CLEAN TEQ SUNRISE

Clean TeQ Sunrise Project
Water Management Plan
2020-CTEQ-0000-66AA-0015

3 September 2019

REVISION 1

CONTENTS

FIGURES

TABLES

ATTACHMENTS

APPENDICES

1. INTRODUCTION

The Clean TeQ Sunrise Project (the Project)[1] is a nickel cobalt scandium open cut mining project situated near the village of Fifield, approximately 350 kilometres (km) west-northwest of Sydney, in New South Wales (NSW) (Figure 1).

The Project includes the establishment and operation of the following:

- mine (including the acid leach processing facility);
- limestone quarry;
- rail siding;
- gas pipeline;
- borefields, surface water extraction infrastructure and water pipeline;
- accommodation camp; and
- associated transport activities and transport infrastructure (e.g. the Fifield Bypass, road and intersection upgrades).

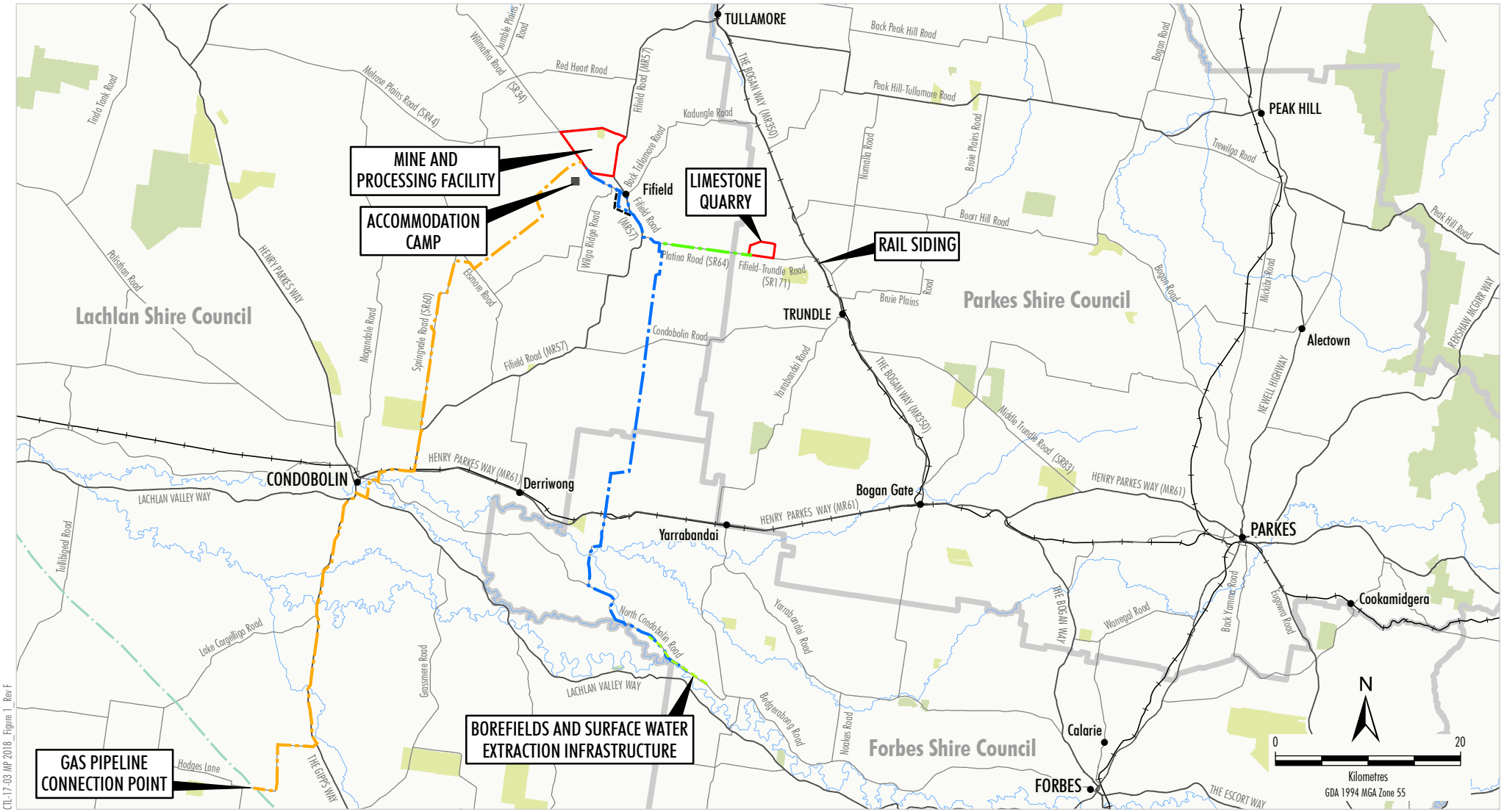
Clean TeQ Sunrise Pty Ltd owns the rights to develop the Project. Clean TeQ Sunrise Pty Ltd is a wholly owned subsidiary of Clean TeQ Holdings Limited (Clean TeQ).

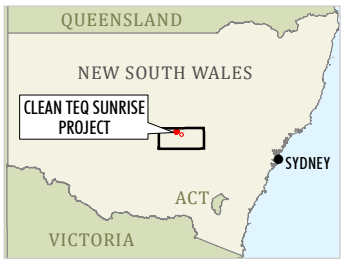
Development Consent DA 374-11-00 for the Project was issued under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) in 2001. Six modifications to Development Consent DA 374-11-00 have since been granted under the EP&A Act:

- 2005 – to allow for an increase of the autoclave feed rate, limestone quarry extraction rate and adjustments to ore processing operations;
- 2006 – to allow for the reconfiguration of the borefields;
- 2017 – to allow for the production of scandium oxide;
- 2017 – to amend hazard study requirements;
- 2018 – to relocate the accommodation camp; and
- 2018 – to implement opportunities to improve the overall efficiency of the Project.

The general arrangement for the mine layout during the initial Project construction activities and full development are shown on Figures 2 and 3.

[1] The Project was previously known as the Syerston Project.





LEGEND

- National Park/Conservation Area
- State Forest
- Local Government Boundary
- Railway
- Existing Gas Pipeline
- Mining Lease Boundary (ML)
- Fifield Bypass
- Gas Pipeline
- Water Pipeline
- Limestone Quarry Water Pipeline
- Borefield Infrastructure Corridor

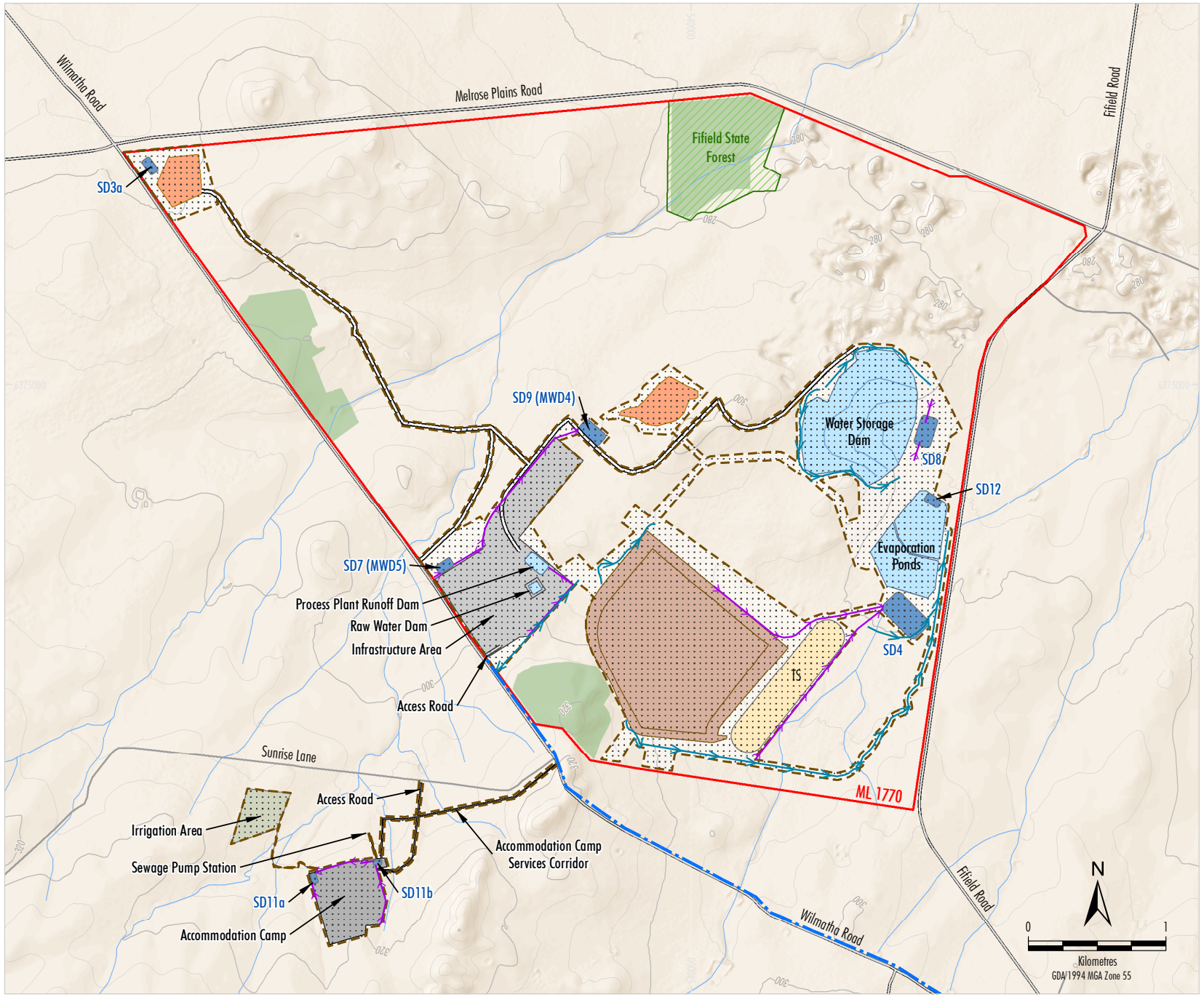
Source: Black Range Minerals (2000); Clean TeQ (2017, 2018); NSW Department of Industry (2018); NSW Land & Property Information (2017); Office of Environment and Heritage NSW (2017)

CLEAN TEQ SUNRISE PROJECT

Regional Location

Figure 1

CTL-17-03 MP 2018_Figure 1_Rev F



LEGEND

- State Forest
- Mining Lease Boundary (ML)
- Initial Construction Activities
- Surface Development Area
- Tailings Storage Facility
- Borrow Pit
- TS Topsoil Stockpile
- Infrastructure Area
- Water Storage (Mine Water)
- Sediment Dam (Mine Water)
- Existing Open Woodland to be Maintained
- Water Pipeline
- Collection Drain (Sediment Water) #
- Diversion Channel (Clean Water)

No 'mine water' would be generated during the initial construction activities and therefore no 'mine water' collection drains are shown.

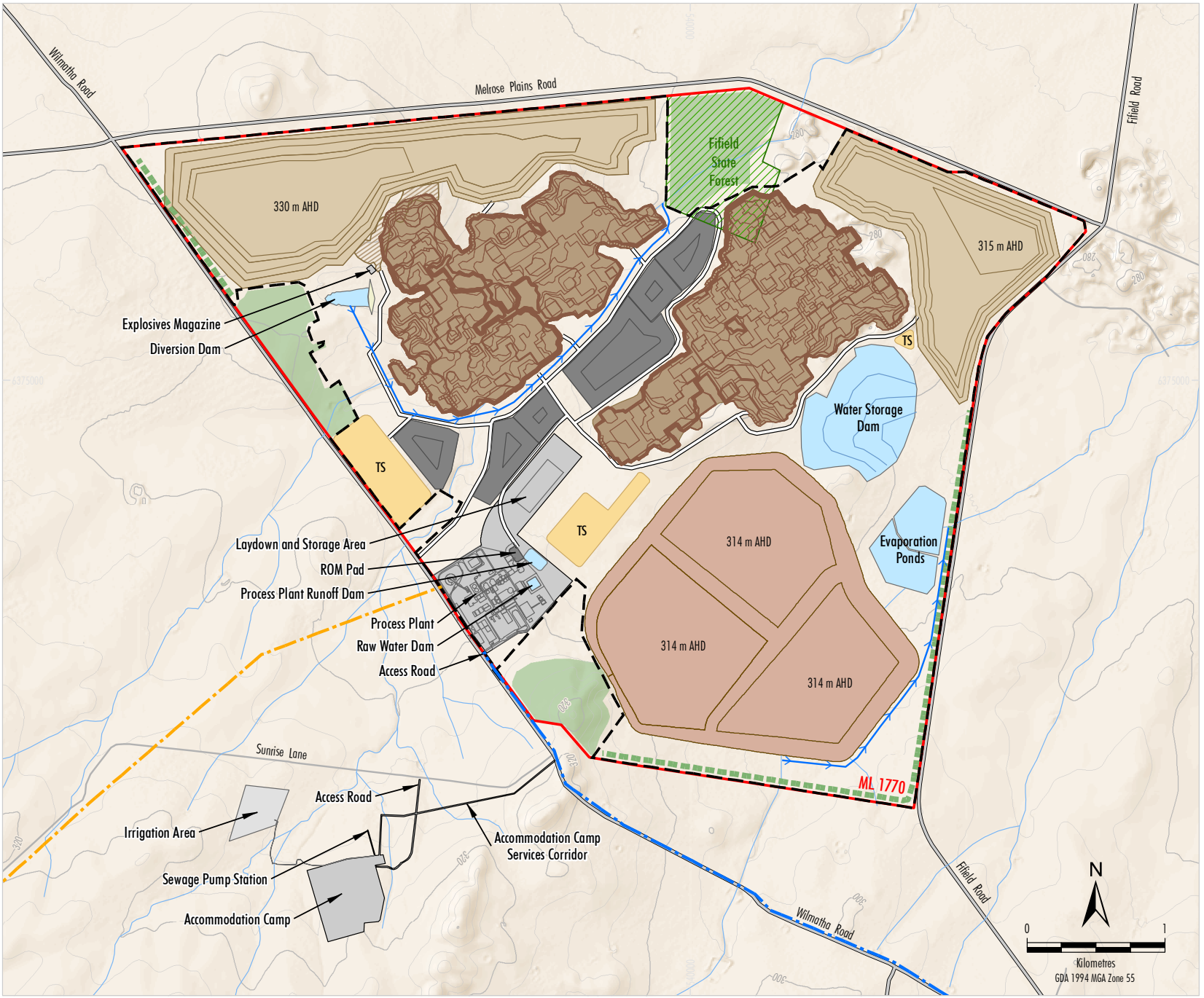
Source: Black Range Minerals (2000); Clean TeQ (2017, 2019); NSW Department of Industry (2018); NSW Land & Property Information (2017)

CLEAN TEQ SUNRISE PROJECT

Mine and Processing Facility General Arrangement (Initial Construction Activities)

Figure 2

CTL-17-03 MP 2018_WMP_202D



LEGEND

- State Forest
- Mining Lease Boundary (ML)
- Approved Surface Development Area
- Open Cut Pit (Scandium Oxide)
- Open Cut Pit
- Waste Rock Emplacement
- Tailings Storage Facility
- TS Topsoil Stockpile
- Ore Stockpile
- Mine Infrastructure Area
- Diversion Structure
- Vegetation Screening
- Existing Open Woodland to be Maintained
- Gas Pipeline
- Water Pipeline

Source: Black Range Minerals (2000); Clean TeQ (2017, 2019); NSW Department of Industry (2018); NSW Land & Property Information (2017)

CLEAN TEQ SUNRISE PROJECT

Mine and Processing Facility Conceptual General Arrangement

Figure 3

CTL-17-03 MP 2018_MOD4_Figure 3_Rev C

1.1 Purpose and Scope

This Water Management Plan (WMP) has been prepared by Clean TeQ in accordance with the requirements of Condition 30, Schedule 3 of Development Consent DA 374-11-00 (Table 1).

Table 1 – Specific WMP Requirements in Development Consent DA 374-11-00

Development Consent DA 374-11-00 Schedule 3	**Section where Addressed in this WMP**
30. Prior to carrying out any development after 6 May 2017, the Applicant must prepare a Water Management Plan for the development in consultation with DoI Lands & Water and the EPA, and to the satisfaction of the Secretary. This plan must include:	This WMP
(a) a Water Balance that: • *includes details of:* – *sources and security of water supply, including contingency planning for future reporting periods;* – *water use and management on site;* – *measures to prioritise the use of water in the following order* ○ *recycled water from the water treatment plant;* ○ *other on-site sources (in accordance with harvestable rights provisions); and* ○ *water extracted from the borefields and Lachlan River;* – *reporting procedures, including the preparation of a site water balance for each calendar year; and* • *describes the reasonable and feasible measures that would be implemented to minimise clean water use on site and maximise the reuse of recovered tailings water at the facility;*	Appendix A
(b) a Surface Water Management Plan, that includes: • *baseline data on water flows and quality in the watercourses that could be affected by the development (if available);* • *a detailed description of the water management system on-site, including the:* – *clean water diversion systems;* – *erosion and sediment controls; and* – *water storages; and* – *irrigation area;* • *objectives and performance criteria, including trigger levels for investigating any potential or actual adverse impacts associated with the development, including the:* – *surface water flows and quality;* – *downstream flooding;* • *a program to monitor and report on:* – *the effectiveness of the water management system and tailings storage facility; and* – *surface water flows and water quality;* – *the performance measures listed in Table 9;* – *impacts on water users;* – *downstream flooding;* • *a plan to respond to any exceedances of the trigger levels and/or performance criteria, and minimise and/or offset any adverse surface water impacts of the development;*	Appendix B
(c) a Groundwater Management Plan, that includes: • *baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the development in the vicinity of the borefields;* • *groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts associated with the development in the vicinity of the borefields;* • *a program to monitor and report on:* – *groundwater inflows into the open cut pits, if relevant;* – *the seepage/leachate from the tailings storage facility and evaporation ponds; and* – *the impacts of the development on:* ○ *groundwater supply of any potentially affected landholders, particularly around the borefields;* ○ *regional and local aquifers; and* ○ *post-mining groundwater recovery;* • *a plan to respond to any exceedances of the groundwater assessment criteria, and mitigate any adverse impacts of the development;*	Appendix C

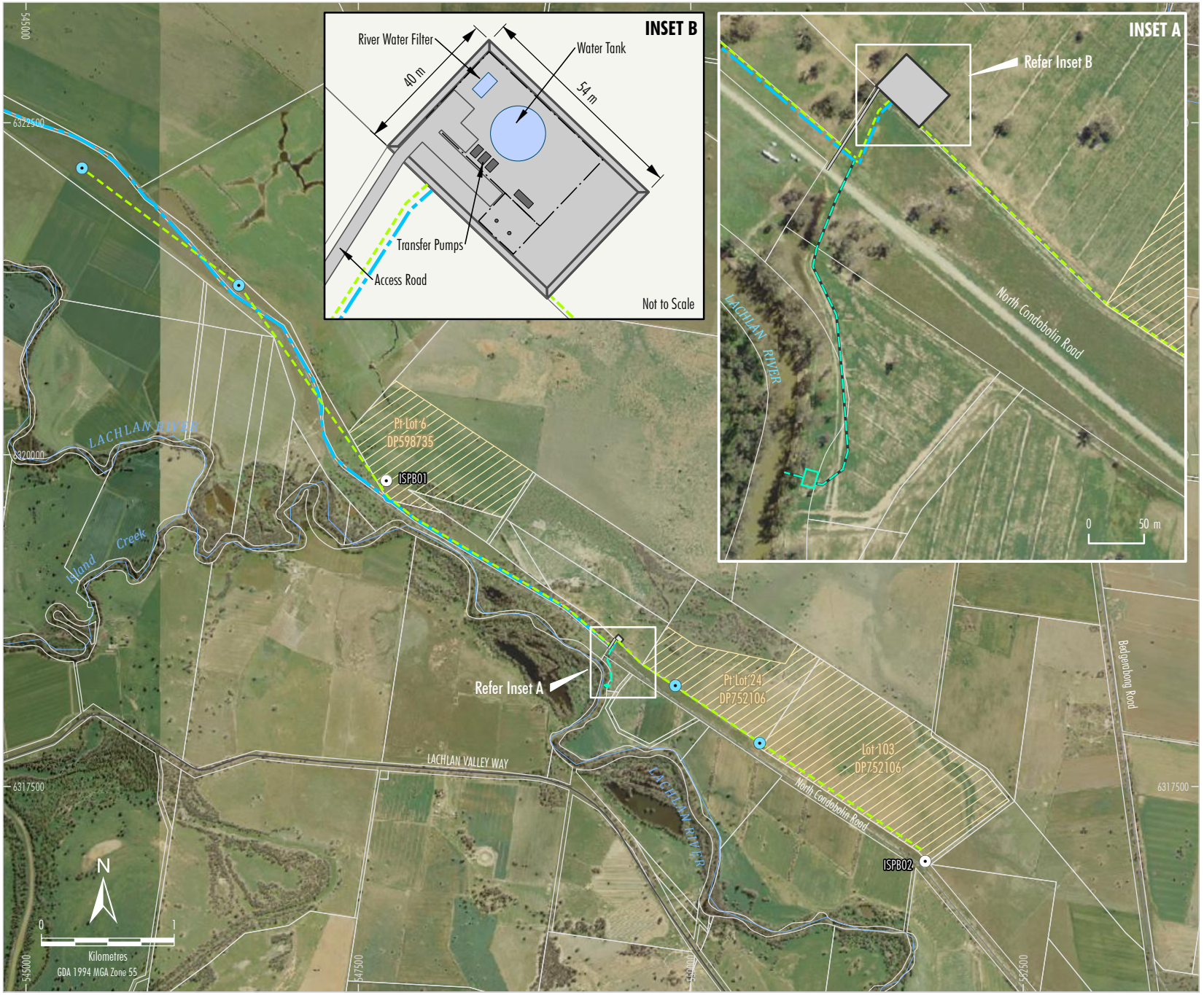
On 5 July 2018, the Secretary of the Department of Planning, and Environment (now the Department Planning, Industry and Environment [DPIE]) (the Secretary) approved the progressive submission of environmental management plans for the Project in accordance with Condition 12, Schedule 2 of Development Consent DA 374-11-00. The scope of this WMP is specifically related to the following initial Project construction activities:

- development of the mine, including:
  - site establishment and earthworks;
  - construction of site access roads and haul roads;
  - processing facility earthworks;
  - establishment of temporary facilities required for construction activities (e.g. offices, lay down areas, communications infrastructure);
  - construction of the mine infrastructure area including the offices, workshops, warehouse, laboratory and amenities buildings, fuel storage areas, potable water treatment plant and car parking facilities;
  - construction of the tailings storage facility and evaporation pond;
  - construction of water management infrastructure including the raw water dam, water storage dam and sediment dams;
  - construction and operation of the concrete batch plant;
  - development of gravel and clay borrow pits (including blasting and crushing);
  - installation of appropriate fencing and barriers for public safety and security for mining and construction; and
  - other associated minor infrastructure, plant, equipment and activities.
- development and operation of the accommodation camp;
- installation of the borefields;
- installation and operation of the surface water extraction infrastructure and water pipeline[2]; and
- road upgrades.

The initial construction activities would not include any development of the limestone quarry, rail siding or gas pipeline.

The approximate extent of the initial Project construction activities at the mine site and accommodation camp are shown on Figure 2. The approved water pipeline alignment and borefields and surface water extraction general arrangement is shown on Figures 1 and 4 respectively.

[2] The water pipeline includes the Fifield Bypass and Alternative Pipeline Route alignments.



LEGEND

- Property Boundary
- Borefield Location
- Water Pipeline
- Borefield Infrastructure Corridor *
- Surface Water Infrastructure Corridor *
- Pump Station
- Transfer Station
- Access Road
- Production Bore (constructed)
- Production Bore (not constructed)

* Infrastructure Corridor includes linking pipline, access road and electricity transmission line.

Source: Clean TeQ (2017, 2019); Ivanplats Syerston (2005); NSW Land & Property Information (2018)
NSW Imagery: © Department of Finance, Services & Innovation (2018)

CLEAN TEQ SUNRISE PROJECT

Borefields and Surface Water Extraction General Arrangement

Figure 4

CTL-17-03 MP 2018_MOD4_Figure 4_Rev B

1.2 Structure of the Water Management Plan

The remainder of this WMP is structured as follows:

Section 2: Describes the review and update of the WMP.

Section 3: Outlines the statutory requirements applicable to the WMP.

Section 4: Details the performance measures and performance indicators that will be used to assess the Project.

Section 5: Provides an overview of the Project water management system and measures.

Section 6: Details the water monitoring programs for the Project.

Section 7: Provides a Contingency Plan to manage any unpredicted impacts and their consequences.

Section 8: Describes the program to review and report on the effectiveness of management measures and improvement of environmental performance.

Section 9: Describes the protocol for management and reporting of incidents, complaints and non-compliances with statutory requirements.

Section 10: Lists the references cited in this WMP.

In addition, the WMP includes the following three appendices in accordance with Condition 30, Schedule 3 of Development Consent DA 374-11-00:

- Water Balance (Appendix A);
- Surface Water Management Plan (SWMP) (Appendix B); and
- Groundwater Management Plan (GWMP) (Appendix C).

2. WATER MANAGEMENT PLAN REVIEW AND UPDATE

This WMP has been provided to the NSW Environment Protection Authority (EPA) and the Department of Industry – Lands & Water (now the Natural Resources Access Regulator [NRAR]) for the purposes of consultation on 20 June 2018 and 25 June 2018, respectively, in accordance with Condition 30, Schedule 3 of Development Consent DA 374-11-00.

The NRAR provided comments on 27 September 2018 and 12 June 2019. These comments have been incorporated into this WMP. The EPA indicated on 19 October 2018 that it had no comments on the WMP.

Consistent with the Secretary's approval for the progressive submission of environmental management plans, this WMP would be re-submitted and approved prior to the commencement of activities not included in the scope of this WMP.

In accordance with Condition 6, Schedule 5 of Development Consent DA 374-11-00, this WMP will be reviewed, and if necessary revised (to the satisfaction of the Secretary), within three months of the submission of:

- an Annual Review (Condition 5, Schedule 5);
- an incident report (Condition 8, Schedule 5);
- an independent environmental audit (Condition 10, Schedule 5); or
- any modification to the conditions of Development Consent DA 374-11-00 (unless the conditions require otherwise).

The reviews would be undertaken to ensure the WMP is updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the Project.

Within 4 weeks of conducting a review of the WMP, the Secretary will be advised of the outcomes of the review and any revised documents submitted to the Secretary for approval.

If agreed with the Secretary, a revision to the WMP required under Development Consent DA 374-11-00 may be prepared without undertaking consultation with all parties nominated under the relevant condition of Development Consent DA 374-11-00.

The revision status of this WMP is indicated on the title page of each copy.

The approved WMP will be made publicly available on the Clean TeQ website, in accordance with Condition 12, Schedule 5 of Development Consent DA 374-11-00.

3. STATUTORY REQUIREMENTS

Clean TeQ's statutory obligations relevant to water management are contained in:

- the conditions of Development Consent DA 374-11-00;
- relevant licences and permits, including conditions attached to mining leases; and
- other relevant legislation.

Obligations relevant to this WMP are described below.

3.1 Development Consent DA 374-11-00

3.1.1 WMP Requirements

Condition 30, Schedule 3 of Development Consent DA 374-11-00 requires the preparation of a WMP. Table 1 presents these requirements and indicates where they are addressed in this WMP.

A comprehensive list of all conditions in Development Consent DA 374-11-00 relevant to water is provided in Attachment 1, including:

- Water Supply (Condition 26, Schedule 3);
- Water Pollution (Condition 27, Schedule 3);
- Compensatory Water Supply (Condition 28, Schedule 3);
- Water Management Performance Measures (Condition 29, Schedule 3); and
- Water Management Plan (Conditions 30 and 31, Schedule 3).

In accordance with Condition 31, Schedule 3 of Development Consent DA 374-11-00, Clean TeQ will implement the Water Management Plan.

3.1.2 Management Plan (General) Requirements

In addition to the WMP requirements prescribed in Condition 30, Schedule 3, Condition 4, Schedule 5 of Development Consent DA 374-11-00 outlines the management plan (general) requirements that are also applicable to the preparation of this WMP.

Table 2 presents these requirements and indicates where each is addressed within this WMP.

Table 2 – Management Plan (General) Requirements

Development Consent DA 374-11-00 Schedule 5	WMP Section
Management Plan Requirements *4. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, are consistent with other plans prepared for other stakeholders, and include:*	
a) detailed baseline data;	Appendices A to C
b) a description of: • *the relevant statutory requirements (including any relevant approval, licence or lease conditions);*	Section 3
• *any relevant limits or performance measures/criteria;*	Section 4 and Appendices A to C
• *the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;*	Section 4 and Appendices A to C
c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Section 5 and Appendices A to C
d) a program to monitor and report on the: • *impacts and environmental performance of the development;* • *effectiveness of any management measures (see c above);*	Section 6 and Appendices A to C
e) a contingency plan to manage any unpredicted impacts and their consequences	Section 7 and Appendices A to C
f) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 8
g) a protocol for managing and reporting any: • *incidents;* • *complaints;* • *non-compliances with statutory requirements; and* • *exceedances of the impact assessment criteria and/or performance criteria; and*	Section 9.1 Section 9.2 Section 9.3 Sections 6 & 7 and Appendices A to C
h) a protocol for periodic review of the plan.	Section 2
Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	

3.2 Licences, Permits and Leases

In addition to the requirements of Development Consent DA 374-11-00, all activities at or in association with the Project will be undertaken in accordance with the following licences, permits and leases which have been issued or are pending issue:

- Mining Lease 1770 sought and issued by the NSW Minister for Resources under the NSW *Mining Act, 1992*.
- Mining Operations Plan(s) submitted and approved by the NSW Division of Resources and Geoscience.
- Environment Protection Licence (EPL) 21146 issued by the EPA under the NSW *Protection of the Environment Operations Act 1997* (POEO Act).
- Water supply works, water use approvals and water access licences (WALs) issued by NRAR under the NSW *Water Management Act 2000* including:
  - Water Supply Works Approval 70CA614098 for the Project borefields.
  - WAL 32068 in the Upper Lachlan Alluvial Groundwater Source (Upper Lachlan Alluvial Zone 5 Management Zone) for 3,154 share components under the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012*.

  - WAL 39837 in the Upper Lachlan Alluvial Groundwater Source (Upper Lachlan Alluvial Zone 5 Management Zone) for 766 share components under the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012*.
  - WAL 28681 in the Lachlan Fold Belt Murray-Darling Basin (MDB) Groundwater Source (Lachlan Fold Belt MDB [Other] Management Zone), for 243 share components under the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011*.
  - WAL 6679 in the Lachlan Regulated River Water Source, for 123 share components (General Security) under the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016*.
  - WAL 1798 in the Lachlan Regulated River Water Source, for 300 share components (General Security) under the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016*.
  - WAL 42370 in the Lachlan Regulated River Water Source, for zero share components (High Security) under the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016*.
- Groundwater licences for monitoring bores under the *Water Management Act 2000*.
- Aboriginal Heritage Impact Permits (AHIPs #C0003049 and AHIP #C0003887) issued by the Office of Environment and Heritage (OEH) under the NSW *National Parks and Wildlife Act 1974*.
- Mining and workplace health and safety related approvals granted by the NSW Department of Industry and SafeWork NSW.
- Permits under the *Roads Act 1993*.
- Heavy Vehicle Authorisation Permit 119039 issued by the National Heavy Vehicle Regulator under the *Heavy Vehicle National Law NSW.*
- Crown Land Licences issued under the *Crown Land Management Act 2016*.

3.3 Other Legislation, Policies and Guidance

Clean TeQ will conduct the Project consistent with the requirements of Development Consent DA 374-11-00 and any other legislation that is applicable to an approved Part 4 Project under the EP&A Act.

In addition to the statutory obligations described in Sections 3.1 and 3.2, the following NSW Acts (and their Regulations) may be applicable to the conduct of the Project:

- *Aboriginal Land Rights Act 1983;*
- *Biodiversity Conservation Act 2016;*
- *Biosecurity Act 2015;*
- *Crown Land Management Act 2016;*
- *Contaminated Land Management Act 1997;*

- *Dams Safety Act 2015;*
- *Dangerous Goods (Road and Rail Transport) Act 2008;*
- *Energy and Utilities Administration Act 1987;*
- EP&A Act;
- *Fisheries Management Act 1994;*
- *Forestry Act 2012;*
- *Mining Act 1992;*
- *National Parks and Wildlife Act 1974;*
- *Pipelines Act 1967;*
- POEO Act;
- *Rail Safety (Adoption of National Law) Act 2012;*
- *Roads Act 1993;*
- *Soil Conservation Act 1938*;
- *Water Act 1912;*
- *Water Management Act 2000;*
- *Work Health and Safety Act 2011;* and
- *Work Health and Safety (Mines and Petroleum Sites) Act 2013.*

Commonwealth Acts which may also be applicable to the conduct of the Project include:

- *Environment Protection and Biodiversity Conservation Act 1999;* and
- *Native Title Act 1993.*

Relevant licences or approvals required under these Acts will be obtained as required.

Further details relating to the above NSW Acts regulated by NRAR and EPA, and other relevant water policy and guideline documentation relevant to this WMP is provided in the following sub-sections.

3.3.1 Water Management Act 2000

As water sharing plans have commenced under the *Water Management Act 2000* for all surface and groundwater systems within which the Project lies, the *Water Management Act 2000* is relevant to water licensing considerations for the Project. The following water sharing plans have been commenced under the *Water Management Act, 2000* for all groundwater and surface water systems within which the Project lies, including:

<u>Mine</u>

- *Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012; and*

- *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011.*

Borefields

- *Water Sharing Plan for the Lachlan Regulated River Water Source 2016; and*
- *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012.*

The *Water Management Act 2000* incorporates the provisions of various prior Acts relating to the management of surface and groundwater in NSW and provides a single statute for regulation of water access, use and works (e.g. pumps or bores) that affect the licensing of surface water and alluvial and non-alluvial (i.e. fractured rock and porous rock) groundwater in the vicinity of the Project.

3.3.2 Water Act 1912

As water sharing plans have commenced under the *Water Management Act, 2000* for all groundwater and surface water systems within which the Project lies (Section 3.3.1), the *Water Act 1912* is not relevant to licensing considerations for the Project.

3.3.3 Protection of the Environment Operations Act 1997

Clean TeQ holds EPL 21146 for the Project. A summary of the key surface water related conditions of EPL 21146 is provided in Section 4.

Unless EPL 21146 authorises otherwise, the Project will be carried out to comply with Section 120 of the POEO Act.

3.3.4 National Water Quality Management Strategy/ANZECC & ARMCANZ (2000)

The National Water Quality Management Strategy is a joint national approach to improving water quality in Australian and New Zealand waterways. The ANZECC water quality guidelines (ANZECC & ARMCANZ, 2000) have been considered where applicable in the SWMP (Appendix B), GWMP (Appendix C) for the Project.

3.3.5 NSW Water Quality and River Flow Objectives

The NSW Water Quality and River Flow Objectives have been developed to guide plans and actions to achieve healthy waterways in NSW, including the Macquarie-Bogan River catchment.

Each objective is based on providing the right water quality for the environment and the different beneficial uses of the water. They are based on measurable environmental values (EVs), which are those values or uses of water that the community believes are important for a healthy ecosystem for public benefit, welfare, safety or health. The target concentrations for each water quality objective (WQO) are based on ANZECC & ARMCANZ (2000).

3.3.6 Aquifer Interference Policy

The *NSW Aquifer Interference Policy* (NSW Government, 2012) has been developed by the NSW Government as a component of the NSW Government's Strategic Regional Land Use Policy. The Aquifer Interference Policy applies statewide and details water licence and impact assessment requirements. The Aquifer Interference Policy has been developed to ensure equitable water sharing between various water users and proper licensing of water taken by aquifer interference activities such that the take is accounted for in the water budget and water sharing arrangements. The Aquifer Interference Policy also enhances existing regulation, contributing to a comprehensive framework to protect the rights of all water users and the environment in NSW.

The *NSW Aquifer Interference Policy* (NSW Government, 2012) includes minimal impact considerations relating to water table and groundwater pressure drawdown and changes in groundwater and surface water quality. Where relevant, these minimal impact considerations have informed the groundwater impact trigger levels (i.e. more than 2 m drawdown) (Section 5.1).

3.3.7 NSW Central West Local Strategic Plan

Local Land Services Central West Local Strategic Plan 2016-2021 has been considered where applicable in the development of this WMP. The Local Strategic Plan describes the climate and geography, communities, agriculture, biosecurity challenges and natural resources in the region.

3.3.8 Australian Standard 1940-2017

Australian Standard (AS) 1940-2017 *The Storage and Handling of Flammable and Combustible Liquids* sets out requirements and recommendations for the safe storage and handling of flammable liquids of dangerous goods (Class 3) and also provides requirements and recommendations for the storage and handling of combustible liquids. It also provides minimum acceptable safety requirements for storage facilities, operating procedures, emergency planning and fire protection.

AS 1940-2017 have been considered where applicable in this Water Balance.

4. PERFORMANCE MEASURES AND PERFORMANCE INDICATORS

Table 9 in Development Consent DA 374-11-00 prescribes the water management performance measures for the Project, as follows:

- **Water Management – General**
  - Maintain separation between clean and mine water management systems.
  - Minimise the use of clean water on-site.
- **Construction and Operation of Infrastructure**
  - Design, install and maintain erosion and sediment controls generally in accordance with the series *Managing Urban Stormwater: Soils and Construction including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads.*
  - Design, install and maintain infrastructure within 40 m of watercourses generally in accordance with the *Guidelines for Controlled Activities on Waterfront Land* (DPI, 2012), or its latest version.
  - Design, install and maintain any creek crossings generally in accordance with the *Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings* (NSW Fisheries, 2003), or their latest versions.
- **Clean Water Diversion Infrastructure**
  - Maximise the diversion of clean water around disturbed areas on-site.
  - Design, construct and maintain the clean water diversions to capture and convey the 100 year, peak flow rainfall event.
- **Sediment Dams (Mine and Limestone Quarry)**
  - Design, install and/or maintain the dams generally in accordance with the series *Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries*.
- **Mine and Limestone Quarry Water Storages**
  - Design, install and/or maintain mine and limestone water storage infrastructure to ensure no discharge of mine or limestone quarry water off-site (except in accordance with an EPL).
  - On-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and/or maintained to minimise permeability.
  - Ensure that the floor and side walls of the tailings storage facility, Evaporation Basin and Surge Dam are designed with a minimum of a 900 millimetres (mm) clay or modified soil liner with a permeability of no more than 1×10^{-9} metres per second (m/s), or a synthetic (plastic) liner of 1.5 mm minimum thickness with a permeability of no more than 1×10^{-14} m/s (or equivalent).

- Design, install and maintain a seepage interception system in the Tailings Storage Facility embankments in accordance with Dams Safety Committee (DSC) guidelines.
- Design, install and maintain the water storages to capture and convey the 100 year, 72-hour Average Recurrence Interval (ARI) rainfall event.
- Design, install and/or maintain the facilities to meet the requirements of the DSC.
- The design of the tailings storage facility should conform to:
  - DSC3A – Consequence Categories for Dams (DSC); and
  - DSC3F – Tailings Dams (DSC).

- **Chemical and Hydrocarbon Storage**
  - Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standards.
- **Irrigation Area**
  - Manage the irrigation area in accordance with the EPA's *Environmental Guidelines: Use of Effluent by Irrigation*.

During construction activities, Clean TeQ will assess the Project against the specific water management performance indicators outlined in Table 3.

Table 3 – Water Management Performance Indicators – Construction

Performance Measure	Performance Indicators
Water Management - General	
• Maintain separation between clean and mine water management systems.	The water management system is constructed and maintained generally in accordance with the design described in the SWMP.
• Minimise the use of clean water on-site.	Water use is consistent with the water use priority described in the Water Balance and in accordance with relevant Water Management Act 2000 approvals.
Construction and Operation of Infrastructure	
• Design, install and maintain erosion and sediment controls generally in accordance with the series *Managing Urban Stormwater: Soils and Construction* including *Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads.*	Suitably qualified person documents that erosion and sediment controls have been designed and installed generally in accordance with the series *Managing Urban Stormwater: Soils and Construction* including *Volume 1*, *Volume 2A – Installation of Services* and *Volume 2C – Unsealed Roads.*
• Design, install and maintain infrastructure within 40 m of watercourses generally in accordance with the *Guidelines for Controlled Activities on Waterfront Land* (DPI 2012), or its latest version.	Suitably qualified person documents that key infrastructure within 40 m of watercourses is designed and installed generally in accordance with the *Guidelines for Controlled Activities on Waterfront Land* (DPI 2012), or its latest version.
• Design, install and maintain any creek crossings generally in accordance with the *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI, 2013) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (NSW Fisheries 2003), or their latest versions.	Suitably qualified person documents that creek crossings have been designed generally in accordance with the *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI, 2013) and *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (NSW Fisheries 2003), or their latest versions.
Clean Water Diversion Infrastructure	
• Maximise the diversion of clean water around disturbed areas on-site.	Suitably qualified person documents that clean water diversions are designed to maximise the diversion of clean water around disturbance areas.
• Design, construct and maintain the clean water diversions to capture and convey the 100-year, peak flow rainfall event.	Suitably qualified person documents that clean water diversions are designed and constructed to capture and convey the 100-year, peak flow rainfall event.

Table 3 (Continued) – Water Management Performance Indicators – Construction

Performance Measure	Performance Indicators
Sediment Dams (Mine and Limestone Quarry)	
• Design, install and/or maintain the dams generally in accordance with the series *Managing Urban Stormwater: Soils and Construction – Volume 1* and *Volume 2E Mines and Quarries*.	Suitably qualified person documents that sediment dams have been designed and installed generally in accordance with the series *Managing Urban Stormwater: Soils and Construction* including *Volume 1* and *Volume 2A – Installation of Services and 2E Mines and Quarries.*
Mine and Limestone Quarry Water Storages	
• Design, install and/or maintain mine and limestone water storage infrastructure to ensure no discharge of mine or limestone quarry water off-site (except in accordance with an EPL).	Suitably qualified person documents that the water management infrastructure is constructed and maintained generally in accordance with the design described in the Water Balance and SWMP.
• On-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and/or maintained to minimise permeability.	Mine water storages are constructed and maintained to minimise seepage.
• Ensure that the floor and side walls of the tailings storage facility, evaporation basin and surge dam are designed with a minimum of a 900 mm clay or modified soil liner with a permeability of no more than 1×10^{-9} m/s, or a synthetic (plastic) liner of 1.5 mm minimum thickness with a permeability of no more than 1×10^{-14} m/s (or equivalent).	Suitably qualified person documents that the tailings storage facility, evaporation basin and surge dam mine water storages are designed and constructed to capture and convey the 100 year, 72-hour ARI rainfall event.
• Design, install and maintain a seepage interception system in the Tailings Storage Facility embankments in accordance with the DSC guidelines.	The Dam Safety Committee approves the tailings storage facility design.
• Design, install and maintain the water storages to capture and convey the 100 year, 72-hour ARI rainfall event.	Suitably qualified person documents that the mine water storages are designed and constructed to capture and convey the 100 year, 72-hour ARI rainfall event.
• Design, install and/or maintain the facilities to meet the requirements of the DSC.	The Dam Safety Committee approves the design of relevant water storages (i.e. prescribed structures).
• The design of the tailings storage facility should conform to: – DSC3A – Consequence Categories for Dams (DSC); and – DSC3F – Tailings Dams (DSC).	The Dam Safety Committee approves the tailings storage facility design.
Chemical and Hydrocarbon Storage	
• Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standards.	Suitably qualified person documents that chemical and hydrocarbon storages are designed and constructed in accordance with the relevant Australian Standards.
Irrigation Area	
• Manage the irrigation area in accordance with the *EPA's Environmental Guidelines: Use of Effluent by Irrigation*.	The irrigation area is designed and maintained so as not to cause irrigation water runoff from the irrigation area.

In addition, EPL 21146 includes surface water quality limits for receiving waters at the mine site and surface water quality limits for waters discharged from the sediment dams (Table 4).

Table 4 – EPL 21146 Surface Water Quality Limits

Parameter	Units	Limit
Receiving Waters		
Electrical Conductivity (EC)	µS/cm	2,200
pH	pH units	6.5 – 8.5
Total Suspended Solids	mg/L	50
Iron (Fe)	mg/L	3.7
Nickel (Ni)	mg/L	0.008
Stormwater (Sediment Dam) Discharges[1]		
Electrical Conductivity (EC)	µS/cm	2,200
pH	pH units	6.5 – 8.5
Total Suspended Solids	mg/L	50[2]
Turbidity	Nephelometric Turbidity Units	50

µS/cm = micro Siemens per centimetre; mg/L = milligrams per litre.

1 Limits do not apply when the discharge occurs solely as a result of rainfall measured at the site which exceeds a total of 50.7 mm of rainfall over any consecutive 5 day period (Condition L2.5 of EPL 21145).

2 Limit is not deemed to be exceeded where the water sample complies with the turbidity limit at the time of discharge and the EPA is advised of any total suspended solid exceedances within 3 working days of the completion of the total suspended solids testing (Condition L2.6).

5. WATER MANAGEMENT SYSTEM OVERVIEW

Consistent with the general water management and clean water diversion infrastructure performance measures for the Project (Section 4), the key objectives of the water management system are to control runoff from the development/construction areas and the operational areas, while diverting up-catchment water around these areas, and to minimise the use of clean water on-site.

The water management system will include both permanent features that will continue to operate post-closure (e.g. northern and southern diversion channels) and temporary structures during mining operations (e.g. sediment dams).

An internal drainage system will be constructed to collect and contain water generated within the development/construction areas and operation areas.

Sediment control structures such as sediment dams and sediment fences will be employed where necessary within and downstream of disturbance areas.

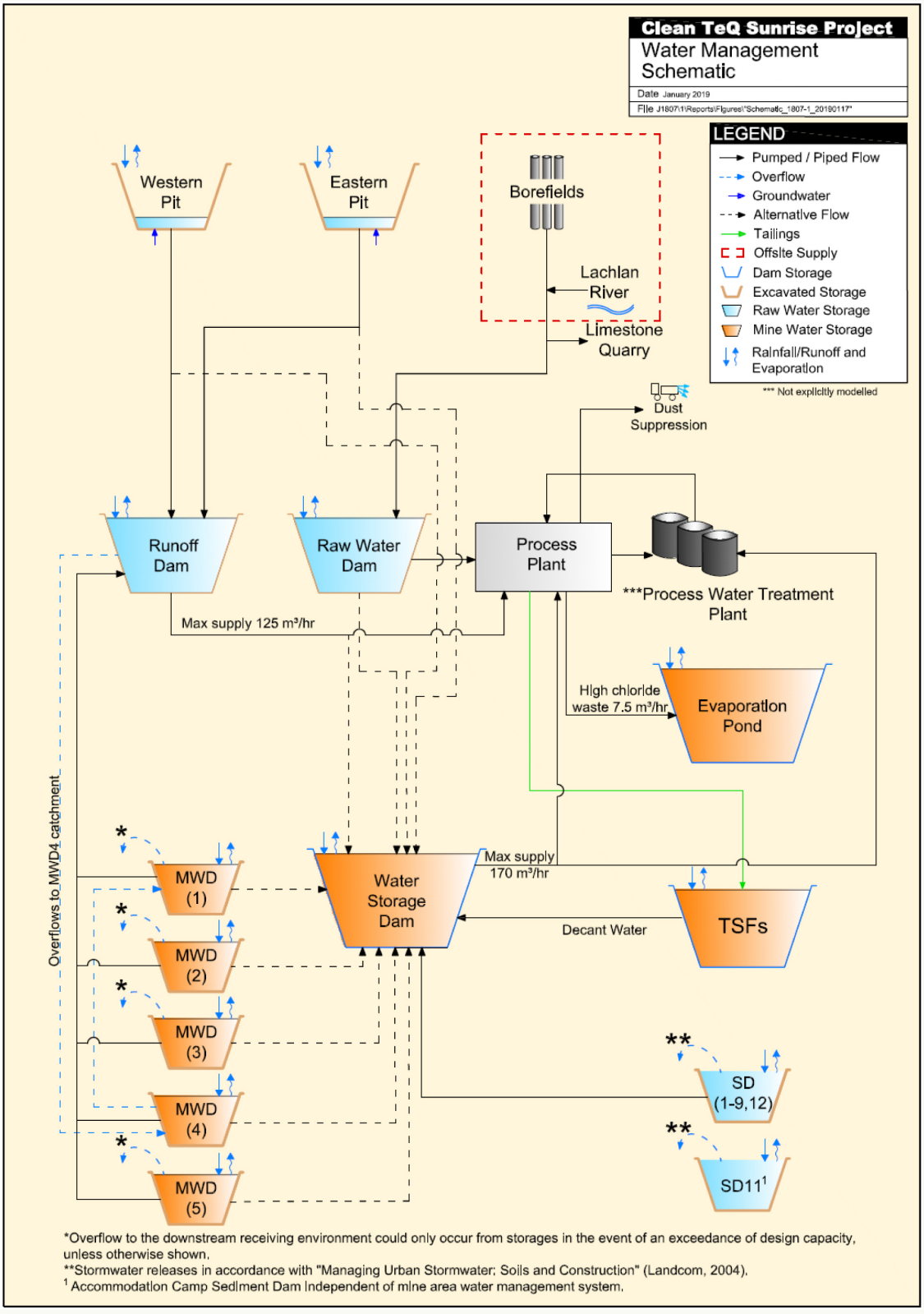
The water management system for the initial construction activities is presented on Figure 2. The water management system will be progressively developed during the construction and operation phases as diversion and containment requirements change. The water management system for the mine site at full development is presented on Figure 3. The water management schematic is shown on Figure 5 and a summary of the water management system is provided in this section.

5.1 Mine Water Storages

The following mine water storages will be constructed during the initial construction activities (Figure 2):

- tailings storage facility;
- evaporation pond;
- water storage dam;
- mine water dams and runoff dam; and
- raw water dam.

Additional details on the design and operation of these water storages is provided in the Water Balance (Appendix A) and the SWMP (Appendix B).



CTL-17-03 MP 2018_WBMP_001C

Source: HEC (2019)

5.2 Sediment Dams

Consistent with the relevant performance measures (Section 4), the sediment dams will be designed, installed and maintained generally in accordance with the series *Managing Urban Stormwater: Soils and Construction* including *Volume 1* (Landcom, 2004) and *Volume 2E Mines and Quarries* (DECC, 2008c).

Water collected from the disturbance footprint (e.g. internal haul roads and waste dumps) will be temporarily contained in the sediment dams to minimise potential water quality impacts. Where opportunities arise, water will be recycled for dust suppression or use in the processing facility, or otherwise released in accordance with the requirements of EPL 21146.

Additional details on the design and operation of the sediment dams is provided in the Water Balance (Appendix A) and the SWMP (Appendix B).

5.3 Diversion Systems

The diversion system consists of clean water diversions and collection drains. The clean water diversions will collect and divert clean water around disturbed areas. The collection drains will collect and convey runoff from disturbed areas to mine water dams ("mine water") (Section 5.1) or sediment dams ("sediment water") (Section 5.2). Consistent with the relevant performance measures (Section 4), the diversion system will:

- maintain separation between clean and mine water management systems; and
- maximise the diversion of clean water around disturbed areas on site.

Additional details on the design and operation of the diversion system is provided in the Water Balance (Appendix A) and the SWMP (Appendix B).

5.4 Other Surface Water Management Measures

The water management system at the mine site is designed to minimise any potential water quality impacts and is described in the Water Balance (Appendix A). The overall objective of the surface water management system is to contain any potentially contaminated water generated within development/construction and operational areas while diverting all other water around these areas. In summary, this objective is achieved by:

- minimising disturbance areas;
- containment and recycling (including priority re-use of accumulated waters stored);
- collection of runoff from the stockpiles and emplacements to sediment dams designed and managed in accordance with relevant guidelines;
- progressive stabilisation and revegetation of disturbed areas; and
- installation of appropriate erosion and sediment controls.

6. MONITORING PROGRAMS

Monitoring programs have been developed and are described in the Water Balance (Appendix A), SWMP (Appendix B) and GWMP (Appendix C).

7. CONTINGENCY PLAN

In the event a water management performance measure for the Project (detailed in Section 4) has not been met or a performance indicator is considered to have been exceeded, Clean TeQ will implement the following Contingency Plan:

- The Clean TeQ Environmental Superintendent will report the likely exceedance in accordance with Section 9.1.
- Clean TeQ will identify an appropriate course of action with respect to the identified potential impacts or environmental consequences (if any), in consultation with specialists and relevant government agencies, as necessary. For example, contingency measures, such as, but not limited to, those described in Section 7.2.
- Clean TeQ will submit the proposed course of action to the DPIE for approval.
- Clean TeQ will implement the approved course of action to the satisfaction of the DPIE.

7.1 Adaptive Management

In accordance with Condition 3, Schedule 5 of Development Consent DA 374-11-00, where any exceedance of the criteria and/or performance measures outlined in Schedule 3 of Development Consent DA 374-11-00 occurs, at the earliest opportunity Clean TeQ will:

- take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;
- consider all reasonable and feasible options for remediation and submit a report to the DPIE describing these options and preferred remediation measures; and
- implement remediation measures as directed by the Secretary of the DPIE.

7.2 Specific Contingency Measures

Specific contingency measures for an exceedance of the water management performance measures would include:

- The conduct of additional monitoring (e.g. increase in monitoring frequency or additional sampling), which would inform further specific contingency measures.
- Implementation of adaptive management strategies (e.g. on-site reconfiguration) to better maintain separation of clean and mine waters, diversion of clean waters, storage ‘as-built’ designs and avoid discharge of mine waters (except in accordance with an EPL).
- Provision of equivalent water supply or compensation for an impacted privately-owned bore.
- The provision of a suitable offset (e.g. improvement works) if there was an environmental consequence and/or adverse surface water impacts were to result.

Clean TeQ will also implement any preferred contingency measures identified to address an incident as directed by the Secretary (Sections 7.1 and 9.1).

8. REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

8.1 Annual Review

In accordance with Condition 5, Schedule 5 of Development Consent DA 374-11-00, Clean TeQ will review the environmental performance of the Project by the end of March each year (for the previous calendar year) to the satisfaction of the Secretary.

In relation to water management, the Annual Review will (where relevant):

- describe the development that was carried out in the relevant calendar year, and the development that is proposed to be carried out during the following calendar year;
- include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the:
  - relevant statutory requirements, limits or performance measures/criteria;
  - monitoring results of previous years; and
  - relevant predictions in the Syerston Nickel Cobalt Project Environmental Impact Statement (Black Range Minerals, 2000) and subsequent environmental assessments;
- identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the development;
- identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next year to improve the environmental performance of the development.

The Annual Review will be made publicly available on the Clean TeQ website.

8.2 Independent Environmental Audit

In accordance with Condition 10, Schedule 5 of Development Consent DA 374-11-00, an independent environmental audit of the Project will be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary.

The independent environmental audit will assess the environmental performance of the Project and review the adequacy of this WMP. If necessary, appropriate measures or actions to improve the environmental performance of the Project or this WMP will be recommended.

An independent environmental audit will be conducted within one year of the commencement of the development under this consent, after 6 May 2017.

The independent environmental audit, and Clean TeQ's response to the recommendations in the audit, will be made publicly available on the Clean TeQ website, in accordance with Condition 12, Schedule 5 of Development Consent DA 374-11-00.

9. REPORTING PROTOCOLS

In accordance with Condition 4(g), Schedule 5 of Development Consent DA 374-11-00, Clean TeQ has developed protocols for managing and reporting the following:

- incidents;
- complaints;
- non-compliances with statutory requirements; and
- exceedances of the impact assessment criteria and/or performance criteria.

These protocols are described in detail in Clean TeQ's Environmental Management Strategy.

In accordance with Condition 9, Schedule 5 of Development Consent DA 374-11-00, Clean TeQ will provide regular reporting on the environmental performance of the Project on the Clean TeQ website. The Annual Review will be made publicly available on the Clean TeQ website to address this requirement.

9.1 Incident Reporting

An incident is defined as a set of circumstances that causes or threatens to cause material harm to the environment and/or breaches or exceeds the limits or performance measures/criteria in Development Consent DA 374-11-00.

In the event that review of surface or ground water monitoring data indicates an incident has occurred, the incident will be reported in accordance with Condition 8, Schedule 5 of Development Consent DA 374-11-00. Clean TeQ will notify the Secretary and any other relevant agencies including the relevant Council immediately after it becomes aware of the incident. Clean TeQ will also notify any affected landholders of any incident that has caused, or threatens to cause, material harm to the environment.

Within seven days of the date of the incident, Clean TeQ will provide the Secretary and any other relevant agencies with a detailed report on the incident and such further reports as may be requested. The report will:

- describe the date, time and nature of the exceedance/incident;
- identify the cause (or likely cause) of the exceedance/incident;
- describe what action has been taken to date; and
- describe reasonable and feasible options to address the incident and identify the preferred option to address the incident (Section 7.1).

9.2 Complaints

Clean TeQ will maintain a Community Complaints Line (tel: 1800 952 277) and email address (community@cleanteq.com) for the sole purpose of receiving community contacts and complaints. The Community Complaints Line number will be available on the website and included in Clean TeQ's advertising and community communication tools. The Community Complaints line will be staffed 24 hours a day, seven days a week during construction and operations. Clean TeQ will respond to callers on the next business day. If the issue is urgent a member of the leadership team will be contacted immediately.

Clean TeQ has developed a procedure that outlines its commitment to receiving, resolving and recording complaints received from the community. Detailed records of each complaint resolution are kept in Clean TeQ's record management systems.

Complaints will be investigated within 24 hours of receipt. The cause of the complaint will be analysed and actions to resolve the complaint taken as soon as possible. In complex cases where resolution will take more than 48 hours, Clean TeQ will commit to update the community member regularly until the complaint is resolved.

In accordance with Condition 12(a), Schedule 5 of Development Consent DA 374-11-00, a complaints register will be made available on the Clean TeQ website and updated monthly.

9.3 Non-Compliances with Statutory Requirements

A protocol for managing and reporting non-compliances with statutory requirements has been developed as a component of Clean TeQ's Environmental Management Strategy and is described below.

Compliance with all approvals plans and procedures is the responsibility of all personnel (staff and contractors) employed on or in association with Clean TeQ and the Project.

The Clean TeQ Environmental Superintendent will undertake regular inspections, internal audits and initiate directions identifying any remediation/rectification work required, and areas of actual or potential non-compliance.

As described in Section 9.1, Clean TeQ will report incidents in accordance with Condition 8, Schedule 5 of Development Consent DA 374-11-00 and in accordance with the protocol for industry notification of pollution incidents under Part 5.7 of the POEO Act.

Clean TeQ will notify the Secretary and any other relevant agencies including the relevant Council immediately after the authorised person becomes aware of the incident which causes or threatens to cause material harm to the environment. Within seven days of the date of the incident, Clean TeQ will provide the Secretary and any other relevant agencies with a detailed report on the incident and such further reports as may be requested.

A review of compliance with all conditions in Development Consent DA 374-11-00, Mining Lease 1770 and all other approvals and licences will be undertaken prior to (and included within) each Annual Review (Section 8.1).

Additionally, in accordance with Condition 10, Schedule 5 of Development Consent DA 374-11-00, an independent environmental audit (Section 8.2) would be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary to assess whether Clean TeQ is complying with the requirements in Development Consent DA 374-11-00, and any other relevant approvals, EPLs, and/or mining leases.

9.4 Exceedances of Impact Assessment Criteria and/or Performance

A protocol for managing and reporting exceedances of impact assessment criteria and/or performance criteria is provided is Section 4.

10. REFERENCES

Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality – The Guidelines*. National Water Quality Management Strategy. October 2000.

Black Range Minerals (2000) *Syerston Nickel-Cobalt Project Environmental Impact Statement*. October 2000.

Department of Primary Industries (DPI) Fisheries NSW (2013) *Policy and Guidelines for Fish Habitat Conservation and Management.* June 2013.

Department of Primary Industries (DPI) Office of Water (2012) *Controlled Activities on Waterfront Land – Guidelines for Riparian Corridors on Waterfront Land.* July 2012.

Fairfull, S. and Witheridge, G. (2003) *Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings.* NSW Fisheries, January 2003.

ATTACHMENT 1

Water Related Development Consent DA 374-11-00 Conditions

Table A-1 – Water Related Development Consent DA 374-11-00 Conditions

Development Consent DA 374-11-00 Schedule 3	Section Where Addressed in this WMP Section
Water Supply *26. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of development on site to match its available water supply.* *Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain the necessary water licences for the development.*	Appendix A
Water Pollution *27. Unless an EPL authorises otherwise, the Applicant must comply with Section 120 of the POEO Act.*	Section 3.3.3
Compensatory Water Supply *28. The Applicant must provide a compensatory water supply to anyone whose basic landholder water rights (as defined in the Water Management Act 2000) are adversely and directly impacted as a result of the development. This supply must be provided in consultation with DoI Lands & Water, and to the satisfaction of the Secretary.* *The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributable to the development. Equivalent water supply must be provided (at least on an interim basis) as soon as possible after the loss is identified, unless otherwise agreed with the landowner.* *If the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution* *If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide alternative compensation to the satisfaction of the Secretary.*	Appendix C

Table A-1 (Continued) – Water Related Development Consent DA 374-11-00 Conditions

<table>
<tr><th>Development Consent DA 374-11-00
Schedule 3</th><th>Section Where Addressed in this WMP Section</th></tr>
<tr><td>

Water Management Performance Measures

29. The Applicant must ensure the development on site complies with the performance measures in Table 9, to the satisfaction of the Secretary.

Table 9: Water Management Performance Measures

<table>
<tr><th>Feature</th><th>Performance Measure</th></tr>
<tr><td>Water Management General</td><td>• Maintain separation between clean and mine water management systems
• Minimise the use of clean water on site</td></tr>
<tr><td>Construction and operation of infrastructure</td><td>• Design, install and maintain erosion and sediment controls generally in accordance with the series Managing Urban Stormwater: Soils and Construction including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads.
• Design, install and maintain infrastructure within 40 m of watercourses generally in accordance with the Guidelines for Controlled Activities on Waterfront Land (DPI 2012), or its latest version;
• Design, install and maintain any creek crossings generally in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003), or their latest versions</td></tr>
<tr><td>Clean water diversion infrastructure</td><td>• Maximise the diversion of clean water around disturbed areas on site
• Design, construct and maintain the clean water diversions to capture and convey the 100 year, peak flow rainfall event</td></tr>
<tr><td>Sediment dams (mine and limestone quarry)</td><td>• Design, install and/or maintain the dams generally in accordance with the series Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries</td></tr>
<tr><td>Mine and limestone quarry water storages</td><td>• Design, install and/or maintain mine and limestone water storage infrastructure to ensure no discharge of mine or limestone quarry water off-site (except in accordance with an EPL)
• On-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and/or maintained to minimise permeability
• Ensure that the floor and side walls of the Tailings Storage Facility, Evaporation Basin and Surge Dam are designed with a minimum of a 900 mm clay or modified soil liner with a permeability of no more than 1 x 10-9 m/s, or a synthetic (plastic) liner of 1.5 mm minimum thickness with a permeability of no more than 1 x 10-14 m/s (or equivalent)
• Design, install and maintain a seepage interception system in the Tailings Storage Facility embankments in accordance with DSC guidelines
• Design, install and maintain the water storages to capture and convey the 100 year, 72-hour ARI rainfall event
• Design, install and/or maintain the facilities to meet the requirements of the DSC
• The design of the Tailings Storage Facility should conform to: -
– DSC3A – Consequence Categories for Dams (DSC); and
– DSC3F – Tailings Dams (DSC)</td></tr>
<tr><td>Chemical and hydrocarbon storage</td><td>• Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standards</td></tr>
<tr><td>Irrigation Area</td><td>• Manage the irrigation in accordance with the EPA's Environmental Guidelines: Use of Effluent by Irrigation</td></tr>
</table>

</td><td>Section 5 and Appendices 2 & 3</td></tr>
</table>

Table A-1 (Continued) – Water Related Development Consent DA 374-11-00 Conditions

Development Consent DA 374-11-00 Schedule 3	Section Where Addressed in this WMP Section
Water Management Plan	
30. Prior to carrying out any development after 6 May 2017, the Applicant must prepare a Water Management. Plan for the development in consultation with DoI Lands & Water and the EPA, and to the satisfaction of the Secretary. This plan must include:	This WMP
(a) a Water Balance that: • *includes details of:* – *sources and security of water supply, including contingency planning for future reporting periods;* – *water use and management on site;* – *measures to prioritise the use of water in the following order:* o *recycled water from the water treatment plant;* o *other on-site sources (in accordance with harvestable rights provisions); and* o *water extracted from the borefields and Lachlan River;* – *reporting procedures, including the preparation of a site water balance for each calendar year; and* • *describes the reasonable and feasible measures that would be implemented to minimise clean water use on site and maximise the reuse of recovered tailings water at the facility;*	Appendix A
(b) a Surface Water Management Plan, that includes: • *baseline data on water flows and quality in the watercourses that could be affected by the development (if available);* • *a detailed description of the water management system on-site, including the:* – *clean water diversion systems;* – *erosion and sediment controls; and* – *water storages; and* – *irrigation area;* • *objectives and performance criteria, including trigger levels for investigating any potential or actual adverse impacts associated with the development, including the:* – *surface water flows and quality;* – *downstream flooding;* • *a program to monitor and report on:* – *the effectiveness of the water management system and tailings storage facility; and* – *surface water flows and water quality;* – *the performance measures listed in Table 9;* – *impacts on water users;* – *downstream flooding;* • *a plan to respond to any exceedances of the trigger levels and/or performance criteria, and minimise and/or offset any adverse surface water impacts of the development;*	Appendix B
(c) a Groundwater Management Plan, that includes: • *baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the development in the vicinity of the borefields;* • *groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts associated with the development in the vicinity of the borefields;* • *a program to monitor and report on:* - *groundwater inflows into the open cut pits, if relevant;* - *the seepage/leachate from the tailings storage facility and evaporation ponds; and* - *the impacts of the development on:* ▪ *groundwater supply of any potentially affected landholders, particularly around the borefields;* ▪ *regional and local aquifers; and* ▪ *post-mining groundwater recovery;* • *a plan to respond to any exceedances of the groundwater assessment criteria, and mitigate any adverse impacts of the development;*	Appendix C
31. The Applicant must implement the approved Water Management Plan for the development.	This WMP (once approved)

APPENDIX A

Water Balance

APPENDIX B

Surface Water Management Plan

APPENDIX C

Groundwater Management Plan