area Plans / GIS mapping	3 - Moderate	1 - Rare	3 - Low	Future Generation
10	Dredging	Biodiversity	Loss of fish, fish eggs and invertebrates within the dredge area	Hydraulic entrainment of aquatic fauna in the dredge cutter head	- Unauthorised impact to fauna (and potentially threatened fauna) - Impacts to aquatic fauna population - Loss of threatened species within Talbingo Reservoir	3 - Moderate	3 - Possible	9 - Medium	- Dredging Management Plan (for Exploratory Works if required)	4 - Major	1 - Rare	4 - Low	Future Generation

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
11	Stockpile/spoil emplacement	Biodiversity	Introduction and spread of weeds, pests and pathogens causing native/threatened species population declines within KNP	Disturbance of natural areas and storage of spoil provides opportunity for weeds to establish and spread beyond the project area	- Impact to biodiversity in exceedance of the approved Project - Spread of weeds in the National Park - Smothering / impacts to native vegetation - Long term maintenance requirements	3 - Moderate	4 - Likely	12 - High	- Biodiversity Management Plan - Weed, Pest and Pathogen Management Plan	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
12	Transport of materials, equipment and personnel	Biodiversity	Frequent Injury/mortality of protected fauna	Driving vehicles on access roads during times of high fauna activity. Excessive speed on access roads. Inattention of drivers on potential for fauna impacts.	- Trigger EPBC Act thresholds for impacts on Commonwealth listed species, including Booroolong Frog and Smoky Mouse - Potential regulatory action from agencies - Financial penalties - Reputational impacts - Personal injury due to collision with large fauna including kangaroos, feral pigs, horses and deer	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Transport Management Plan - Drivers Code of Conduct	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
13	Transport of materials, equipment and personnel	Biodiversity	Introduction and spread of weeds, pests and pathogens causing native/threatened species population declines within KNP	Vehicular movements from disturbed and contaminated areas beyond KNP into undisturbed areas within the project area and surrounding national park	- Impact to biodiversity in exceedance of the approved Project - Spread of weeds in the National Park - Smothering / impacts to native vegetation - Long term maintenance requirements	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Weed, Pest and Pathogen Management Plan - Weed and seed washdown inspections - Washdown facility for plant - Hygiene inspections of vehicles	4 - Major	2 - Unlikely	8 - Medium	Future Generation
14	Vegetation Clearing	Surface water	- Erosion and sedimentation - Contamination of surface water and breach of EPL water quality performance standards	Newly exposed sediment and top soil carried into catchments and watercourses during rainfall events	- Water pollution - Loss of topsoil - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
15	Earthworks/ Roadworks	Surface water	- Contamination of surface water - Breach of EPL water quality performance standards - Dispersion of contaminants	Exposed sediment carried into catchments and watercourses during rainfall events	- Water pollution - Loss of topsoil - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Baseline water quality data - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Process and intercepted water management - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
16	Spoil emplacement	Surface Water	Contamination of surface water, breach of EPL water quality performance standards	Runoff from spoil stockpiles causes contaminated/polluted stormwater discharge into watercourses due to lack of controls or inadequately installed controls	- Adverse water quality impacts - Loss of amenity - Potential regulatory action from agencies	4 - Major	3 - Possible	12 - High	- Spoil Management Plan - Water Management Plan - Surface Water Management Plan - Erosion and sediment control measures - Clean water diversions - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
17	Construction of waterway crossings and barge access infrastructure	Surface water	- Contamination of surface water - breach of EPL water quality performance standards - Dispersion of contaminants	Construction activities in Yarrangobilly Creek and Wallace Creek without controls that prevent siltation and turbidity discharge being carried downstream	- Water pollution - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Specific management measures implemented for working within creeks, rivers and riparian areas - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Process and intercepted water management - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
18	Dredging activities	Surface water	Contamination of surface water, breach of EPL water quality performance standards	Disturbance of reservoir bed results in increased turbidity, siltation and dissolved oxygen levels	- Water pollution - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Dredging Management Plan (for Exploratory Works if dredging) - Surface Water Management Plan - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
19	Transport of materials, equipment and personnel	Surface water	Contamination of surface water, breach of EPL water quality performance standards	Vehicular spills along access road or within Project compounds	- Hydrocarbon pollution - Potential regulatory action from agencies - Financial penalties - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Water Management Plan - Surface Water Management Plan - Spill Response Procedure - Training of drivers and relevant personnel - Trigger Action Response Plan - Refuelling and washdown in designated areas	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
20	Storage of hazardous materials	Surface water	Contamination of surface water, breach of EPL water quality performance standards	Spill of stored hazardous material escaping containment into waterways	- Hydrocarbon pollution - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Bunded areas for storage of fuels and oils - Spill Response Procedure - Provision of spill response kits - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
21	Storage of hazardous materials	Groundwater	Contamination of groundwater	Spill or leaks of stored hazardous material dispersing into ground water	- Potential for irreparable damage to groundwater quality - Impact to groundwater dependent species or ecosystems - Damage to Karst features	4 - Major	3 - Possible	12 - High	- Water Management Plan - Groundwater Management Plan - Groundwater Monitoring Program - Bunded areas for storage of fuels and oils - Spill Response Procedure - Provision of spill response kits - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
21	Tunnel construction	Groundwater	Contamination of groundwater, ground water level depletion	Interception of groundwater during tunnelling activities provides interface for contamination of groundwater and/or reduction in groundwater levels	- Impact to groundwater levels beyond those assessed - Ecological impacts in dependent waterways and groundwater dependent ecosystems including karst features	3 - Moderate	2 - Unlikely	6 - Medium	- Water Management plan - Groundwater Management Plan - Groundwater level and quality monitoring - Groundwater Dependent Ecosystem monitoring	3 - Moderate	1 - Rare	3 - Low	Future Generation
24	Tunnelling and spoil emplacement	Contamination	Contamination of soils by NOA and acid-forming materials, spread of contamination across the site an surrounds, potential for significant health hazards caused by naturally occurring asbestos	Irresponsible management and movement of contaminated spoil	- Potential for significant health hazards - Long term contamination - Potential regulatory action from agencies - Financial penalties - Reputational impacts	5 - Severe	4 - Likely	20 - Extreme	- Spoil Management Plan - Training for all contractors - Geotechnical investigations to aid in predicting NOA presence	5 - Severe	2 - Unlikely	10 - Medium	Future Generation
25	Earthworks/ Roadworks	Landform	Loss and/or degradation of topsoils and subsoils	Exposed sediment carried into catchments and watercourses during rainfall events due to lack of controls or inadequately installed controls	- Adverse water quality impacts - Loss of amenity - Potential regulatory action from agencies	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Baseline water quality data - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Process and intercepted water management - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	Future Generation
26	Clearing and earthworks	Landform	Loss of visual amenity	Earthworks, spoil emplacement and vegetation clearing not adequately remediated following completion of the project.	- Amenity impacts to KNP - Loss of amenity for KNP users - Impacts inconsistent with project approval Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Minimise soil and vegetation clearance - Sensitive area plans / GIS mapping - Rehabilitation Management Plan	3 - Moderate	2 - Unlikely	3 - Low	Future Generation
27	Clearing and earthworks	Landform	Loss of geodiversity features, fossils, boulder screes beyond those assessed in the project approval	Clearing outside the project footprint, plant operation and excavation outside project footprint	- Unapproved impacts beyond construction envelope - Loss of geodiversity values - Potential regulatory action from agencies - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Sensitive area plans / GIS mapping - Heritage Management Plan identifies areas of conservation significance - Unexpected finds protocol	3 - Moderate	2 - Unlikely	3 - Low	Future Generation
28	Spoil emplacement	Landform	Changes to landform and natural water flows	Earthworks, stockpiles, spoil emplacement and structures disrupting existing surface and groundwater regimes	- Groundwater level reduced - Surface water flows in waterways cease to flow - Unpredictable water quality impacts from changed water regime	3 - Moderate	2 - Unlikely	6 - Medium	- Spoil Management Plans - Detailed plans for emplacement areas - Water Management Plan - Surface Water Management Plan	3 - Moderate	1 - Rare	3 - Low	Future Generation

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
29	Earthworks, vegetation clearing, blasting, transport of plant	Heritage	Damage to heritage items, including culturally significant sites, artefacts and heritage values	Clearing outside the project footprint, plant operation and excavation outside project footprint, relocation of blasting not assessed for sensitive area/item impacts	- Unapproved impacts beyond project boundary - Potential regulatory action from agencies - Financial penalties - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Sensitive area plans / GIS mapping - Heritage Management Plan identifies areas of conservation significance - archival recording and / or salvage of items carried out as required by the Approval	3 - Moderate	2 - Unlikely	3 - Low	Future Generation
30	Actions of site personnel or members of public	Heritage	Theft of heritage items	Persons entering restricted areas unmonitored and using heritage documentation to locate items of interest	- Loss of items of cultural significance - Impacts to relationships with traditional owners - Potential regulatory impacts from agencies - Reputational impacts	2 - Minor	3 - Possible	6 - Medium	- Heritage Management Plan - Archival recording and salvage - Exclusion zones and defined clearing limits	2 - Minor	1 - Rare	2 - Low	Future Generation
31	Earthworks, vegetation clearing, blasting, transport of plant	Noise and vibration	Increased noise and vibration levels at sensitive receivers, particularly at Rock Forest	Noise levels from construction activates and transport of materials, equipment and personnel exceeds the levels assessed in the approval. Works change from those assessed. The project site is remote from sensitive receivers, noise impacts are more likely an issue at Rock Forest.	- Sleep disturbance at sensitive receiver locations - Decreased amenity for KNP users in the locality - Loss of support from local community	3 - Moderate	3 - Possible	9 - Medium	- Construction Noise Management Plan - Traffic Management Plan	3 - Moderate	1 - Rare	3 - Low	Future Generation
32	Earthworks, blasting, transport of plant	Noise and vibration	Vibratory impacts to heritage items, geodiversity and structures	Vibrations from plant operation, transport, and blasting impacts exceed those assessed and cause structural damage to sensitive items	- Loss of items of cultural significance Impacts to relationships with traditional owners - Potential regulatory impacts from agencies	2 - Minor	2 - Unlikely	4 - Low	- Heritage Management Plan - Archival recording and salvage - Exclusion zones and defined clearing limits	2 - Minor	1 - Rare	2 - Low	Future Generation
34	Rock crushing/ screening	Noise and vibration	Increased noise and vibration levels at sensitive receivers	Rock crushing and screening activities situated too close to sensitive receivers	- Sleep disturbance at sensitive receiver locations - Decreased amenity for KNP users in the locality - Loss of support from local community	3 - Moderate	3 - Possible	9 - Medium	- Construction Noise Management Plan - Noise monitoring to evaluate impacts and establish additional mitigation where required	3 - Moderate	1 - Rare	3 - Low	Future Generation
35	Rock crushing/ screening	Air Quality	Increased dust emissions	Rock crushing and screening activities not implementing adequate dust suppression mitigation	- Excessive dust emission/deposition in surrounding environment - Air quality impacts exceed the approved project levels - Adverse biodiversity impacts	3 - Moderate	4 - Likely	12 - High	- Dust suppression through use of water cart - Progressive stabilisation of the site	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
36	Earthworks, blasting, transport of plant	Air Quality	Visible dust plumes and deposition of dust on surfaces	Blasting and plant movements cause dust particle to become airborne and carried in wind to other areas	- Excessive dust emission/deposition in surrounding environment - Air quality impacts exceed the approved project levels - Adverse biodiversity impacts	3 - Moderate	4 - Likely	12 - High	- Dust suppression through use of water cart - Progressive stabilisation of the site	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
37	Vegetation clearing, spoil emplacement	Air Quality	Visible dust plumes and deposition of dust on surfaces, impacts to amenity, Dust generation from exposing of top soil and sub soil through vegetation removal,	Exposed sediment and stockpiled fines become airborne in strong winds and carried to other areas	- Excessive dust emission/deposition in surrounding environment - Air quality impacts exceed the approved project levels - Adverse biodiversity impacts	3 - Moderate	4 - Likely	12 - High	- Dust suppression through use of water cart - Spoil Management Plan - Rehabilitation/stabilisation of cleared areas where possible	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
38	Spoil management, tunnelling	Air Quality / Waste	Release of airborne fibres from disturbed Naturally Occurring Asbestos (NOA)	Excavated materials containing NOA are not appropriately identified and/or contained following excavation from tunnel	- Airborne contamination and deposition to surrounding areas - Potential for significant health hazards - Long term contamination - Potential regulatory action from agencies - Financial penalties - Reputational impacts	5 - Severe	4 - Likely	20 - Extreme	- Spoil Management Plan - Geotechnical investigations to aid in predicting NOA presence	5 - Severe	2 - Unlikely	10 - Medium	Future Generation

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
39	Earthworks, roadworks	Waste	Excess use of natural resources and energy, production of greenhouse gases	Unnecessary operation/ idling of machinery and plant	- Excessive consumption of diesel and other resources - Unnecessary production of greenhouse gases	1 - Negligible	4 - Likely	4 - Low	- Training/instruction to machinery and plant operators to shut down equipment when not required	1 - Negligible	3 - Possible	3 - Low	Future Generation
40	Storage / disposal of hazardous materials	Waste	Contamination of soil and water, unlawful disposal of waste	Inadequate storage of hazardous materials, inadequate spill management practices, improper disposal practices	- Contamination of soil and water in sensitive environment - Potential regulatory action from agencies - Financial penalties - Loss of community support - Reputational impacts	4 - Major	3 - Possible	12 - High	- Surface Water Management Plan to address spills - Spill Management Procedure - Use of licensed disposal contractors for waste disposal which requires licensing - Appropriate bunded storage of hazardous materials	4 - Major	2 - Unlikely	8 - Medium	Future Generation
41	Operation of accommodation camp	Waste	Excess use of natural resources and energy	Inefficient use of resources within the accommodation camp	- Excessive use of water and electricity	2 - Minor	4 - Likely	8 - Medium	- Energy efficient design of site facilities - Water saving devices installed in camp facilities where possible	2 - Minor	2 - Unlikely	4 - Low	Future Generation
42	Operation of accommodation camp	Waste	Odour impacts, contamination of soil and water in sensitive environment, excess waste sent to landfill	Inadequate management of camp waste including sewerage and mixed waste	- Unlawful disposal of waste - Excess waste generation - Contamination of waste streams - Contamination of soil and water - Potential regulatory action from agencies	4 - Major	3 - Possible	12 - High	- Waste facilities available at the camps - Use of licensed waste disposal contractors - Waste tracking - Regular inspection of controls	4 - Major	2 - Unlikely	8 - Medium	Future Generation
43	Transport of materials, equipment and personnel	Waste	Unnecessary production of Greenhouse gases	Materials shipped from distant locations, excessive personal vehicle usage, repeated movements back and forth from site	- Unnecessary production of greenhouse gases - Impacts of the project exceed those assessed in the EIS	2 - Minor	5 - Almost Certain	10 - Medium	- Transport Management Plan implemented - Procurement of local materials to minimise shipping distances where possible - Communal transport to site for personnel (including buses and prohibition of personal vehicle use) where possible - Personnel to remain on site to reduce commute time and transport requirements	2 - Minor	2 - Unlikely	4 - Low	Future Generation
44	Vegetation Clearing	Waste	Excessive production of Greenhouse gases	Excessive clearing of vegetation resulting in increased greenhouse gas emission from released carbon storage in decomposing vegetation	- Unnecessary production of greenhouse gases - Impacts of the project exceed those assessed in the EIS	2 - Minor	3 - Possible	6 - Medium	- Exclusion fencing to identify areas not to be cleared	2 - Minor	1 - Rare	2 - Low	Future Generation
45	Hot works and plant operations	Emergency	Ignition of bushfire	Sparks from machinery or hot work activities ignites combustible vegetation and fire gets out of control	- Significant impact to KNP through bushfire - Potential destruction of project infrastructure and equipment - Potential for fatality/injury to personnel and members of the public - Damage to public property and adjacent properties - Loss of biodiversity - Project delays - Significant reputational impact - Potential regulatory actions from agencies - Financial penalties	5 - Severe	4 - Likely	20 - Extreme	- Natural Hazard Management Plan - Continuous monitoring of fire hazard throughout bushfire season - Suspension of fire risk work on days of elevated fire danger in accordance with the EMP - Fire preparedness mitigation measures implemented on fire danger days - Relevant personnel trained in rapid response to extinguish potential ignitions to prevent bushfire escalation - Provision of firefighting equipment throughout the project site	5 - Severe	3 - Possible	15 - High	Future Generation
46	Working in bushfire prone areas	Emergency	Damage to construction site and works by bushfire	Siting of infrastructure and personnel in bushfire prone areas without appropriate bushfire mitigation in place.	- Damage to construction site and works - Project delays - Safety impacts	3 - Moderate	4 - Likely	12 - High	- Pre position fire fighting equipment - Safety and emergency systems and procedures - Implement preparatory actions of Natural Hazard Management Plan	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
47	Earthworks	Emergency	Localised flooding within construction envelope	Alterations to existing hydrological regime through earthworks, blasting, basin construction, tunnelling and building construction beyond those assessed	- Localised flooding - Damage to project infrastructure - Project access/egress interrupted - Water quality impacts	3 - Moderate	2 - Unlikely	6 - Medium	- Consideration of hydrology throughout detailed design - Location of stockpiles and structures above flood zones where possible	3 - Moderate	1 - Rare	3 - Low	Future Generation

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
48	Earthworks/ Roadworks	Traffic	Disturbance / traffic delays to local residents	Roadworks on local roads blocking or excessively delaying traffic movements and thoroughfare.	- Traffic delays on local and regional roads - Increased safety hazard - Adverse reputational impacts - Increased noise and air quality impacts	3 - Moderate	4 - Likely	12 - High	- Transport Management Plan - Engagement with community to manage expectations	3 - Moderate	3 - Possible	9 - Medium	Future Generation
49	Transport of materials, equipment and personnel	Traffic	Increased traffic volumes and congestion, increased road noise, degradation of roadways, traffic delays	Heavy and light vehicles moving in convoys through local towns to the project site.	- Traffic delays on local and regional roads - Increased safety hazard - Adverse reputational impacts - Increased noise and air quality impacts	3 - Moderate	4 - Likely	12 - High	- Transport Management Plan - Manage timing of OSOM movements - Driver code of conduct - Engagement with community	3 - Moderate	3 - Possible	9 - Medium	Future Generation
50	Construction activities	Socio economic and KNP	Loss of public facilities and KNP recreational facilities, loss of access of areas to KNP for public use.	Construction activities inhibiting public access to KNP and reservoir facilities including camping areas and boat ramps to reservoirs	- Loss of community support for the project	3 - Moderate	3 - Possible	9 - Medium	- Clearly signposted signage indicated area closures and timeframes - Minimisation of project traffic movements during peak recreational periods	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
51	Inflow of workforce to local area	Socio economic and KNP	Business impacts, increased housing demand	Workforce size relocating to local area	- Housing rental/purchase prices increase due to increased demand - Local services struggle to meet demands - Loss of community support for the project	2 - Minor	3 - Possible	6 - Medium	- Establishment of Pacific Hills development to provide accommodation for workforce - Encourage personnel to purchase local produce and use local business to stimulate positive economic growth in the locality	2 - Minor	2 - Unlikely	4 - Low	Future Generation
52	Working in bushfire prone areas	Emergency	Damage to construction site and works by bushfire	Siting of infrastructure and personnel in bushfire prone areas without appropriate bushfire mitigation in place.	- Damage to construction site and works - Project delays - Safety impacts	3 - Moderate	4 - Likely	12 - High	- Pre position fire fighting equipment - Safety and emergency systems and procedures - Implement preparatory actions of Natural Hazard Management Plan	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation

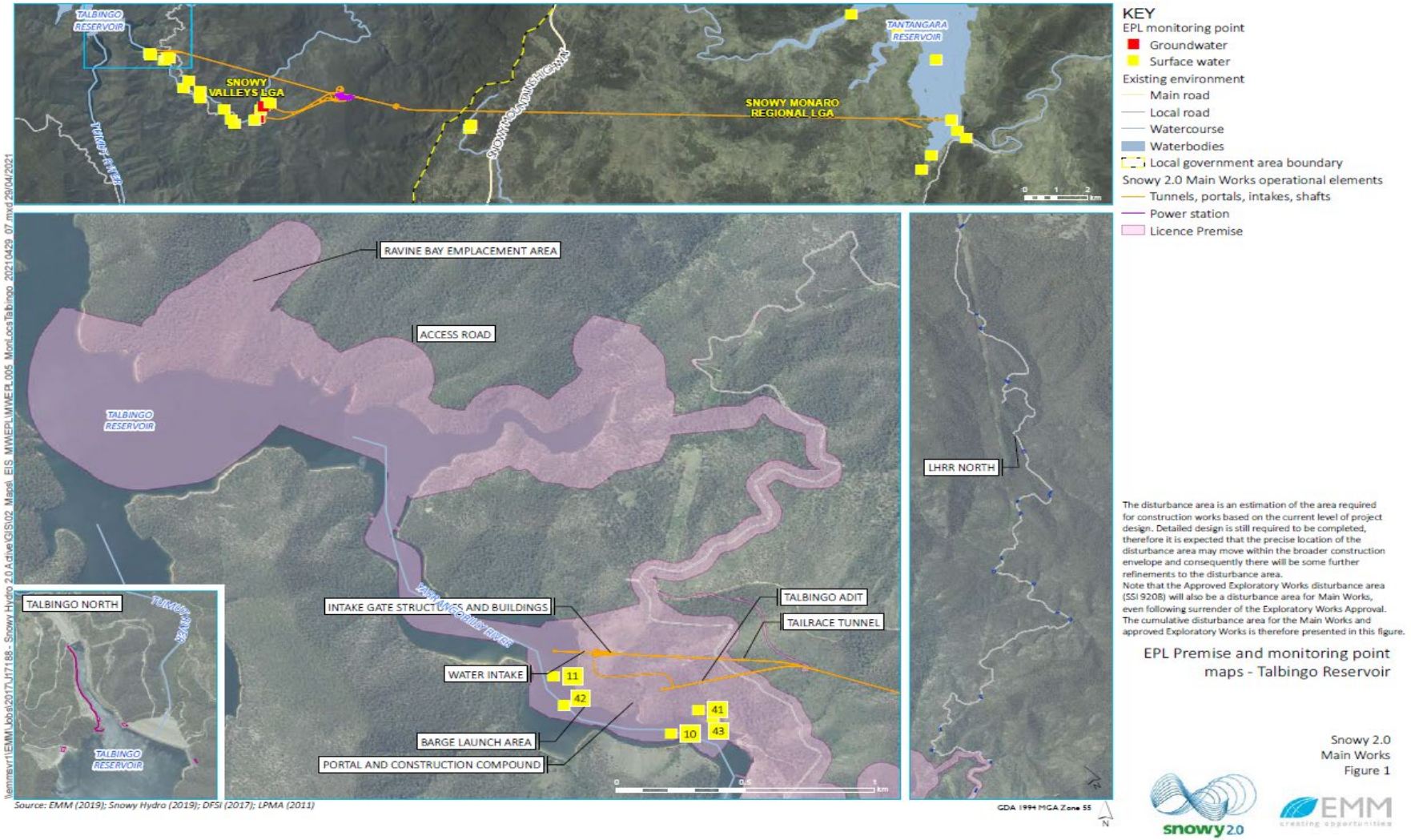
APPENDIX C – EXAMPLE INVENTORY OF POLLUTANTS

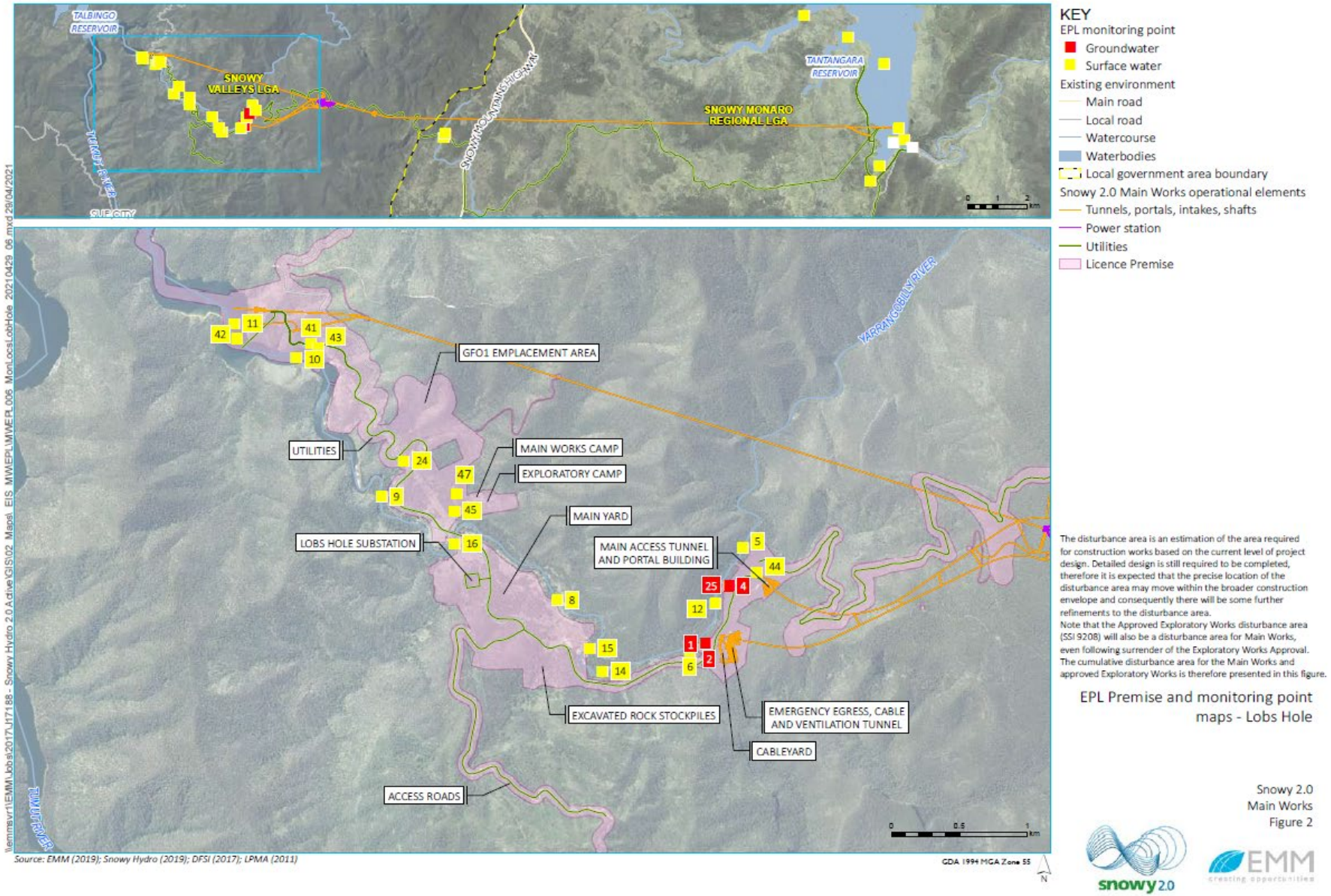
Updated pollutant register to be found at: include server reference

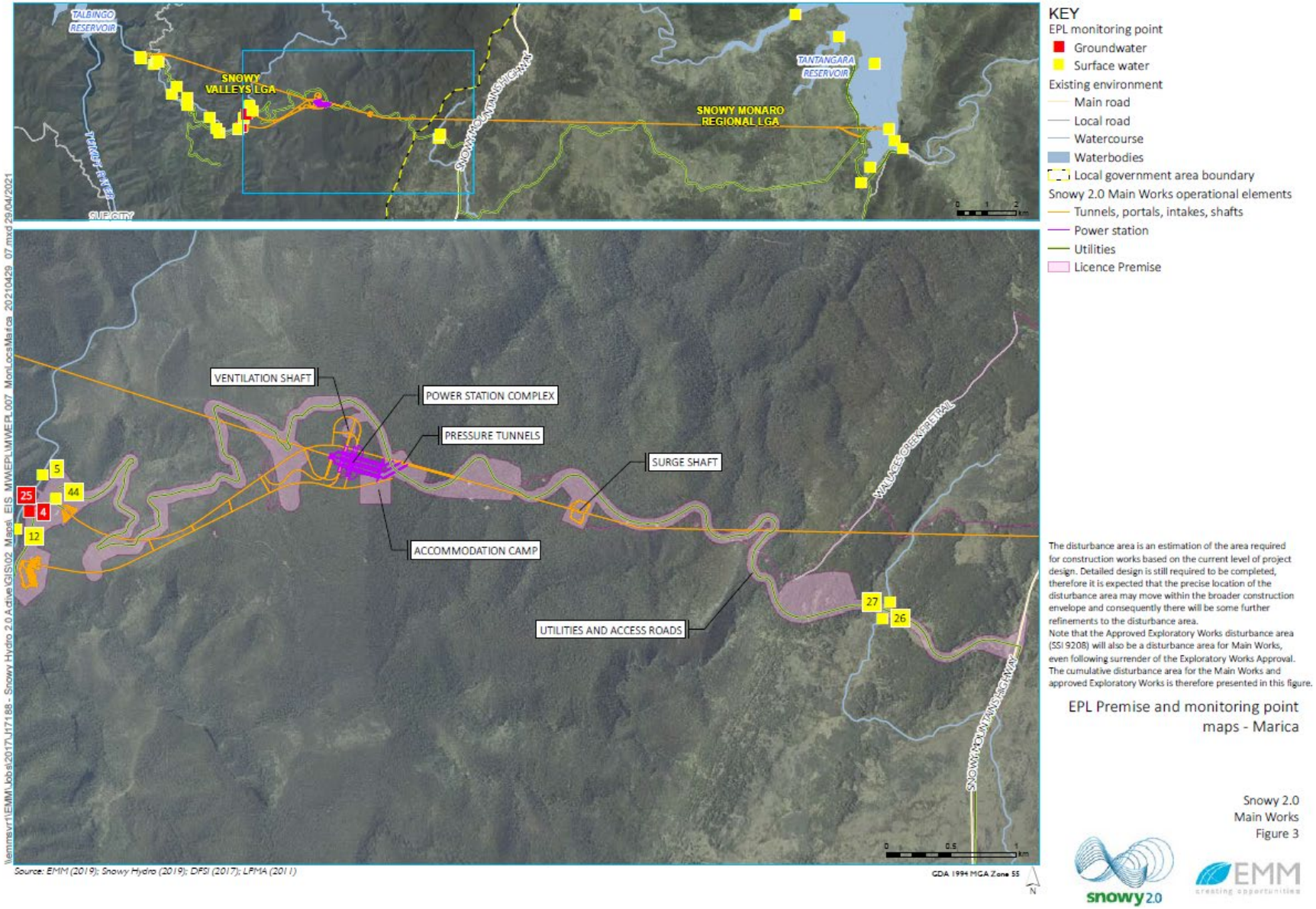
Location	Phase	Classification	Class	Sub	PG	Typical (L) (kg for explosives only)	Typical quantity (tonnes)	Storage type/ arrangement	Comments
Main camp (Lobs Hole)	Construction	Corrosive	8	-	III	2,000	2	Wastewater Treatment Plant	
Main camp (Lobs Hole)	Construction	Explosives	1.1	D	-	10,000	10	Magazine Store	
		Flammable gases	2	2.1	-	15,200	9.12	Warehouse	Made up of aerosols, sprays and cleaning agents
		Flammable liquid	3	-	II	100	0.08	Warehouse	
					III	28,500	22.8	Warehouse	Stored more at least 20 m from site boundary (APZ)
		Corrosive	8	-	II	300	0.3	Warehouse	
MAT portal	Construction	Explosives	1.1	D	-	10,000	10	Ventilated Magazine Store	
		Corrosive	8	-	III	5,000	5	Process Water Treatment Plant	
Talbingo adit construction compound	Construction	Corrosive	8	-	III	22,500	22..5	Process Water Treatment Plant	
ECVT Portal	Construction	Explosives	1.1	D	-	10,000	10	Ventilated Magazine Store	
		Corrosive	8	-	II I	16,000	16	Process Water Treatment Plant	
Marica accommodation camp	Construction	Corrosive	8	-	II I	1,150	1.15	Wastewater Treatment Plant	
Headrace surge shaft	Construction	Corrosive	8	-	II I	16,000	16	Process Water Treatment Plant	
	Construction	Explosives	1.1	D	-	10,000	10	Ventilated Magazine Store	

Location	Phase	Classification	Class	Sub	PG	Typical (L) (kg for explosives only)	Typical quantity (tonnes)	Storage type/ arrangement	Comments
Tantangara construction compound		Corrosive	8	-	II I	22,500	22.5	Process Water Treatment Plant	
Tantangara accommodation camp	Construction	Corrosive	8	-	II I	850	0.85	Wastewater Treatment Plant	
Rock Forest logistics laydown	Construction	Combustible liquid	-	-	-	320,000	-	-	Combustible liquid not stored with flammable liquids and so does not have a SEPP 33 screening threshold.

APPENDIX D – EPL PREMISE AREA MAPS







The disturbance area is an estimation of the area required for construction works based on the current level of project design. Detailed design is still required to be completed, therefore it is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.
Note that the Approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following surrender of the Exploratory Works Approval. The cumulative disturbance area for the Main Works and approved Exploratory Works is therefore presented in this figure.

EPL Premise and monitoring point maps - Marica

Snowy 2.0
Main Works
Figure 3