Bellevue Gold Project- Underground Dewatering

Supplementary Report- M36/24 and M36/25 Dewatering Operation.

May 2020. Version 1

Contents

Introduction

The Bellevue Gold project is currently held by Bellevue Gold Limited (Bellevue). The project exists across two mining leases, M36/24 and M36/25 which are held by Golden Spur Resources Pty Ltd (Golden Spur). Golden Spur is a wholly owned subsidiary of Bellevue. The Project was acquired by Bellevue in 2014, when the tenements were purchased from Xstrata Nickel Australasia Operations Pty Ltd (Xstrata).

The Bellevue Gold Mine produced around 800,000oz of gold at a grade of 15g/t between the late 1800's and the late 1900's. In 1996 mining was ceased across the project and the site was largely forgotten. In 2014 Bellevue Gold Limited recommenced exploration across the project area, and the first drilling undertaken occurred in 2017. By March 2020 the company had outlined an inferred gold resource across the leases of 2.2Moz at a grade of 11.3g/t.

To increase the confidence in the resource further drilling is required to infill drill and further test the resource. As parts of the resource are considerably deep, the company is looking at ways to both reduce drilling costs and reduce the timeframe taken to drill. The solution to both issues is to drill from the existing operation, this removes the need to drill through several hundred meters of overburden which saves both time and money.

The Bellevue underground, and the open pits across the site were used by the past holder of the tenure to hold dewatered groundwater, unsuitable for the processing of nickel ores. This has led to the flooding of the underground, which therefore requires dewatering and inspection before safe access can once again be gained.

To dewater the underground, Bellevue would remove the water placed inside the underground by the previous tenure holders and would store it within open pits located across the site. As the water is required for future processing, Bellevue wishes to retain the water and will not be discharging it to the environment.

This document outlines how dewatering will be undertaken and will also identify and manage potential environmental issues. Bellevue is confident that the level of impact associated with the dewatering of the underground is low impact and no significant environmental impacts will arise.

Purpose and Scope

The aim of this document is to identify and explain the Bellevue dewatering program and to assess this work against potential environmental impacts. The company has identified that there are three EPA environmental factors that could potentially be impacted by the works, Inland Water, Social Environment and Flora and Vegetation and will describe the potential impacts on these and outline mitigation strategies.

Location and Layout

Dewatering will occur across two mining leases, M36/24 and M36/25 (Figure1). M36/244 has an area of 884.60ha and M36/25 has an area of 997.75ha. Both leases have been subject to intense levels of mining and exploration and have largely been disturbed. In these disturbed areas, flora and vegetation are almost completely degraded. In areas where mining has not occurred, vegetation and floral communities remain in good to very good condition (RPS, 2020).

Figure 2 shows the current infrastructure that is located across the two leases. From the Figure there is a great deal of disturbance across the two leases. There are currently six mining pits, Bellevue,

Paris, Westralia, Vanguard, Henderson and Prospero. All these open pits were once filled with water from the adjacent Cosmos Mine dewatering. Additionally, there is a significant TSF and three waste rock landforms located across the tenements.

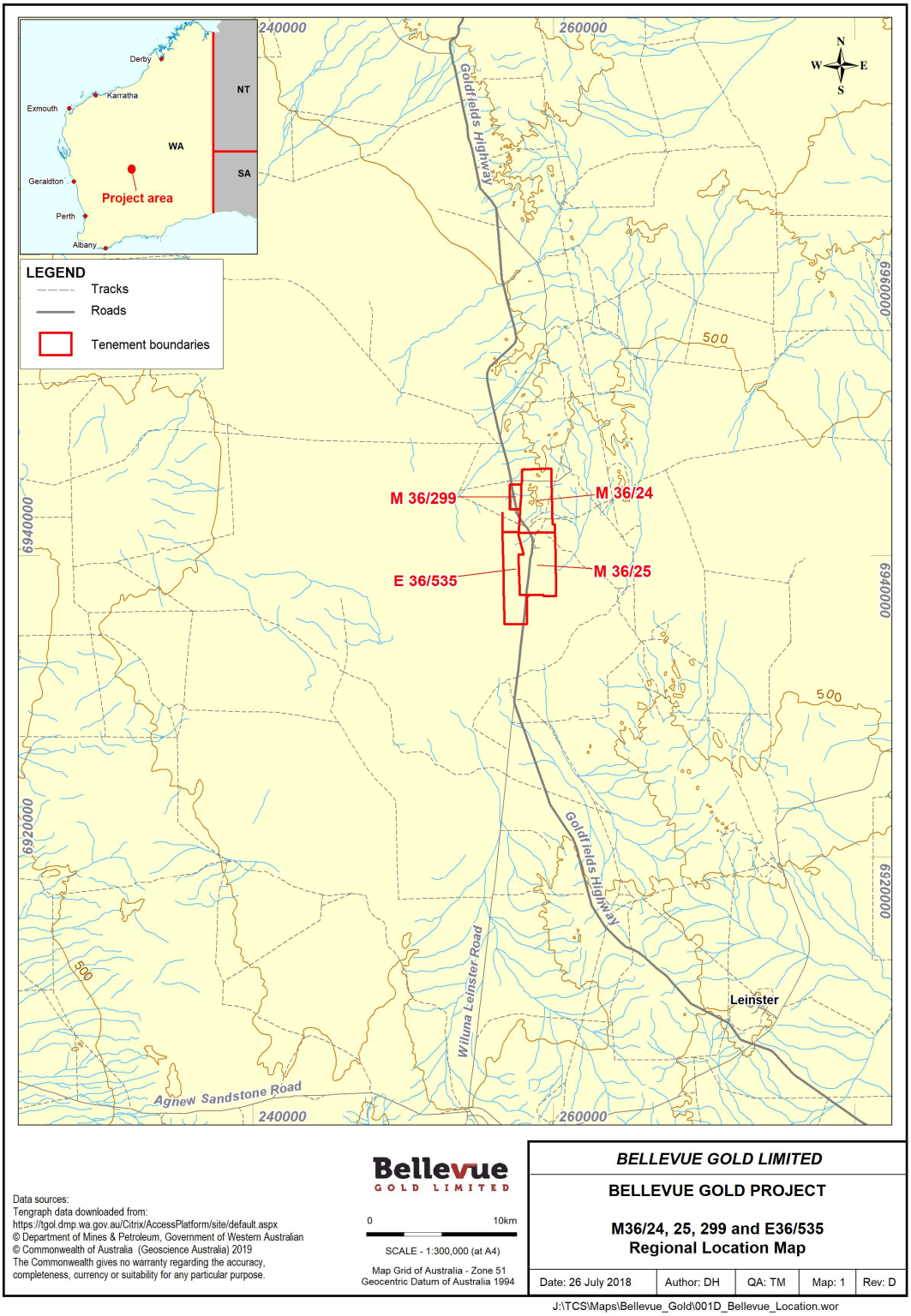

Figure 1 Project Tenements.

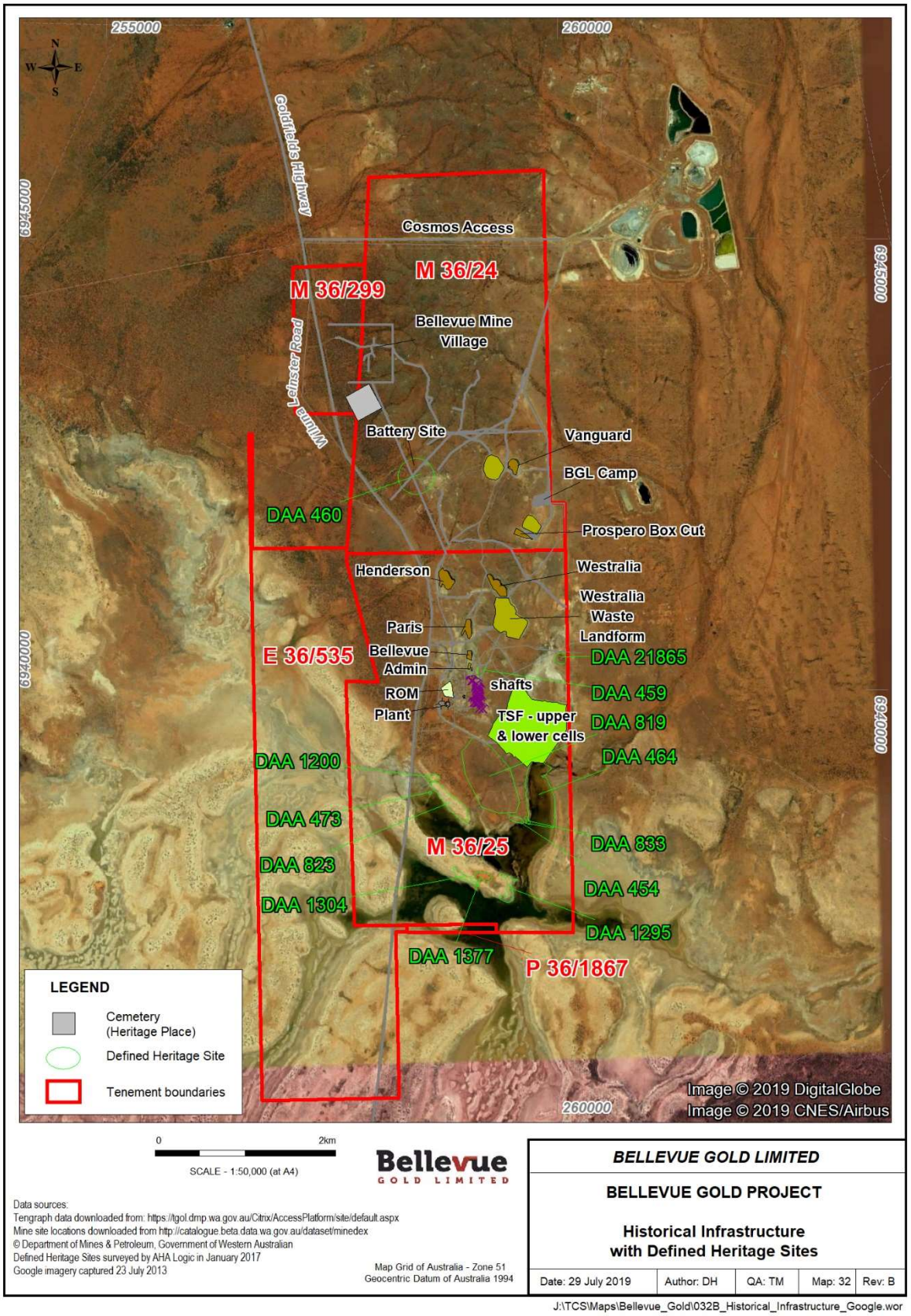

Figure 2 Bellevue Project Existing Infrastructure.

Figure 2 also shows the location of disturbances associated with past mining activities. There can still be seen the site of the Run of Mine (ROM), old shafts, administration area and the location of the

old processing plant. Except for the shafts, all this infrastructure has been removed and the areas rehabilitated. At the cessation of mining, the pit areas were all made safe, prior to the commencement of water storage occurring.

Proponent

The proponent for this referral is Bellevue Gold Limited (ACN 110 493 686). The tenure on which the project is situated is held by Golden Spur Resources, a fully owned subsidiary of Bellevue Gold Limited. All correspondence regarding this proposal should be forwarded to the key contact;

Alan Tandy

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Proposal Description

Infrastructure

The dewatering of the underground will make use of existing infrastructure as much as possible. Figure 3 below shows the pipeline infrastructure that was left in place after the cosmos dewatering activities ceased (Blue line). As can be seen most of the pipeline is there. All pipelines are located within V drains with sumps installed at pipeline low points. These have been installed to prevent any loss of containment and to capture spills and leaks.

Three small sections of pipeline were required for the dewatering. These sections linked the northern vent rise, the southern vent rise and the main shaft to the existing piping network (shown in green). The addition of these sections of pipeline, and the associated ground disturbance was approved by the DMIRS in Mining Proposal (Reg ID 82971).

Each abstraction point within the dewatering network has been equipped with a flow meter to record the volume taken. Likewise, each outlet also has a flow meter to enable to distribution of water to be measured. Water abstracted shall be recorded daily, for operational purposed, but also for licence compliance purposes.

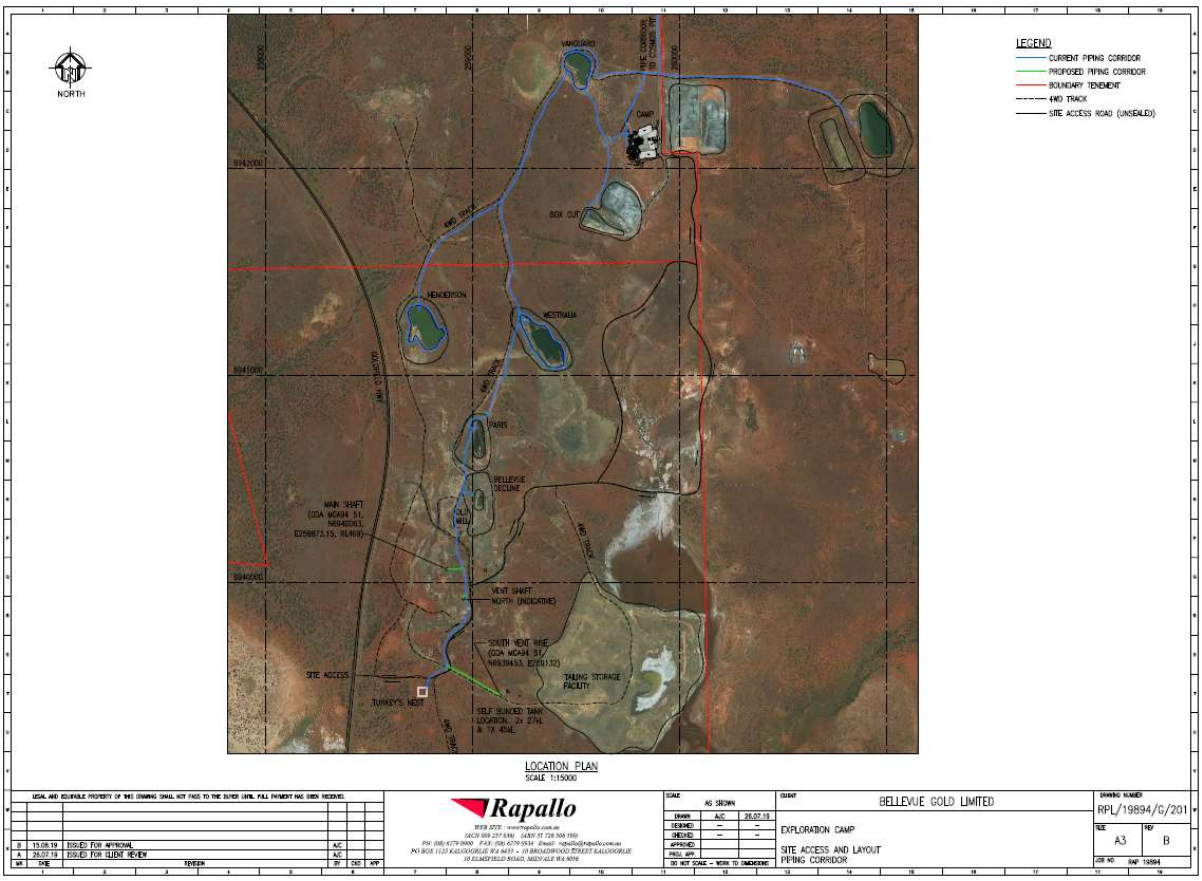


Figure 3 Pipeline Infrastructure

Dewatering

The main activity associated with this referral is the dewatering of the underground workings. The underground was abandoned in the late 1990s and there is little digital data about the size and extent of the underground workings. Bellevue has based the dewatering figure based on past mine plans, which suggest the workings will hold between 400,000 to 700,000kl of water.

Environmental Principles

Flora and Vegetation

EPA Objective

The EPA's objective for the Flora and Vegetation factor is 'to protect flora and vegetation so that biological diversity and ecological integrity are maintained' (EPA, 2016).

Policy and Guidance

The EPA has published several guidelines for the Flora and Vegetation factor. Guidance relevant to the Proposal includes;

- Environmental Factor Guideline: Flora and Vegetation (EPA, 2016)
- Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment.

Receiving Environment

The Bellevue Project has undertaken Level 2 flora and Vegetation surveys across the entire project area. The surveys now cover the entire lease package, including the main mining areas, all the way to the Kathleen Valley Project area. The scope and nature of the surveys evolved over 2017 and 2018

as the project transitioned from an exploration project through to a mining project. As the resource grew and the need for further infrastructure was realised, further studies were undertaken to ensure all impact areas had been covered. Figure 2 shows the areas covered by Flora and Vegetation Surveys.

Nine naturalised alien (Weed) species were recorded for the survey area. These species were recorded at low densities across most of the survey area, however Buffel Grass (*Cenchrus ciliaris*) was significantly denser along the verge's adjacent roads and tracks, especially within the Mulga Sandplain Vegetation unit. Ruby Dock (Acetosa vesicaria) was also found in greater densities in heavily disturbed areas, such as the faces of waste rock dumps and mining pits.

A total of 19 vegetation units were described and mapped for the survey area which covered the full toposequence of vegetation types from hillcrests and slopes, to pediments, plains, drainage lines and salt lake margins throughout the survey area.

The vegetation units were defined from 92 floristic quadrats and 20 relevés which occurred across 13 physiographic units. Vegetation unit mapping was conducted using a combination of aerial photointerpretation, on-ground confirmation, vegetation structure data, and multivariate analysis of the floristic quadrat data. The hierarchical cluster analysis of the quadrat data determined there to be 20 statistically significant groups of sites based on their floristics, with 17 of the groups defining a unique vegetation unit and two groups further delineated into two vegetation units each based on topography and substrate, because although similar floristically, they differed in structure and occupied different positions in the landscape.

Vegetation condition within the survey area ranged from Very Good throughout much of the intact vegetation (on the stony hills, sandy rises and undulating plains and hardpan flats, drainage lines and on the gypsum dunes and samphire flats adjacent to Lake Miranda), to Completely Degraded on areas of the stony hills and plains subject to historical mining activities including the old tailings storage facility, open pits, waste rock dumps, access roads and exploration camp. Much of the survey area has been subjected to some level of clearing or disturbance at some stage in its mining history, and extant vegetation comprises a range of revegetation ages. There is not much of the survey area which has not been impacted by mining-related activities or modified to some degree over the past century. It is likely that much of the hill crest and slope vegetation has undergone selective felling and clearing of tree species including mulga and eucalypts as a source of timber for construction of buildings and other structures associated with prospecting and mining.

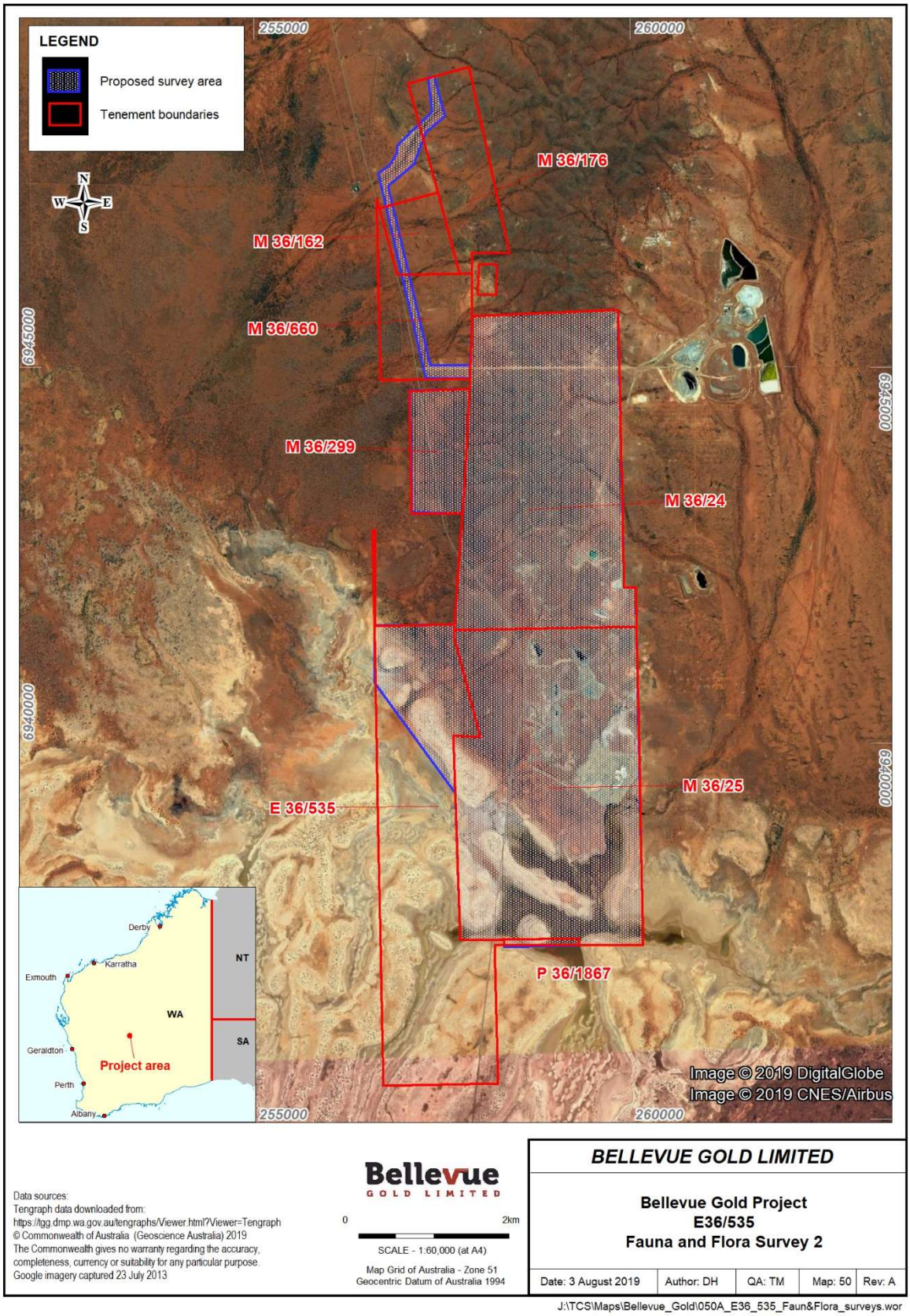


Figure 4 Flora and Vegetation Survey Area

Priority Ecological Community

Desktop surveys across the project area identified that two priority Ecological Communities (PEC) occur within the Project area. The Lake Miranda East PEC covers the Carey palaeodrainage channel that is known to support stygofauna species. The 2000m buffer of this PEC overlaps most of the eastern half of M36/25 (RPS, 2019). There is little potential for the project to impact this PEC given mining and dewatering occurs within a different aquifer, and that the project does not intent to target the Carey palaeochannel for water. Impacts on this PEC are considered so unlikely that no further work was undertaken.

The second PEC is the Violet Range (Perseverance Greenstone Belt) PEC. This PEC extends over almost the entire tenement package included within the referral area and is associated with a Banded Iron Formation (BIF) ridge that extends north from the project tenements. The Development envelope for the project is some 359.7ha. The PEC was previously mapped as occupying an extent of 19256.21ha, meaning the Project, at full implementation, will impact approximately 1.87% of the PEC (RPS, 2020).

Conservation Significant Species

One Priority Flora (PF) species listed by the DBCA was recorded within the survey area; *Grevillea inconspicua* (Priority 4). This species is known to occur on creek lines and drainage lines on rocky outcrops, hills and ridges (WAH, 2019) and, within the survey area, is associated with two stony hill vegetation units: H5; and H7. Vegetation unit H7 is present across the low stony hills and plains on M36/25. The locations of *G. inconspicua* records within the survey area are presented in Figure 3.

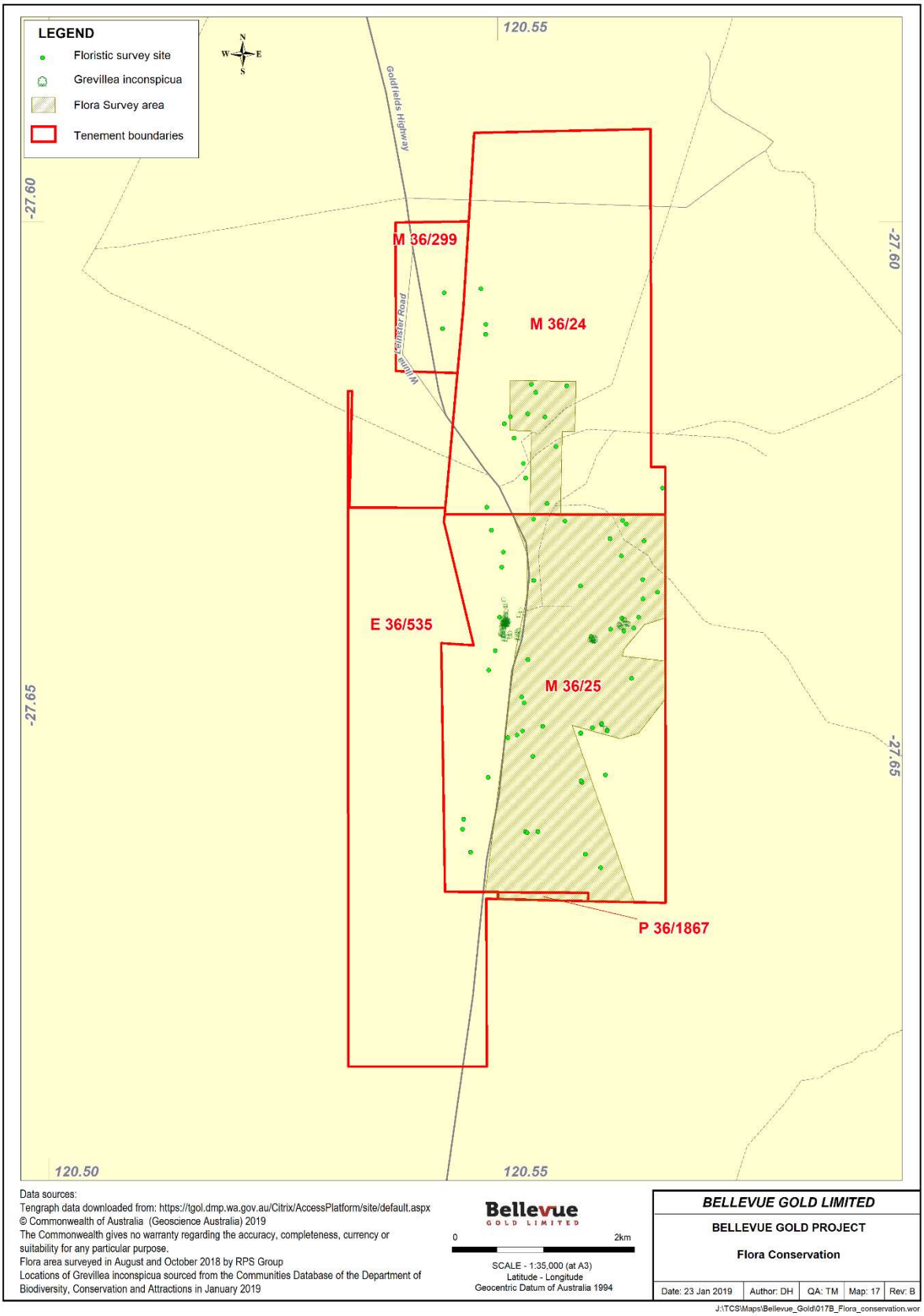


Figure 5 Conservation Significant Flora Locations

Vegetation Condition

Vegetation condition within the survey area ranged from Very Good throughout much of the intact vegetation (on the stony hills, sandy rises and undulating plains and hardpan flats, drainage lines and on the gypsum dunes and samphire flats adjacent to Lake Miranda), to Completely Degraded on areas of the stony hills and plains subject to historical mining activities including the old tailings storage facility, open pits, waste rock dumps, access roads and exploration camp. Much of the survey area has been subjected to some level of clearing or disturbance at some stage in its mining history, and extant vegetation comprises a range of revegetation ages. There is not much of the survey area which has not been impacted by mining-related activities or modified to some degree over the past century. Even areas recorded for the current assessment as Very Good in condition showed signs of human impact. Very Good is defined in EPA (2016) as some relatively slight signs of damage caused by human activities since European settlement. It is likely that much of the hill crest and slope vegetation has undergone selective felling and clearing of tree species including mulga and eucalypts as a source of timber for construction of buildings and other structures associated with prospecting and mining.

The table below shows the breakdown of vegetation condition and its extents across the Project area.

Table 1 Vegetation Condition

Vegetation Condition		**Hectares (ha)**	**Percentage (%)**
P	Pristine	0	0
E	Excellent	0	0
VG	Very Good	1416345	62.81
G-VG	Good- Very Good	414.81	18.39
G	Good	127.59	5.66
P	Poor	117.69	5.22
D	Degraded	16.83	0.75
CD	Completely Degraded	101.70	7.17

Mapping of vegetation condition has been undertaken and is presented in the figures below. From the figures it can be seen the areas associated with mining are the most degraded and the areas away from historic disturbances are most intact.

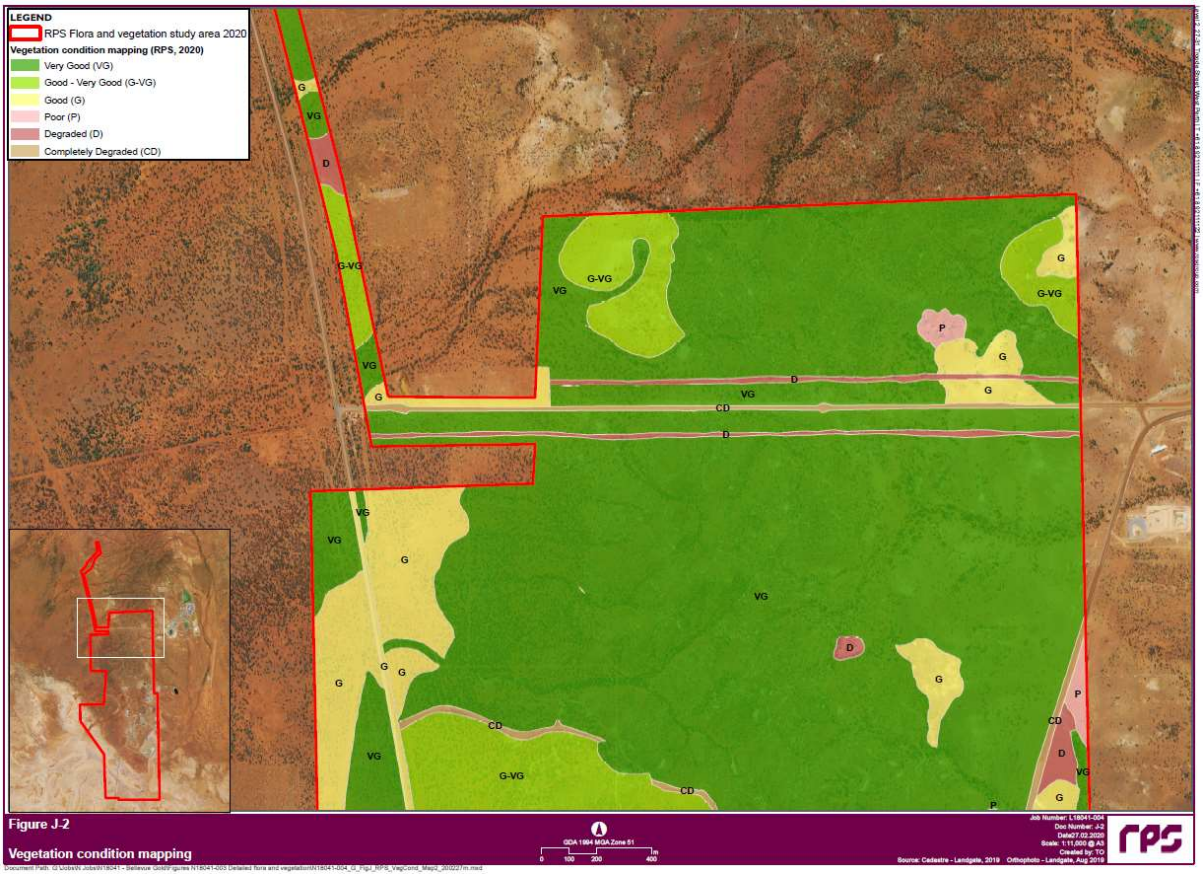


Figure 6 Vegetation Condition mapping North M36/24

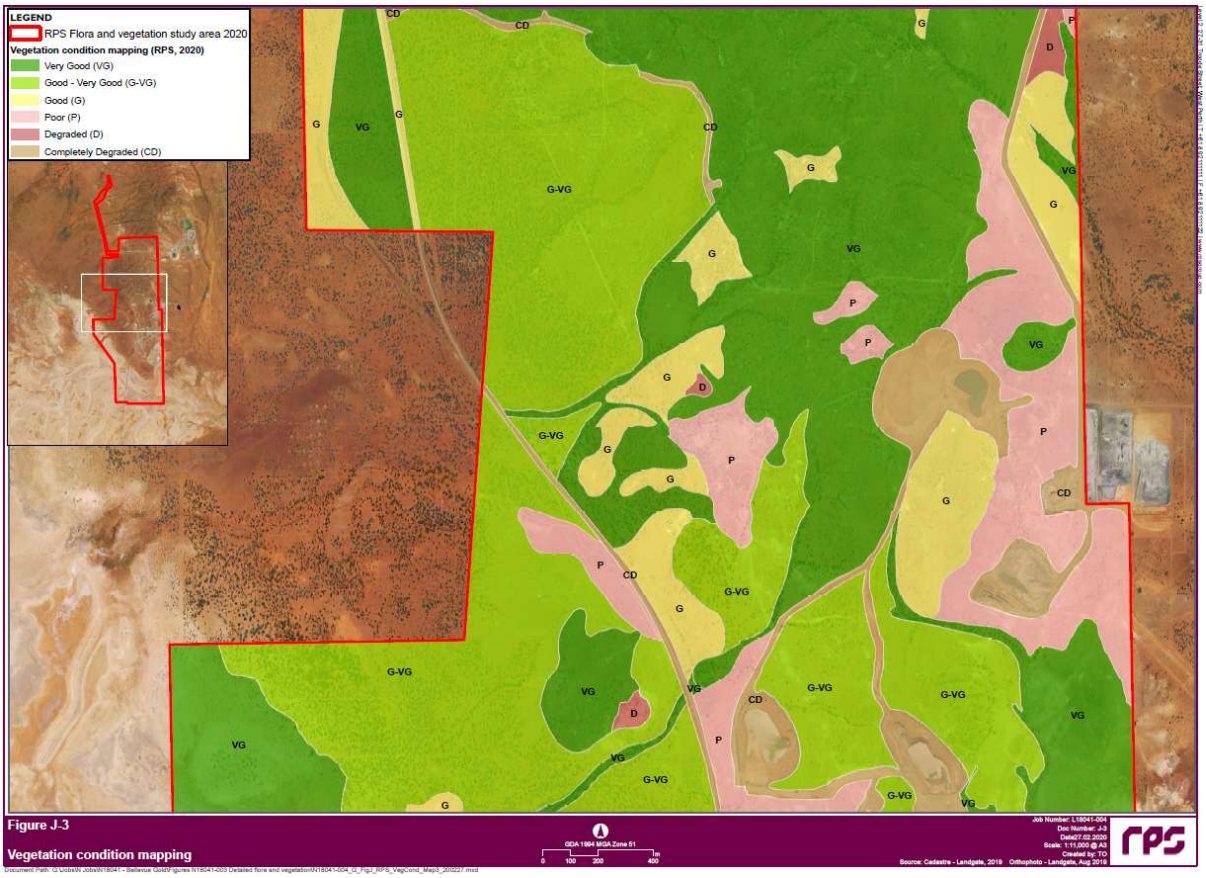


Figure 7 Vegetation Condition Mapping South M36/24 and North M36/25

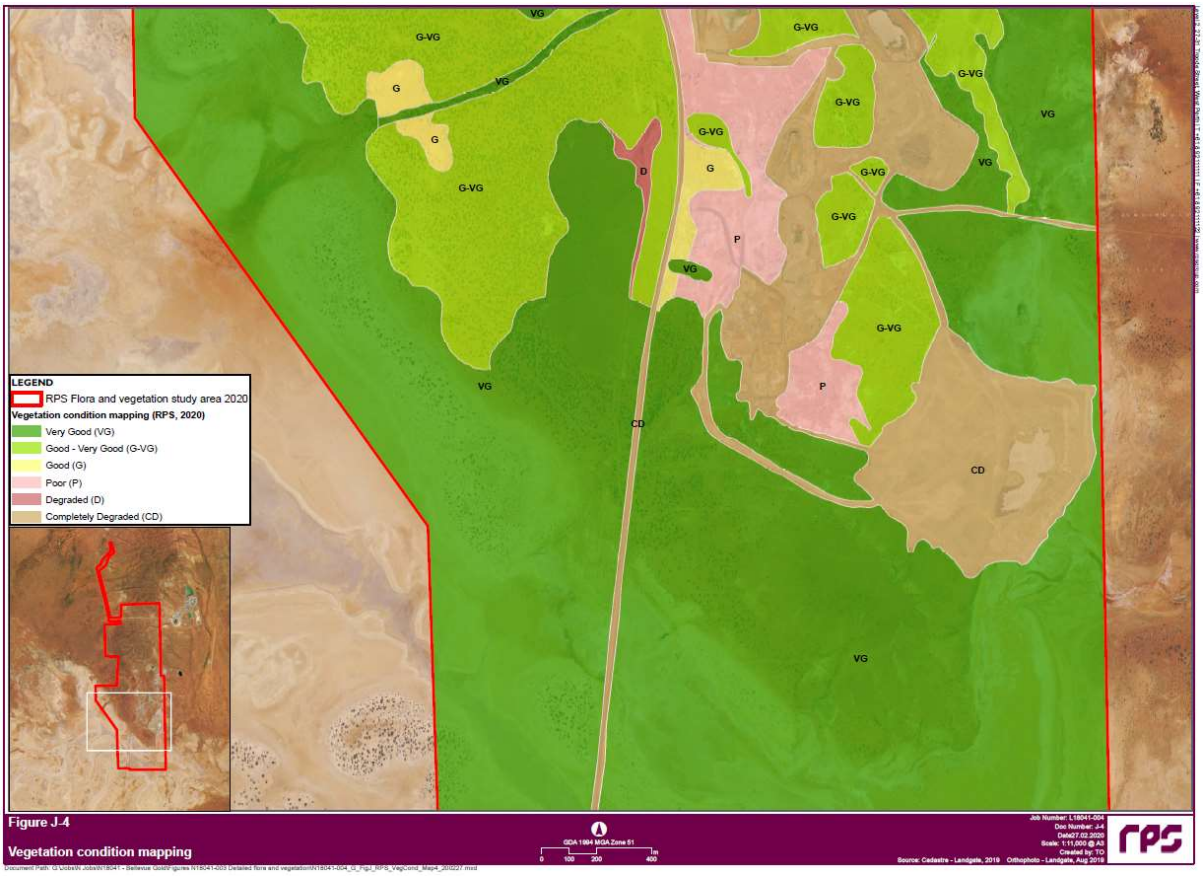


Figure 8 Vegetation Condition Mapping South M36/25

Figure 9 Vegetation Condition Mapping Lake End of M36/25

Sheet Flow Dependent Species

Sheet flow dependent species across the project area are typically Mulga species that utilise a shallow and broad root system to secure water from the soils in periods post rainfall. Across the project area there are 11 vegetation units that can be described as sheet flow dependant. All these communities contain Acacia species of some variety.

The Table below describes the sheet flow dependant vegetation units.

Table 2 Sheet Flow Dependent Vegetation Units

Vegetation Unit	Description
H01	Mulga spp. Isolated Trees to Low Open Woodland over *Acacia tetragonophylla*, *Eremophila galeata* and *Hakea preissii* Tall Sparse Shrubland over *Ptilotus obovatus var. obovatus* and mixed Chenopod Low Sparse Shrubland over *Aristida contorta* and *Enneapogon caerulescens* Sparse Tussock Grassland on stony plains and lower hill slopes.
H02	Mulga spp. and *Acacia doreta* (long phyllode form) Low Open Woodland to Low Isolated Trees over *Senna sp. Meekatharra* Mid Sparse to Open Shrubland on stony plains and lower hill slopes.
H05	*Acacia fuscaneura* Low Open Woodland over *A. xanthocarpa* Tall Sparse Shrubland over *Eremophila exilifolia* and *E. forrestii subsp. forrestii* Mid Sparse Shrubland over *Aristida contorta* Sparse Tussock Grassland on stony hill slopes, spurs and crests.
H06	Mulga spp. and *Acacia doreta* (long phyllode form) Low Open Woodland with Isolated *Eremophila oldfieldii subsp. angustifolia* over A. *xanthocarpa* Tall

	Isolated Shrubs over *Eremophila exilifolia*, E. forrestii subsp. forrestii and Senna artemesioides Mid Sparse Shrubland over Ptilotus obovatus var. obovatus and Maireana spp. Low Sparse Shrubland over Aristida contorta Sparse Tussock Grassland on stony hill slopes, spurs and crests
H07	*Acacia doreta* (long phyllode form) Low Open Woodland over *A. xanthocarpa Tall* Sparse to Open Shrubland over *Senna sp. Meekatharra* and *S. artemisioides subsp. helmsii* Mid Sparse Shrubland over *Ptilotus obovatus var. obovatus* Low Shrubland on stony hillslopes, spurs and crests
H08	Mulga spp. Low Open Woodland over Senna spp. Mid Sparse Shrubland over *Ptilotus obovatus var. obovatus* Low Sparse Shrubland over *Enneapogon caerulescens* and *Cymbopogon ambiguus* Sparse Tussock Grassland in drainage lines on stony hill slopes
H09	Mulga spp. Low Open to Closed Forest over *Acacia xanthocarpa* Tall Sparse to Open Shrubland over *Eremophila exilifolia* and Senna spp. Mid to Low Open Shrubland over *Aristida contorta* Sparse to Open Tussock Grassland in drainage lines on stony hill slopes
P01	Mulga spp. Low Woodland to Low Open Forest over *Eremophila galeata*, *E. serrulata* and Senna spp. Mid Sparse to open Shrubland over *Cymbopogon obtectus* and *Aristida contorta* Sparse to Open Tussock Grassland in drainage lines on stony hardpan plains
P02	Mulga spp. Low Open Woodland to Isolated Trees over *Eremophila pantonii and E. galeata* Tall Open to Sparse Shrubland over Senna sp. Meekatharra Mid Open Shrubland over *Ptilotus obovatus var. obovatus and* mixed Chenopods Low Open to Sparse Shrubland *over Aristida contorta* Sparse Tussock Grassland on stony hardpan plains
S02	Mulga spp. Low Open Woodland to Low Woodland over *Eremophila forrestii subsp. forrestii* Mid Sparse Shrubland over a mixed Open Tussock Grassland on sand plains and low undulating sand hills and sandy rises
S03	Mulga spp. Low Open Woodland to Low Woodland over *Eremophila forrestii subsp. forrestii* Mid Sparse Shrubland over *Eragrostis eriopoda, Monachather paradoxus* and *Eriachne helmsii* Tussock Grassland on sand over hardpan plains

The figures below show the locations of sheet flow dependant vegetation units. Fromm the figures the majority of the sheet flow dependent vegetation is associated with the BIF ridge which forms the Violet Range PEC. Most of the sheet flow dependent vegetation is located tot the north of the planned impact areas, on M36/24. As the vegetation moves south it remains located predominantly to the west of the pipeline.

Figure shows the pipeline alignment in relation to sheet flow dependent vegetation. Within the figure the three open pits, Vanguard, Henderson and Westralia are easily identified from the aerial photo and it is seen that the tracks connecting the pits (where the pipeline is located) are void of vegetation and completely degraded. Small sections of sheet flow dependent vegetation remain in place in and around the heavily disturbed areas and continue to extend south towards Lake Miranda.

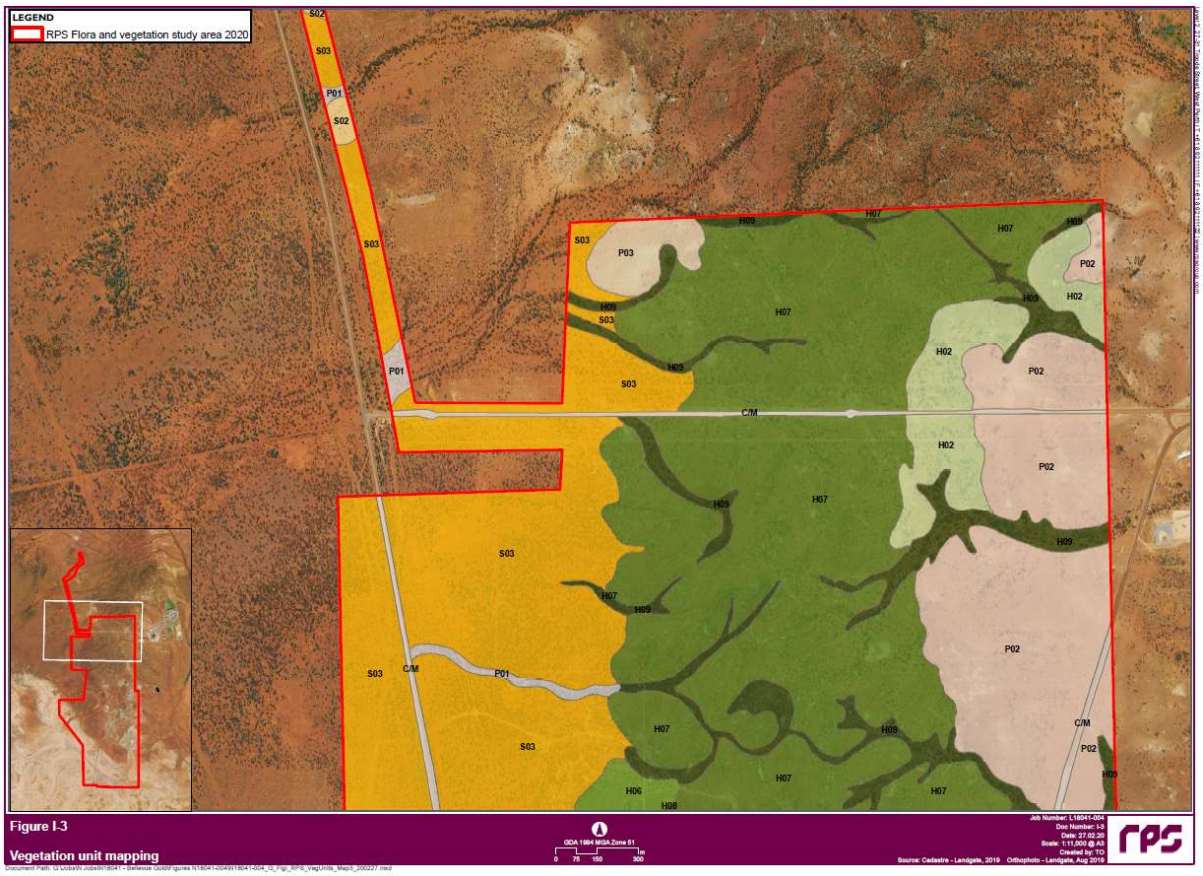


Figure 10 Vegetation mapping M36/24

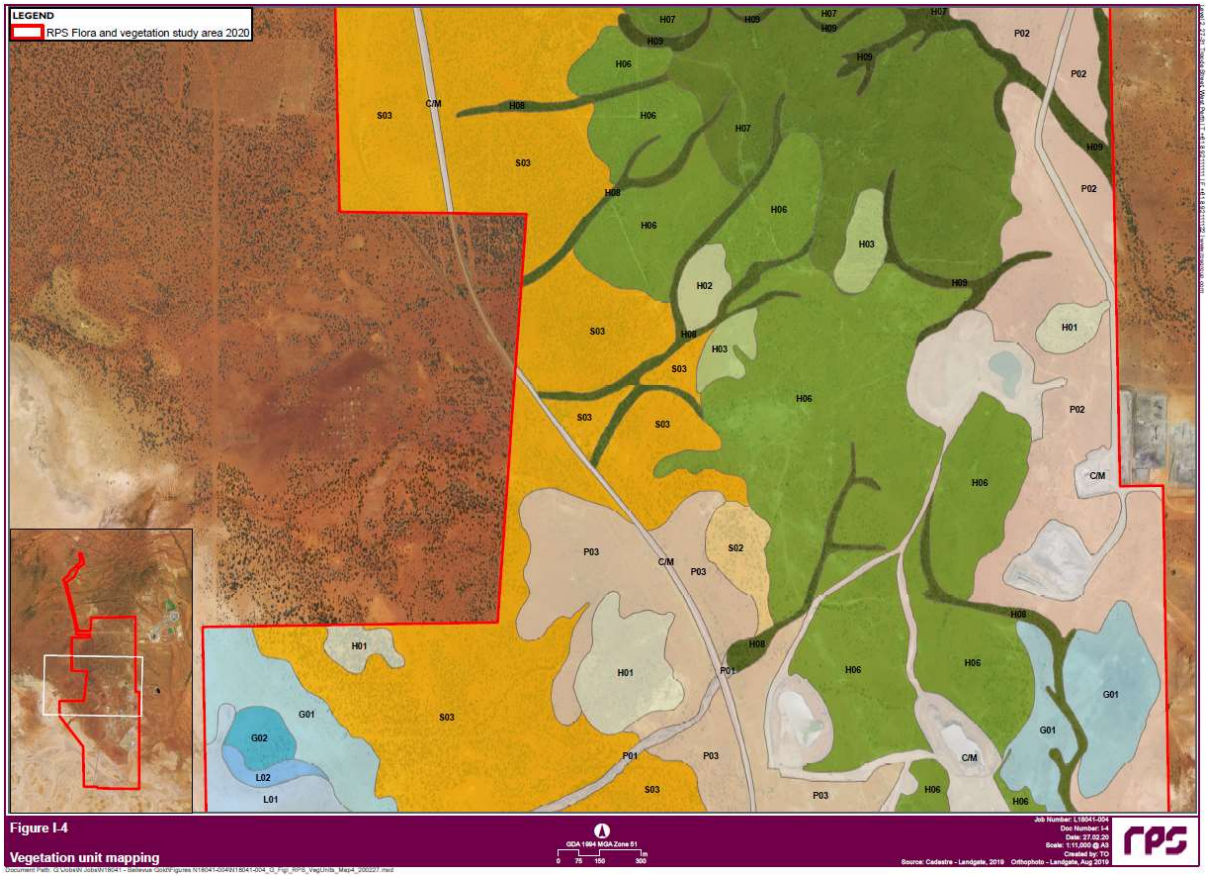


Figure 11 Vegetation Mapping M36/24 and M36/25

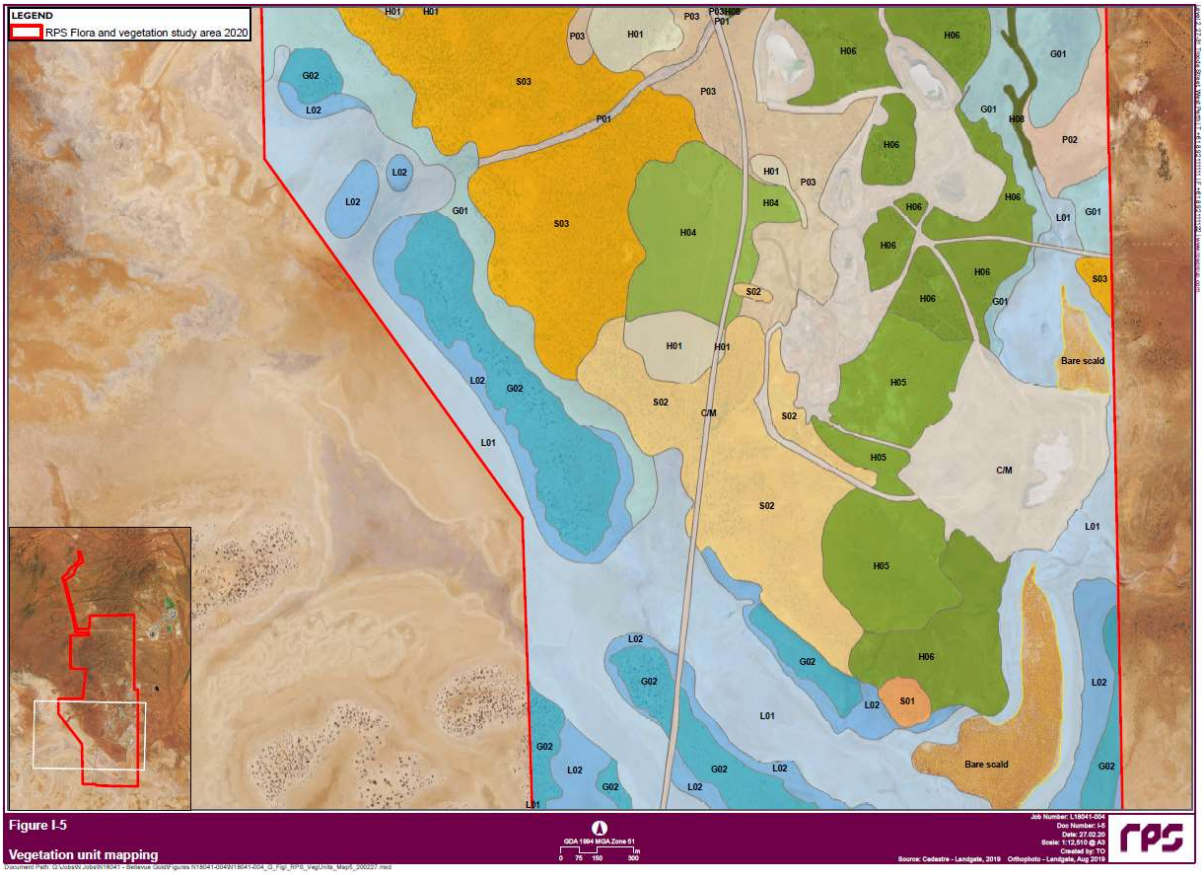


Figure 12 Vegetation Mapping South M36/25

Potential Impacts

Clearing

Clearing will be required as part of the implementation of the Project. Much of the area to be disturbed is situated on M36/25, which has been subject to intense mining and exploration for much of the last 100 years. Much of the vegetation across the project area is common and well represented throughout the greater project area. No clearing is required and therefore there will be no clearing impacts to species or individual plants.

Weeds and Introduced Flora

There are currently ten known weed species within the project area. the Implementation of the project has two possible potential impacts, the introduction of new species, and the spread and population growth of current weed species.

Ruby Dock (*Acetosa vesicaria*) is the most common weed in the Project area and is also extremely common throughout the goldfields. The species is highly invasive and quickly moves into disturbed areas, often outcompeting native species and establishing large populations. As areas are cleared for project implementation, there is a significant chance that Ruby Dock or other weeds will move into the area.

The other weeds currently in the project area are found in low numbers. While these have the potential to also colonise and proliferate in disturbed areas, their low density makes the potential for this less likely.

The Project will source materials from Perth, Kalgoorlie and from overseas. The importation of construction materials to the project has the potential to bring weeds in with it. This could lead to new species entering and establishing within the Project area.

Dust Generation

The development of the Project will create dust emissions associated with ground disturbance and construction, blasting, haulage and general traffic activities, the impacts of which may not be confined to the Development Envelope. Dust emissions have the potential to affect surrounding flora and vegetation. Dust deposition on individual taxa may have either a physical impact (such as blocking stomata, or physically smothering leaves), or chemical impacts, either on the individuals themselves or through contact with the soil. This may place pressure on conservation significant flora located in proximity of the Indicative Disturbance Footprint if not appropriately managed.

Dewatering

As mentioned, groundwaters within the Project area are hypersaline. There are no expected impacts that will be associated with the drawdown of the local aquifer. Plant species across the project are typically shallow rooted and get their moisture from the soil and surface drainage. They are not dependant on groundwater and are harmed if exposed to hypersaline waters.

The main issue associated with dewatering is water transfer. The Project is required to continually dewater the underground workings that produce about 4L/s of recharge water, equating to approximately 128KL per day. A burst of a dewatering pipe would lead to a loss of containment of hypersaline water which would kill local vegetation with which it comes into contact.

Altered Hydrological Regimes

The Project area is one where groundwaters are hypersaline, and where vegetation sources its water from soils. Vegetation within the Project area typically has shallow and widespread root systems designed to take up any surface waters that eventually seep deep enough into the soil. The installation of linear structures such as roads has the potential to stop sheet flows relied upon by project vegetation, leading to plant death.

As can be seen from the Vegetation mapping, even with the pipeline infrastructure in place, there remains significant and extensive sheet flow dependent vegetation units in place. The pipeline and tracks run parallel to the rise and fall of the local topography and rarely cut across and interrupt sheet flows. The roads and tracks currently around the site are small access ways, suitable for light vehicles and drill rigs, are not built up and are merely tracks pushed through lightly vegetated areas. there are no shoulders to the tracks or any impediments to water flows, and after periods of heavy rainfall, these tracks are often flooded and inaccessible.

Figure 13 shows the construction and upgrade of the dewatering pipeline. The line running east west on the bottom of the picture is the new line connecting the dewatering line to the southern vent rise, while the north south line is the historic pipeline constructed for the previous dewatering. The V drains have been upgraded to capture spills and leaks. The picture shows that the general topography of the land dips to the south and highlights the heavily disturbed nature of the general project area.

Figure 13 Pipeline Construction

The impact of the pipeline on sheet flow dependent vegetation would appear to be very minimal. Vegetation condition mapping (Figures 6-9) show that even within proximity to the current exploration areas much of the vegetation is in good to very good condition or better. Given the pipeline has been in place for a period of almost 20 years, if significant enough sheet flow interruption was occurring to affect plant health, this would be more observable. The project does accept that in areas away from mining and mine infrastructure the vegetation condition is better, described as at least very good, but considers this to be more influenced by mining and exploration activities, rather than from interruptions to surface water flow regimes.

Mitigation

Bellevue Gold has an operating EMS that has been used to manage exploration to date. The EMS will be reviewed prior to the implementation of the full Project but has been effective thus far in managing similar environmental concerns.

The table below utilises the mitigation hierarchy (Avoid, minimise and rehabilitate) to address the potential impacts outlined earlier. The mitigation strategies identified in this document will be

incorporated into the project design and both the construction and operational phases of the Project.

	Mitigations to be Applied
Avoidance	• Infrastructure locations will be checked to ensure they are located away from priority flora where possible. • The disturbance envelop will be modified based on survey findings to limit the impacts of the Project on the receiving environment. • Infrastructure shall not be located on the BIF ridge to the north of M36/24, where there is a greater chance of hitherto unidentified species of significance occurring. • No clearing of vegetation. Location of pipelines in existing disturbed areas. • Utilising exiting pipeline and pipeline alignment to ensure further disturbance does not occur.
Minimise	• Project implemented and managed in accordance with approval conditions • Review disturbance envelope regularly to ensure disturbance is kept to a minimum • Review EMS annually to ensure site disturbance procedures are working as required and providing adequate vegetating protection • Regular inspections of dewatering infrastructure to ensure minor pipeline defects are identified and rectified before a catastrophic event can occur • Implement weed hygiene procedure to prevent the spread of weeds into and within the Project area. • Regular site inspections for weeds and regular spraying or physical removal of weeds as populations area identified • Establishment of properly located topsoil stockpiles with correct storage measures implemented. • Rehabilitation of disturbed areas, including with seeding if required, as soon as disturbed areas are no longer required.

Predicted Outcome

Vegetation across the Project area is well mapped and extends significantly outside the direct tenement areas. No clearing of vegetation is required as part of this proposal, as existing infrastructure and pipelines will be used where possible. Where pipelines are required to be installed i.e. between the northern vent rise and the main pipeline, disturbed areas will be used for the pipeline corridor ensuring no direct impacts to vegetation.

The impacts on vegetation and flora associated with dust, dewatering and weeds can be managed adequately within the Project's current Environmental Management System which currently includes plans and procedures to manage these potential impacts.

Altered surface flow regimes are unavoidable with the installation of a pipeline. The pipeline has been installed to run parallel to the natural topography with minimal cross cutting. Most of the

sheet flow depended vegetation is located outside of planned disturbance areas where flows will not change. Between the historic mine pits and the TSF there are some roads and tracks that cut across the natural drainage lines, but these are very minor and present no real risks. Given the pipeline has been installed for a significant period of time, and that minimal impacts to vegetation can be seen, it is unlikely that the resumption of use of the dewatering infrastructure poses any material threat in terms of altered flows.

Inland Waters

EPA Objective

To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

Policy and Guidance

The EPA has published a guideline for the Inland Waters factor. Guidance relevant to the Proposal is;

- EPA 2018, Environmental Factor Guideline- Inland Waters

Receiving Environment

Water Quality

The Project has undertaken sampling of the current project pit water and groundwater. The results of the monitoring are supplied in Appendix A. Generally, the water quality across the project is poor, with high levels of salts making the water practically useless. The Project has undertaken a water quality assessment (RPS, 2018) which is supplied as part of the supplementary information.

A sample from the underground workings was sent for testing in January 2020. The sample returned a pH of 6.82 and a total dissolved solids loading of 89,700 mg/L. Sodium and chloride levels were high (48,600mg/L and 56,700mg/L each respectively), while dissolved metals are all low.

Water within the open pits is of worse quality than the underground water. This is likely due to the influence of the discharged Cosmos mine water and the impacts of years of evaporation and concentration. The dilution of pit water with underground water leads to an increased quality of pit water.

Regional Hydrology

The Northern Goldfields area is underlain by weathered and fractured Archaean bedrock, which forms the northern portion of the Yilgarn Goldfields fractured-rock groundwater province. The bedrock is covered locally by palaeochannel deposits and by widespread alluvium, colluvium and lake deposits. Fractured rock aquifers are developed in greenstone rocks, such as mafic and ultramafic volcanic rocks, with minor groundwater supplies present within fractured granitoid rocks.

Palaeochannels in the Northern Goldfields tend to be highly permeable and contains significant supplies of groundwater, which is fresh to brackish in the tributaries and saline to hypersaline in the main drainage channels. Although the palaeochannels can be the most productive and reliable aquifer in the Northern Goldfields, they have limited storage and long-term pumping will induce leakage from the overlying lithologies and surrounding weathered bedrock. Groundwater in the palaeochannels tends to be saline to hypersaline, so its usefulness is usually restricted to mining activities, although the presence of pockets of fresh to brackish groundwater can provide potential for potable supplies and irrigation usage (Commander 1999).

The units overlying the regional palaeochannels, can include alluvium and calcrete deposits. The alluvium aquifer has by low permeability in the Northern Goldfields due to its clayey nature,

whereas the calcrete can often provide large local supplies of fresh to brackish groundwater from cavities (Commander 1999).

Groundwater flows regionally within the major palaeodrainages. It moves under gravity from drainage divides towards the salt lakes, and then downstream in the palaeochannels. Hydraulic gradients along the palaeodrainages are generally very low, with steeper gradients occurring in the upper reaches of the catchments, and where the palaeochannel crosses greenstone ridges. The groundwater flow systems in the Northern Goldfields are maintained by rainfall recharge. Groundwater discharge occurs mainly by evaporation from playa lakes, and a relatively small amount by throughflow within the palaeochannels (Commander 1999).

Local Hydrology

The local mine area consists of basaltic hills ranging up to 30 metres above the surrounding colluvial plains and salt lakes and characteristically extensively covered by blocky scree. Alluvial cover is generally thin, and outcrops of basement rocks are common on most hills in the area.

The known palaeochannel aquifer systems are to the south and east of the Project area. The main aquifer of relevance to mining and dewatering is the fractured-rock aquifer, which is comprised of greenstones, granitoids and minor intrusive rocks. The greenstone belt in the project area is aligned in a north to south orientation, with the associated faults and fracture sets also aligned in this direction. The fractured rock aquifer is characterised the extents and degree of fracturing and the interconnectedness of such fractures along strike. Typically, such fractured rock aquifers are quite localised and low in groundwater storage. This preferred orientation for faulting also gives an asymmetry to the preferential flow paths for groundwater, with drawdown propagation expected to extend further along strike (north south), while being more limited across strike (east west).

The pre-mining groundwater levels at Bellevue range between 15 to 30 metres below ground level (mbgl), depending on topography, equivalent to about ~460 metres above height datum (m AHD). The levels indicate a relatively flat groundwater gradient regionally towards the south, which is consistent with the regional groundwater flow direction following the major palaeodrainages.

Existing Groundwater Users

According to the DWER Water Register, there are no identified bores within a 1km radius of the site. In fact, the closest licenced abstraction bore/borefield to the site is located approximately 4km east north east from the Bellevue Pit, attributed to Australasian Nickel Investments (ANI), and assumed to be the palaeochannel tributary borefield associated with the Cosmos mine.

Local Geology

A map of the local geology was done by CSA Global in response to the EPA request for information (figure 14). The figure shows the setting of the mine and Project area, along with structures and the Lake. The figure shows the locations of the monitoring bores from which dewatering information was obtained and from which the model was calibrated. The extents of the underground workings are shown in the pink dotted line, which require dewatering for exploration.

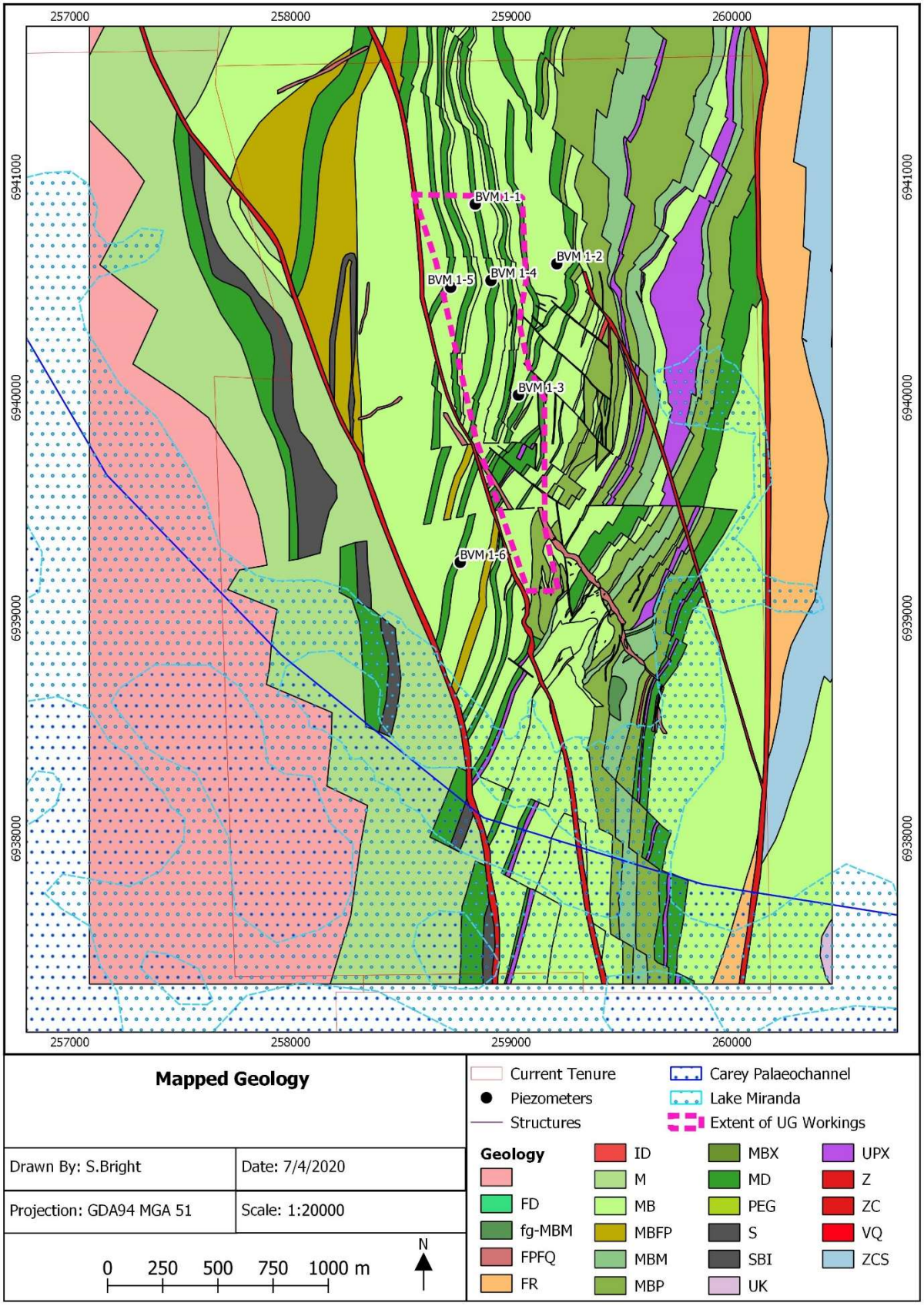


Figure 14 Project Geology and Structures

Lake Miranda

Groundwater within the Project area flows south from the mine area to the Lake. The lake acts as a groundwater sink where water is lost back to the environment and salts concentrate. Water levels at the lake are typically far shallower than at the mine area and may be less than two meters below the surface. These waters support halophytic vegetation across the lake, some which has cultural significance.

Previous Studies

H1 Assessment

A 5C licence to abstract groundwater was applied for by the Project in 2018. The licence was for an annual abstraction volume of 1,000,000kl of ground water for the purposes of dust suppression, dewatering and mining purposes. Given the large volume of water requested an H1 hydrogeological assessment was required to support the assessment of the licence application (RPS, 2018).

This assessment identified that there were no groundwater users within close proximity of the Project area and undertook some theoretical modelling of the drawdown impacts associated with the ongoing dewatering of the operation (1,000,000kl for a period of 10 years).

The assessment identified that drawdown associated with dewatering would be confined to close to the area of the dewatering but that impacts may be seen in the greater region. The assessment determined that the larger impacts would be seen in a north-south direction from the mine and drawdown confined to a relatively narrow profile east and west.

Dewatering Assessment

In 2020 CAS Global was commissioned to undertake further dewatering investigations to further develop the understanding of how dewatering and drawdown would occur. The document was an addendum memo for the H1 assessment and utilised data gathered from dewatering activities and level logger data at a series of piezometers. The aim of the modelling was to determine whether the ongoing dewatering of the underground would lead to any impacts on the Lake.

Assessment of Impacts

Given the lack of other water users within the area and the quality of the water, the impacts around dewatering are confined to those associated with the drawdown. The memo and H 1 assessment evaluated the data to determine the potential impacts.

There are five piezometers located in and around the area of the dewatering and two bores located some distance to the west near the shore of Lake Miranda. The four bores closest to the historic workings and the site of the dewatering (BVM1-1, BVM1-2, BVM1-3 and BVM1-5) shows an instant response when the dewatering pumps were turned on. The water levels within the bores drops sharply as the water within the underground drops. There bores likely intersect the historical workings or have a high level of hydraulic connectivity.

Bore BVM1-6 is located south of the main workings and outside the workings. When dewatering was ongoing this bore showed no response to the dewatering. The levels within the bore remained stable and showed oscillations inconsistent with dewatering activities. From the data CSA drew the conclusion that this bore was not heavily influenced by the dewatering.

The dewatering requires up to 700,000kl of water to be removed to allow for underground exploration to commence. To date approximately half that amount (351,755kl) has been removed from the underground. this water has been stored within the Henderson and Westralia pits, which

are immediately north of the extent of the underground workings. The data gathered from BVM1-6 supports the conclusion that the dewatering of the underground will not lead to drawdown impacts on the lake, and that the extents of drawdown are confined to 300m south of the mine (CAS,2020).

It should be noted that the H1 assessment determined the potential drawdown based on a decade of dewatering and the removal of a substantial extra volume of water. Bellevue acknowledges that the work undertaken for this referral does not identify the long-term dewatering impacts and that further work is required to support the full implementation of the project. This work would likely be commenced when the future mining operation is better defined, and more certainty is known about mine voids, dewatering volumes and life of mine.

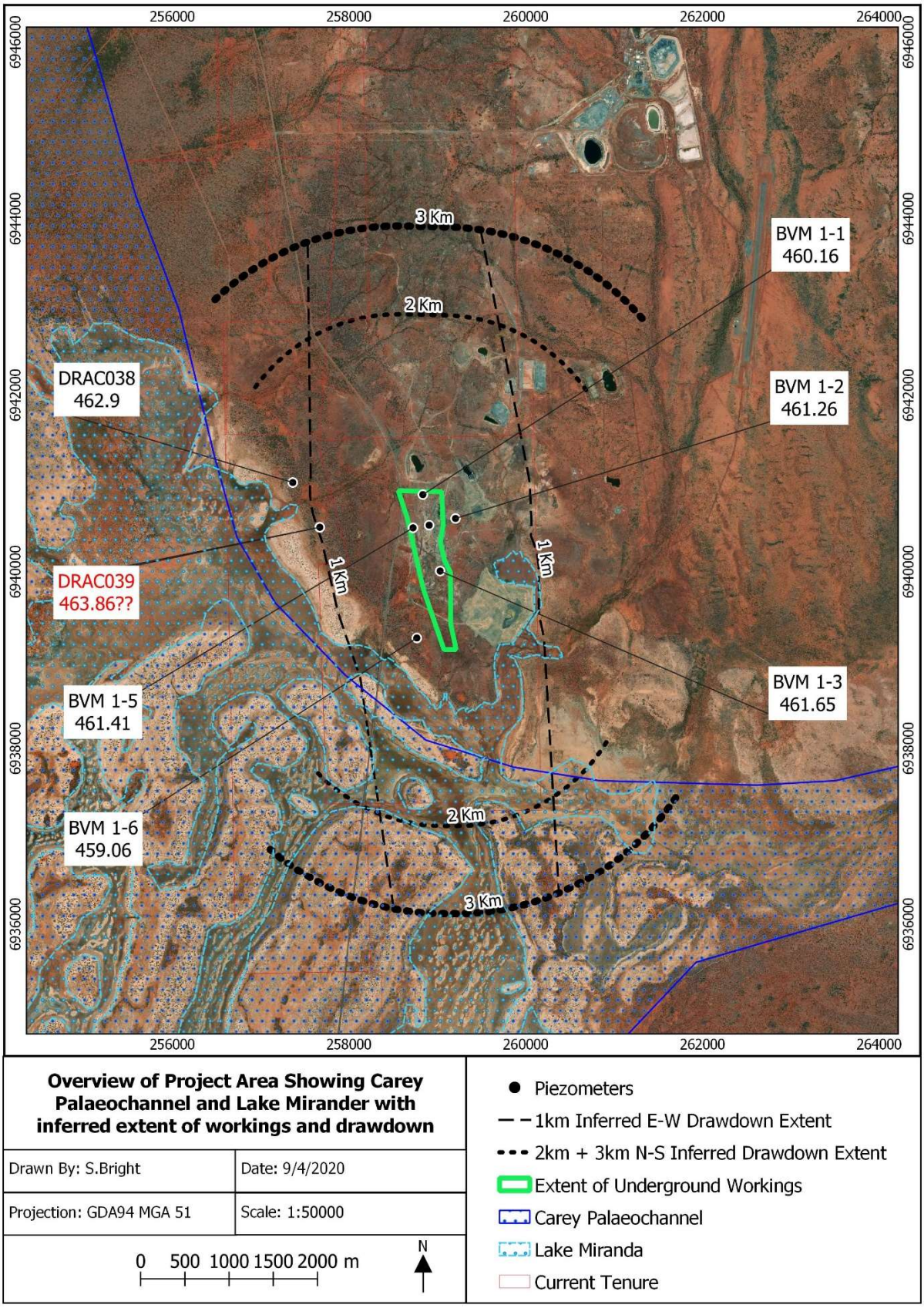


Figure 15 Potential Drawdown

The Lake Carey Palaeochannel is a priority ecological community that is known to support Stygofauna communities, which are sensitive to water abstraction. these communities usually reside

in karsts within calcretes and if water levels are lowered, are severely impacted. The modelling also looked at the potential impacts to the palaeochannel as part of the current dewatering operation.

The Carey palaeochannel wraps around the lake to the west of the Project area. There are two piezometers located in this region that were monitored pre and post dewatering. These two bores (DRAC0038 and DRAC0039) were monitored in August 2019 and March 2020 and showed differences in water level of 0.07m and 0.09m respectively. Changes in water level of less than 0.1m are considered to be insignificant and fall within the range of barometric fluctuations (CSA, 2020). The memo determines that impacts to the Carey Palaeochannel are unlikely based on the results thus far. Again, Bellevue accepts that these impacts are confined to the dewatering to facilitate exploration, and that further studies are required to quantify the potential impact of full implementation of the Project.

Mitigation

At present dewatering of the underground has ceased. When dewatering resumes, the ongoing monitoring of water levels will continue as will the recoding of volumes abstracted and the monitoring of water quality.

Predicted Outcome

The modelling and the data generated to date suggests there will be no impacts to either Lake Miranda or the Carey Palaeochannel as part of exploration dewatering.

Social Surroundings and Heritage

EPA Objective

To protect social surroundings from significant harm.

Policy and Guidance

The EPA has produced the following guidance for this key environmental factor;

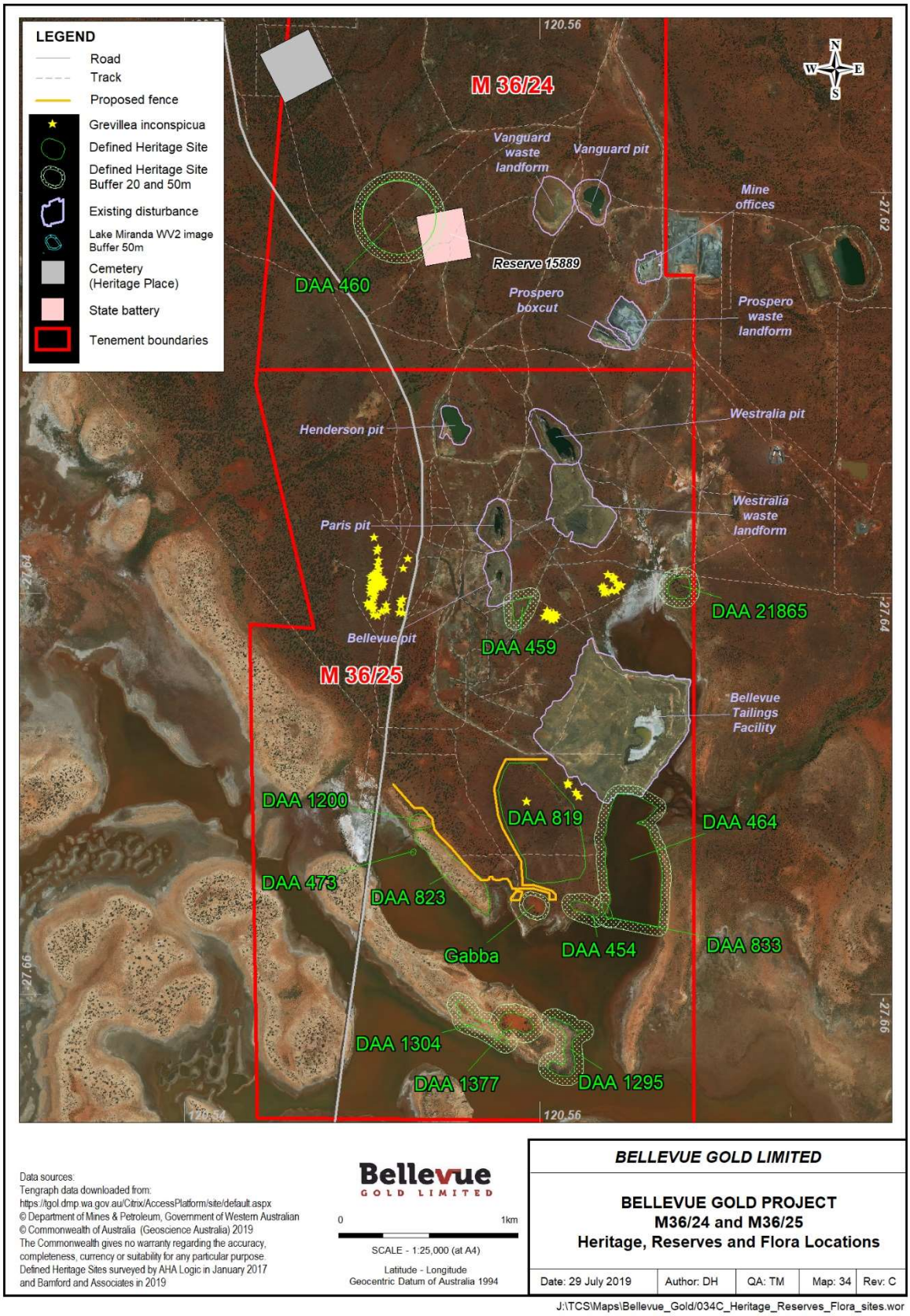
- Environmental Factor Guideline: Social Surroundings (EPA, 2016)

The EPA has also determined that the following are considerations for impact assessment regarding social surroundings

- application of the mitigation hierarchy to avoid or minimise impacts on social surroundings, where possible
- the aesthetic, cultural, economic and/or social values which may be impacted, and whether those values are significant
- the contribution implementation of the proposal or scheme may make to existing or predicted cumulative impacts to aesthetic, cultural or social values
- that emissions of noise, odour or dust are considered in the context of relevant legislation, criteria or standards
- the level of confidence with which the predicted impacts to social surroundings have been made, and what is the risk should those predictions be incorrect
- whether proposed management or mitigation of impacts to aesthetic, cultural, economic and/or social surroundings is technically and practically feasible.

Receiving Environment

The Bellevue tenements are located within an area of high heritage significance. There are registered sites and places across both M36/24 and M36/25 as shown in the figure below.



Outside of the registered sites are also registered places and objects. Lake Miranda is a heritage place as are the Lawrencia helmsii, which grow on the edges of the lake playa.

Potential Impacts

There are potential direct and indirect impacts that might occur to heritage sites. Direct impacts are easier to quantify and include damage to known and unknown sites, and interference with known sites. Indirect impacts are those that occur due to project activities, these might include dust and noise reducing the quality of a site or place and issues such as dewatering, which is present at the Bellevue Project.

Assessment of Impacts

Bellevue has undertaken heritage surveys across all proposed disturbance areas and has a Cultural Heritage Management Plan in place. All known sites are added to maps and workspaces in GIS and are identified prior to the commencement of works. The internal approvals that grant an employee the permission to disturb ground take into account the location of heritage sites and places and ensure that there can be no impacts to these.

For the dewatering the pipeline installed by Cosmos in 2008 was use for the removal and transfer of water. This pipeline sticks to existing tracks and avoids known sites. To avoid further disturbance, Bellevue committed to reusing this pipeline and the alignments. Three small sections of pipeline needed to be added to the network, which were approved under Mining Proposal (Reg ID 82971). The location of the pipeline was supported by the Heritage survey data that confirmed no sites would be impacted (Figures 2 and 3).

The indirect impacts to the sites have been managed by site procedures. Dust and noise are minor issues on the site and have negligible impacts to site. The main impact associated with the dewatering would be drawdown and changes to the hydrology at the Lake. Reductions in water levels can lead to loss of individual plants, and when more severe can lead to loss of populations or communities. Any drawdown at the lake is also considered in impact to a site and requires protection.

The hydrology section above outlines the impacts drawdown will likely have on the lake. The drawdown seen to date supports the notion that dewatering the underground creates localised drawdown only and will not impact the lake. If drawdown does not extend to the lake, then it can reasonably be inferred that vegetation that is supported by the lake environment will not be impacted.

Mitigation

During detwaering the project will continue to monitor water levels, particularly at BVM1-6 to ensure that drawdown is not an issue. Should drawdown at this bore appear to be happening, the project will update the dewatering model and determine the impacts ongoing dewatering shall have.

As mentioned earlier, the Project understands that the impacts associated with dewatering the underground will be different to dewatering to enable mining and will undertake further studies to quantify and manage these impacts as they arise.

Predicted Outcome

The modelling undertaken to date suggests there will be no indirect impacts on the Lake (CSA, 2020).

The surveys undertaken to allow ground disturbing activities have identified sites in and around the work area and these are actively protected. There will be no impacts to these sites.

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