

ECOLOGY SURVEY INFORMATION

Julia Creek Vanadium Project



PROJECT SUMMARY

- The Julia Creek Vanadium Project (the Project) is a proposed vanadium and oil shale mining opportunity located in the North-West Minerals Province being developed by QEM Limited (QEM).
- It is proposed to develop a shallow-cut mine, processing facilities and infrastructure to produce three primary commodities including high purity vanadium pentoxide, fuel and/or hydrocarbon products, and power from renewables.
- Once operating, the Project is forecast to produce 10,000 metric tonnes of high purity vanadium pentoxide per year, 250 MW of renewable electricity installed capacity and approximately 6,000 barrels per day of transportation grade fuel. All products will be produced onsite in Julia Creek and utilise innovative, low-carbon technologies.



APPROVALS PROCESS

- QEM, with its environmental consulting partner Epic Environmental Pty Ltd (Epic), are working to seek the relevant Commonwealth and State Government approvals for the Project to enable its development.
- The permitting approval and development of the Project involves a number of steps that come together in the form of an Environmental Impact Statement (EIS).
- It will take up to two (2) years to prepare and lodge the EIS for assessment by the Queensland Government and the EIS will be placed on public exhibition for the community and other stakeholders to make comments. During this time a wide range of environment, social and economic studies are undertaken involving field work and consultation in local communities.
- An important first step in the process is to improve the understanding of ecological values at the Project site.

Ecological surveys are proposed to be completed over a seven-day period from March 17 to March 24, 2022.

ECOLOGICAL SURVEY GOALS

The primary goals of the ecological surveys are to:

- Build from a comprehensive desktop assessment and analysis of existing information (including other published and unpublished data) to provide a prudent method
- Address State and Commonwealth policy or guidelines for the assessment of ecological values
- Identify the presence of flora and fauna
- Map vegetation communities and habitats for threatened flora and fauna
- Identify existing threats to threatened flora and fauna
- Establish the degree of raptor and migratory bird activity

ECOLOGICAL SURVEY METHODS

The following methods are proposed for the ecological surveys:

- The surveys will be undertaken by a team of four ecologists from Epic, including two highly experienced senior ecologists.
- Survey types include:
 - Bird utilisation surveys
 - Fauna trapping
 - Flora Surveys - Protected plant surveys and vegetation community mapping
- The survey sites are illustrated in Figure 1 (page 4).
- All survey methods will be undertaken in accordance with Scientific and Ethic Permits issued by the QLD Government.

BIRD UTILISATION SURVEYS

Bird surveys targeting raptors and migratory birds will be undertaken to assess the degree of bird activity in the Project area. A total of 10 survey sites are proposed as shown in Figure 1 (page 4).

Surveys consist of a 20 minute search at each site by two observers with binoculars, repeated twice at different times of the day. The species, height, and direction of all observed flying birds will be recorded. Any incidental records of bird activity observed while moving between sites will also be recorded.

FAUNA TRAPPING

Fauna trapping targeting the Julia Creek dunnart and reptiles such as snakes and lizards will be undertaken across the Project area. The proposed fauna trapping surveys will aim to detect the Julia Creek dunnart and assess the diversity of terrestrial vertebrate fauna within the Project area. Equipment types used during the surveys are shown in Plate 1, 2 and 3.

Elliot traps and camera traps will be baited with a mixture of oats, peanut butter and sardines. Camera traps will be mounted on a stake or tree if available. All traps will be deployed for a total of five days and four nights. Traps will be checked daily each morning.

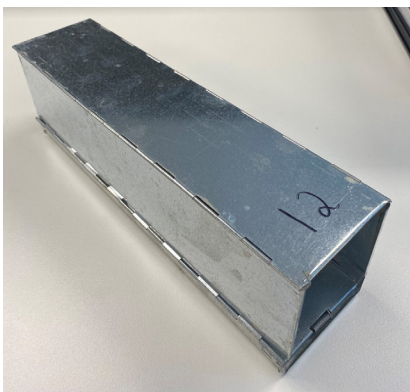


Plate 1: Type A Elliot Box Trap



Plate 2: Funnel Trap



Plate 3: Camera Trap

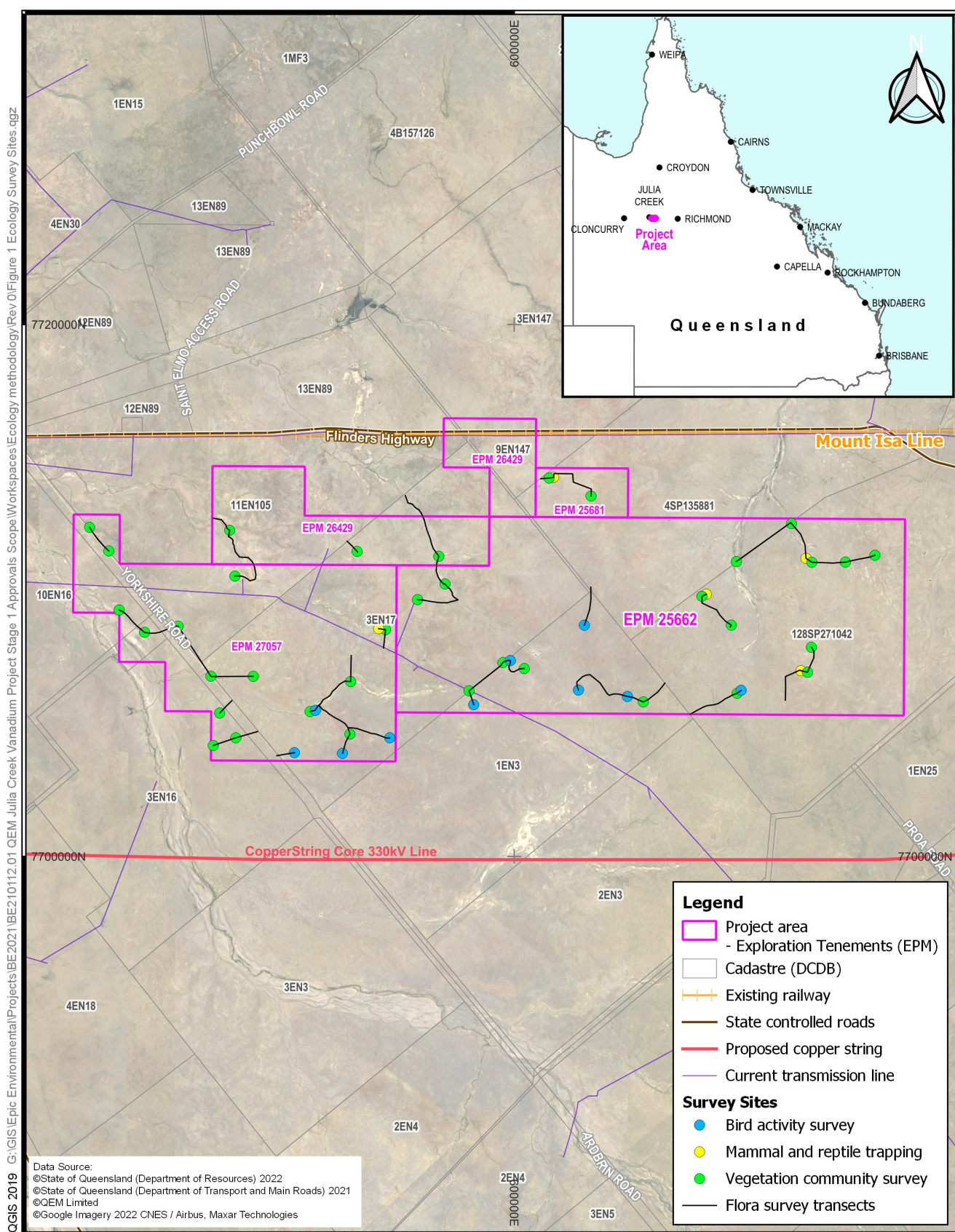
FLORA SURVEYS

Flora surveys will consist of Protected Plants Flora surveys and vegetation community surveys. Protected Plants Flora surveys will be undertaken by a suitably qualified botanist. To assess vegetation communities, Regional Ecosystem assessments will be undertaken. Observed infestations of invasive plants (e.g. Prickly Acacia) will also be mapped. Any waterways and wetlands identified while on site will be described and mapped.

ACCESS

The Epic Ecological Team will be available onsite during the survey to ask any questions or share their ecological knowledge of the region. It is possible that access to some proposed survey sites will be restricted due to terrain and/or inclement weather. Survey site locations are indicative only and may be changed if access is not possible or more suitable survey locations are identified during the site surveys.

FIGURE 1: ECOLOGY SURVEY SITES



0 2.5 5 7.5 10 km
 Scale: 1: 180,000@ A4
 Datum: GDA94 Projection: MGA zone 54

QEM Limited
Julia Creek Vanadium Project
Ecology Methodology

Figure 1
 Ecology Survey Sites