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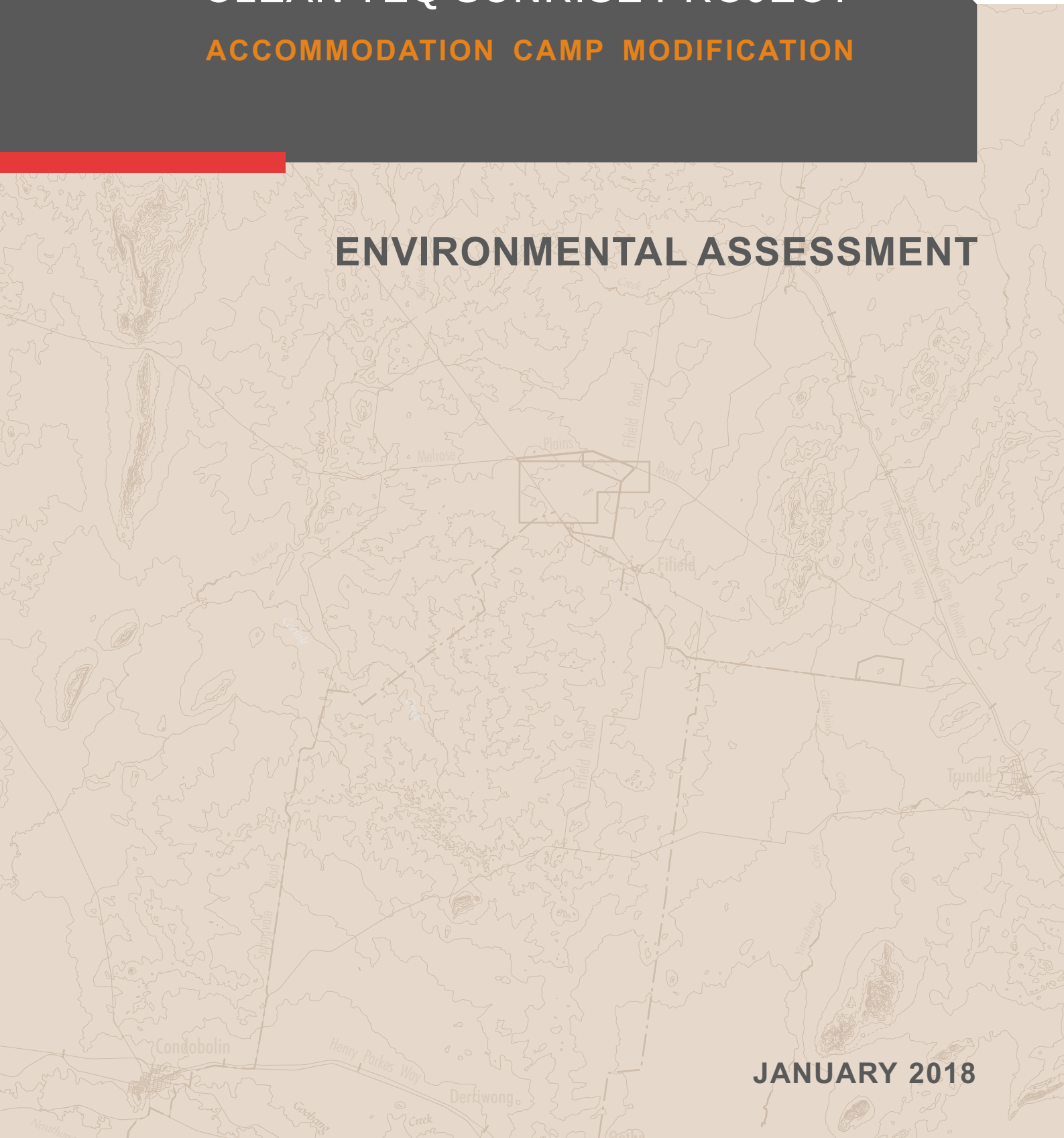
CLEAN TEQ SUNRISE PROJECT

ACCOMMODATION CAMP MODIFICATION

ENVIRONMENTAL ASSESSMENT



JANUARY 2018

Clean TeQ Sunrise Project

Accommodation Camp Modification (MOD 6) Environmental Assessment

00897181

Date Published	Revision
11-Jan-18	1

Executive Summary

ES.1 Background

The Clean TeQ Sunrise Project (the Project) is an approved nickel cobalt scandium mining project situated approximately 350 kilometres west-northwest of Sydney, near the village of Fifield, New South Wales.

Scandium21 Pty Ltd owns the rights to develop the Project. Scandium21 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 New South Wales *Environmental Planning and Assessment Act, 1979* in 2001. The Project includes the establishment and operation of the following:

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

An accommodation camp is approved to be located on the western side of the mine site in the vicinity of Wilmatha Road (Figures ES-1a and ES-1b). The approved accommodation camp will be used during the construction phase of the Project and will have accommodation facilities for approximately 1,000 personnel.

Construction of the Project commenced in 2006 with the construction of components of the borefields, however Project operations are yet to commence.

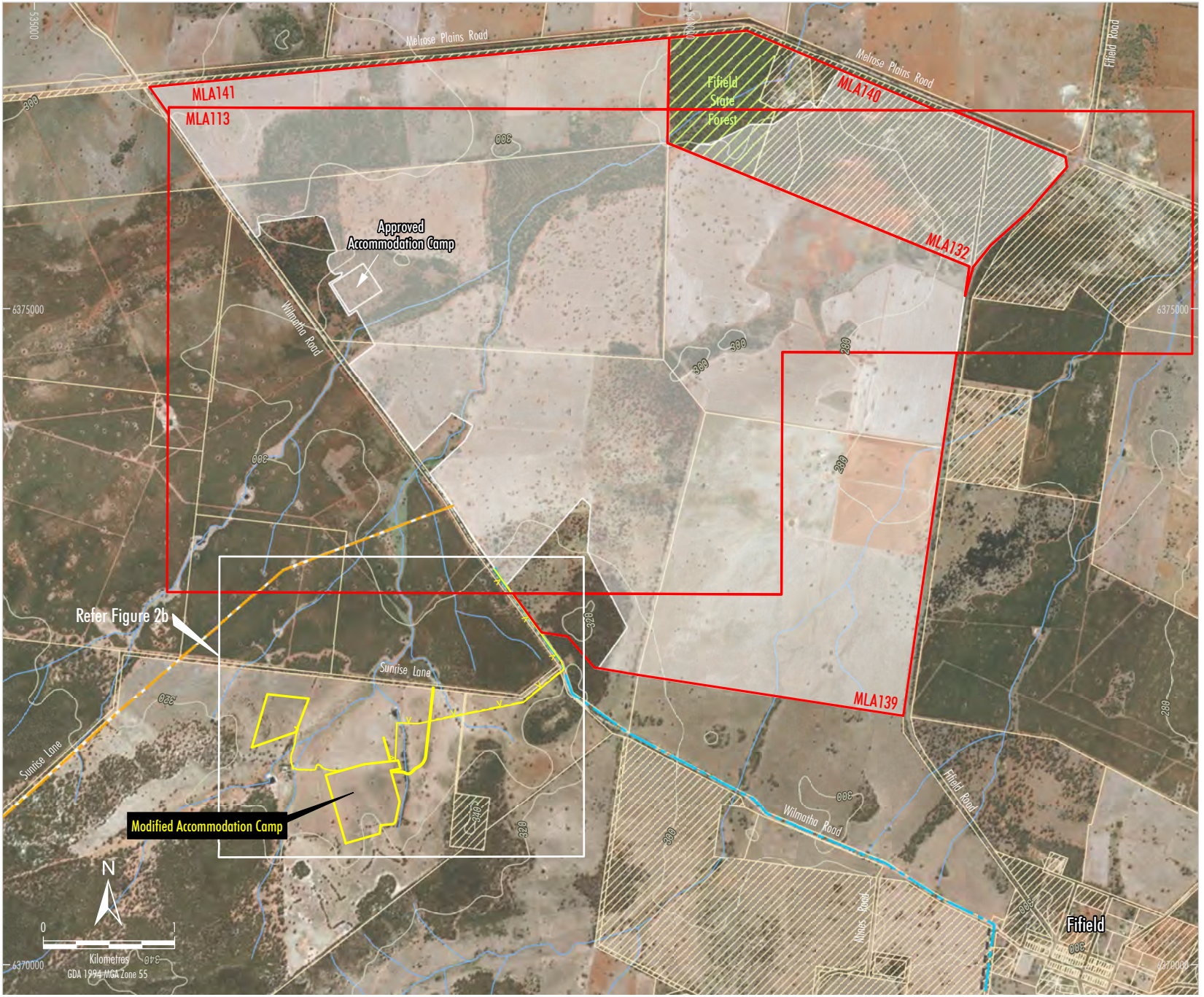
ES.2 Modification Overview

As part of detailed planning for the construction phase of the Project, Clean TeQ has identified an alternative location for the approved accommodation camp that would provide improved amenity for the workforce in the accommodation camp and minimise potential operational constraints at the mine site. Clean TeQ also identified the preference to maintain the accommodation camp (at reduced capacity) during operations for the short-term use of temporary contractors and visitors.

These proposed changes to the approved accommodation camp is referred to as the Accommodation Camp Modification (the Modification). The Modification is sought under section 75W of the New South Wales *Environmental Planning and Assessment Act, 1979* and would include:

- development of the accommodation camp (including supporting infrastructure) at an alternative location approximately 4 kilometres to the south of the mine site;
- construction of an electricity transmission line and water pipeline from the mine site to the modified accommodation camp site;
- minor road upgrades;
- increased accommodation camp capacity (from approximately 1,000 to 1,300 personnel); and
- the accommodation camp (at reduced capacity) would continue to be operated post-construction.

A conceptual general arrangement of the modified accommodation camp is provided on Figures ES-1a and ES-1b.



LEGEND

- Mining Lease Application Boundary
- Approved Surface Development Area
- Approved Fifield Bypass
- Approved Gas Pipeline
- Approved Water Pipeline
- State Forest
- Property Boundary
- Crown Land
- Modified Layout

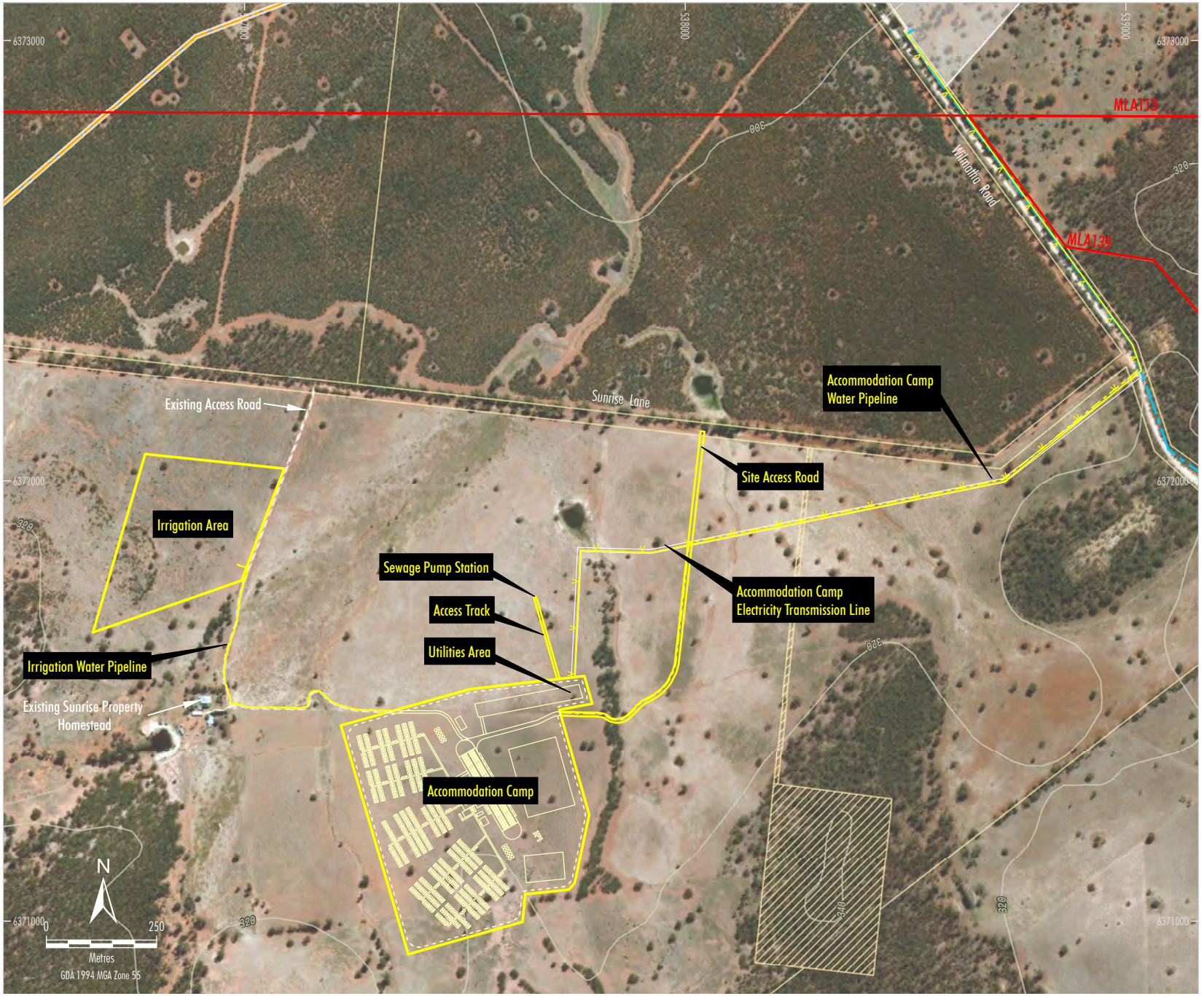
Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017) NSW Imagery: Esri Basemap

CLEAN TEQ SUNRISE PROJECT

Conceptual Modified General Arrangement

Figure ES-1a

CTL-17-04 MOD6_EA_ES_202A



LEGEND

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Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017) NSW Imagery: Esri Basemap

CLEAN TEQ SUNRISE PROJECT

Conceptual Modified General Arrangement Inset

Figure ES-1b

CTL-17-04 MOD6_EA_ES_201A

The Modification would not involve changes to any aspects of the approved mine and processing operations, limestone quarry, rail siding, borefields, water pipeline or gas pipeline.

ES.3 Environmental Review

Clean TeQ has undertaken a review of the potential environmental impacts of the Modification to identify key potential environmental issues requiring assessment. The following key potential environmental issues were identified:

- potential impacts due to additional surface development areas required for the modified accommodation camp and supporting infrastructure;
- potential surface water impacts associated with the development of the modified accommodation camp;
- potential air quality and noise impacts associated with the construction of the modified accommodation camp;
- changes to road transport requirements and road network due to relocation of the accommodation camp; and
- potential visual impacts associated with the development of the modified accommodation camp.

In order to assess the potential environmental impacts of the Modification, environmental reviews were completed for key issues.

Table ES-1 summarises the key environmental review conclusions regarding the Modification.

Clean TeQ would implement environmental management and monitoring measures to minimise the potential impacts of the modified Project on existing environmental values. Additional mitigation measures, management and monitoring proposed for the Modification are summarised in Table ES-1.

ES.4 Modification Justification

The Modification would provide improved amenity for the workforce in the accommodation camp and minimise potential operational constraints at the mine site.

Alternatives locations for the modified accommodation camp have been considered by Clean TeQ as part of detailed planning for the construction phase of the Project. The proposed location and layout of the modified accommodation camp was the preferred location on the following basis:

- it would improve amenity for the workforce in the accommodation camp and minimise potential operational constraints at the mine site;
- it would remain proximal to the mine site to minimise workforce travel requirements;
- it would be located within previously cleared/cultivated land with minimal biodiversity values to minimise native vegetation clearance;
- it would be located approximately 2.5 kilometres from the closest privately-owned receiver to minimise potential amenity impacts; and
- it would be located on Clean TeQ owned land.

This Environmental Assessment has demonstrated that with the implementation of the mitigation measures, the Modification can be implemented with limited additional biophysical and environmental impacts in comparison with the approved Project.

It is therefore considered that the Modification is justified on environmental, economic and social grounds and that an application to modify Project Development Consent DA 374-11-00 under section 75W of the *Environmental Planning and Assessment Act, 1979* is appropriate.

Table ES-1 Key Outcomes of Environmental Review

Environmental Aspect	Summary of Key Environmental Review Conclusions	Additional Mitigation Measures, Management and Monitoring Proposed for the Modification[1]
Land and Agricultural Resources	• The Modification would result in the disturbance or alteration of approximately 38 hectares of existing low to moderate capability agricultural lands for the life of the Project.	• Agricultural activities would continue to occur on outside the accommodation camp area during the Project. • The modified accommodation camp area would be rehabilitated for an agricultural final land use.
Biodiversity	• The modified accommodation camp was designed to avoid and minimise potential biodiversity impacts and is proposed to be constructed solely within the previously cleared/cultivated land with minimal biodiversity values. • The Modification would result in the clearance of approximately 27.5 hectares of previously cleared land with regrowth of predominantly native grasses, herbs and low shrubs. • Scattered trees would need to be cleared for the Modification, however trees which could provide habitat for threatened 'species credit species' were identified and would be avoided. • The proposed irrigation over approximately 10.5 hectares of previously cleared land is unlikely to adversely impact native vegetation.	• Scattered trees which could provide habitat for threatened 'species credit species' would specifically be identified with flagging tape during nearby construction works and would be avoided. • The modified accommodation camp would be kept as a clean, rubbish-free environment in order to discourage scavenging and reduce the potential for colonisation of these areas by non-endemic fauna (e.g. rodents). • The workforce in the modified accommodation camp would not be permitted to keep native fauna or to encourage fauna through feeding. • Domestic pets would not be allowed at the modified accommodation camp.
Aboriginal Cultural Heritage	• The field surveys identified four previously unrecorded Aboriginal cultural heritage sites not of high scientific significance in the modified accommodation camp area and surrounds. • One Aboriginal cultural heritage site (stone artefact site – AHIMS site number 35-4-0034) would be impacted by the Modification.	• Three Aboriginal cultural heritage sites (AHIMS site numbers 35-4-0035, 35-4-0036 and 35-4-0037) would be avoided. • Clean TeQ would submit an application for a new Aboriginal Heritage Impact Permit under section 90 of the New South Wales *National Parks and Wildlife Act, 1974* (and/or a variation application to the existing approved Aboriginal Heritage Impact Permit #C0003049).
Historic Heritage	• As no historic heritage items were identified within the modified accommodation camp area, there would be no impacts to historic heritage items associated with the Modification.	• Clean TeQ considers that no specific or additional mitigation measures, management or monitoring of historic heritage are required for the Modification.
Water Resources	• The Modification is expected to result in negligible change to the approved flow impacts in Bullock Creek and the Bogan River. • The Modification is predicted to have no change to the approved potential water quality impacts in the receiving drainage lines. • As the Modification would not change mining operations or materially alter water demand, no change to approved groundwater impacts are expected.	• The irrigation area would be managed in accordance with the *Environmental Guidelines Use of Effluent by Irrigation* and the irrigation rate would be controlled so as not to: – cause irrigation water runoff from the irrigation area; or – exceed the capacity of the soil in the irrigation area to effectively absorb the applied nutrient, salt, organic material and hydraulic loads.

Table ES-1 Key Outcomes of Environmental Review (Continued)

Environmental Aspect	Summary of Key Environmental Review Conclusions	Additional Mitigation Measures, Management and Monitoring Proposed for the Modification[1]
Air Quality and Noise	• Potential air quality and noise impacts associated with the construction of the modified accommodation camp would not result in significant or prolonged impacts at any privately-owned receivers. • Potential air quality and noise emissions from the modified accommodation camp operations would be negligible.	• Clean TeQ considers that no specific or additional mitigation measures, management or monitoring of air quality or noise are required for the Modification.
Road Transport	• The relocation of the accommodation camp would change Project road traffic movements on sections of Wilmatha Road and Sunrise Lane. • The Modification would have negligible effect on the operation of the key access routes on the wider road network in the region. • The Modification would not result in significant impacts on the safety of the road network with implementation of the road upgrades.	• Clean TeQ would undertake the following road upgrades: – Sunrise Lane between Wilmatha Road and the modified accommodation camp access road – upgraded consistent with a Class 4A unsealed road; and – Wilmatha Road/Sunrise Lane intersection – remove the transition between the gravel and dirt surfaces while Wilmatha Road remains unsealed, and then seal a minimum of 30 metres of Sunrise Lane on the approach to the intersection once Wilmatha Road is sealed. • Clean TeQ would contribute to the maintenance of Sunrise Lane during the life of the Project.
Visual	• No views of the modified accommodation camp would be available from privately-owned dwellings due to the presence of intervening topography and vegetation. • Overall, the potential visual impacts associated with the modified accommodation camp would be low.	• The visual appearance of the modified accommodation camp (including paint colours, specifications and screening) would be designed to blend in as far as possible with the surrounding landscape. • The modified accommodation camp would be landscaped in order to reduce the contrast between the modified accommodation camp and the surrounding environment.
Community Infrastructure	• As the Modification would not result in any additional demand for employees, no material alteration to the approved population and community infrastructure demand is expected as a result of the Modification.	• Clean TeQ considers that no specific or additional mitigation or management measures are required for the Modification with regard to community infrastructure.
Hazard and Risk	• As the Modification would not result in changes to the existing potential risk areas identified in Preliminary Hazard Analysis previously prepared for the Project, no material alteration to the approved hazards and risks is expected as a result of the Modification.	• Clean TeQ considers that no specific or additional mitigation or management measures are required for the Modification with regard to hazard and risks.

[1] In addition to measures currently required under the Development Consent DA 374-11-00.

Contents

List of Attachments

List of Appendices

List of Tables

List of Figures

List of Plates

1 Introduction

This document is an Environmental Assessment (EA) for a proposed modification to the Clean TeQ Sunrise Project (the Project), an approved nickel cobalt scandium mining project. Scandium21 Pty Ltd owns the rights to develop the Project. Scandium21 Pty Ltd is a wholly owned subsidiary of Clean TeQ Holdings Limited (Clean TeQ).

This Modification is sought under section 75W of the New South Wales (NSW) *Environmental Planning and Assessment Act, 1979* (EP&A Act).

1.1 Overview of the Approved Project

The Project is situated approximately 350 kilometres (km) west-northwest of Sydney, near the village of Fifield, NSW (Figure 1).

Development Consent DA 374-11-00 (Attachment 1) for the Project was issued under Part 4 of the EP&A Act in 2001.

The Project includes the establishment and operation of the following (Figure 1):

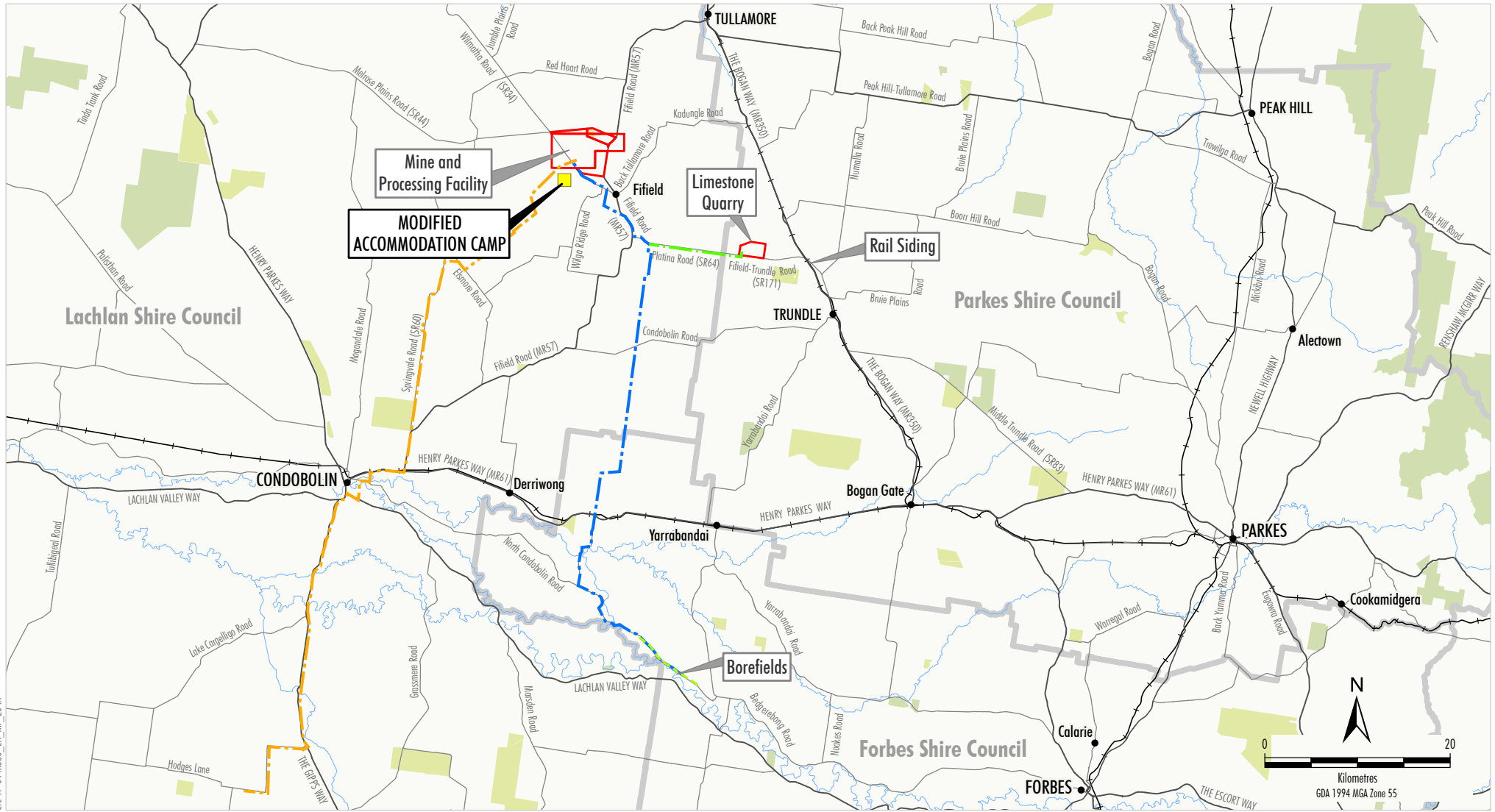
- mine (including the processing facility);
- limestone quarry;
- rail siding;
- gas pipeline;
- borefields and water pipeline; and
- associated transport activities and transport infrastructure (e.g. the Fifield Bypass, road and intersection upgrades).

The Project includes an initial scandium oxide focussed production phase (the Initial Production Phase) prior to shifting to scandium oxide and nickel and cobalt precipitate production by developing the full Project (the Full Production Phase). The Initial Production Phase is a smaller-scale operation compared to the Full Project Phase and will include preferentially mining scandium-rich areas of the Syerston deposit at a run-of-mine ore production rate of 100,000 tonnes per annum (tpa) to produce up to 1,000 tpa of nickel and cobalt metal equivalents, as either sulphide or sulphate precipitate products, and up to approximately 80 tpa of scandium oxide.

The Project would transition to the Full Production Phase once scandium-rich areas of the Syerston deposit are depleted or sooner if favourable market conditions prevail for larger scale nickel cobalt scandium production. The mining and processing will then increase to allow for an autoclave feed rate of 2.5 million tonnes per annum (Mtpa) to produce up to 40,000 tpa of nickel and cobalt metal equivalents, as either sulphide or sulphate precipitate products, and up to approximately 180 tpa of scandium oxide.

An accommodation camp is approved to be located on the western side of the mine site in the vicinity of Wilmatha Road (Figures 2a and 2b). The approved accommodation camp will be used during the construction phase of the Project and will have accommodation facilities for approximately 1,000 personnel.

Construction of the Project commenced in 2006 with the construction of components of the borefields, however Project operations are yet to commence.

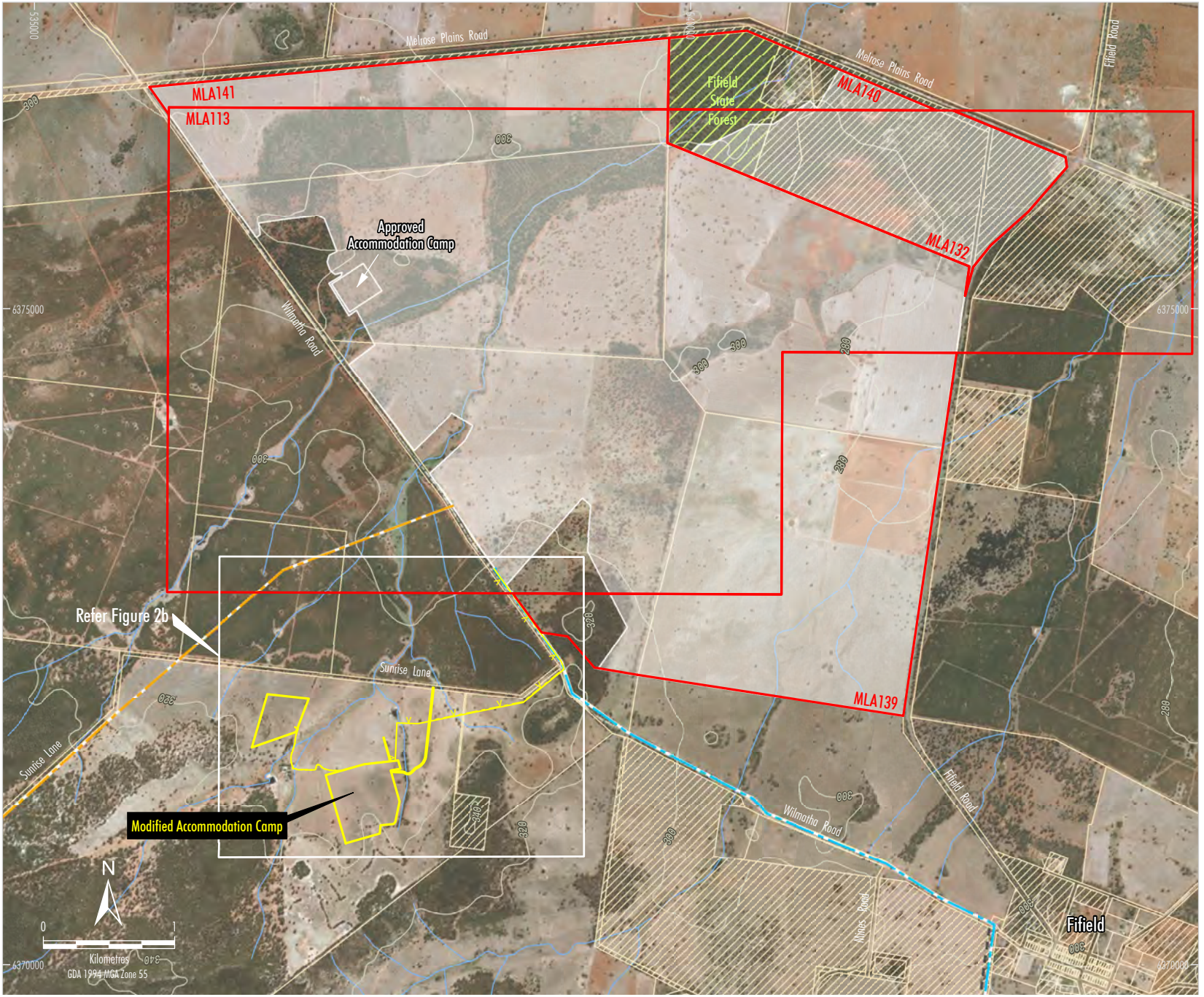


Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017); Office of Environment and Heritage NSW (2017)

CLEAN TEQ SUNRISE PROJECT

Project Location

Figure 1



LEGEND

- Mining Lease Application Boundary
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- Approved Gas Pipeline
- Approved Water Pipeline
- State Forest
- Property Boundary
- Crown Land
- Modified Layout

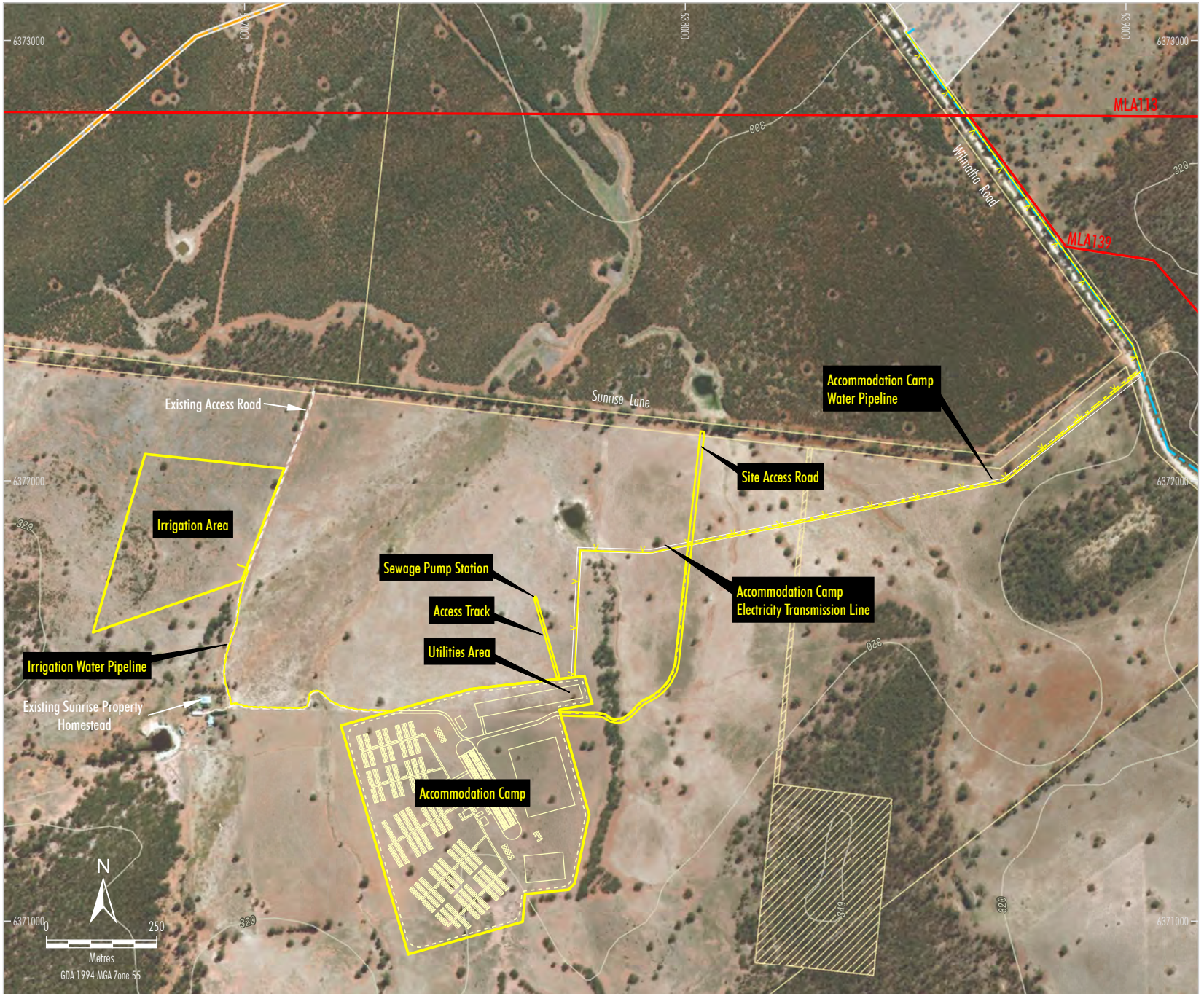
Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017) NSW Imagery: Esri Basemap

CLEAN TEQ SUNRISE PROJECT

Conceptual Modified General Arrangement

Figure 2a

CTL-17-04 MOD6_EA_MT_201C



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Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017) NSW Imagery: Esri Basemap

CLEAN TEQ SUNRISE PROJECT

Conceptual Modified General Arrangement Inset

Figure 2b

CTL-17-04 MOD6_EA_MT_202F

1.2 Approval History

Development Consent DA 374-11-00 for the Project was issued under Part 4 of the EP&A Act in 2001. Four 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 (Modification 1);
- 2006 – to allow for the reconfiguration of the borefields (Modification 2);
- 2017 – to allow for the production of scandium oxide (Modification 3); and
- 2017 – to amend hazard study requirements (Modification 5).

The consolidated Development Consent DA 374-11-00, incorporating these modifications, is provided in Attachment 1.

In addition, Clean TeQ lodged a separate modification application to improve the overall efficiency of the Project (Modification 4) in November 2017. Modification 4 is subject to separate environmental assessment and approval to this Modification.

1.3 Modification Overview and Justification

As part of detailed planning for the construction phase of the Project, Clean TeQ has identified an alternative location for the approved accommodation camp that would provide improved amenity for the workforce in the accommodation camp and minimise potential operational constraints at the mine site. Clean TeQ also identified the preference to maintain the accommodation camp (at reduced capacity) during operations for the short-term use of temporary contractors and visitors. The Modification would include:

- development of the accommodation camp (including supporting infrastructure) at an alternative location approximately 4 km to the south of the mine site;
- construction of an electricity transmission line (ETL) and water pipeline from the mine site to the modified accommodation camp site;
- minor road upgrades;
- increased accommodation camp capacity (from approximately 1,000 to 1,300 personnel); and
- the accommodation camp (at reduced capacity) would continue to be operated post-construction.

The Modification would not involve changes to any aspects of the approved mine and processing operations, limestone quarry, rail siding, borefields, water pipeline or gas pipeline. Table 1 provides a comparative summary of the approved and proposed modified Project.

The Modification would provide improved amenity for the workforce in the accommodation camp due to the following:

- The modified accommodation camp would be located further away from the Project activities than the approved accommodation camp (Figure 2a) which would:
  - reduce the potential for sleep disturbance of the workforce in the accommodation camp and consequential hazards (e.g. fatigued personnel); and
  - reduce the potential air quality amenity impacts at the accommodation camp.
- The modified accommodation camp is larger than the approved accommodation camp which provides additional space for an improved layout and recreational spaces.

Table 1 Comparative Summary of the Approved and Modified Project

Component	Approved Clean TeQ Sunrise Project [1,2]	Modified Project
Mining Tenements	• Mining Lease Application (MLA) 113, 132, 139, 140, 141 and limestone quarry MLA 162.	• Unchanged.
Mine Life	• 21 years from commencement of mining.	• Unchanged.
Hours of Operation	• 24 hours per day, seven days per week.	• Unchanged.
Open Cut Mining	• Open cut mining method.	• Unchanged.
Blasting	• Blasting undertaken at the limestone quarry only.	• Unchanged.
Waste Rock Management	• Waste rock deposited in open cut voids and in waste rock emplacements.	• Unchanged.
Mineral Processing	• Autoclave feed rate of up to 2.5 Mtpa. • Processing facility consists of counter current decantation or resin-in-pulp circuit/metals recovery.	• Unchanged.
Reagent Production	• Up to 700,000 tpa of sulphuric acid would be produced in the sulphuric acid plant. • Hydrogen sulphide, hydrogen and nitrogen would be produced in the processing facility.	• Unchanged.
Limestone Supply	• Development of a limestone quarry to extract up to 790,000 tpa of limestone.	• Unchanged.
Product	• Up to 180 tpa of scandium oxide. • Up to 40,000 tpa of nickel and cobalt metal equivalents, as either sulphide or sulphate precipitate products.	• Unchanged.
Tailings Management	• Waste deposited in the tailings storage facility and evaporation ponds.	• Unchanged.
Surface Water Management	• Overall objective is to control runoff from the construction and operational areas while diverting upstream water around these areas. • The water management system will include both permanent features that will continue to operate post-closure and temporary structures during mining operations.	• Overall objectives of the surface water management would be unchanged. • Surface water objectives to be adopted at the modified accommodation camp.
Accommodation Camp	• Accommodation camp located at the mine site during the construction phase with an approximate capacity of 1,000 personnel.	• Development of the accommodation camp at an alternative location approximately 4 km to the south of the mine. • Capacity of the construction camp would be increased from 1,000 to 1,300 personnel. • A reduced capacity accommodation camp (300 personnel) would remain during the operations phase of the Project. No permanent employees or contractors would reside in the modified accommodation camp on a full-time basis.
Water Supply	• Development of borefields and water pipeline from the borefields to the mine.	• Water supply sources unchanged. • An accommodation camp water supply pipeline would be constructed between the mine site and the modified accommodation camp.

Table 1 Comparative Summary of the Approved and Modified Project (Continued)

Component	Approved Clean TeQ Sunrise Project [1,2]	Modified Project
Power Supply	• On-site gas power plant (34 megawatts).	• Mine site power supply source unchanged. • An accommodation camp ETL would be constructed between the mine site and the modified accommodation camp. • Diesel generators would be used at the modified accommodation camp until the accommodation camp ETL is constructed.
Gas Pipeline	• Development of a gas pipeline from an existing gas pipeline to the mine.	• Unchanged.
Material Transport	• Transport of inputs and products via a combination of road and rail (including development of a rail siding).	• Unchanged.
Road Upgrades	• Road upgrades in accordance with the Development Consent DA 374-11-00 and Voluntary Planning Agreements (VPAs).	• Minor changes to reflect modified accommodation camp road transport requirements.
Employees	• Peak of approximately 1,000 personnel during construction phase. • Approximately 300 personnel during operation phase.	• Unchanged.

1 Development Consent DA 374-11-00 (as modified) – does not include Modification 4.

2 Full Production Phase (maximum case) has been described.

The Modification would also minimise potential operational constraints at the mine site by avoiding the need to modify (constrain) mine site activities to minimise potential noise and air quality impacts at the approved accommodation camp.

The capacity of the modified accommodation camp during the construction phase of the modified Project would increase from approximately 1,000 to 1,300 personnel. The increased capacity of the modified accommodation camp is required to provide rooms for non-Project personnel associated with the accommodation camp management contractor, exploration activities and visitors. The additional capacity would minimise the requirement for personnel to share accommodation units (or 'hot bedding') at the accommodation camp.

The Modification would maintain the accommodation camp (at reduced capacity – approximately 300 personnel) during operations for the short-term use of temporary contractors and visitors. This reduced capacity accommodation camp would be maintained for the short-term use of temporary contractors and visitors (e.g. short-term contractors present during scheduled processing plant maintenance shutdowns). The availability of the accommodation would minimise potential impacts associated with temporary contractors and visitors use of the local road network (i.e. reduce movements to and from the mine site). No permanent employees or contractors would reside in the modified accommodation camp on a full-time basis.

Alternatives locations for the modified accommodation camp have been considered by Clean TeQ as part of detailed planning for the construction phase of the Project. The proposed location and layout of the modified accommodation camp was the preferred location on the following basis:

- it would improve amenity for the workforce in the accommodation camp and minimise potential operational constraints at the mine site;
- it would remain proximal to the mine site to minimise workforce travel requirements;
- it would be located within previously cleared/cultivated land with minimal biodiversity values to minimise native vegetation clearance;

- it would be located approximately 2.5 km from the closest privately-owned receiver to minimise potential amenity impacts; and
- it would be located on Clean TeQ owned land.

1.4 Consultation

Consultation has been conducted with key State government agencies and the Lachlan Shire Council (LSC), Parkes Shire Council (PSC), Forbes Shire Council (FSC) and the community during the preparation of this EA. A summary of this consultation is provided below.

It is anticipated that consultation with these stakeholders will continue during the assessment of the Modification by the NSW Government.

State Government Agencies

Department of Planning and Environment

A meeting was held with representatives of the Department of Planning and Environment (DP&E) on 30 June 2017 to provide an overview of the Modification and discuss potential approval pathway options. Further consultation has been undertaken in regard to environmental assessment requirements and provisional timing for lodgement of the Modification.

Clean TeQ submitted a request to modify Development Consent DA 374-11-00 to the DP&E in the form of a letter with accompanying application form on 20 November 2017, which sought notification of environmental assessment requirements relevant to the Modification.

A response letter from the DP&E was received on 19 December 2017 confirming the Modification would be assessed and determined under section 75W of the EP&A Act.

Other State Government Agencies

A briefing package was provided to the following State government agencies in December 2017:

- Office of Environment and Heritage (OEH);
- Environment Protection Authority (EPA); and
- Department of Industry – Crown Lands and Water Division.

The briefing package included an overview of the Modification, an outline of the proposed scope of the environmental assessment and provisional timing for lodgement of the Modification.

These State government agencies had not provided any feedback at the time of writing the EA.

Local Government

Consultation has been conducted with the relevant local councils regarding the approved Project, the Modification and revised VPAs during the preparation of this EA. A summary of this consultation is provided below.

Lachlan Shire Council

The modified accommodation camp would be located in the Lachlan Shire local government area (LGA).

Clean TeQ met with the LSC on 29 June 2017 to provide an initial overview of the Modification and discuss potential approval pathways. Since this initial meeting, Clean TeQ has consulted regularly with the LSC regarding the Modification, including ongoing VPA negotiations.

Clean TeQ has consulted with the LSC regarding the proposed changes to road upgrades and road maintenance requirements associated with the Modification as part of VPA negotiations (Section 2.3). The LSC indicated that it supports the proposed changes to road upgrades and road maintenance requirements.

A briefing package was also provided to the LSC in December 2017 to provide an update on the Modification.

Parkes Shire Council and Forbes Shire Council

The Modification would not change Project components located in the Parkes and Forbes LGAs.

A briefing package on the Modification was provided to the PSC and FSC in December 2017.

The briefing package included an overview of the Modification, an outline of the proposed scope of the environmental assessment and provisional timing for lodgement of the Modification.

Community Consultative Committee

In accordance with Condition 7, Schedule 5 of Development Consent DA 374-11-00, a Community Consultative Committee (CCC) has been established for the Project.

An outline of the Modification was provided during the CCC meeting held on 23 November 2017.

In addition, a briefing package was provided to the CCC in December 2017.

Local Community and Landholders

Clean TeQ has undertaken individual consultation with a number of private landholders that reside in the vicinity of the Project to discuss the upcoming development of the Project.

In addition, community liaison kiosks were established within Fifield, Trundle and Tullamore in August 2017 to provide opportunities for the local community to learn more about the Project.

Aboriginal Community

Aboriginal community consultation was undertaken in consideration of the requirements of the OEH's *Aboriginal cultural heritage consultation requirements for proponents 2010* (Department of Environment, Climate Change and Water [DECCW], 2010a) the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation [DEC], 2005) and clause 80c of the NSW *National Parks and Wildlife Regulation, 2009*.

In accordance with these guidelines and regulation, Clean TeQ consulted with relevant government agencies and Registered Aboriginal Parties (RAPs), as described in Appendix B.

As a result of the registration process undertaken for the Modification in accordance with *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010a), a total of ten RAPs registered an interest in the Modification, including:

- Wiradjuri Condobolin Corporation;
- Murie Elders Group;
- Binjang Wellington Wiradjuri Aboriginal Heritage Survey;
- West Wyalong Local Aboriginal Land Council (LALC);
- Condobolin LALC;
- Louise Davis;
- Peter Peckham;
- Joshua Aboriginal Corporation;
- Isabel Goolagong; and
- Peter White.

Surveys of the modified accommodation camp area were undertaken with representatives of some of the RAPs (Appendix B). All RAPs were consulted regarding the Aboriginal cultural heritage management and mitigation measures documented in this EA.

1.5 Structure of this Document

This EA comprises a main text component and supporting studies. An overview of the main text sections is presented below:

Section 1 Provides an overview of the approved Project and the Modification and the consultation undertaken in relation to the Modification.

Section 2 Provides a description of the approved Project and the Modification.

Section 3 Provides an environmental assessment of the Modification.

Section 4 Describes the general statutory context of the Modification.

Section 5 Provides a conclusion for the document.

Section 6 References.

Attachment 1 and Appendices A to C provide supporting information as follows:

Attachment 1 Clean TeQ Sunrise Project Consolidated Development Consent.

Appendix A Biodiversity Development Assessment Report.

Appendix B Aboriginal Cultural Heritage Assessment.

Appendix C Land Contamination Assessment.

2 Description of the Modification

A description of the Modification is provided in this section, including a comparison of the modified Project with the approved Project.

As only minor changes are proposed to the approved Project as part of the Modification (Table 1), this section focuses on the Project components that would change as a result of the Modification. A complete description of the approved Project is provided in the environmental approval documentation listed in the Development Consent DA 374-11-00.

2.1 Accommodation Camp

2.1.1 General Arrangement

Approved Project

The approved accommodation camp is located on the western side of the mine site in the vicinity of Wilmatha Road (Figure 2a).

The approved accommodation camp includes the following components (Black Range Minerals, 2000):

- accommodation facilities for approximately 1,000 personnel;
- recreational and mess areas;
- power supply infrastructure;
- water supply infrastructure (e.g. water treatment plant, storage tanks, distribution system);
- sewage treatment infrastructure (e.g. sewage treatment plant, storage tanks and irrigation area);
- access road; and
- other ancillary infrastructure.

The accommodation camp buildings and infrastructure would be constructed using conventional demountable components (Black Range Minerals, 2000).

The final layout and location of the accommodation camp is required to be prepared in consultation with the LSC by Condition 47, Schedule 3 of Development Consent DA 374-11-00.

Modified Project

The modified accommodation camp would be located on the Sunrise property (Lot 17 of Deposited Plan [DP] 752086) approximately 4 km to the south of the mine site (Figures 2a and 2b). The modified accommodation camp area would include:

- accommodation camp, including:
  - accommodation facilities;
  - administration offices and first aid facility;
  - recreational and mess areas;
  - fire-fighting infrastructure (e.g. fire water tank and reticulation system);
  - internal access roads and car parking areas; and
  - communications infrastructure;
- sewage pump station, irrigation water pipeline and irrigation area;

- utilities area, including:
  - water supply infrastructure (e.g. water treatment plant, storage tanks, distribution system);
  - sewage collection system, treatment plant and storage tanks; and
  - power supply infrastructure (e.g. diesel generators, substation);
- accommodation camp ETL (between the mine site and the accommodation camp);
- accommodation camp water pipeline (between the mine site and the accommodation camp);
- site access road from Sunrise Lane; and
- construction (laydown) areas.

The modified accommodation camp buildings and infrastructure would be constructed using conventional demountable components and would be located to avoid trees with hollows. Plate 1 provides an example of an accommodation camp constructed using conventional demountable components.

A conceptual general arrangement of the modified accommodation camp is provided on Figures 2a and 2b. In accordance with Condition 47, Schedule 3 of Development Consent DA 374-11-00, Clean TeQ would resolve the final layout and location of the modified accommodation camp in consultation with the LSC.

The footprint of the approved accommodation camp site at the mine would be used as a supplementary soil stockpile area during mine development.

Plate 1 Example Accommodation Camp Constructed using Conventional Demountable Components

2.1.2 Capacity and Development Staging

Approved Project

The accommodation camp is scheduled to be one of the first components developed as part of the construction phase of the approved Project (Black Range Minerals, 2000).

The accommodation camp is approved to have accommodation facilities for approximately 1,000 personnel during construction.

The accommodation camp is scheduled to be decommissioned at the completion of the construction phase of the approved Project.

Modified Project

The Modification would not change the approved construction timing or construction hours of the accommodation camp.

The capacity of the modified accommodation camp during the construction phase of the modified Project would be approximately 1,300 personnel. The increased capacity of the modified accommodation camp is required to provide rooms for non-Project personnel associated with the accommodation camp management contractor, exploration activities and visitors. The additional capacity would minimise the requirement for personnel to share accommodation units (or 'hot bedding').

At the completion of the construction phase of the modified Project, the capacity of the modified accommodation camp would be reduced to approximately 300 personnel rather than be decommissioned. This reduced capacity accommodation camp would be maintained for the short-term use of temporary contractors and visitors (e.g. short-term contractors present during scheduled processing plant maintenance shutdowns). The availability of the accommodation would minimise potential impacts associated with temporary contractors and visitors use of the local road network (i.e. reduce movements to and from the mine site).

No permanent employees or contractors would reside in the modified accommodation camp on a full-time basis.

2.1.3 Power Supply

Approved Project

Power for the accommodation camp is approved to be provided by the on-site gas fired co-generation plant.

Modified Project

Power for the modified accommodation camp would initially be supplied by diesel generators located in the modified accommodation camp utilities area until an 11 kilovolt ETL is constructed from the mine site substation to the modified accommodation camp utilities area (Figures 2a and 2b).

Diesel would be stored in self-bunded tanks adjacent the generators in utilities area.

The ETL alignment would follow the approved water pipeline corridor along Wilmatha Road until approximately 50 metres (m) after the intersection of Wilmatha Road and Sunrise Lane where it would cross Wilmatha Road to enter the Sunrise property. The ETL alignment would then cross the Sunrise property to the utilities area (Figures 2a and 2b).

Some diesel generator capacity would be maintained at the modified accommodation camp for emergency power in the event of power failure.

2.1.4 Water Supply

Approved Project

Water for the accommodation camp is approved to be supplied by a package water treatment plant utilising raw water from the Project water supply. The treated water will be stored in tanks and then distributed around the approved accommodation camp.

Modified Project

Consistent with the approved Project, water for the modified accommodation camp would be supplied by a package water treatment plant utilising the raw water from the Project water supply.

Raw water would be pumped from the mine site to the packaged water treatment plant via the accommodation camp water pipeline (Figures 2a and 2b). The accommodation camp water pipeline alignment would follow the accommodation camp ETL alignment until it meets the site access road where it would then follow the site access road to the utilities area (Figures 2a and 2b).

The packaged water treatment plant would be located in the utilities area and would include:

- raw water receival and potable water holding tanks;
- treatment and disinfection plants; and
- pumps for the distribution of potable water.

2.1.5 Sewage Treatment and Waste Disposal

Approved Project

A sewage reticulation system is approved to collect and treat sewage and waste water at the accommodation camp. The sewage treatment plant will consist of anaerobic and aerobic treatment and final sterilisation. Effluent produced from the sewage treatment plant is approved to be irrigated on rehabilitated or landscaped areas.

Solid waste from the sewage treatment plant is approved to be periodically collected for disposal by a licensed contractor.

Modified Project

Consistent with the approved Project, a sewage reticulation system would be installed at the modified accommodation camp to collect and treat sewage and waste water.

Sewage would be transferred by a sewage pump station to a packaged sewage treatment plant in the utilities area. The sewage treatment plant would consist of anaerobic and aerobic treatment and final disinfection of treated effluent. The sewage treatment plant would be designed and constructed in accordance with LSC requirements.

Consistent with the approved Project, the treated waste water produced from the sewage treatment plant would be pumped to the irrigation area via the irrigation water pipeline (Figure 2b). The irrigation of the treated waste water would be undertaken in accordance with the *Environmental Guidelines Use of Effluent by Irrigation* (DEC, 2004).

Solid waste from the sewage treatment plant would be periodically collected for disposal by a licensed contractor.

2.2 Site Water Management

Approved Project

The accommodation camp is approved to be located inside the mine site and therefore will form part of the mine site water management system.

Modified Project

Construction Phase

The overall objective of the modified accommodation camp water management system during the construction phase would be to control runoff from construction areas, while diverting upstream water around these areas.

Sediment control structures such as sediment dams and sediment fences would be employed where necessary within and downstream of disturbance areas. Sediment control structures would be designed, installed and maintained in accordance with *Managing Urban Stormwater: Soils and Construction* in accordance with Condition 29, Schedule 3 of Development Consent DA 374-11-00.

Operations Phase

During the operations phase of the modified accommodation camp (i.e. once construction has been completed), site runoff would be free-draining to the natural environment with the exception of runoff from the utilities area.

Management of the irrigation area would be undertaken in accordance with the *Environmental Guidelines Use of Effluent by Irrigation* (DEC, 2004). The irrigation rate would be controlled so as not to:

- cause irrigation water runoff from the irrigation area; or
- exceed the capacity of the soil in the irrigation area to effectively absorb the applied nutrient, salt, organic material and hydraulic loads.

2.3 Road Upgrades and Maintenance

Approved Project

Condition 17, Schedule 2 of Development Consent DA 374-11-00 requires Clean TeQ to enter into VPA with the LSC. The LSC VPA must include provision of funding for road upgrades outlined in Appendix 3 of Development Consent DA 374-11-00.

In addition, intersection upgrades outlined in Appendix 5 of Development Consent DA 374-11-00 are required prior to commissioning of the mine.

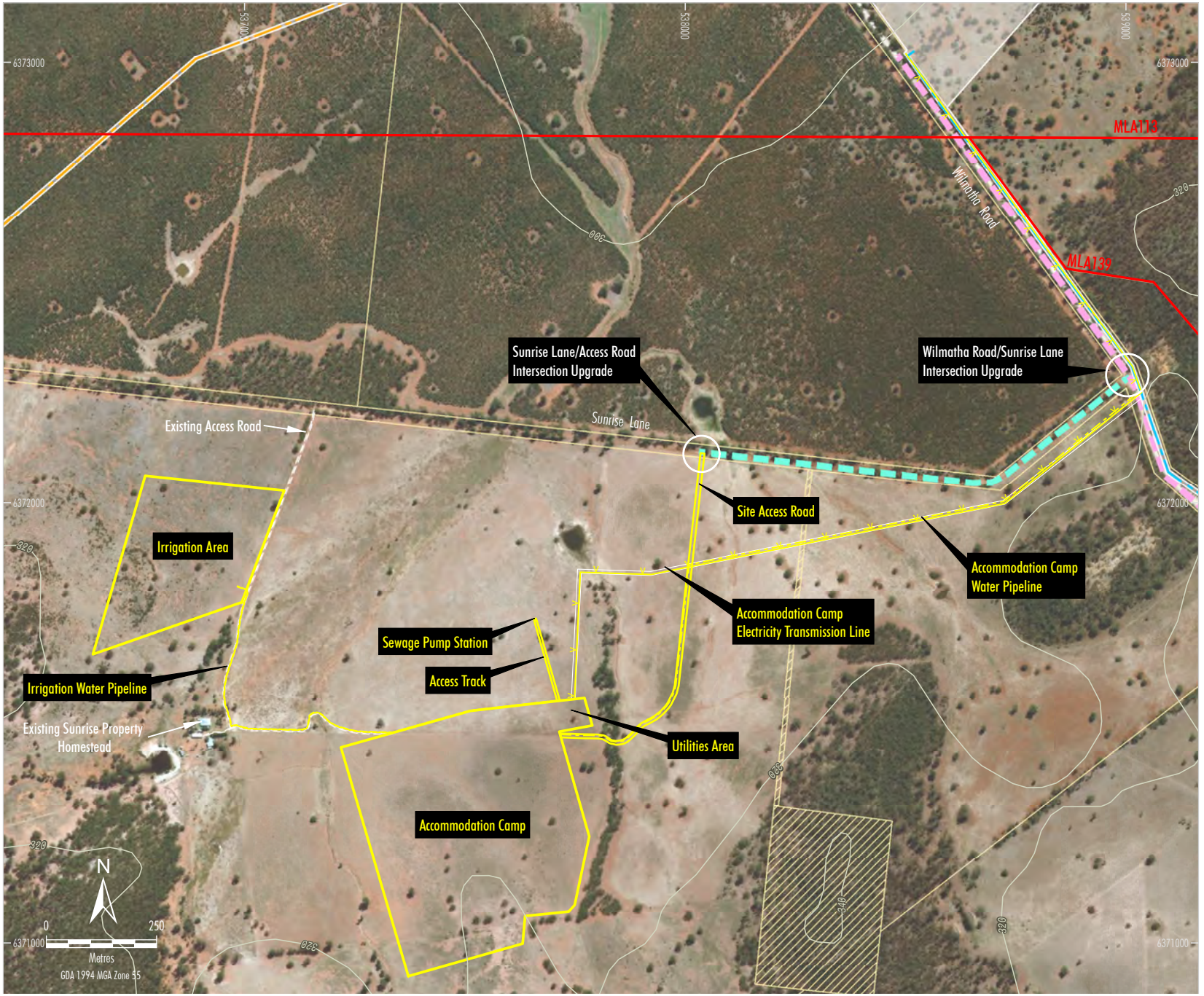
Condition 43, Schedule 3 of Development Consent DA 374-11-00 requires the preparation of a Road Upgrade and Maintenance Strategy. The Road Upgrade and Maintenance Strategy will detail all road upgrade requirements and a program for their implementation and maintenance.

Modified Project

As described in Section 2.1.1, access to the modified accommodation camp would be via Sunrise Lane.

GTA Consultants (2017) considered the potential road transport impacts associated with the modified accommodation camp and recommended the following road upgrades (Figure 3):

- Sunrise Lane between Wilmatha Road and the modified accommodation camp access road – upgraded consistent with a Class 4A unsealed road; and
- Wilmatha Road/Sunrise Lane intersection – remove the transition between the gravel and dirt surfaces while Wilmatha Road remains unsealed, and then seal a minimum of 30 m of Sunrise Lane on the approach to the intersection once Wilmatha Road is sealed.



LEGEND

- Mining Lease Application Boundary
- Approved Surface Development Area
- Approved Gas Pipeline
- Approved Water Pipeline
- Property Boundary
- Crown Land
- Modified Layout
- Extent of Approved Road Upgrade
- Extent of Modified Road Upgrade

Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017) NSW Imagery: Esri Basemap

CLEAN TEQ SUNRISE PROJECT

Road Upgrade

Figure 3

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The road upgrades would be located within the extent of the existing road footprint.

The Modification would not change the other road upgrades currently required by Development Consent DA 374-11-00.

Clean TeQ would contribute to the maintenance of Sunrise Lane during the life of the Project. Clean TeQ has consulted with the LSC regarding the proposed changes to the road upgrades and road maintenance requirements as part of VPA negotiations.

2.4 Rehabilitation

Approved Project

Condition 55, Schedule 3 of Development Consent DA 374-11-00 outlines the rehabilitation objectives for the Project and these are reproduced in Table 2.

The approved post-mining land use is a combination of agriculture (pasture for grazing) and nature conservation (endemic woodland areas) (Black Range Minerals, 2000).

Table 2 Rehabilitation Objectives

Features	Objective
Site (as a whole)	• Safe, stable and non-polluting. • Materials (including topsoils, substrates and seeds of the disturbed areas) are recovered, appropriately managed and used effectively as resources in the rehabilitation of the site. • Final land forms to: – restore native vegetation communities and ecosystem function (in the applicable domains); – sustain intended land use for the post- mining domains; – minimise visual impacts; – be generally in keeping with the natural terrain features of the area; and – incorporate micro-relief. • Incorporate drainage lines consistent with topography and natural drainage where reasonable and feasible.
Final voids	• Minimise: – the size and depth of the final void/s; – the drainage catchment of the final voids; and – risk of flood interaction for all flood events up to and including a 1 in 100 year or 1% annual exceedance probability storm event.
Surface Infrastructure	• To be decommissioned and removed, unless agreed otherwise by the Secretary of the DP&E.
Agriculture	• Land capability classification for the relevant nominated agricultural pursuit for each domain is established and self-sustaining within a reasonable timeframe.
Community	• Ensure public safety. • Minimise the adverse socio-economic effects associated with mine closure.

Modified Project

The Modification would not change the Project rehabilitation objectives.

The conceptual closure and rehabilitation objectives for the modified accommodation camp area would be:

- Infrastructure with no on-going beneficial use would be decommissioned and removed, unless otherwise agreed by the Secretary of the DP&E.
- Hydrocarbons (diesel), chemicals and liquid and non-liquid wastes unused at the completion of the Project would be returned to the supplier in accordance with relevant safety and handling procedures.

- If there are any contaminated soils associated with the modified accommodation camp, these would be identified and remediated in accordance with the requirements of the NSW *Contaminated Land Management Act, 1997*.
- The area would be profiled to a free-draining landform with runoff reporting to the natural environment and would be revegetated to pasture areas.

Following rehabilitation, it is anticipated that an agriculture land use would occur.

3 Environmental Review

3.1 Identification of Key Issues

The Modification would not involve changes to any aspects of the approved mine and processing operations, limestone quarry, rail siding, borefields, water pipeline or gas pipeline (Table 1).

Clean TeQ has undertaken a review of the potential environmental impacts of the Modification to identify key potential environmental issues requiring assessment. The key environmental issues identified are summarised in Table 3 and addressed in Sections 3.2 to 3.10 and the relevant appendices.

Table 3 Summary of Key Potential Environmental Issues

Environmental Aspect	Key Potential Environmental Issue/Impact	EA Section/Appendix
Land and Agricultural Resources	Additional surface development areas required for the modified accommodation camp and supporting infrastructure.	Section 3.2 and Appendix C
Biodiversity		Section 3.3 and Appendix A
Aboriginal Cultural Heritage		Section 3.4 and Appendix B
Historic Heritage		Section 3.5
Water Resources	Potential surface water impacts associated with the development of the accommodation camp. As the Modification would not change mining operations or materially alter water demand, no change to approved groundwater impacts are expected.	Section 3.6
Air Quality and Noise	Potential air quality and noise impacts associated with the construction of the modified accommodation camp.	Sections 3.7 and 3.8
Road Transport	Changes to road transport requirements and road network due to relocation of the accommodation camp.	Section 3.9
Visual	Potential visual impacts associated with the development of the modified accommodation camp.	Section 3.10
Community Infrastructure	As the Modification would not result in any additional demand for employees, no material alteration to the approved population and community infrastructure demand is expected as a result of the Modification.	-
Hazard and Risk	As the Modification would not result in changes to the existing potential risk areas identified in Preliminary Hazard Analysis previously prepared for the Project (SHE Pacific, 2000 and Pinnacle Risk Management, 2017), no material alteration to the approved hazards and risks is expected as a result of the Modification.	-

3.2 Land and Agricultural Resources

3.2.1 Existing Environment

Landforms and Topography

The main topographic features in the modified accommodation camp area are three shallow drainage lines that drain towards Sunrise Lane in the north. Elevations in the modified accommodation camp area range from approximately 305 metres Australian Height Datum (m AHD) in the north to approximately 320 m AHD in the south (Figures 2a and 2b).

Land Use

Land use at the modified accommodation camp area includes agriculture, vegetated areas and road reserve. Agricultural land uses include grazing and dryland cropping (fodder crop production) (Appendix C).

Soils

OEH's (2017a) regional Australian Soil Classification mapping in the vicinity of the modified accommodation camp is presented on Figure 4. The soils types mapped include "Chromosols" and "Rudosols and Tenosols". The inherent soil fertility of these soils is "Moderate" and "Low" (OEH, 2017a).

Land Soil Capability

The OEH's Land and Soil Capability system is used to give an indication of the land management practices that can be applied to a parcel of agricultural land. Agricultural land is classified by evaluating biophysical features of the land and soil including landform position, slope gradient, drainage, climate, soil type and soil characteristics to derive detailed rating tables for a range of land and soil hazards (OEH, 2012).

OEH's (2017a) regionally mapped Land and Soil Capability Classes in the vicinity of the modified accommodation camp is presented on Figure 5. The modified accommodation camp area is identified as having Land and Soil Capability Classes of 4 and 6. These Land and Soil Capability Classes are defined as (OEH, 2012):

> *Class 4: Moderate capability land:*
>
> *Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.*
>
> *Class 6: Low capability land:*
>
> *Land has very high limitations for high-impact land uses. Land use restricted to low-impact land uses such as grazing, forestry and nature conservation. Careful management of limitations is required to prevent severe land and environmental degradation.*

Contaminated Land

A Land Contamination Assessment was undertaken in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011a) by Ground Doctor (Appendix C). It was undertaken in the form of a Stage 1 (or Preliminary Investigation) Land Contamination Assessment.

As part of the Land Contamination Assessment, a site inspection and a soil sampling and analysis program was undertaken. Results from the soil sampling and analysis program indicated that there have been no significant impacts to soil within the modified accommodation camp area (Appendix C).

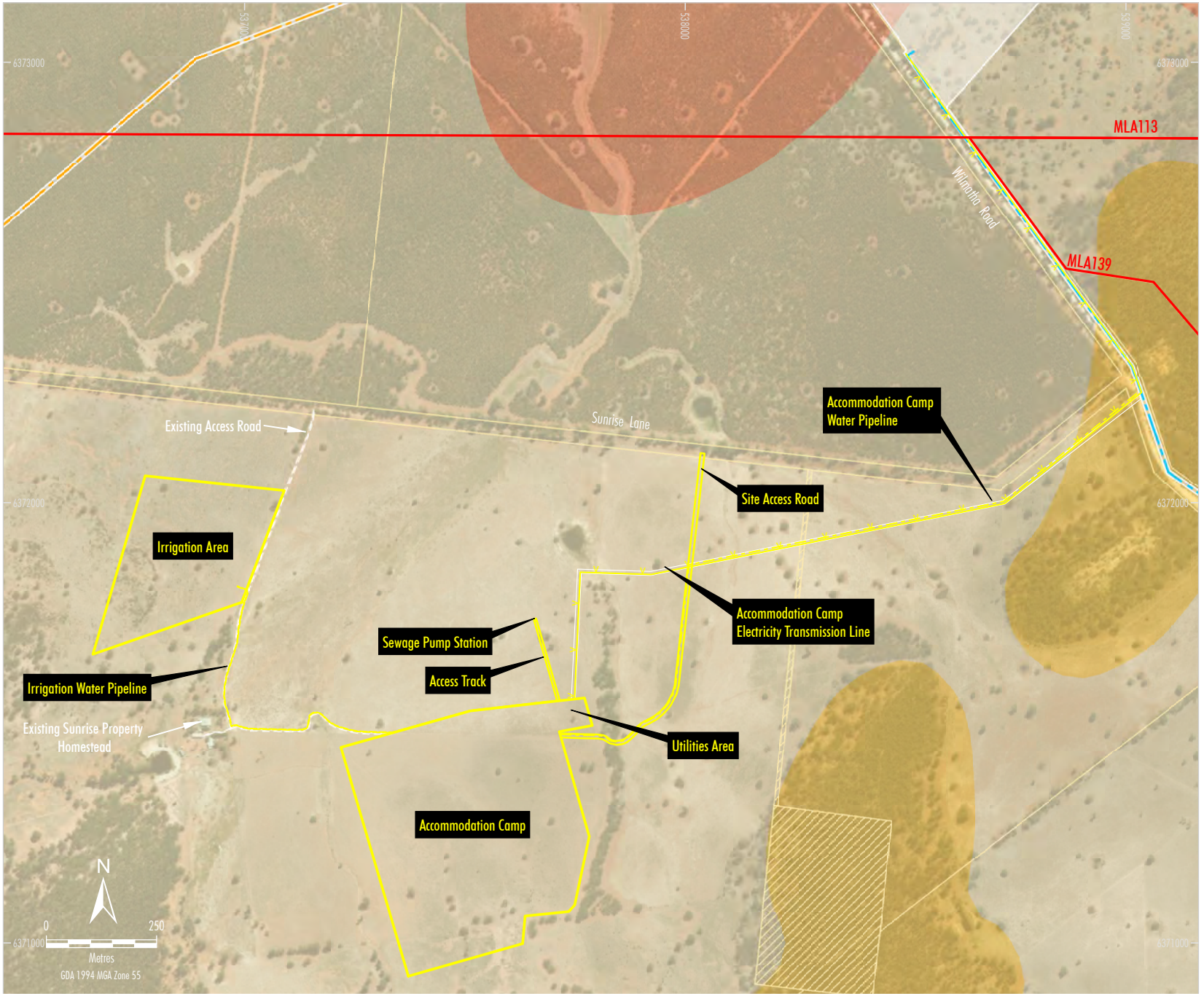
On the basis of the Stage 1 (or Preliminary Investigation) Land Contamination Assessment, the modified accommodation camp area is suitable for the land use proposed by the Modification (Appendix C).

Bushfire Regime

The Project is located within the jurisdiction of the *Mid Lachlan Valley Fire Management Committee Bush Fire Management Plan* (Mid Lachlan Valley Bush Fire Management Committee, 2010) area.

The bushfire season is generally from October to March with the fire season coinciding with high temperatures, low humidity and strong north-west winds, which prevail over the summer months. Lightning strikes account for the majority of ignitions in the area (Mid Lachlan Valley Bush Fire Management Committee, 2010).

Bushfire management measures at the Project will be implemented in accordance with Condition 49, Schedule 3 of Development Consent DA 374-11-00 and will include the site being suitably equipped to fight fires; development of asset protection zones in accordance with the Rural Fire Service's (2006) *Planning for Bushfire Protection 2006*; and consultation with the Rural Fire Service.



LEGEND

- Mining Lease Application Boundary
- Approved Surface Development Area
- Approved Gas Pipeline
- Approved Water Pipeline
- Property Boundary
- Crown Land
- Modified Layout

Australian Soil Classification

- Chromosols
- Kandosols
- Rudosols and Tenosols

Source: Black Range Minerals (2000); NSW Department of Industry (2017); NSW Land & Property Information (2017); Office of Environment & Heritage NSW (2017)
NSW Imagery: Esri Basemap

CLEAN TEQ SUNRISE PROJECT

Regional Soil Mapping

Figure 4

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