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Mr Ross Martelli
Chief Executive Officer
Covalent Lithium Pty Ltd
Via email: ross.martelli@covalentlithium.com

Att: Anthea Pate, Manager Environment & Approvals

Dear Mr Martelli

**EARL GREY LITHIUM PROJECT – MINISTERIAL STATEMENT 1118 –
FLORA AND VEGETATION ENVIRONMENTAL MANAGEMENT PLAN –
APPROVED**

Thank you for your letter of 26 February 2021 submitting the *Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan* (Rev 5, 24 February 2021) to the Department of Water and Environmental Regulation (DWER) for review.

I note the plan has been prepared to satisfy condition 6 of Ministerial Statement 1118 which states:

- 6 Flora and Vegetation Environmental Management Plan
- 6-1 The proponent shall implement the proposal to meet the following environmental outcome:
 - (1) The proponent shall ensure there is no proposal-related direct or adverse indirect impacts to flora and vegetation within the exclusion zones as shown on Figure 3 and delineated by coordinates in Schedule 2.
- 6-2 Prior to the commencement of ground disturbing activities, the proponent must undertake pre-clearance vegetation and flora survey(s) within the development envelope in accordance with *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*.
- 6-3 In order to meet the requirements of condition 6-1, the proponent shall update and submit to the CEO the Flora and Vegetation Environmental Management Plan on advice of the Department of Biodiversity, Conservation and Attractions within six (6) months of this Statement being issued.
- 6-4 The proponent shall not commence ground disturbing activities until such a time as the Flora and Vegetation Environmental Management Plan required by condition 6-3 is approved by the CEO.

- 6-5 The Flora and Vegetation Environmental Management Plan shall:
- (1) include details of the timing, methods, limitations and results of the preclearance surveys required by condition 6-2 and demonstrate how the findings of the survey(s) have been considered, including provision of mitigation measures.
 - (2) include actions to ensure that dust, weeds and fire are appropriately managed within the development envelope.
 - (3) specify trigger criteria that must provide an early warning that the threshold criteria identified in condition 6-5(4) may not be met.
 - (4) specify threshold criteria to demonstrate compliance with the environmental outcome specified in condition 6-1.
 - (5) specify monitoring to determine if trigger criteria and threshold criteria are exceeded.
 - (6) specify trigger level actions to be implemented in the event that trigger criteria have been exceeded.
 - (7) specify threshold contingency actions to be implemented in the event that threshold criteria are exceeded; and
 - (8) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that condition 6-1 has been met over the reporting period in the Compliance Assessment Report required by condition 4-6.
- 6-6 After receiving notice in writing from the CEO that the Flora and Vegetation Environmental Management Plan satisfies the requirements of conditions 6-3 and 6-5 the proponent shall:
- (1) implement the provisions of the Flora and Vegetation Environmental Management Plan; and
 - (2) continue to implement the Flora and Vegetation Environmental Management Plan until the CEO has confirmed by notice in writing that the proponent has demonstrated the objective specified in condition 6-1 has been met.
- 6-7 In the event that monitoring, or investigations indicates exceedance of threshold criteria specified in the Flora and Vegetation Environmental Management Plan, the proponent shall:
- (1) report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified.
 - (2) implement the threshold contingency actions specified in the Flora and Vegetation Environmental Management Plan within twenty-four (24) hours of the exceedance being reported as required by condition 6-7(1) and continue implementation of those actions until the CEO has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and the implementation of the threshold contingency actions is no longer required;
 - (3) investigate to determine the cause of the threshold criteria being exceeded.
 - (4) investigate to provide information for the CEO to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and
 - (5) provide a report to the CEO within twenty-one (21) days of the exceedance being reported as required by condition 6-7(1). The report shall include:
 - a. details of threshold contingency actions implemented.
 - b. the effectiveness of the threshold contingency actions implemented, against the threshold criteria.

- c. the findings of the investigations required by conditions 6-7(3) and 6-7(4).
- d. measures to prevent the threshold criteria being exceeded in the future.
- e. measures to prevent, control or abate the environmental harm which may have occurred; and
- f. justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.

6-8 The proponent:

- (1) may review and revise the Flora and Vegetation Environmental Management Plan, or
- (2) shall review and revise the Flora and Vegetation Environmental Management Plan as and when directed by the CEO.

6-9 The proponent shall implement the latest revision of the Flora and Vegetation Environmental Management Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 6-4.

I am satisfied that the *Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan* (Rev 5, 24 February 2021) meets the requirements of condition 6 of Ministerial Statement 1118, and that the proponent must now implement the provisions of the Management Plan as required by condition 6-6(1).

Yours sincerely



Anthony Sutton

Executive Director

EPA SERVICES

for the Chief Executive Officer under Notice of Delegation dated 3 July 2017

8 March 2021

Covalent Lithium

Earl Grey Lithium Project

Flora and Vegetation Environmental Management Plan





Rev	Originator	Reviewer	Approval	Date	Covalent approval	Date
1	L. Whitley	K. Moyle		6/04/20	A Pate	6/04/20
2	L. Whitley	K. Moyle		17/11/20	A Pate	17/11/20
3	L. Whitley	K. Moyle		10/12/20	A Pate	10/12/20
4	L. Whitley	K. Moyle		1/02/21	A Pate	1/02/21
5	L. Whitley	K. Moyle		24/02/21	A Pate	24/02/21

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Appendix A Preclearance Survey Report



Executive Summary

This Flora and Vegetation Environmental Management Plan (FVMP) is submitted to meet the requirements of condition 6 of Ministerial Statement 1118 (MS1118) for the Earl Grey Lithium Project which is to be developed by Covalent Lithium Pty Ltd (Covalent). Table ES1 summarises the plan and its purpose.

Table ES1: Summary and Purpose of the Environmental Management Plan

Item	Description
Proposal title	Earl Grey Lithium Project
Proponents name	Covalent Lithium Pty Ltd.
Short description of Proposal	The proposal is to develop a pegmatite-hosted lithium deposit at the abandoned Mt Holland Mine Site, in a development envelope of 1,984 ha. The proposal involves a footprint of 667 ha of land, including new clearing of up to 386 ha of native vegetation, for pit, waste rock dump, integrated waste landform, processing plant, airstrip, accommodation village and associated
Purpose of the Environmental Management Plan	This Flora and Vegetation Management Plan (FVMP) has principally been developed to meet the environmental outcome of condition 6-1(1) of MS1118. The environmental outcome is: <i>'The proponent shall ensure there is no proposal- related direct or adverse indirect impacts to flora and vegetation within the exclusion zones'</i> The FVMP provides a framework to ensure this objective is achieved by implementing management provisions to avoid direct impacts and mitigate potential indirect impacts. It also provides provisions for monitoring and reporting against trigger and threshold criteria which are used to demonstrate the outcome is being achieved.
Key environmental factors	Flora and Vegetation
EPA Objectives	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.
Key Management Plan Objectives	The key environmental criteria for the FVMP include: <ul style="list-style-type: none"> • No proposal related direct impact to flora and vegetation within a exclusion zones resulting in an adverse impact to flora and vegetation. • No proposal related indirect impact to vegetation within the exclusion zones resulting in an adverse impact to flora and vegetation. Management targets <ul style="list-style-type: none"> • no unauthorised clearing of native vegetation • no unauthorised access within the Vegetation Exclusion Zones (VEZ's) • minimise dust deposition from mining and related activities • minimise spread of weeds or dieback • minimise alteration of fire regimes or surface hydrology

This FVMP is designed to be adaptive and will be updated over the life of the Project. As monitoring programs are undertaken, quantifiable environmental criteria will be further defined. Covalent will update this FVMP in consultation with relevant government departments, as such, this FVMP remains a working document.



1. Context, Scope and Rationale

The proposed Earl Grey Lithium Project (the Proposal; the Project) is located approximately 105 km south-southeast of Southern Cross, Western Australia in the Shire of Yilgarn (Figure 1-1). Covalent is a joint venture between Wesfarmers Limited (Wesfarmers) and Sociedad Química y Minera (SQM).

A large, economic pegmatite-hosted lithium deposit was discovered by Kidman Resources Limited in 2016. The deposit is situated at the previously abandoned Mt Holland Mine Site, which was operated between 1988 and 2001, and comprises open pits, an underground mine, a processing plant, waste rock dumps, tailings storage facilities (TSF) and associated infrastructure. The Mt Holland Mine is largely unrehabilitated and currently a liability of the State of Western Australia.

This Flora and Vegetation Management Plan (FVMP) is intended to meet condition 6 of Ministerial Statement 1118 (MS1118) providing ministerial approval for the Earl Grey Lithium Project. Specifically, this FVMP aims to meet the key environmental outcome of condition 6-1 (1) which states:

- 6-1 (1) The Proponent shall ensure there is no proposal-related direct or adverse indirect impacts to flora and vegetation within the exclusion zones as shown on Figure 3 and delineated by coordinates in Schedule 2.

The vegetation exclusion zones (VEZs) mentioned above are illustrated by Figure 1-2.

A separate Flora Offset Strategy will be developed to address any offset requirements under Condition 8-7 of MS1118.

1.1 Proposal

The Project will comprise open cut mining and processing of lithium ore, with transport of a lithium concentrate to an existing Western Australian port for export to overseas markets or a future potential lithium refinery in Kwinana. Within the Development Envelope (1984 ha), the total Project footprint is 667 ha with the full extent of the Project to be developed progressively over a 40 year period. The location of the Development Envelope and Proposed Layout is shown in Figure 1-1.

The Project has been designed to maximise the use of existing disturbance areas. The Project requires clearing of 386 ha of native vegetation and will use 281 ha of the existing cleared areas. The additional clearing is predominately required for the mine pit, waste landforms and ancillary infrastructure.

1.2 Key Environmental Factors

The Proposal was referred under s 38 of the EP Act on 19 May 2017. The Environmental Protection Authority (EPA) determined the Proposal required a Public Environmental Review (PER) level of assessment on 14 July 2017. The EPA approved an Environmental Scoping Document (ESD) on 14 December 2017 identifying the preliminary key environmental factors, impacts to be assessed and work required to prepare the ERD.

The ESD identified Flora and Vegetation as one of the key preliminary environmental factors for the proposal.

The Proposal was also referred under the Commonwealth Government *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and received a 'Controlled Action' decision (2017/7950), which was authorised to be assessed under the WA bilateral assessment process. The EPBC Act requires an assessment as to whether a proposed action is likely to have a significant effect on a matter of national environmental significance (MNES). MNES are nationally and internationally recognised important flora, fauna and ecological communities and includes listed threatened species.

The listed threatened species and relevant MNES for this Proposal and relevant to this plan are:

- Ironcaps Banksia (*Banksia sphaerocarpa* var. *dolichostyla*) – Vulnerable.

On 21 November 2019, the Western Australian Minister for the Environment approved the Proposal under Ministerial Statement 1118 (MS1118). Condition 6 of MS1118 addresses the key environmental factor of flora and vegetation and requires the proponent to meet the following environmental outcome:



- 'The proponent shall ensure there is no proposal-related direct or adverse indirect to flora and vegetation within the exclusion zones...'

The conditions of MS1118 relating to the key environmental factor of flora and vegetation are detailed by Table 1-1, including the relevant section of this FVMP where they are addressed.

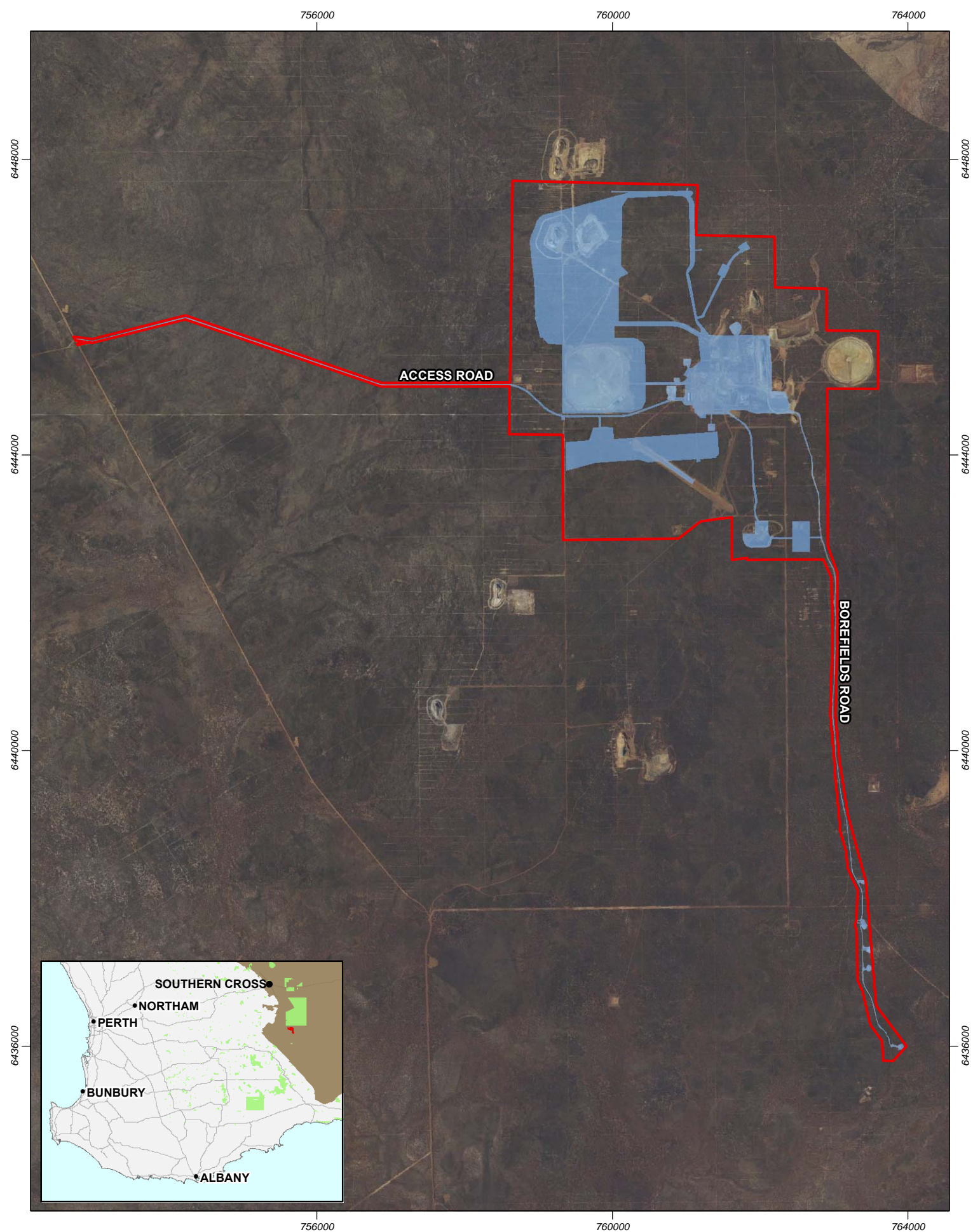


Figure 1.1: Earl Grey Lithium Project Development Envelope



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1.3 Condition Requirements

Table 1-1 details the relevant conditions of MS1118 and the corresponding section of this document where they are addressed.

Table 1-1: Conditions of MS1118

Item #	Condition	FVMP Section
6-1	(1) The proponent shall implement the proposal to meet the following environmental outcome: The proponent shall ensure there is no proposal-related direct or adverse indirect impacts to flora and vegetation within the exclusion zones as shown on Figure 3 and delineated by coordinates in Schedule 2.	This Plan
6-2	Prior to the commencement of ground disturbing activities, the proponent must undertake pre-clearance vegetation and flora survey(s) within the development envelope in accordance with Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment.	Section 3
6-3	In order to meet the requirements of condition 6-1, the proponent shall update and submit to the CEO the Flora and Vegetation Environmental Management Plan on advice of the Department of Biodiversity, Conservation and Attractions within six (6) months of this statement being issued.	This Plan
6-4	The proponent shall not commence ground disturbing activities until such a time as the Flora and Vegetation Management Plan required by 6-3 is approved by the CEO.	This Plan
6-5	The Flora and Vegetation Environmental Management Plan shall:	
	(1) Include details of the timing, methods, limitations and results of the pre-clearance surveys required by condition 6-2 and demonstrate how the findings of the survey(s) have been considered, including provision of mitigation measures.	Section 3.1 and Section 3.2
	(2) Include actions to ensure that dust, weeds and fire are appropriately managed within the development envelope.	Section 2.2 and Table 2-3
	(3) specify trigger criteria that must provide an early warning that the threshold criteria identified in condition 6-4(4) may not be met;	Table 2-2 and Table 2-3
	(4) specify threshold criteria to demonstrate compliance with the environmental outcome specified in condition 6-1;	Table 2-2 and Table 2-3
	(5) specify monitoring to determine if trigger criteria and threshold criteria are exceeded;	Section 2.4, Table 2-2 and Table 2-3
	(6) specify trigger level actions to be implemented in the event that trigger criteria have been exceeded;	Table 2-2 and Table 2-3
	(7) specify threshold contingency actions to be implemented in the event that threshold criteria are exceeded; and	Table 2-2 and Table 2-3
	(8) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that condition 6-1 has been met over the reporting period in the Compliance Assessment Report required by condition 4-6.	Section 2.5

The Project was designed to avoid and minimise impacts related to the Proposed Layout and the inclusion of the VEZs preserves key vegetation communities and species. Project activities may result in the potential for direct and indirect impacts on flora and vegetation within the VEZs.

1.3.1 Survey and Study Findings

1.3.1.1 Surveys

Floristic and vegetation surveys outlined in Table 1-2 were undertaken to support the assessment of potential impacts of the Proposal on flora and vegetation during the assessment process (section 1.2) and have been used to identify the location of the VEZs.



The surveys were completed in accordance with the standards set out in Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016a) and Environmental Factor Guideline: Flora and Vegetation (EPA 2016). This included targeted surveys for *Banksia sphaerocarpa* var. *dolichostyla* and other priority flora.

Threatened or priority flora species identified within the VEZs are described by section 0 and Figure 1-2.

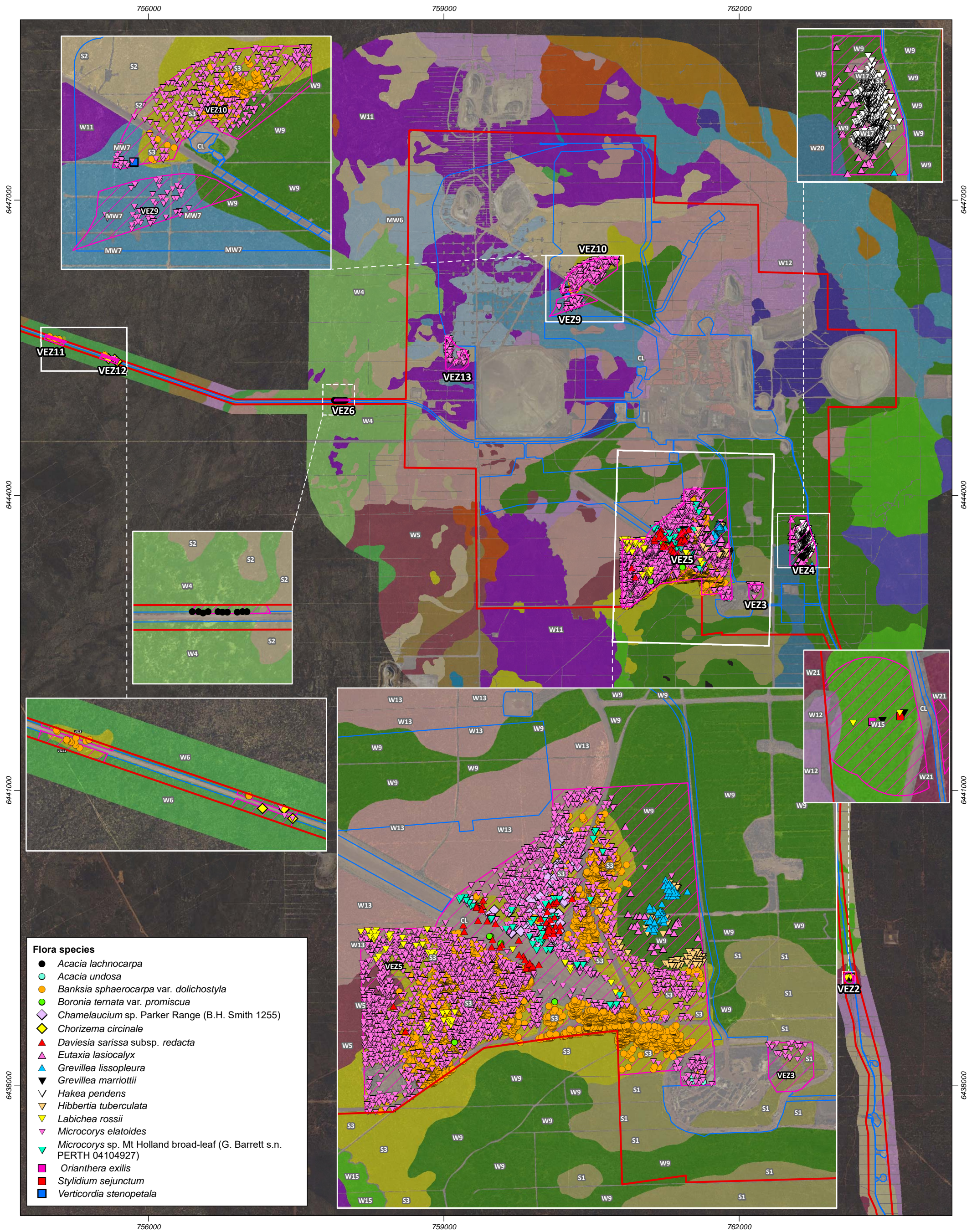


Figure 1.2: Threatened and priority flora within the VEZs



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Table 1-2: Flora and vegetation studies completed for the Project

Investigation	Scope
Native Vegetation Solutions (2014).	Native Vegetation Solutions (NVS) conducted surveys for <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> around existing infrastructure areas (including roads, the historic camp, landfill and airstrip) of the site.
Native Vegetation Solutions (2016).	In September 2016, Native Vegetation Solutions conducted surveys for <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> within proposed exploration areas of the Earl Grey deposit.
Blueprint Environmental Strategies (2017).	In April 2017, Goldfields Landcare Services conducted surveys for <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> within proposed landform and infrastructure areas of the Development Envelope.
Mattiske Consulting Pty Ltd (2017).	The assessment of the flora and vegetation of the Earl Grey, Irish Breakfast and Prince of Wales prospects at Mt Holland was undertaken by Mattiske, from 24 to 26 October 2016 and 9 to 10 November 2016. A total of 43 vegetation survey quadrats were established.
Mattiske Consulting Pty Ltd (2018a).	Flora and vegetation surveys have been conducted within the Earl Grey Lithium Project Development Envelope, a 1 km area around the Development Envelope and 200 m either side of the centre line of the access routes. The total area surveyed was 4,417.83 ha, of which 1,993.59 ha was within the Earl Grey Lithium Project Development Envelope. A total of 214 vegetation survey quadrats were established and surveyed across the survey area.
Mattiske Consulting Pty Ltd (2018b).	<p>Mattiske Consulting Pty Ltd was commissioned between April and June of 2018 by Western Australian Lithium Pty Ltd to undertake a survey of the threatened <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> both within the Earl Grey Lithium Development Envelope and within the broader region surrounding the proposal area.</p> <p>18 individual populations of <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> were recorded during the surveys. A total of 16,503 <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> individuals were recorded across all the areas surveyed. When the estimated numbers are included (6,083), the local population is potentially 22,586 plants.</p>
Mattiske Consulting Pty Ltd (2018c).	Mattiske Consulting conducted a statistical comparison between the Ironcap Hills Vegetation Complexes and the Vegetation defined within the EGLP to address one of the issues raised by the Environmental Protection Authority in response to the Environmental Review Document submission. A poor correlation between the vegetation of the Ironcap Hills Complexes and that recorded within the EGLP was concluded.
Mattiske Consulting Pty Ltd (2018d).	<p>Mattiske Consulting and Straten Environmental conducted targeted floristic surveys focused on Priority 1 flora, range extensions and new species with potential to be impacted by the Proposal in November 2018. Species of focus due to potential presence in the Development Envelope and potential impacts included:</p> <ul style="list-style-type: none"> • <i>Brachyloma stenolobum</i> (P1) • <i>Grevillea lissopleura</i> (P1) • <i>Grevillea marriottii</i> (P1)r • <i>Labichea rossii</i> (P1) • <i>Microcorys elatoides</i> (P1) • <i>Acacia</i> sp. Forresteria (P1) • <i>Acacia lachnocarpa</i> (P1) • <i>Eremophila verticillate</i> (Threatened) (previously stated as <i>Eremophila</i> sp. aff. <i>verticillate</i>) • <i>Hibbertia tuberculata</i> K.R.Thiele, sp. nov. (P1) • <i>Acacia undosa</i> (P3) • <i>Eutaxia lasiocalyx</i> (P2) • <i>Hakea pendens</i> (P3) • <i>Dicrastylis capitellata</i> (P1) • <i>Daviesia newbeyi</i> (P3) • <i>Stenanthemum bremerense</i> (P4) • <i>Daviesia sarissa</i> subsp. <i>redacta</i> (P2) • <i>Olearia laciniifolia</i> (P2)



Investigation	Scope
	<ul style="list-style-type: none"> • <i>Orianthera exilis</i> (P2) • <i>Chorizema circinale</i> (P2) • <i>Callitris verrucosa</i> (range extension) • <i>Centrolepis strigosa subsp. rupestris</i> (range extension). <p>Targeted surveys were conducted both within and outside the Development Envelope to characterise local context in addition to understanding the direct impacts of the Proposal.</p>
Mattiske Consulting Pty Ltd (2019e)	<p>Mattiske Consulting Pty Ltd conducted targeted surveys for all potential conservation significant taxa which may be present within the infrastructure footprint of the mine development envelope to satisfy Condition 6-2 of Ministerial Statement 1118.</p> <p>Between March and November 2019 10 surveys were completed. Conservation significant flora searches were based on 10 m spaced transects within the Project footprint, with approximately 2,865 km search lines traversed on foot. In addition to the surveys completed by Mattiske Consulting Pty Ltd, data from surveys undertaken by Strategen JBS&G and AECOM within and in the region about the Earl Grey Lithium Project was incorporated to provide a comprehensive set of data for impact assessment.</p> <p>29 conservation significant species were recorded. Of these, six were new species found either during the pre-clearance surveys or from past surveys. The 29 conservation significant species recorded were:</p> <ul style="list-style-type: none"> • <i>Acacia</i> sp. Forrestania (D. Angus DA 3001) (P1) • <i>Acacia lachnocarpa</i> (P1) • <i>Acacia undosa</i> (P3) • <i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105) (P1) • <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T) • <i>Brachyloma stenolobum</i> (P1) • <i>Calamphoreus inflatus</i> (P4) • <i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255) (P1) • <i>Chorizema circinale</i> (P3) • <i>Daviesia sarissa subsp. redacta</i> (P2) • <i>Eremophila biserrata</i> (P4) • <i>Eremophila verticillata</i> (T) • <i>Eutaxia lasiocalyx</i> (P2) • <i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898) (P1) • <i>Grevillea lissopleura</i> (P1) • <i>Grevillea marriottii</i> (P1) • <i>Gyrostemon ditrigynus</i> (P4) • <i>Hakea pendens</i> (P3) • <i>Hibbertia tuberculata</i> K.R.Thiele, sp. nov. (P1) • <i>Hibbertia</i> sp. Novel • <i>Labichea rossii</i> (P1) • <i>Microcorys elatoides</i> (P1) • <i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) • <i>Olearia laciniifolia</i> (P2) • <i>Orianthera exilis</i> (P2) • <i>Rinzia medifila</i> (P1) • <i>Stylidium sejunctum</i> (P3) • <i>Teucrium</i> sp. dwarf (R Davis 8813) (P3) • <i>Verticordia stenopetala</i> (P3)
Strategen JBS&G (2019a)	<p>Strategen JBS&G conducted the following:</p> <ul style="list-style-type: none"> • Regional surveys for <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> and <i>Microcorys elatoides</i> at 24 locations • Assessments of roadside vegetation
Strategen JBS&G (2019b)	<p>Strategen JBS&G conducted the following:</p> <ul style="list-style-type: none"> • assessments of two sites for <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> • regional survey for <i>Microcorys elatoides</i> at 19 sites



Investigation	Scope
Western Botanical (2019)	<p>Western Botanical undertook a reconnaissance survey of 1,765 ha portion of remnant vegetation. The survey undertook vegetation mapping and targeted six conservation significant species:</p> <ul style="list-style-type: none"> • <i>Acacia undosa</i> (Priority 3) • <i>Microcorys elatoides</i> (Priority 1) • <i>Microcorys</i> sp. Mt Holland broad-leaf (Priority 1) • <i>Hibbertia</i> sp. <i>tuberculata</i> (Priority 1) • <i>Eutaxia</i> sp. North Ironcap (Priority 1) • <i>Eutaxia lasiocalyx</i> (Priority 2) • <i>Stylidium sejunctum</i> (Priority 3)
Emerge (2019)	<p>Emerge Associates (Emerge) undertook a targeted survey of the following species within the Wheatbelt region:</p> <ul style="list-style-type: none"> • <i>Acacia undosa</i> (Priority 3) • <i>Microcorys elatoides</i> (Priority 1) • <i>Microcorys</i> sp. Mt Holland broad-leaf (Priority 1) • <i>Hibbertia</i> sp. <i>tuberculata</i> (Priority 1) • <i>Eutaxia</i> sp. North Ironcap (Priority 1) • <i>Eutaxia lasiocalyx</i> (Priority 2) • <i>Stylidium sejunctum</i> (Priority 3)
360 Environmental (2019)	<p>360 Environmental undertook a targeted survey of the following species in the Lake Magenta, South Buniche and Heathland Nature Reserves within the Wheatbelt region:</p> <ul style="list-style-type: none"> • <i>Acacia undosa</i> (Priority 3) • <i>Microcorys elatoides</i> (Priority 1) • <i>Microcorys</i> sp. Mt Holland broad-leaf (Priority 1) • <i>Hibbertia</i> sp. <i>tuberculata</i> (Priority 1) • <i>Eutaxia</i> sp. North Ironcap (Priority 1) • <i>Eutaxia lasiocalyx</i> (Priority 2) • <i>Stylidium sejunctum</i> (Priority 3)
AECOM (2020a)	<p>A detailed flora and vegetation assessment and level 1 fauna assessment was conducted to record and describe the environmental values of the survey area within the mining tenement E77/2244. Survey area comprised of nine 20x20m quadrants and walking linear traverses of 10m apart. Five priority floral species were recorded including:</p> <ul style="list-style-type: none"> • <i>Acacia lachnocarpa</i> (WA P1) comprising 42 individuals; • <i>Acacia undosa</i> (WA P4) comprising 100 individuals; • <i>Microcorys elatoides</i> (WA P1) comprising 5,667 individuals; • <i>Verticordia stenopetala</i> (WA P3) comprising 3 individuals <p>One Priority 3 Ecological Community was recorded namely;</p> <ul style="list-style-type: none"> • Ironcap Hills vegetation assemblages (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (greenstone ranges)
AECOM (2020b)	<p>A detailed flora and vegetation assessment and level 1 fauna assessment was conducted to record and describe the environmental values of the survey area within the mining tenement E77/1582. Survey area comprised of seven 20x20m quadrants and walking linear traverses of 10m apart. Five priority floral species were recorded including:</p> <ul style="list-style-type: none"> • <i>Acacia lachnocarpa</i> (WA P1) comprising 42 individuals; • <i>Calamphoreus inflatus</i> (WA P4) comprising one individual found in a quadrat only; • <i>Microcorys elatoides</i> (WA P1) comprising 751 individuals; • <i>Microcorys</i> aff. <i>Obovata</i> (WA P1) comprising one individual found in a quadrat only; • <i>Verticordia stenopetala</i> (WA P3) comprising 392 individuals. <p>No Threatened or Priority Ecological Community was recorded.</p>



Investigation	Scope
GHD (2020)	GHD undertook a targeted survey for conservation significant flora species at three sites near Mt Holland, covering 184 hectares.
Emerge (2020)	Emerge Associates (Emerge) undertook a targeted survey for <i>Acacia undosa</i> (P3) within the Great Southern Region. Surveys in 2019 and 2020 resulted in records for 9,955 individuals of <i>Acacia undosa</i> in parts of Dragon Rocks Nature Reserve, Harris Nature Reserve and McGlinn Nature Reserve. It was estimated that based on the sampled mean density of <i>Acacia undosa</i> that a further 34,064 ±26, 870 individuals occur in recorded areas of habitat.
Mattiske Consulting Pty Ltd (2020a).	Two field surveys were undertaken by Mattiske Consulting in March and April 2020. The first survey was designed to undertake a reconnaissance survey of a proposed water pipeline route from Moorine Rock to EGLP. The second component of the survey was to continue targeted searches in areas not previously surveyed within the EGLP DE. The second survey was designed to continue targeted searches for conservation significant flora in areas that were not previously searched within the EGLP DE and to also survey drill pads and tracks located on the western side of the Blue Vein Rd. Fourteen floral species of conservation significance were recorded within the EGLP DE during both surveys including: <ul style="list-style-type: none"> • <i>Acacia</i> sp. Forrestania (D. Angus DA 3001) (P1) • <i>Acacia lachnocarpa</i> (P1) • <i>Acacia undosa</i> (P3) • <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T) • DA4128 cham paker • <i>Daviesia sarissa</i> subsp. <i>redacta</i> (P2) • <i>Eutaxia lasiocalyx</i> (P2) • <i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898) (P1) • <i>Grevillea lissopleura</i> (P1) • <i>Grevillea marriottii</i> (P1) • <i>Gyrostemon ditrigynus</i> (P4) • <i>Labichea rossii</i> (P1) • <i>Microcorys elatoides</i> (P1) • <i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) • <i>Stylidium sejunctum</i> (P3)
Mattiske Consulting Pty Ltd (2020b).	A reconnaissance flora survey was conducted in March 2020 for the proposed water pipeline corridor to supply potable water from the Goldfields Water Supply water pipeline near Moorine Rock to the Early Grey Lithium Project. It was concluded that the minimal clearing that will be undertaken is unlikely going to impact the potentially conservation significant taxa given their large distribution throughout different biogeographical regions.
Mattiske Consulting Pty Ltd (2020c).	A reconnaissance flora and vegetation assessment associated with the proposed Moorine Rock to Earl Grey Lithium Project area water pipeline was conducted in September 2020 as a result of some modifications to the pipeline alignment. Two areas were surveyed; first location (0.7484 ha) was for a modification to the water pipeline alignment and the second location (0.5342 ha) was for an access area to a booster station situated on the edge of a cleared agricultural lands. No threatened or priority taxa were recorded during the survey. No concerns were raised in the report with the placement of the infrastructure.
Western Botanical (2020a)	A targeted survey for <i>Eutaxia lasiocalyx</i> near the Mt Holland minesite was undertaken in September 2020.
360 Environmental (2020)	360 Environmental was engaged by Covalent Lithium to conduct a targeted flora survey of the following species: <ul style="list-style-type: none"> • <i>Acacia undosa</i> (Priority 3) • <i>Acacia lachnocarpa</i> (Priority 1) • <i>Baeckea</i> sp. <i>forrestiana</i> (Priority 1) • <i>Chorizema circinale</i> (Priority 3) • <i>Eutaxia lasiocalyx</i> (Priority 2)



Investigation	Scope
	<ul style="list-style-type: none"> • <i>Grevillea lissopleura</i> (Priority 1) • <i>Microcorys elatoides</i> (Priority 1) • <i>Microcorys</i> sp. Mt Holland broad-leaf (Priority 1)
Mattiske Consulting Pty Ltd (2020d).	Mattiske Consulting Pty Ltd was engaged by Covalent Lithium Pty Ltd to undertake a weed assessment in current areas of disturbance within the Earl Grey Lithium Project development envelope, and in particular areas currently designated as the processing plant, ROM pad and accommodation village area. Weed assessments were conducted in October 2019 and July 2020.

1.3.1.2 Survey results

The conservation significant species, current listing and abundance within the VEZs is detailed by Table 1-3. A brief description of those species is provided below.

Table 1-3: Species, conservation status and abundance within VEZs

Species	Conservation status	Recorded individuals within VEZs
<i>Acacia lachnocarpa</i>	Priority 1	82
<i>Acacia undosa</i>	Priority 3	4
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	Threatened	5,238
<i>Boronia ternata</i> var. <i>promiscua</i>	Priority 3	16
<i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255)	Priority 1	433
<i>Chorizema circinale</i>	Priority 3	3
<i>Daviesia sarissa</i> subsp. <i>redacta</i>	Priority 2	121
<i>Eutaxia lasiocalyx</i>	Priority 2	236
<i>Grevillea lissopleura</i>	Priority 1	498
<i>Grevillea marriottii</i>	Priority 1	25
<i>Hakea pendens</i>	Priority 3	1,124
<i>Hibbertia tuberculata</i>	Priority 1	1,082
<i>Labichea rossii</i>	Priority 1	339
<i>Microcorys elatoides</i>	Priority 1	13,537
<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)	Priority 1	85
<i>Orianthera exilis</i>	Priority 2	1
<i>Stylidium sejunctum</i>	Priority 3	7
<i>Verticordia stenopetala</i>	Priority 3	1

***Banksia sphaerocarpa* var. *dolichostyla* (Threatened)**

This species is an easily identified shrub 2 to 4 m tall, with bluish green leaves and golden inflorescences. It is confined to an area east of the cleared wheatbelt within the Narrogin and Merredin Districts. It occurs on Vacant Crown Land north from Digger Rocks through Forrestania to Mt Holland. This species prefers iron-capped rises on ironstone profiles. It is found in low woodlands to low shrublands with associates which include *Banksia* and *Allocasuarina* species.

Banksia sphaerocarpa var. *dolichostyla* is currently known to be distributed between Mt Holland and South Ironcap, east of Hyden, Western Australia. Its preferred habitat is lateritic gravel on hills and rises. It commonly grows in association with *Banksia* spp., *Allocasuarina* spp., and *Hakea* spp. (Brown et al. 1998, Collins et al. 2008, WAH 1998-). *Banksia sphaerocarpa* var. *dolichostyla* is currently listed as a Threatened species under the BC Act and is listed as Vulnerable under the EPBC Act.

Observations made in the field indicate that populations are healthy, are recruiting juveniles, and in areas which have been subject to fires, have recovered rapidly. Given these factors, and the observation that *Banksia sphaerocarpa* var. *dolichostyla* was growing in previously disturbed areas, it is likely that this taxon would be a good candidate for seeding in rehabilitation areas with suitable soils.

***Microcorys elatoides* (P1)**

This species was first recorded by Mattiske Consulting during a reconnaissance survey of the Earl Grey prospect in 2016 (Mattiske 2017) and was previously named *Microcorys* sp. Mt Holland (D. Angus DA2397).

Within the Development Envelope, *Microcorys elatoides* was principally recorded within the S3 and W13 vegetation communities (Mattiske 2019e) and to a lesser extent the W6 and W11 vegetation communities. In other vegetation communities, specifically eucalypt mallee shrublands or woodlands, it prefers the vicinity of eucalypt mallee trees.

Microcorys elatoides was recorded growing on disturbed land and in recently fire burnt areas. *Microcorys elatoides* was recorded within the Jilbadji Nature Reserve on sandplain areas.

***Acacia undosa* (P3)**

This species was recorded by the survey in 2017 (Mattiske 2018a) within the S2, W9, W11 and W13 vegetation communities. Regionally, records of *Acacia undosa* exist in both the Avon Wheatbelt and Mallee bioregions up to 230 km from the Development Envelope with 21 records and an estimated 75 individuals.

***Acacia lachnocarpa* (P1)**

This species was first recorded in 2017 by Mattiske Consulting (2019e) and is known to occur to the west of the EGLP Development Envelope in the W4 vegetation community. This species was previously named *Acacia* sp. Mt Holland. Observations indicate this taxon has a preference for the more open areas within the W4 woodland, with sandy grey clay-loam soils, often but not always, with quartzite rocks present on flats and gentle slopes in undisturbed vegetation.

Additional populations have been identified in Jilbadji Nature Reserve.

***Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)**

This species was recorded within the S2 and W13 vegetation communities. Regionally, it has been recorded in the Avon Wheatbelt and Coolgardie IBRA bioregions a minimum of 50 km to the north and north-west of the Project. The largest number of records is located within the Parker Range, therefore the records within the Development Envelope are considered a southern extension.

***Chorizema circinale* (P3)**

The known habitats for *Chorizema circinale* are yellow sands and gravelly sandy clay flats and recorded in the W5 and W6 vegetation communities. Given its relatively widespread regional distribution, potential impacts to this taxon are considered to be low.

The species has been recorded in Coolgardie, Mallee and Esperance Plains IBRA bioregions.

***Daviesia sarissa subsp. redacta* (P2)**

This species was recorded in associated with the W11 and W13 vegetation communities, with minor extensions into the S3 and W5 vegetation communities. Regionally, records of *Daviesia sarissa subsp. redacta* exists within the Southern Cross IBRA sub region, to the north of the Project.

***Eutaxia lasiocalyx* (P2)**

This species was recorded within the W9 and W11 vegetation communities. Regionally, records of *Eutaxia lasiocalyx* exist principally within the Coolgardie and Avon Wheatbelt IBRA regions. The preferred habitat for this species is described as red sandy loam, laterite and quartz gravel on gentle slopes (WAH 1998-).

***Grevillea lissopleura* (P1)**

This species was recorded within the W9 and W11 vegetation communities. Regionally, it has been recorded in the Avon Wheatbelt, Coolgardie and Mallee IBRA bioregions.

***Grevillea marriottii* (P1)**

This species was recorded within the W13 and W15 vegetation communities, in addition to disturbed areas surrounding the Bounty Mine tailings storage facility. Regionally, *Grevillea marriottii* has only been recorded in the Coolgardie IBRA bioregion.



***Hakea pendens* (P3)**

This species was principally identified within the W17 vegetation community. Regionally, it has been recorded in the Avon Wheatbelt and Coolgardie IBRA bioregion with the majority of records to the north west of the Development Envelope.

***Hibbertia tuberculata* (P1)**

This species is a new taxon, uncovered in 2017 and is only known from three locations within the Coolgardie IBRA bioregion – from Lake Cronin to North Ironcap and Mt Holland.

***Labichea rossii* (P1)**

This species was recorded within the S3, W5, W12 and W15 vegetation communities. Regionally, records of *Labichea rossii* exist in the Coolgardie IBRA sub region, in the vicinity of the Project.

***Orianthera exilis* (P2)**

This species has been recorded within the W15 vegetation community. Regionally, scattered records of *Orianthera exilis* (P2) occur within 72 km to the north, east and south of the Project, within the Coolgardie and Mallee IBRA regions.

***Boronia ternata* var. *promiscua* (P3)**

The species is known to occur within the Avon Wheatbelt and Coolgardie IBRA regions and can be characterised by a spreading shrub that can grow up to 1m in height. Flowering season is in June or September to October. The plant is known to grown within yellow sandy clay and laterite soil types. *Boronia ternata* has been recorded growing on disturbed land in old Bounty mine area.

***Stylidium sejunctum* (P3)**

This species was recorded in the W11 and W13 vegetation communities. Within W13 it was recorded in recently burnt areas. Regionally, it has been recorded in the Coolgardie and Mallee IBRA bioregion.

***Verticordia stenopetala* (P3)**

This species is recorded in the Avon Wheatbelt, Coolgardie and Mallee IBRA bioregions. Within the Development Envelope, *Verticordia stenopetala* was recorded to the east of the waste rock landform.

1.3.1.3 Weeds

Weeds were very limited across the Development Envelope. During the surveys one introduced species was recorded from one location within the Development Envelope, outside of the Proposed Layout.

Overall, the vegetation within the EGLP is considered to be in excellent condition and is largely free of introduced species. The presence of introduced species was predominantly restricted to the areas of historical clearing associated with the former Bounty Mine area. The exploration drill tracks and pads associated with the Earl Grey Lithium Project were free of introduced species. A total of 16 weed species were recorded in the Earl Grey Lithium Project survey area:

- *Avena barbata*
- *Brassica tournefortii*
- *Brassica xnapus*
- *Bromus diandrus*
- *Carrichtera annua*
- *Centaurea melitensis*
- *Centaurium tenuiflorum*
- *Hordeum glaucum*



- *Hypochaeris glabra*
- *Lavandula stoechas*
- *Lysimachia arvensis*
- *Mesembryanthemum nodiflorum*
- *Pentameris airoides*
- *Rostraria cristata*
- *Solanum nigrum*
- *Sonchus asper*
- *Sonchus oleraceus*

The taxa recorded with the highest number of individuals recorded were *Carrichtera annua* and *Mesembryanthemum nodiflorum*, with 503 and 101 individuals respectively. *Carrichtera annua* was recorded at four locations, and was the most widely recorded taxon.

The implementation of hygiene protocols during construction and operations will be necessary to prevent the introduction and spread of new introduced species into the VEZs.

1.3.1.4 Fire

No fire has significantly altered the native vegetation within the VEZs since exploration commenced in 2016. Fires as a result of construction and operations will be mitigated as far as practicable with protocols implemented by the onsite emergency response team throughout the life of the Proposal.

1.3.1.5 Dust

Fugitive dust emissions from vegetation clearing, disturbed areas, mine pit excavation, crushing and road use have been identified as a potential indirect impact to vegetation within the VEZs. To date, there has been no background monitoring undertaken for dust deposition and it is unknown at what rates an adverse impact to native flora and vegetation within the VEZs may be apparent. Dust deposition gauges are considered the most appropriate means by which to measure dust fall on flora and vegetation. Dust deposition gauges will be installed and monitored in accordance with Australian Standard AS/NZS 3580.10.1:2003 methods for sampling and analysis of ambient air. Results will be considered in association with the results of flora and vegetation health and condition monitoring (outlined in sections 2.4.1 and 2.4.2) to manage dust emissions from mining activities and mitigate potential adverse impacts to flora and vegetation within the VEZs.

1.3.2 Key assumptions and uncertainties

1.3.2.1 Assumptions

- surveys to date provide sufficient information to confirm the extent of conservation significant flora within the VEZs.
- targeted surveys for threatened flora as outlined in the *Biodiversity Conservation Act 2016*. and other conservation significant flora are considered adequate to characterise the populations within VEZs. The surveys are of suitable quality to identify any Project related direct or indirect impacts to the VEZs.

1.3.2.2 Uncertainties

- the extent to which climatic factors outside of Covalent's control will affect the spread of dust, weeds and fire into the VEZs
- the extent to which dust generated from implementation of the Proposal will travel from the source to receptor



- the level of dust deposition that has the potential to indirectly impact vegetation within the VEZs
- the resilience of conservation significant flora species to dust deposition
- the extent to which climatic factors outside of Covalent's control will impact on the health and extent of populations of conservation significant flora within the VEZs



1.3.3 Management Approach

Management measures to minimise impacts from project activities are necessary to ensure the Proposal will not have a significant impact on flora and vegetation within the VEZs.

1.3.3.1 Potential Impacts

The potential impacts of relevance to the VEZs include:

- direct loss of conservation significant flora from vegetation clearing
- indirect impact from altered fire regimes
- indirect impact from dust, during construction and mining operations
- indirect impact from weed infestation during construction and mining operations.
- indirect impact from changes to surface hydrology, during construction and mining operations

1.3.3.2 Focus on Avoidance

Direct impacts (unauthorised clearing) of the VEZ will be avoided to meet the environmental outcome of condition 6-1(1) of MS1118. The internal vegetation clearing procedure and permit will be utilised to control clearing within the Development Envelope. Furthermore, the VEZs will be surveyed and delineated by an appropriate means (for example flagging tape, fencing or signage) to prevent unauthorised access. Access will be limited to foot access only or vehicle access only to existing cleared tracks and controlled by a procedure and permitting process. This will aim to ensure the area is only accessed for monitoring or rehabilitation activities to meet the requirement of this FVMP. All personnel will be made aware of the requirement to avoid the VEZs through the site induction process.

1.3.3.3 Minimising potential impacts

While the objective to avoid direct impacts to the VEZs is readily achievable, the potential for factors that may lead to potential adverse indirect impacts also needs to be addressed. For this reason, potential indirect impacts such as dust, fire and weeds need to be minimised in order to meet the environmental outcome of condition 6-1(1) of MS1118.

Indirect impacts will be minimised to the maximum extent practicable using best management practices to suppress dust and minimise invasive plant species and impacts from altered surface hydrology as described in Section 2.2.

1.3.3.4 Remediation actions where impacts cannot be avoided

Mitigation measures where monitoring or observations have identified impact(s) on values are detailed in Table 4.1. In the unlikely event the environmental outcome of condition 6-1(1) of MS1118 is not met, further actions will be undertaken to mitigate this loss. This shall include consultation with EPA and DBCA to determine an appropriate strategy.

1.3.3.5 Rationale for choice of provisions

The mitigation hierarchy is based on the objective of avoiding direct impacts and minimising indirect impacts to the VEZs.

The key mechanism by which direct impacts may occur to the VEZs is unauthorised clearing. Management measures mentioned by section 1.3.3.2 will avoid vegetation clearing by limiting access to the area. The key outcome will be to ensure there is no vegetation clearing within the VEZs (threshold criteria) and should there be failures of the management measures (section 1.3.3.2) without causing a direct impact on the VEZs, this will serve as an early warning trigger. For example, clearing within the Development Envelope, but outside of the VEZs without an internally approved clearing permit or unauthorised access to a VEZs.

The assessment process outlined by section 1.2 identified dust emissions, weeds and fire as a potential source of indirect effects on the flora and vegetation of the VEZs, and as a result MS1118 included conditions for their management. It is not known at what level dust and weeds will impact the vegetation communities of the VEZs and for this reason trigger and threshold criteria has not been prescribed for these aspects (section 1.3.2.2). However, monitoring of dust and weeds as



outlined by section 2.4 will be undertaken in conjunction with flora and vegetation health and condition monitoring to understand if any indirect effects to vegetation of the VEZs are proposal related.

Plant health and condition monitoring will be undertaken on both a qualitative and quantitative basis. Trigger and threshold criteria have been developed based on the outcomes of this monitoring (section 2.1). Qualitative monitoring will include a scoring system for a visual assessment of plant health. Quantitative monitoring will be conducted using a plant pigment efficiency analyser (PEA) which measures chlorophyll inflorescence and photosynthetic function. Monitoring quadrats with at least five representative species will be placed both within the VEZs and control sites to allow for a statistical comparison. A potential adverse impact may be apparent in the event of a statistically significant difference between the VEZ and a non-impact area. This approach has been demonstrated and accepted at other mine sites within the mid-west region for this purpose. Monitoring for plant health is outlined further by section 2.4.

Periodic review of the management approach will be undertaken based on monitoring results and incident data. Adaptive management measures will be implemented with a view to achieving continuous improvement in managing the VEZs.



2. Management plan provisions

This FVMP outlines both outcomes-based and management-based provisions. Outcome-based provisions are performance-based and may be used where the part of the environment is capable of objective measurement and reporting. Therefore, outcome-based provisions have been established to specify trigger and thresholds on direct impacts and to ensure the Proposal achieves acceptable environmental outcomes (i.e., plant health monitoring).

Management-based provisions relate to management actions and may be used where the part of the environment is not capable of objective measurement and reporting. Therefore, management-based provisions have been established to specify management actions and targets, particularly for indirect impacts that are non-quantifiable. In addition, management-based provisions will assist with onsite management in achieving the outcome-based environmental criteria. Early response triggers for management-based provisions are detailed in Section 4.1.

2.1 Outcome-based provisions

Environmental criteria, both triggers and thresholds, are detailed in Table 2-2.

2.1.1 Environmental Criteria justification

Environmental criteria, both triggers and thresholds have been established for direct impacts discussed in the Environmental Review Document (Revision 6) and Response to Submissions. Justification for the environmental criteria is detailed in Table 2-1.



Table 2-1: Environmental Criteria justification

Environmental Criteria (Outcome)	Trigger and Threshold	Justification
No proposal related direct impact to flora and vegetation within a VEZ (Figure 1-1)	Trigger criteria: <ul style="list-style-type: none"> Vegetation clearing without an authorised internal permit within the Development Envelope, but outside of the VEZs Authorised clearing has occurred within 5 m of a VEZ Unauthorised access by personnel to a VEZ 	The means by which a direct proposal related impact may occur to a VEZ is vegetation clearing. If clearing occurs which has not received an approved internal clearing permit within the Development Envelope, but outside of the VEZ, it is considered a non-compliance or failure of the procedure which is in place to prevent vegetation clearing of the VEZs. Similarly, if personnel access a VEZ without authorisation, it also represents a failure in the procedure and permit to control access to the area.
	Threshold criteria: <ul style="list-style-type: none"> Proposal related direct vegetation disturbance of any kind or extent within a VEZ resulting in the mortality of flora and vegetation. For example, vegetation clearing. 	The objective of the key environmental outcome is for no proposal related direct impacts to flora and vegetation within the VEZ. Threshold criteria of no proposal related disturbance within VEZ has been chosen as it could lead to mortality of <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> and other priority listed flora within these areas. Exceeding the threshold criteria will lead to investigation, reporting and corrective actions of the incident.
No proposal related indirect impact to flora and vegetation within a VEZ resulting in an adverse impact (Figure 1-1)	Trigger criteria: <ul style="list-style-type: none"> Statistically significant reduction in mean condition ratings (more than 20% difference for qualitative or quantitative) of vegetation health within a VEZ in comparison to control sites, or a mean Fv/FM <0.6 (index of chlorophyll inflorescence) 	Vegetation health monitoring will be undertaken and if a decline in health is identified, the response actions will allow investigation to determine if the causes are attributed to the Proposal and if necessary allow for further management measures to meet the environmental outcome. The triggers for species health decline will be compared with control monitoring to allow consideration for climatic variation such as rainfall and factors outside of the proponent's control.
	Threshold criteria: <ul style="list-style-type: none"> Flora and vegetation within a VEZ experiences a statistically significant higher mortality rate than that of control sites (where that mortality is not attributed to direct or Project impacts). Conservation significant species within a VEZ experiences a statistically significant higher foliage cover loss rate than that of control sites (where that foliage cover loss is not attributed to direct or Project impacts). 	The objective of the key environmental outcome is for no proposal related indirect adverse impacts to flora and vegetation within the VEZs, where adverse is defined as an impact likely to change the conservation status or significantly change the local population numbers of a species. It is widely known that all plants experience a natural rate of mortality. By comparing the rate of mortality of the VEZs, it may be deduced if the VEZs is experiencing natural rates of mortality. If the rate of mortality appears higher than control sites, it should be investigated, reported and corrective actions implemented if it is attributable to proposal related indirect effects. However, It should be noted that the extent of mortality will determine if the key environmental outcome is not being achieved as it may not mean the impact can be defined as 'adverse' (section 6). By reporting a difference the proponent is adopting a precautionary approach. Through monitoring any significant foliage cover loss of conservation significant species, any potential degradation of individual health can be identified, investigated and potentially rectified prior to mortality.

¹ Impact to threatened flora as outlined in the *Biodiversity Conservation Act* 2016 is defined as 'taking all or part of an individual'. Damage to all or any part of a threatened flora individual requires a section 40 authorisation.



Table 2-2: Outcome-based provisions

Environmental objective ¹	Environmental criteria	Response actions	Monitoring	Reporting
No proposal related direct impact to flora and vegetation within a VEZ (Figure 1-1)	Trigger criteria: <ul style="list-style-type: none"> Vegetation clearing without an authorised internal permit within the Development Envelope, but outside of the VEZs Trigger criteria: <ul style="list-style-type: none"> Unauthorised access by personnel to a VEZ 	Trigger response: <ul style="list-style-type: none"> Report internally as an incident in accordance with internal procedures. Review management strategies and implement changes to prevent future occurrences. Management measures may include: <ul style="list-style-type: none"> Undertake incident investigation Review proximity of potential disturbance within/to VEZ. Should disturbance occur to threatened or Priority flora as a result of unauthorised access, report to DWER within 7 days of identification Review and upgrade VEZ signage/delineation where appropriate Audit and review of training and staff inductions (ie. Increase in staff training and awareness to include information on VEZ's, legislative requirements, appropriate clearing procedures) Ground disturbance permit training competency training Review impact of unauthorised clearing and report any noncompliance to DWER within 7 days of identification Undertake rehabilitation of unauthorised clearing (ie disturbance from vehicle tracks, vegetation clearing) by appropriately qualified personnel as required, in accordance with rehabilitation procedure. 	<ul style="list-style-type: none"> Survey records of all clearing undertaken during operation of the Project. 	<ul style="list-style-type: none"> Annual reporting. Clearing Register Internal clearing permits. Survey data Incident reports.
	Threshold criteria: <ul style="list-style-type: none"> Proposal related direct vegetation disturbance of any kind or extent within a VEZ resulting in the mortality of flora and vegetation. For example, vegetation clearing initiated by the proponents mining activities. 	Threshold response: <ul style="list-style-type: none"> Cease clearing activities Immediately report internally Undertake investigation to determine source of and extent of disturbance and if the disturbance is likely to result in the key environmental outcome not being achieved. If disturbance is attributed to Proposal activities, undertake a review of layout to determine if impact can be minimised, development actions to prevent a recurrence and communicate findings to relevant personnel A suitably qualified flora specialist to undertake an assessment of impact Notification to DAWE, DWER and DBCA within 7 days If necessary (deemed to be proposal related), consider measures to prevent an incident occurring and/or remediation strategies to address the impact. Report submitted to DWER with remediation actions proposed. Management measures may include the following: <ul style="list-style-type: none"> Audit and review of training and staff inductions (ie. Increase in staff training and awareness to include information on VEZ's, legislative requirements, appropriate clearing procedures, 5 m trigger response criteria for authorised clearing approaching a VEZ) Undertake rehabilitation of unauthorised access as required in accordance with internal rehabilitation procedures. Engagement with key stakeholders including DBCA, and relevant specialists where required to determine key actions. <p>Provide a report of the incident to EPA as detailed by condition 6-7(5) of MS1118 within 21 days.</p>		



Environmental objective ¹	Environmental criteria	Response actions	Monitoring	Reporting
No proposal related indirect impact to flora and vegetation within a VEZ resulting in an adverse impact (Figure 1-1)	Trigger criteria: <ul style="list-style-type: none"> Statistically significant reduction in mean condition ratings (more than 20% difference for qualitative or quantitative) of vegetation health within a VEZ in comparison to control sites, or a mean Fv/FM <0.6 (index of chlorophyll inflorescence) 	Trigger response: <ul style="list-style-type: none"> Report internally as an incident in accordance with site procedures. Review all monitoring data (including control sites) in relation to management measures (Table 2.3) and any other available data such as weather and climate to determine if the decrease is due to proposal related impacts. Review dust, weather and weed monitoring to compare VEZ and control sites. Determine whether the changes observed in the impact sites are comparable to the observations in the reference sites. Investigate potential causes for the observed decline in vegetation health which may include but are not limited to: <ul style="list-style-type: none"> seasonal conditions (e.g., rainfall and temperatures) effectiveness of weed control spatial variation (near-impact areas) versus sites located further from impact Develop strategies based on the outcomes of the investigation to prevent a recurrence and if necessary or possible reverse the decline in health of the VEZ flora and vegetation. Management measures may include the following: <ul style="list-style-type: none"> Change in frequency of vegetation health monitoring Increase in staff training and awareness on factors which have implications to vegetation health for example dust, changes to hydrology 	<ul style="list-style-type: none"> Quarterly observations of plant health on commencement of Project for the first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed. 	<ul style="list-style-type: none"> Annual reporting Quarterly vegetation monitoring.
	Threshold criteria: <ul style="list-style-type: none"> Flora and vegetation within a VEZ experiences a statistically significant higher mortality rate than that of control sites (where that mortality is not attributed to direct or Project impacts). Conservation significant species within a VEZ experiences a statistically significant higher foliage cover loss rate than that of control sites (where that foliage cover loss is not attributed to direct or Project impacts). 	Threshold response: <ul style="list-style-type: none"> Report internally as an incident Investigate cause and extent of mortality and if it is likely to result in the key environmental outcome not being achieved If necessary (deemed to be proposal related) consider measures to prevent a re-occurrence of the incident and/or remediation strategies to address the impact Notification to DAWE, EPA and DBCA within 7 days Engagement with key stakeholders including DBCA, and relevant specialists where required to determine key actions. <p>Provide a report of the incident to EPA as detailed by condition 6-7(5) of MS1118 within 21 days.</p>		



2.2 Management-based provisions

The following management actions will assist in meeting the trigger and thresholds proposed in the outcome-based provisions. These actions will be reviewed as part of the monitoring and reporting process and changes made where required.

The management actions are detailed in Table 2-3, and include:

- vegetation clearing management
- dust management
- weed management / dieback management
- fire regime management
- surface hydrology.

The management targets are:

- no unauthorised clearing of native vegetation
- no unauthorised access to VEZs
- minimise dust emissions
- minimise spread of weed or dieback
- avoid alteration of fire regimes or surface hydrology

Early response triggers have been established for management targets and are detailed in Section 4.1.



Table 2-3: Management-based provisions

Management Objective	Management Action	Management targets	Monitoring	Reporting
No unauthorised clearing of vegetation within the Development Envelope or personnel access within the VEZs	<p>Avoidance</p> <ul style="list-style-type: none"> • implementation of an internal clearing permit procedure • implementation of an internal procedure limiting access to VEZs by foot only or only by car where there is an existing track. • VEZs to be delineated with flagging tape, physical barrier, signage or similar to alert all personnel of their location • Inductions of all site personnel to include information on the location of VEZs, management targets, measures and expectations 	<p>No unauthorised clearing within the Development Envelope or VEZs.</p> <p>No unauthorised access to a VEZ.</p>	<p>Clearing register.</p> <p>Survey records of all clearing undertaken during operation of the Project.</p>	<p>Annual reporting.</p> <p>Clearing Register.</p> <p>Internal clearing permits.</p> <p>Survey data.</p>
Minimise dust deposition on vegetation from mining and related activities	<p>The Proponent will minimise dust deposition on vegetation through:</p> <ul style="list-style-type: none"> • dust suppression on cleared areas • maximise efficiency of loads when transporting ore or concentrate (including haul trucks and conveyers) • use dust covers on machinery and dust suppressants on exposed areas where possible • minimise open area footprint and rehabilitate or cover (using vegetation, rock, water and/or dust suppressant) exposed areas as soon as practicable • design the mine layout to minimise dust emissions to VEZs where practicable • access roads will be sealed with an emulsion or suitable alternative, as shown in Figure 2-1 	<p>Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m²/month.</p>	<p>Dust deposition rates will be measured monthly using dust deposition gauges for the first 24 months from implementation of the proposal. The dataset gained will be reviewed to inform the dust monitoring regime for the next revision of the FVMP.</p>	<p>Annual reporting.</p> <p>Vegetation health monitoring.</p> <p>Incident report of significant dust plumes.</p>
Minimise spread of weeds / dieback	<p>The Proponent will minimise the risk of introduction of invasive species and spread of dieback through:</p> <ul style="list-style-type: none"> • implementation of a vehicle hygiene procedure, dieback management procedure and weed control 	<p>Minimise new weeds introduced to site.</p> <p>Prevent spread of weeds to VEZs.</p> <p>Prevent spread of dieback onsite.</p>	<ul style="list-style-type: none"> • Annual weed monitoring across Development Envelope. • A Dieback Management Plan will be produced and provided to DBCA, following the completion of baseline monitoring. 	<p>Annual reporting.</p> <p>Vehicle hygiene certificates and auditing.</p> <p>Invasive species control reports.</p>



Management Objective	Management Action	Management targets	Monitoring	Reporting
	<ul style="list-style-type: none"> Development Envelope and VEZs will be surveyed for weeds periodically, so that any infestations of invasive species that establish can be eradicated before the plants can flower and set seed <i>Phytophthora</i> (dieback) controls including signage, cleandown points, vehicle hygiene shall be implemented. 		<ul style="list-style-type: none"> Dieback monitoring programme to be developed. Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed. Quarterly health monitoring at vegetation quadrats within VEZs and control sites to include observations for weeds and if the presence of weeds is having a potential indirect impact. 	Aerial photos. Incident reports.
Avoid alteration of fire regimes	<p>The Proponent will contribute to fire management at the mine site and in the region through the following measures:</p> <ul style="list-style-type: none"> Internal procedures to prevent fires and manage the occurrence of fires due to operational activities (emergency response team, automated fire extinguishers on equipment, personnel trained to use fire fighting equipment). implement fire management procedures (e.g. maintenance of fire breaks, Hot Work Permit system, firefighting training, Emergency Response Plan) firefighting equipment will be located on site and in vehicles lightning protection equipment will be installed as part of Project design where necessary coordination with DBCA and Department of Fire and Emergency Services (DFES) to undertake prescribed burns. 	Prevent fires attributed to mining and associated Project activities.	<ul style="list-style-type: none"> Incident reports of fire. Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed. 	Aerial photos. Incident reports.



Management Objective	Management Action	Management targets	Monitoring	Reporting
Avoid alteration surface hydrology	The Proponent will ensure the appropriate design of infrastructure including: <ul style="list-style-type: none">• Drainage measures designed and constructed to minimise changes to natural surface water flow, including diversion drains, rock cladding and contouring as required.• Rehabilitation and closure to follow contours of natural landforms	Prevent changes to surface water hydrology attributed to mining and associated Project activities.	<ul style="list-style-type: none">• Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a robust dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed.• Quarterly health monitoring at vegetation quadrats within VEZs and control sites	Aerial photos. Incident reports. Annual reporting.

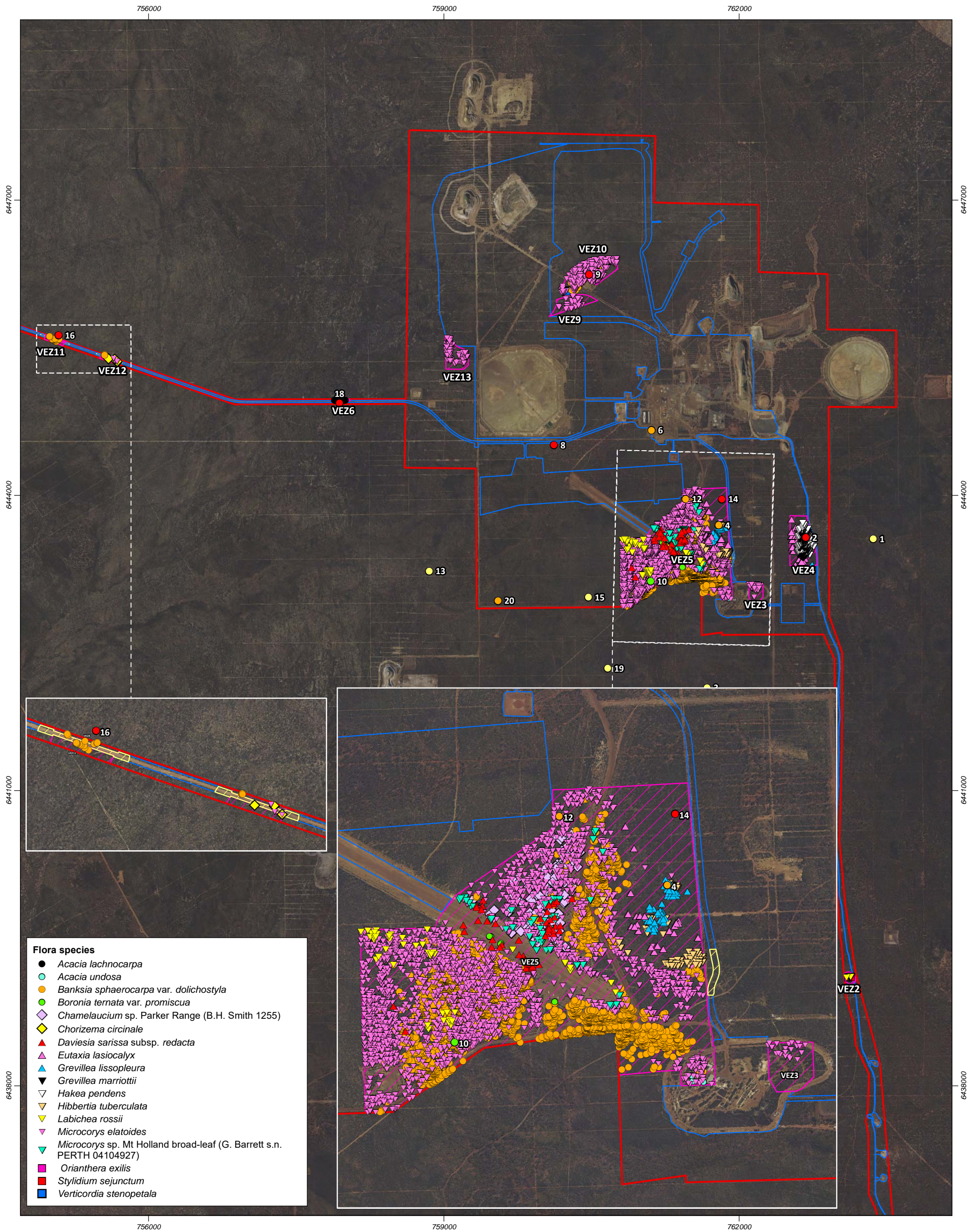
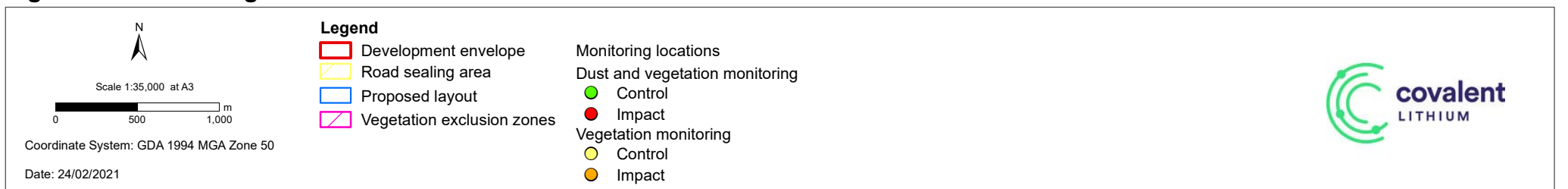


Figure 2.1: Dust mitigation measures



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2.3 Implementation

The implementation of the FVMP will be assisted through an Environmental Management System that will incorporate systems, processes, procedures and work instructions relating to the management, monitoring and reporting components of the FVMP.

Covalent is committed to conducting its activities at the Earl Grey Lithium Project (the Project) in an ecologically responsible manner. The key personnel involved in implementation of the FVMP and their roles and responsibilities are listed in Table 2-4.

Table 2-4: Summary of roles and responsibilities relevant to the Earl Grey Lithium Project FVMP

Role	Responsibility
Covalent	<ul style="list-style-type: none"> Covalent have the overall responsibility for the implementation of this FVMP if any roles are delegated to a contractor or consultant, Covalent has the responsibility to audit compliance and ensure any contingency actions are implemented.
Covalent Environmental Manager	<ul style="list-style-type: none"> overall accountability for auditing and compliance assessment with this FVMP during operation to ensure it is maintained and meets objectives and targets provide technical support to all Project personnel to ensure this FVMP is implemented correctly and complied with implement and maintain this FVMP, review its effectiveness and review the implementation as required obtain relevant approvals for disturbance as required ensure all personnel involved in the project are inducted and will adhere to FVMP requirements undertaking ongoing monitoring and documenting monitoring results liaise with stakeholders and technical advisors for advice and resolution of management aspects/objectives as required review and close out any contingency actions report as required to regulating authorities may delegate all or part responsibility to an appropriately qualified person
Construction Manager or Registered Manager (if different to Environmental manager)	<ul style="list-style-type: none"> overall accountability for auditing and compliance assessment with this FVMP during construction to ensure it is maintained and meets objectives and targets overall accountability to ensure this FVMP is implemented, reported and maintained on-site ensure personnel attend inductions, have sufficient resources and training to meet the requirements of this FVMP support the Proponent's flora management initiative and culture comply with all legal requirements and the requirements of this FVMP seek advice from the Proponent when in doubt about requirements appoint appropriate consultants to undertake specific activities set out in the FVMP if required.
All personnel	<ul style="list-style-type: none"> must receive induction prior to commencement of work on site comply with all legal requirements and the requirements of this FVMP attend environmental inductions and any other training required participate in toolbox meetings and encourage personnel to suggest improvements.

Covalent will undertake consultation with DBCA's Species and Communities Program if activities related to seeding, germinating or planting *Banksia sphaerocarpa* var. *dolichostyla* are being considered. The preparation and approval of a translocation proposal as required in Part 7 of the *Biodiversity Conservation Regulations 2018* will be undertaken, including consultation with DBCA's Species and Communities Program. Impact to threatened flora as outlined in the *Biodiversity Conservation Act 2016* is defined as 'taking all or part of an individual'. Damage to all or any part of a threatened flora individual requires a section 40 authorisation.

2.3.1 Environmental induction

The Proponent will require all workers, both during construction and operation of the mine, to attend a worker awareness training/environmental induction covering the following topics.

- Conservation significance of the flora and vegetation within the VEZs
- Compliance and legislative requirements of the VEZs



- Management measures and expectations of all personnel to ensure the key environmental outcome is achieved

2.3.2 Incidents and corrective actions

Environmental incidents are defined as breaches or non-adherences to objectives and procedures applied to the Project and prescribed in this FVMP. Environmental incidents are to be reported to the Covalent Environmental Manager by the person responsible for the incident or the first person at the site of an incident.

The Covalent Environmental Manager will assess the type and severity of the incident in accordance with internal procedures. Relevant personnel shall be notified and consulted whether the incident requires notification to regulatory agencies.

2.4 Monitoring

The monitoring program will involve monitoring of plant condition, dust deposition and weed monitoring in order to:

- determine if there are any changes occurring to flora and vegetation condition and health in the VEZs
- assess whether any changes in flora and vegetation are due to the Project or external/natural factors
- provide a methodology for ongoing monitoring to enable time-based comparisons.

This will be achieved as the program has been designed to be:

- extensive – sites within representative vegetation communities both within the VEZs and non-impact control sites
- balanced – replicate sites within potential impact areas, and areas outside of the Proposals influence to enable statistical analyses (for example but not limited to, ANOVA, MANOVA)
- repeatedly measurable, reliable and adaptable; allowing monitoring to be intensified or decreased as required based on measurements made.
- Furthermore, monitoring by the way of pre-clearance surveys has also been undertaken to meet condition 6-2 and 6-4(1) of MS1118. The timing, methods, limitations and reporting of those surveys is detailed by section 1.3.1.1 and 3.

2.4.1 Plant condition monitoring

Plant condition monitoring to provide a qualitative assessment of the vegetation condition will be undertaken at permanent representative sites within the VEZs and control sites away from any proposal related indirect effects. Each monitoring site will consist of a quadrat 10 m by 40 m arranged linearly with four sub quadrats of 10m x 10m, thereby providing an area equivalent to 20m x 20m and conforming to the recommended quadrat size for the bioregion (EPA Technical Guidance 2016).

The locations of monitoring quadrats have been reviewed based on recommendations provided by DBCA and locations were revised to monitor the following sub-set of conservation significant species individuals in the monitoring program:

- *Acacia lachnocarpa*
- *Acacia undosa*
- *Banksia sphaerocarpa* var. *dolichostyla*
- *Chamelaucium* sp. Parker Range (B.H. Smith 1255)
- *Daviesia sarissa* subsp. *redacta*
- *Grevillea lissopleura*
- *Grevillea marriottii*



- *Hakea pendens*
- *Hibbertia tuberculata*
- *Microcorys elatoides*
- *Microcorys* broad-leaf (G. Barrett s.n. PERTH 04104927)
- *Rinzia medifila*
- *Stylidium sejunctum*

The GPS coordinates of approximate quadrats is provided in Table 2-5 and shown by Figure 2-1.



Table 2-5: Monitoring quadrat GPS coordinates

Site#	Type - Pair	Vegetation Community	Dust gauge (Y/N)	Easting	Northing	Locality	Siting Justification
1	Control - A	W7	N	763363	6443557	Rocky hill located 600 m east of borefield access track.	<i>Hakea pendens</i> (P3) community.
2	Impact – A	S1	Y	762678	6443570	70 m west of borefield access track.	<i>Hakea pendens</i> (P3) community (W17 vegetation) in VEZ.
3	Control - B	H1	N	761675	6442044	located 600 m south of accommodation village.	H1 vegetation unit – most restricted unit in Development Envelope.
4	Impact - B	W9	N	761794	6443696	95 m west of planned access road to accommodation village.	H1 vegetation unit in VEZ.
6	Impact – C	CL	N	761111	6444662	100 m north-west of power substation, and 70 m south of current planned disturbance.	<i>Microcorys</i> sp. Mt Holland broad-leaf
7	Control – D	Unknown	Y	760130	6451461	3.7 km north of current EGLP DE, and 530 m south of Jilbadji Nature Reserve.	W13 vegetation containing <i>Acacia undosa</i> (P3).
8	Impact – D	W13	Y	760120	6444511	20 m south of planned access road between existing TSF and airstrip. 295 m east on planned entry road to airstrip.	W13 vegetation containing <i>Acacia undosa</i> (P3).
9	Impact– E	S3	Y	760476	6446242	15 m from edge of old borrow pit north of old Earl Grey haul road.	<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T) community (S3 vegetation) in VEZ. Proximate to TSF, mine pit and operations area (generally).
10	Control – E	S3	Y	761102	6443126	55 m north of main access road south of Mt Holland airstrip.	<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T) community (S3 vegetation). Area suitable as control as road access will be closed off and nearest area of disturbance is 800 m to the north (new airstrip) or east (accommodation village).
11	Control – F	W9	Y	761652	6441960	860 m south of accommodation village.	W9 vegetation community.
12	Impact – G	W13	N	761457	6443963	20 m east of planned new airstrip.	W13 vegetation within VEZ



Site#	Type - Pair	Vegetation Community	Dust gauge (Y/N)	Easting	Northing	Locality	Siting Justification
13	Control – H	W5	N	758853	6443230	500 m west of Blue Vein Road	<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T) community (S3 vegetation)
14	Impact – F	W9	Y	761826	6443962	12 m from planned access road to accommodation village.	W9 vegetation in VEZ.
15	Control – G	W5	N	760469	6442964	80 m north of main access road south of Mt Holland airstrip.	Area suitable as control as road access will be closed off and nearest area of disturbance is 950 m to the north (new airstrip), 1.3 km east (accommodation village) and 1.1 km west (Blue Vein Road).
16	Impact – H	W6	Y	755088	6445627	10 m north of main access road from the Forrestania Rd.	<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T) community (S3 vegetation) in VEZ. Adjacent to high traffic area.
17	Control – I	Unknown	N	758514	6454004	1.9km to the north of the southern boundary of the Jilbadji Nature Reserve, and 1.7 km west of main north-south track through the Reserve.	Only other known <i>Acacia lachnocarpa</i> (P1) community.
18	Impact – I	W4	Y	757942	6444937	10 m south of main access road from the Forrestania Rd.	In W4 vegetation, on opposite side of road from VEZ. South side of road chose due to better <i>Acacia lachnocarpa</i> (P1) distribution.
19	Control – J	W11	N	760666	6442241	190 m east of Blue Vein Road and 10 m north of existing road south of Mt Holland airstrip.	Burnt W11 vegetation community with numerous conservation significant species.
20	Impact - J	W11	N	759552	6442928	1.2 km east of Blue Vein Road and 630 m south of access road south of Mt Holland airstrip.	Burnt W11 vegetation community with numerous conservation significant species.



Within each sub-quadrat, the following will be recorded:

- All plant species, both native and alien, present (this will allow for diversity calculations to be made and compared temporally). A specimen of all plant species recorded is to be collected for verification;
- The average height of each species present; and,
- The percentage foliage cover (dead / alive) of each species.

In addition, a minimum of five (dominant/keystone) species have been tagged, and the following information recorded for each specimen:

- Plant condition score, based on the scales in Table 2-6 and Table 2-7;
- Photographic record (taken from the north side of the quadrat to maintain temporal consistency);
- Reproductive status (vegetative, flowering, fruiting); and,
- Plant height and width.

A minimum of 20 plants will be individually tagged and scored within each quadrat. Conservation significant flora species have been tagged and where possible, the same species have been tagged in each of the sub-quadrats to provide for sample replication.

The visual assessment of a range of parameters to assist in determining plant condition score, is based on a stem classification system which has been used by Mattiske Consulting Pty Ltd on numerous projects, together with a modification of the method of Souter *et al.* (2010), to provide for visual assessments of a range of other characters. The range of visual characters used to assess plants has been designed to reduce inter-operator error when making assessments in the field.

Plant condition will be primarily measured by determining the extent and density of the foliage on the plant, or the crown cover of a tree (Table 2-7). In addition, a range of attributes will be scored to standardise the visual assessment process. Some of the attributes are positive, in terms of plant condition – signs of reproduction or new foliage growth. Some of the attributes are negative, in terms of plant health – increasing levels of leaf discolouration and death, insect damage. The attributes to be scored are:

- Leaf die-off
- New tip growth
- Reproductive state
- Epicormic growth
- Insect damage

These attributes will be assessed using the scale set out in Table 2-6.

Table 2-6: Attributes scale

SCORE	DESCRIPTION
0	Absent - effect is not present
1	Scarce - effect is not obvious in a cursory examination, but is present.
2	Common - effect is clearly visible
3	Abundant - effect dominates the appearance of the shrub / tree

Table 2-7: Plant condition scoring

CONDITION	FACTORS
Healthy (score = 4)	<ul style="list-style-type: none">• > 90% of foliage present• canopy is intact• if a tree, then no epicormic growth present• none or little indication of leaf discolouration or loss• none to minor evidence of insect damage, no fungal or other pathogen attack



CONDITION	FACTORS
Slightly stressed (score = 3)	<ul style="list-style-type: none"> 75% - 90% of foliage present some minor canopy loss if a tree, then no epicormic growth minor evidence of leaf discolouration; potentially some dead leaves on branch tips minor evidence of insect damage, fungal or other pathogen attack
Stressed (score = 2)	<ul style="list-style-type: none"> 50% - 75% of foliage present moderate canopy loss if a tree, then none to some epicormic growth evident evidence of leaf discolouration; evident damage to leaves significant evidence of insect, fungal or other pathogen attack obvious
Very stressed (score = 1)	<ul style="list-style-type: none"> < 50% of foliage present major canopy loss if a tree, then epicormic growth likely leaf discolouration significant; evident damage to leaves significant evidence of insect, fungal or other pathogen attack obvious
Dead (score = 0)	<ul style="list-style-type: none"> plant dead foliage may present, but is brown and desiccated. If a tree then the bark is still attached (DR – dead recent) foliage is absent, fine twigs still present. If a tree bark may be present (DM – dead moderate) foliage and fine twigs absent. If a tree the bark is also absent (DO- dead old)

The condition of the vegetation in each quadrat will also be assessed, based on the vegetation condition scale of Trudgeon (1988), for assessment of disturbance within the Eremaean and Northern Botanical Provinces. The disturbance scale is set out in Table 2-8.

Table 2-8: Vegetation condition scale (adapted from Trudgeon, 1988)

VEGETATION CONDITION	DESCRIPTION
Excellent (Ex)	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good (VG)	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good (G)	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor (P)	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded (D)	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded (CD)	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Baseline plant condition monitoring will consist of two baseline monitoring events conducted prior to commencement of construction and operations in spring and summer. On commencement of the Proposal, plant condition monitoring will be undertaken quarterly for the first 12 months during construction and operations. The data gained over this period will be used to review monitoring and inform the methodology and frequency of future monitoring. Should triggers be exceeded at any point, monitoring intensity shall be reviewed, and potentially increased if required and remain increased until such time as the trigger is no longer exceeded.



The mean condition monitoring scores will be compared across species and sites and appropriate statistical analysis undertaken to determine if there is a statistically significant difference between VEZs and control sites.

2.4.2 Plant health monitoring

The use of a plant pigment efficiency analyser (PEA) is an increasingly accepted method of determining plant health and function within the mining, forestry and agricultural industries. The PEA records a score of between 0.0 to 1 for Fv/Fm (index of chlorophyll inflorescence) with most plant taxa being considered healthy within a range of 0.7 to 0.8 (Kalaji et al 2014). When plants are experiencing stress, the ratio may decline and potentially represent a reduction in physiological function or healthy function of the plant. To date, it has generally been accepted that a Fv/Fm score of <0.6 in most regions is an indicator a plant is stressed.

Within or adjacent to each of the monitoring quadrats detailed by section 2.4.1, 25 plants (five from each keystone species) will be selected for testing with a PEA. Given control sites will be monitored, the requirement for monitoring prior to commencement of construction and operations is not considered necessary. As per section 2.4.1, monitoring will initially be undertaken quarterly following implementation of the proposal for the first 12 months to generate a robust dataset. For each monitoring event, the mean of each species Fv/Fm ratio will be compared between VEZs and control sites and appropriate statistical analysis used to determine if a significant difference is apparent. After the first 24 months the dataset will be reviewed and used to inform future monitoring requirements.

2.4.3 Dust monitoring

Dust deposition rates will be measured with dust deposition gauges (DDGs) in accordance with AS/NZS 3580.10.1:2003. Data will be recorded monthly, commencing prior to construction or production enabling a baseline level to be established.

Nine DDGs will be installed at the select monitoring quadrats as detailed by Table 2-5 and shown by Figure 2-1. This will enable a comparison of results between VEZs and control sites and assist with determining any proposal related indirect effects.

As detailed previously in section 1.3.2, it is unknown at what rates (if any) dust deposition may result in a reduction of health of the flora and vegetation within the VEZs. Matsuki et al (2016) investigated the effect of dust on two independent medium-term monitoring studies in semi-arid regions of Western Australia to determine the correlation of any dust on plant health. The Matsuki study found no such correlation of dust load or distance from the source impacting plant health.

However, the study by Williams and Yates (2017) found that the conclusion drawn by Matsuki et al. (2016), in respect of the impact of dust on *T. paynterae paynterae* at Windarling Range, was most likely attributed to the small sample size used in their analysis. Matsuki et al. (2016) used only a small sample of plants (about 1% of the available data) during the critical period between 2004 and 2005 when high mortality rates occurred, whereas Williams and Yates (2017) analysed the complete dataset for survival *T. paynterae paynterae* plants at Windarling Range in 2005 (Yates & Williams 2005). The aspect of the position in which the plant was growing was also as an important factor affecting mortality rate (Yates & Williams 2005).

Williams and Yates (2017) concluded that there was a substantial impact resulting from the development of the mine. There were exceptionally high mortality rates among plants adjacent to the mine, especially those with an easterly or south-easterly aspect facing the mine which coincided with increased exposure of plants adjacent to the mine pit and with the high levels of dust recorded at the time. Subsequently, as the mine deepened and dust loads reduced, mortality rates declined.

Generally, variability of plant health correlated with climatic variation such as rainfall and temperature. Other mining operations have adopted a management target of 10 g/m² in the absence of evidence to suggest at what dust loads certain species may become stressed and experience a reduction in health. The management target of 10 g/m² has been adopted for this FVMP, however, this will be reviewed based on monitoring of the health and condition of the keystone species and may be reduced or increased after the initial 24 months of monitoring. As detailed by section 4.1 an early response trigger of 5 g/m² has also been adopted.



2.4.4 Census of conservation significant species

In order to increase understanding as to the degree of potential long term impacts of the Project on conservation significant species, a census of the highest ranked conservation significant species will be undertaken in 10 years if a Proposal related decline is identified at VEZ monitoring locations. This census will be designed in consultation with an appropriate flora specialist consistent with monitoring undertaken within this plan.

2.4.5 Weed and dieback monitoring

Weed and dieback monitoring will be undertaken in conjunction with plant condition monitoring, as outlined in section 2.4.1 at both VEZs and control sites. This will allow for quarterly monitoring for the first 12 months, with the frequency to be reviewed following this period.

Furthermore, annual monitoring across the Development Envelope will be undertaken for the occurrence of new weeds, the spread of existing weeds and evidence of dieback.

A Dieback Management Plan will be produced and provided to DBCA following the completion of baseline monitoring. This plan will include *Phytophthora* (dieback) management controls such as signage, clean down points, vehicle hygiene and the inspection and monitoring of dieback infested areas.

2.4.6 Flora and vegetation monitoring - rehabilitation and closure

Monitoring of flora and vegetation as outlined in (sections 2.4.1 and 2.4.2) will be continued during rehabilitation and closure to confirm that rehabilitation and closure activities and outcomes are not contributing to any increased impacts on conservation significant flora species. Populations of conservation significant flora and vegetation within protection areas (Table 2-5) will continue for a suitable time period after mining has ceased and whilst rehabilitation and closure actions are ongoing.

2.5 Reporting

2.5.1 Key Environmental Outcome

A summary of all monitoring results against trigger and threshold criteria will be provided within the Annual Compliance Assessment Report. The summary will detail if any trigger or threshold criteria has been exceeded and the actions taken to prevent a recurrence and/or remediation strategies. Raw monitoring data against management measures such as dust deposition, weeds, fire and climate (such as annual rainfall and temperature) will also be provided for comparison to flora and vegetation health and condition monitoring.

Reporting of exceedances of threshold criteria will be undertaken to meet condition 6-7 of MS1118. This shall include:

- A report on the exceedance in writing to the EPA within seven (7) days of the exceedance being identified;
- An investigation to determine the cause of the threshold criteria being exceeded;
- An investigation to provide information to the EPA to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and
- a report to the EPA within twenty-one (21) days of the exceedance being reported as required by condition 6-7(1) of MS1118. The report shall include:
 - details of threshold contingency actions implemented;
 - the effectiveness of the threshold contingency actions implemented, against the threshold criteria;
 - the findings of the investigations required by conditions 6-7(3) and 6-7(4) of MS1118;
 - measures to prevent the threshold criteria being exceeded in the future;
 - measures to prevent, control or abate the environmental harm which may have occurred; and



- justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.



3. Pre-Clearance Surveys

Pre-clearance surveys have been conducted over the Proposed Layout. As a result of surveys, additional priority flora species were identified and mitigation measures proposed.

Prior to any ground disturbance, pre-clearance surveys will be undertaken as per the methodology detailed in Section 3.1. Any future pre-clearance survey reports will be communicated to EPA and include updated population impacts.

3.1 Methodology, timing and limitations

3.1.1 Methodology

Preclearance surveys were coordinated by Mattiske Consulting (Mattiske). Botanists from Mattiske utilised tablets to display all relevant information, including:

- Proposed layout of mine footprint identified for vegetation clearing within the Development Envelope,
- 10 m spaced transect lines (in a north-south and east-west orientation) across the entire area requiring vegetation clearing, and
- Previously recorded locations of conservation significant flora within the Development Envelope (prevent double counting of previous records).
- Each of the 10 m spaced transect lines were walked and the GPS coordinate of each species of conservation significant species was recorded. Specimens of all known conservation significant taxa and any plant not readily identifiable in the field as non-conservation significant taxa were collected for verification and identification.

3.1.2 Timing

Preclearance surveys were completed between March and November 2019 by Mattiske (Mattiske 2019; Appendix A).

3.1.3 Limitations

Two minor constraints were associated with the preclearance surveys:

- Proportion of flora collect and identified as the surveys took place over 16 months in all months of the year (excluding December to February). A review of the flower periods ensured surveys were conducted at the appropriate time of year with consistent botanists to increase the confidence in identification of conservation significant species. It is acknowledged that the identification of some species is difficult outside the flower period (e.g. *Chorizema circinale*) or absence of flowers makes identification of non-conservation significant species from conservation significant species from the same genus (e.g. species of *Baeckea*, *Rinzia*, *Verticordia* and other small leafed myrtle species) difficult. This constraint was overcome through targeting areas identified as likely habitat for the above species during respective flowering periods and ensuring a range of vegetation communities were searched during respective flowering periods.
- Timing, weather and season as the surveys were undertaken over the autumn, winter and spring months, whereas the EPA guidance recommends surveys in the area to be undertaken after the main rainfall period (winter). However, the majority of species were identifiable when sterile. For species that are potentially more problematic for identification, as discussed above, the timing of surveys occurred during respective flowering periods.
- In future, all pre-clearance surveys will be conducted after the main rainfall period (winter), preferably in spring. The surveys will be considered valid for a period of five years from the time the field component of the survey is completed unless otherwise stated in the survey report. For each pre-clearance area, vegetation clearing must be undertaken within this five year period, or another pre-clearance survey will be required.

3.2 Pre-clearance survey results

The pre-clearance survey report (Mattiske 2019) is provided in Appendix A. As a result of the pre-clearance surveys and preceding regional surveys, a total of 29 conservation significant species



were recorded (Figure 3-1), with species potentially impacted detailed in Table 3-1. This included seven species that had not been previously identified from past surveys. A summary of the additional species found through pre-clearance surveys is provided below.

***Eremophila verticillata* (T)**

A total of 3,217 *Eremophila verticillata* (T) were recorded to the south of the DE the pre-clearance and subsequent surveys. An additional 844 individuals were recorded to the east of the existing TSF in vegetation community W9.

At the regional level, *Eremophila verticillata* (T) has previously only been recorded in the Mallee IBRA bioregion, approximately 115 km to 150 km to the south-west of the DE. No *Eremophila verticillata* (T) would be directly impacted by clearing associated within the DE.

***Hibbertia* sp. Mt Holland (B. Ellery BE 1437)**

This species is a new taxon, identified in 2019 (13 individuals) within a small drainage channel (previously disturbed) within the Processing Plant. Further regional surveys have identified individuals to the east of the Project.

***Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (Priority 1)**

This species was initially uncovered in 2019. It was recorded principally within the fire burnt areas of the W11 vegetation community and disturbed areas. It has been identified to a lesser extent in the W13 and W16 vegetation communities. No regional records exist.

***Baeckea* sp. Forrestania (K.R. Newbey 1105) (Priority 1)**

This species has been recorded in the W6, W9 and W13 vegetation communities. The species has been recorded regionally in the Coolgardie and Mallee bioregions. It is noted that this species is in the process of a taxonomic review and will no longer be considered a Priority species.

***Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (Priority 1)**

This species was recorded within the W13 and W8 vegetation community. Regionally, it had only been recorded within the Coolgardie bioregion with five known records, however further individuals have been recorded.

***Eremophila biserrata* (Priority 4)**

This species was recorded on cleared areas within the accommodation village and was not associated with a specific vegetation community, with the majority located along or near Forrestania Road approximately 10 km south of the Project.

***Gyrostemon ditrigynus* (Priority 4)**

This species was recorded exclusively within cleared land (drill pads) and was not recorded within undisturbed vegetation. Regionally, it has been recorded within the Coolgardie and Mallee bioregions with a majority of records to the south and south-east of the Project.

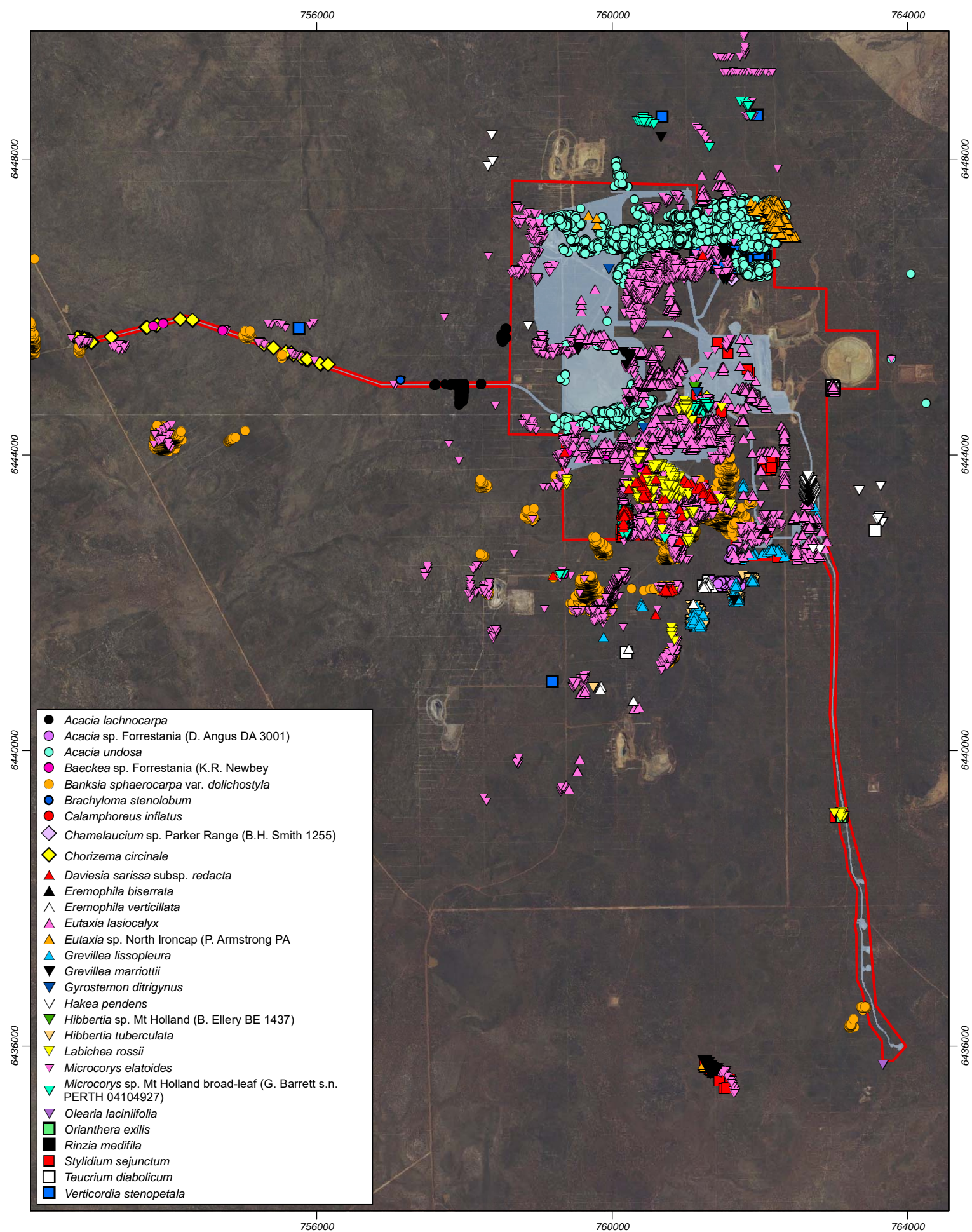


Figure 3.1: Pre-clearance survey conservation significant flora records





Table 3-1: Conservation significant flora recorded by pre-clearance surveys

Species	Conservation Status		Regional Individuals	Local Individuals	Directly Impacted Individuals	Local (%)	Regional (%)
	BC Act	EPBC Act					
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001)	P1		0	6,654	0	0.00	0.00
<i>Acacia lachnocarpa</i>	P1		0	3,089	67	2.17	2.17
<i>Acacia undosa</i>	P3		126	58,479	11,678	19.97	19.93
<i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105)	P1		1	20	0	0.00	0.00
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	T	V	3,906	20,709 ¹	2	0.01	0.01
<i>Brachyloma stenolobum</i>	P1		500	152	0	0.00	0.00
<i>Calamphoreus inflatus</i>	P4		123,343	2,104	0	0.00	0.00
<i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255)	P1		37	2	0	0.00	0.00
<i>Chorizema circinale</i>	P3		425	170	18	10.59	3.03
<i>Daviesia sarissa</i> subsp. <i>redacta</i>	P2		12	489	5	1.02	1.00
<i>Eremophila biserrata</i>	P4		1,267	354	3	0.85	0.19
<i>Eremophila verticillata</i>	T	E	1,903	3,217	0	0.00	0.00
<i>Eutaxia lasiocalyx</i>	P2		9	42,677	6,250	14.65	14.64
<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	P1		3	1	3	0.13	0.13
<i>Grevillea lissopleura</i>	P1		8	1,815	1	0.06	0.05
<i>Grevillea marriottii</i>	P1		0	9,837	15	0.15	0.15
<i>Gyrostemon ditrigynus</i>	P4		52,601	28	3	10.71	0.01
<i>Hakea pendens</i>	P3		129	1,151	0	0.00	0.00
<i>Hibbertia tuberculata</i> K.R. Thiele, sp. nov.	P1		0	4,732	0	0.00	0.00
<i>Hibbertia</i> sp. nov.			0	13	13	100.00	100.00
<i>Labichea rossii</i>	P1		101	3,985	210	5.14	5.14
<i>Microcorys elatoides</i>	P1		0	59,814	8,641	14.60	14.60
<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)	P1		0	1,983	233	11.75	11.75
<i>Olearia laciniifolia</i>	P2		60	2	0	0.00	0.00
<i>Orianthera exilis</i>	P2		61	3	0	0.00	0.00

¹ A review of records indicates local and regional individual populations are inaccurate. Refer to Table 3-3 for revised population data



Species	Conservation Status		Regional Individuals	Local Individuals	Directly Impacted Individuals	Local (%)	Regional (%)
	BC Act	EPBC Act					
<i>Rinzia medifila</i>	P1		0	1	0	0.00	0.00
<i>Stylidium sejunctum</i>	P1		5,409	678	216	31.81	3.55
<i>Teucrium</i> sp. dwarf (R Davis 8813)	P3		23,557	13,196	365	1.76	0.82
<i>Verticordia stenopetala</i>	P3		47	1,588	20	1.26	1.22



3.3 Population Impact Target

The EPA Report 1651 noted that the majority of conservation significant species impacted (directly or indirectly) by the Proposal were below a 10% total regional impact level. The exceptions were *Microcorys elatoides* (15.93%) and *Acacia undosa* (11.47%). *Microcorys elatoides*, *Banksia sphaerocarpa* var. *dolichostyla* and *Acacia lachnocarpa* were the focus of EPA assessment. Based on the EPA Report, a 10% impact to conservation significant species is considered appropriate, with the exception of *Microcorys elatoides* and *Acacia undosa*, of which a higher impact (15.93% and 11.47% respectively) is considered acceptable.

As a result of pre-clearance surveys, additional species and potential impacts have been identified. Therefore, following consultation with EPA, a population impact target of 10% regional population total (direct and indirect) impacts will be implemented to all conservation significant flora species (excluding EPBC Act listed species, *Microcorys elatoides* and *Acacia undosa*). The population impact target for *Microcorys elatoides* and *Acacia undosa* will be 15.93% and 11.47% respectively. Any impact to EPBC Act listed species (excluding currently approved impacts to *Banksia sphaerocarpa* var. *dolichostyla*) will require further consultation with regulators.

To ensure this management target is met mitigation measure are proposed, as detailed in Section 3.4. Covalent will not undertake any Project activities which may exceed the following population impact targets:

- 10% regional population total impact for any conservation significant species; with the exception of total impact to 6,957 individuals of *Microcorys elatoides* and 11.47% regional population total impact for *Acacia undosa*;
- Any impact to EPBC Act listed species; with the exception of 0.27% regional population total impact for *Banksia sphaerocarpa* var. *dolichostyla*

3.4 Mitigation measures

In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, the resulting mitigation measures follow the below hierarchy:

- Avoidance - Adjust the proposed mine layout to avoid direct impacts and minimise indirect impacts to ensure population impact targets are not exceeded.
- Surveys - Undertake further surveys within local and regional areas to reduce the potential impact to an acceptable level based on 10% total threshold, based on EPA Report.
- Minimise – minimise indirect impacts to species through implementation of FVMP.
- Research - Commit to research programs with the aim of developing revegetation practices which will result in the reestablishment of the individuals to areas cleared of vegetation.
- Offsets - Apply the significant residual impacts model (EPA 2014) to determine the requirement for offsets.

Further detail on the mitigation hierarchy is detailed in Table 3-2.


Table 3-2: Application of mitigation hierarchy for conservation significant flora

#	Mitigation Measure	Action	Timeframe
1	Adjust site layout to ensure population impact target is not exceeded	Investigate alternate site layouts whereby the project may still be feasible, but reduces direct and potential indirect impacts.	As required.
		A review of the Proposed Layout shall be undertaken to ensure population impact targets (Section 3.2) are not exceeded. If any clearing is planned outside of the Proposed Layout, revised population impacts (as per Table 3-3) will be undertaken to ensure Population Impact Targets are met.	Prior to clearing
		Implementation of an internal clearing permit procedure which includes demarcation of clearing area to ensure accurate clearing boundaries	Prior to clearing
2	Undertake further surveys within local and regional areas to reduce the direct impact to an acceptable level against impact assessment criteria	Identify areas locally and regionally which may provide habitat for the species	As required.
		Undertake further surveys in accordance with relevant technical guidance (EPA 2016a) and within the appropriate season.	Within 12 months of identifying further survey areas
		Develop and present survey report (including impact assessment against management targets) to EPA and DBCA	Within two months of completing surveys
		EPA and DBCA review and accept report	Within three months of receiving final survey report
3	Minimise indirect impacts through implementation of FVMP	Implement FVMP management measures, including monitoring requirements	Ongoing.
4	Develop research programs for species revegetation	In consultation with research institutions, investigate programs to research and develop a greater scientific understanding of the species for the purpose of revegetation. Develop proposal and scope for the research program. Potential topics may include: <ul style="list-style-type: none"> Habitat modelling and necessary biotic and abiotic factors for establishment and long-term survival Seed ecology including germination cues Seedling establishment via the collection and growth of cuttings Revegetation trials 	Within three months of Mitigation Measures 1, 2 and 3 proving to be unfeasible
		Submit research proposal to DBCA for review and acceptance.	Within one month of receiving research proposal.
		Implement research proposal and produce report on the outcomes.	Complete within 24 months of receiving DBCA acceptance.
		Submit report to EPA and DBCA on research outcomes for acceptance.	Review and accept within three months of receiving report.
		Implement research program outcomes.	Within one month of accepting the report.
5	Apply the Residual Significant Impact Model (RSIM)	Apply the RSIM as per the WA Environmental Offset Guidelines (2014)	Within three months of Mitigation Measures 1, 2 and 3 proving to be unfeasible
		Liaise with EPA and DBCA on the outcomes of the RISM and further actions required.	Within one month of applying the model.

As per mitigation measure 2, Covalent has undertaken further botanical surveys to increase flora population numbers of species potentially impacted by the Project. A summary of additional



surveys are included in Table 1-2. As a result of these surveys, the majority of impacted species are below 10%. The exception is *Microcorys elatoides* and *Acacia undosa*. It is noted that offsets are proposed for *Microcorys elatoides* and a conservative estimate is used for *Acacia undosa* (with 11.47% impact included in the Response to Submissions).

As part of Mitigation Measure 3, further surveys were undertaken, as detailed in Table 1-2. The resulting population impacts are detailed in Table 3-3 and shown in Figure 3-2 to Figure 3-7.



Table 3-3: Conservation significant flora located within Development Envelope recorded by regional surveys

Species	Conservation Status	Individuals				Regional Population Impacts		
		Regional	Direct Impacts	Indirect Impacts	Total Impacts	% Direct	% Potential Indirect	% Total
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	Threatened	18,302		29	29	0.00%	0.16%	0.16%
<i>Eremophila verticillata</i>	Threatened	15,969				0.00%	0.00%	0.00%
<i>Acacia lachnocarpa</i>	Priority 1	13,876	567	295	862	4.09%	2.13%	6.21%
<i>Baeckea</i> sp. <i>Forrestania</i> (K.R. Newbey 1105)	Priority 1	234	17	1	18	7.26%	0.43%	7.69%
<i>Chamelaucium</i> sp. <i>Parker Range</i> (B.H. Smith 1255)	Priority 1	1,396	1	40	41	0.07%	2.87%	2.94%
<i>Eutaxia</i> sp. <i>North Ironcap</i>	Priority 1	2,352	3		3	0.13%	0.00%	0.13%
<i>Grevillea lissopleura</i>	Priority 1	2,710		5	5	0.00%	0.18%	0.18%
<i>Grevillea marriottii</i>	Priority 1	11,992	15	9	24	0.13%	0.08%	0.20%
<i>Hibbertia</i> sp. Mt Holland (B. Ellery BE 1437)	Priority 1	1,271	22	-	22	1.73%	0.00%	1.73%
<i>Hibbertia tuberculata</i>	Priority 1	7,020		5	5	0.00%	0.07%	0.07%
<i>Labichea rossii</i>	Priority 1	7,808	400	313	713	5.12%	4.01%	9.13%
<i>Microcorys elatoides</i>	Priority 1	83,185	4,235	2,717	6,952	5.09%	3.27%	8.36%
<i>Microcorys</i> sp. Mt Holland broad-leaf	Priority 1	6,662	379	279	658	5.69%	4.19%	9.88%
<i>Daviesia sarissa</i> subsp. <i>Redacta</i>	Priority 2	1,534	18	24	42	1.17%	1.56%	2.74%
<i>Eutaxia lasiocalyx</i>	Priority 2	163,878	8,544	3,221	11,765	5.21%	1.97%	7.18%
<i>Acacia undosa</i>	Priority 3	161,948	4,459	6,003	10,462	2.75%	3.71%	6.46%
<i>Boronia ternata</i> var. <i>promiscua</i>	Priority 3	368	4	2	6	1.09%	0.54%	1.63%
<i>Chorizema circinale</i>	Priority 3	955	54	27	81	5.65%	2.83%	8.48%
<i>Hakea pendens</i>	Priority 3	1,401		14	14	0.00%	1.00%	1.00%
<i>Stylidium sejunctum</i>	Priority 3	7,349	26	1	27	0.35%	0.01%	0.37%
<i>Teucrium diabolicum</i>	Priority 3	52,286	485	122	607	0.93%	0.23%	1.16%
<i>Verticordia stenopetala</i>	Priority 3	6,524	36	139	175	0.55%	2.13%	2.68%
<i>Eremophila biserrata</i>	Priority 4	1,625	3	-	3	0.18%	0.00%	0.18%
<i>Grevillea neodissecta</i>	Priority 4	3,295	1	22	23	0.03%	0.67%	0.70%
<i>Gyrostemon ditrigynus</i>	Priority 4	52,809	13	-	13	0.02%	0.00%	0.02%

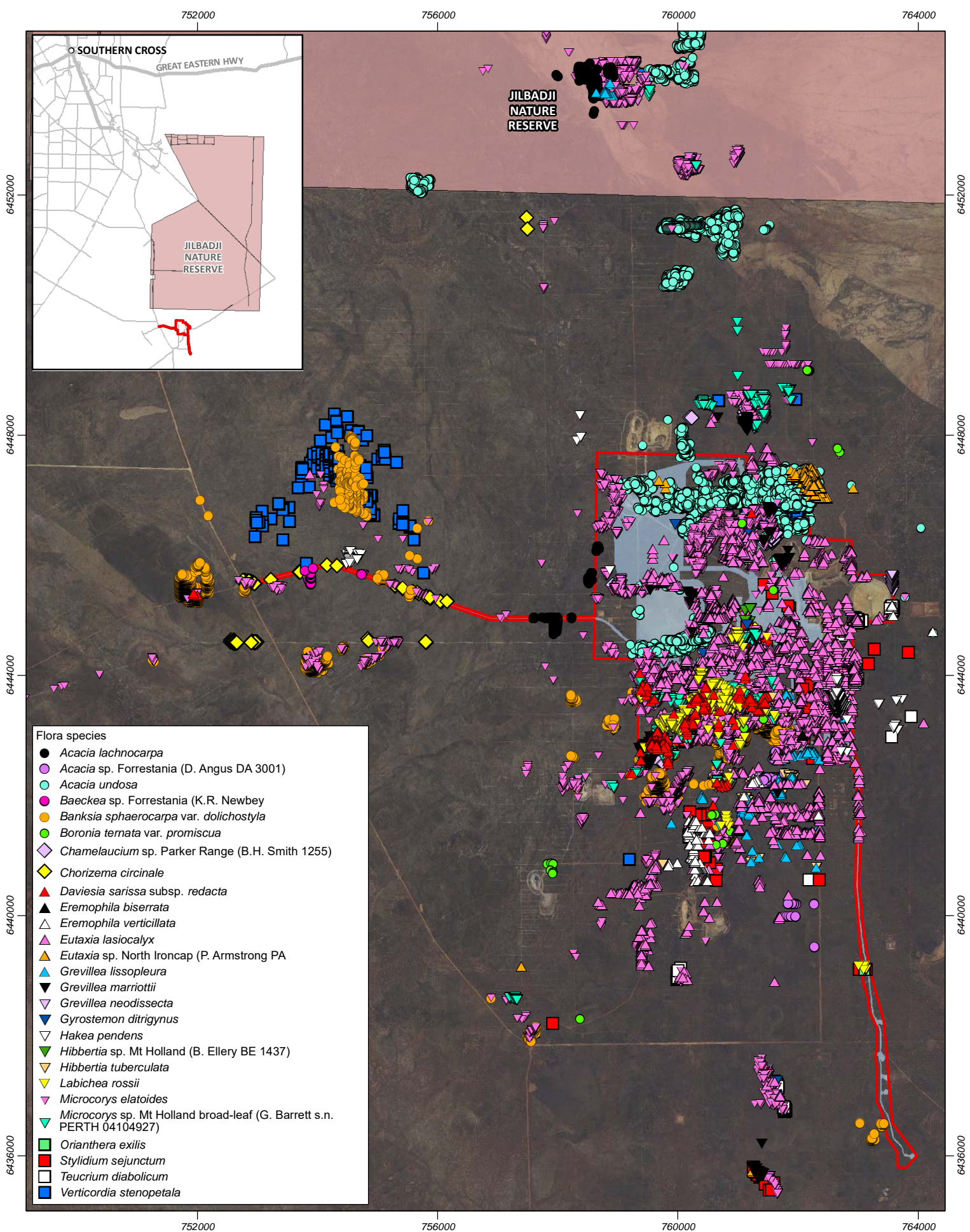


Figure 3-2: Regional survey conservation significant flora records



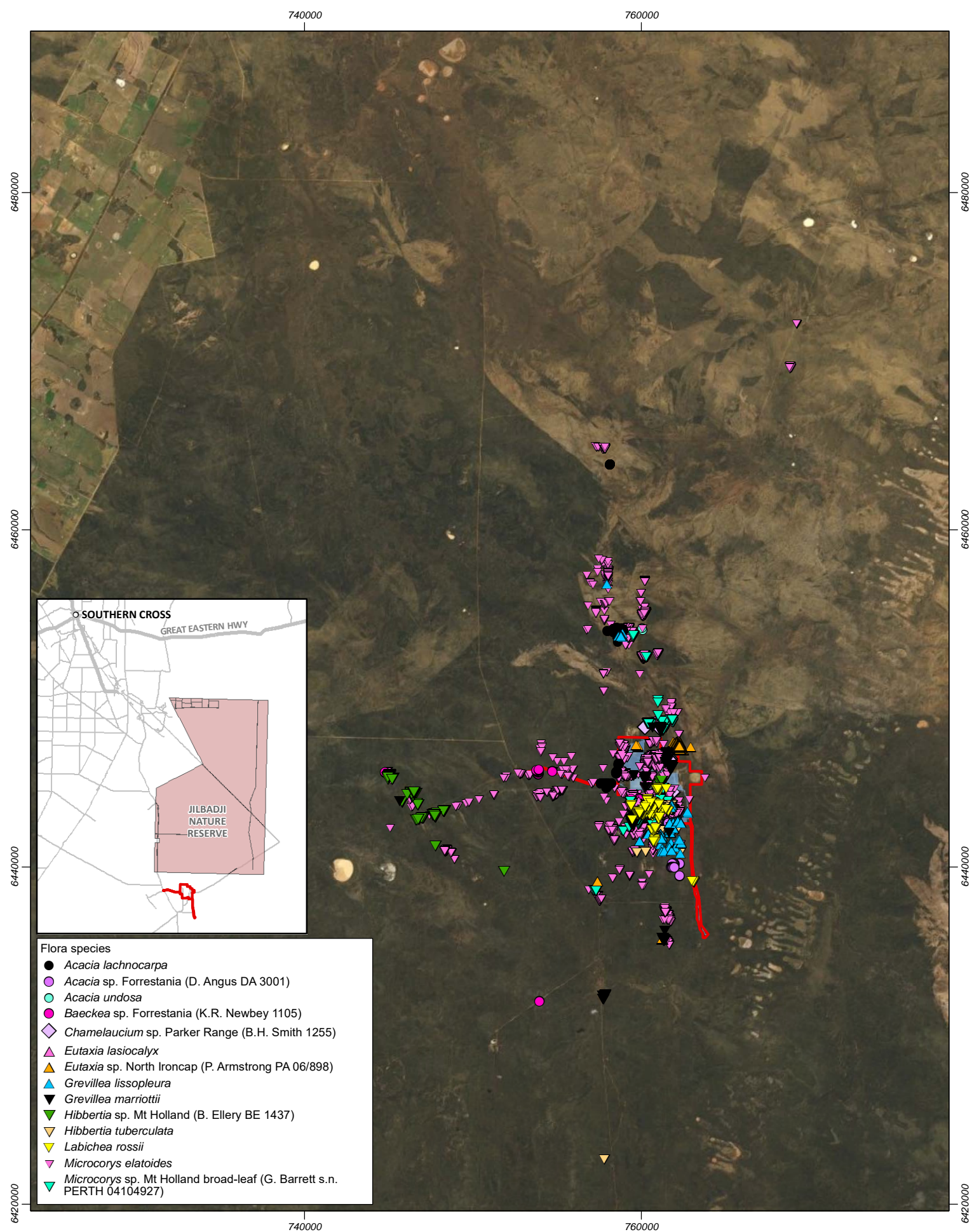
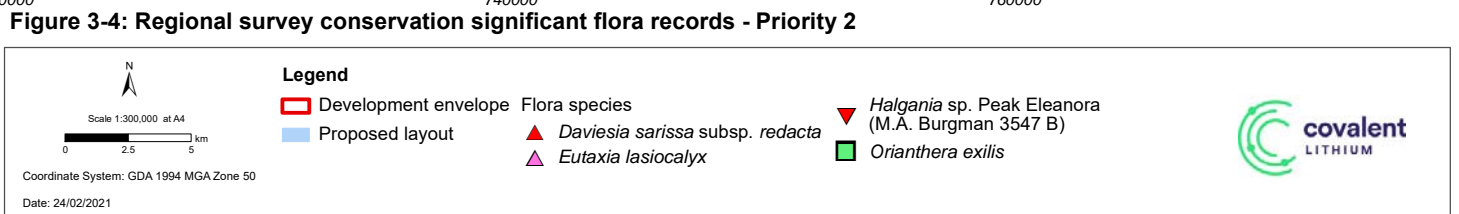
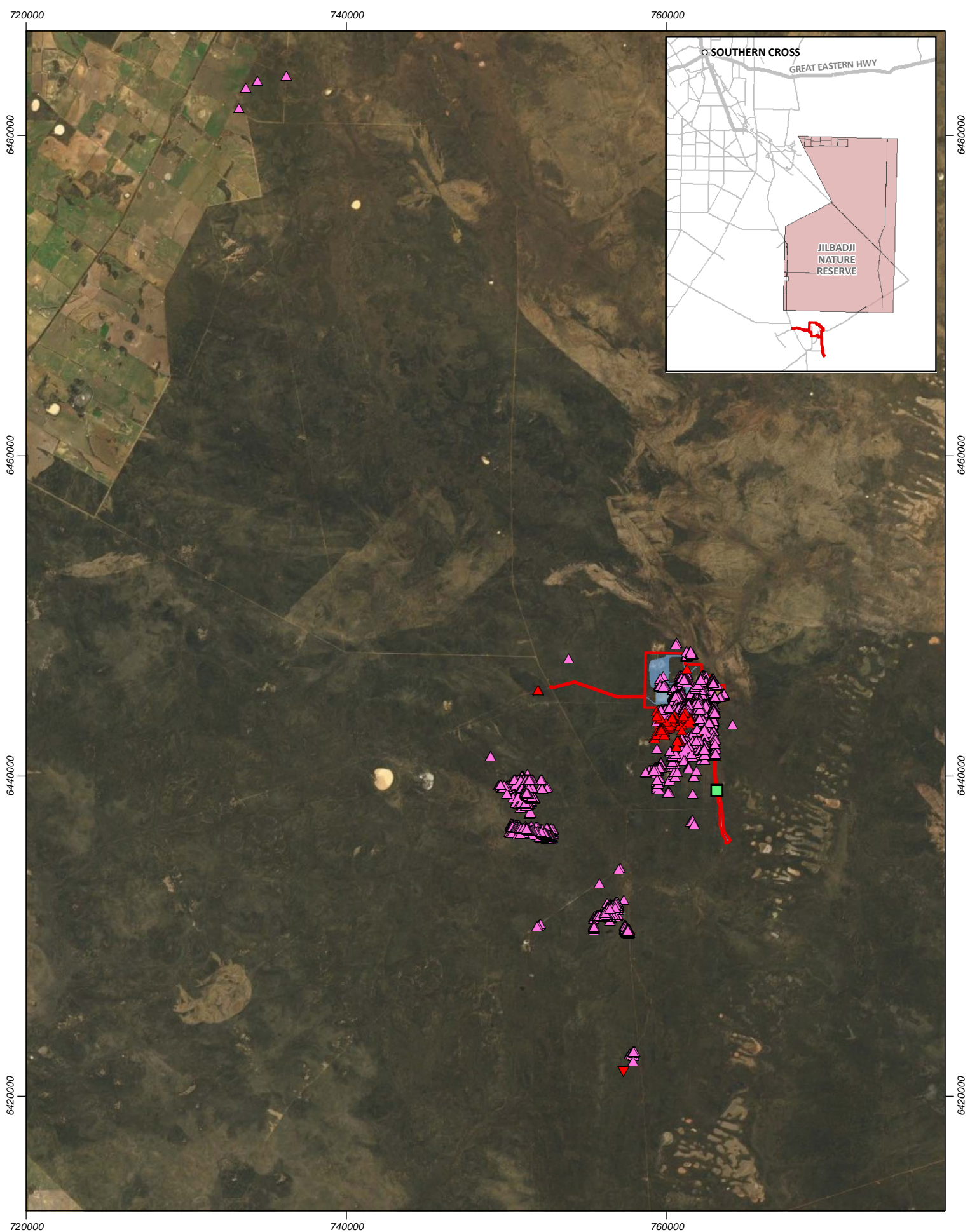


Figure 3-3: Regional survey conservation significant flora records - Priority 1





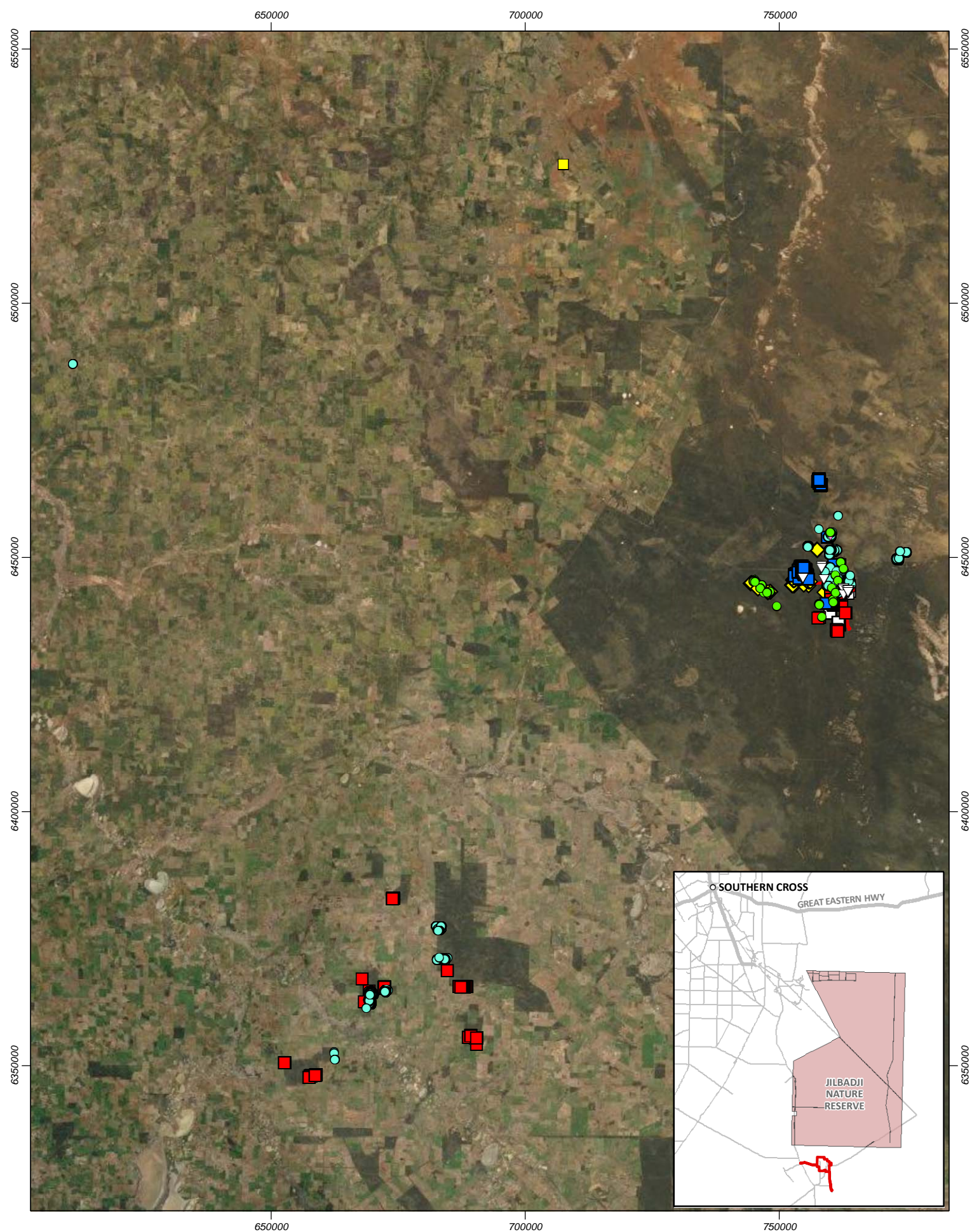
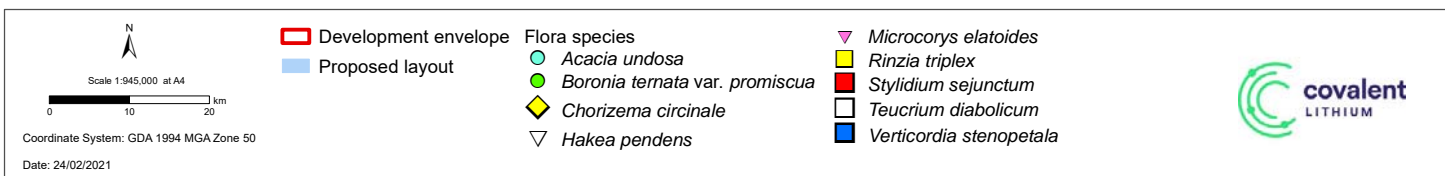


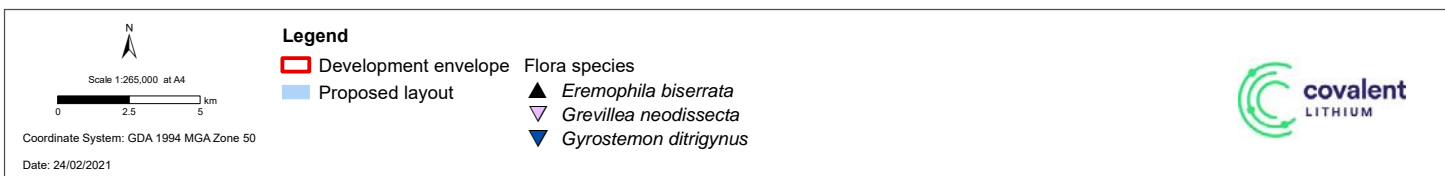
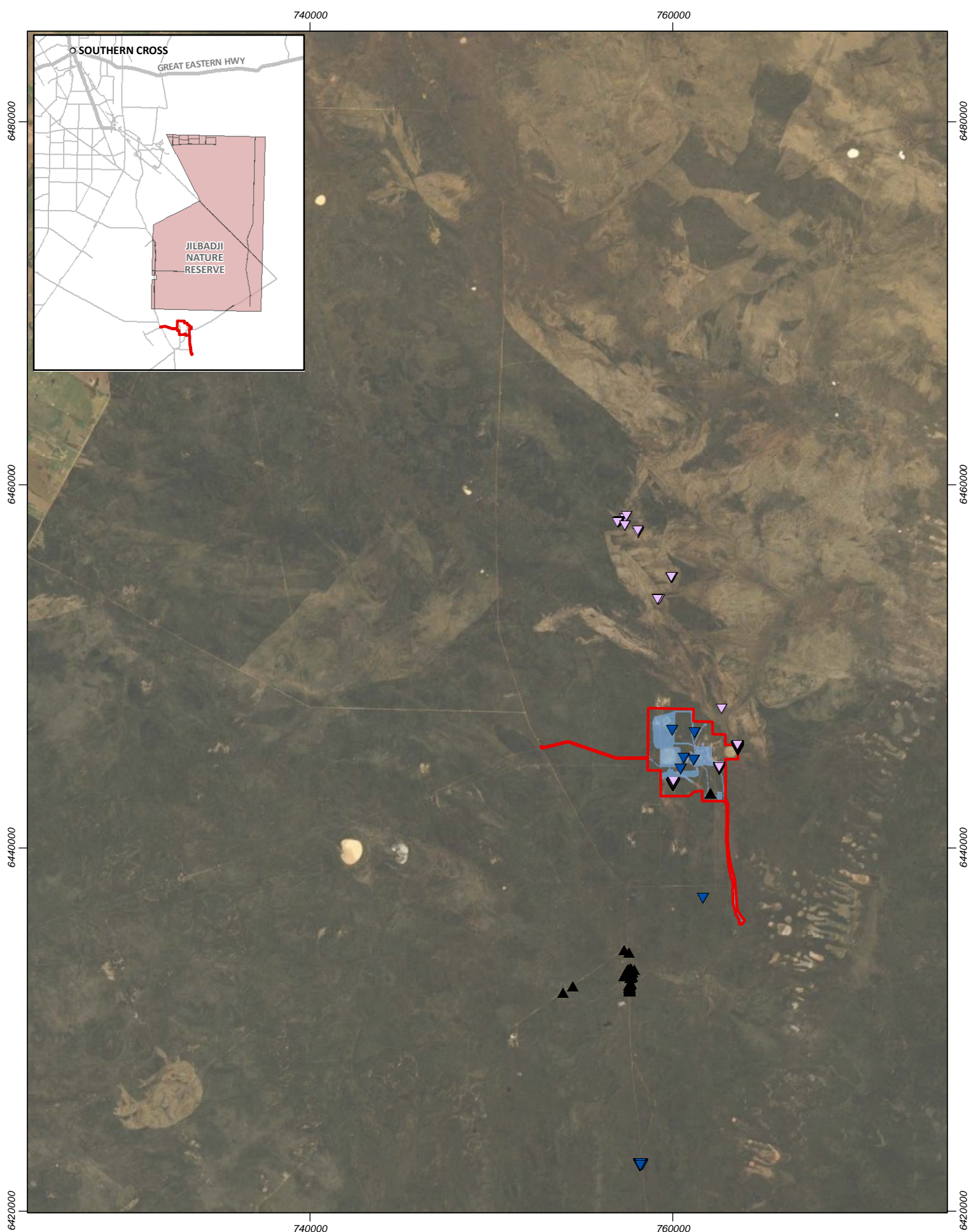
Figure 3-5: Regional survey conservation significant flora records - Priority 3



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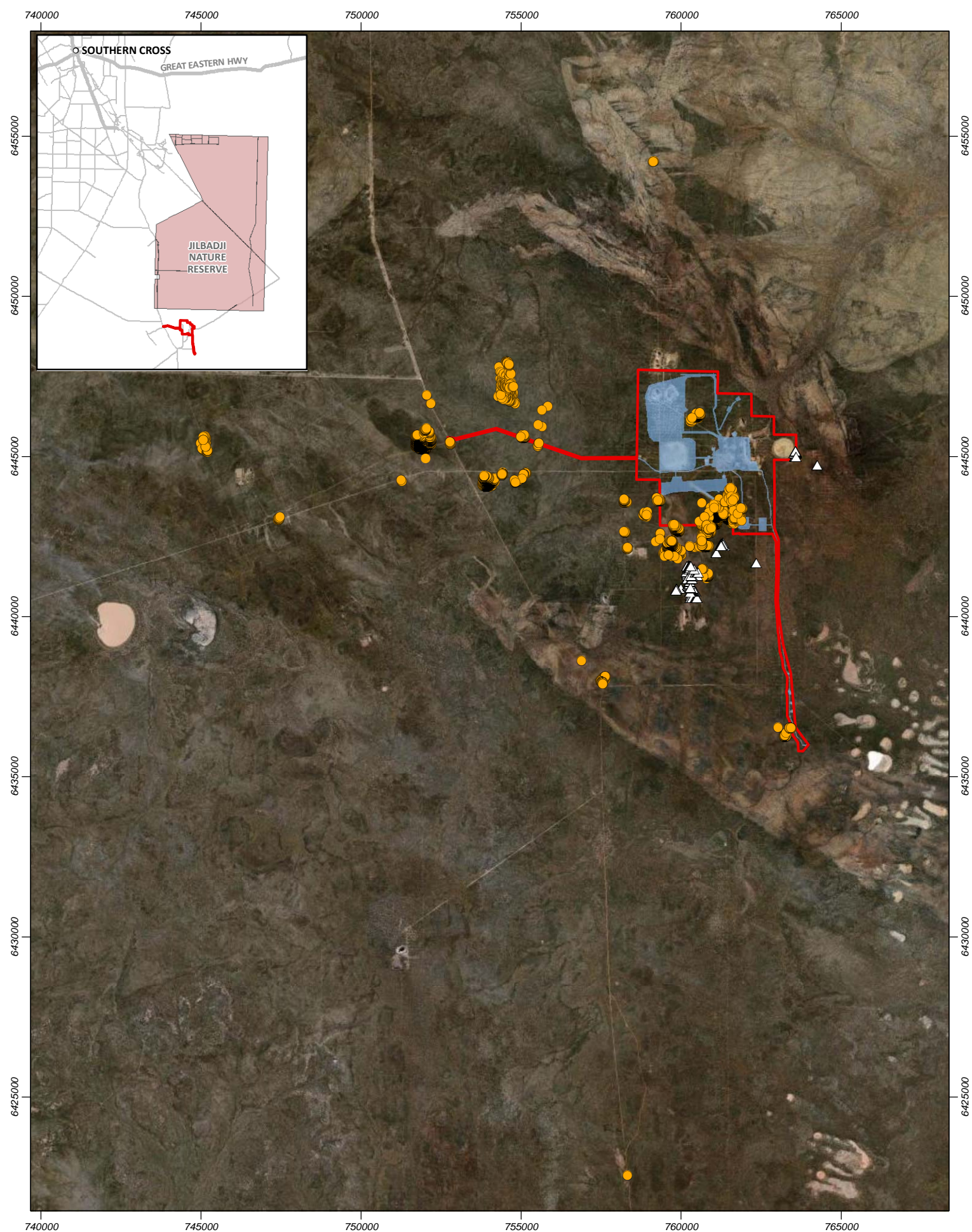
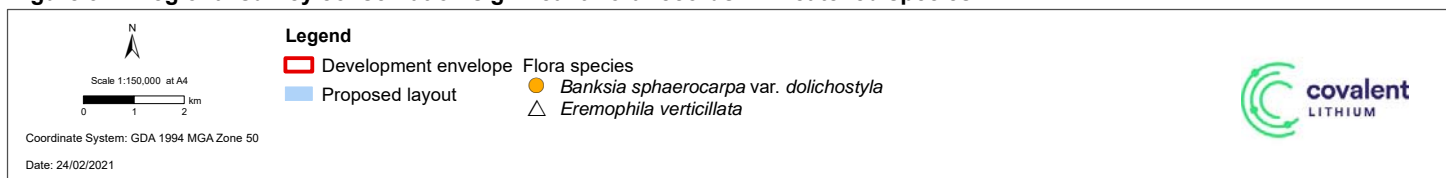


Figure 3-7: Regional survey conservation significant flora records - Threatened species



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4. Adaptive Management and FVMP Review

Covalent recognises the dynamic nature of ecosystems and supports adaptive management under this FVMP. Adaptive management involves:

- implementing mitigation measures
- monitoring and evaluation against management targets (including early response triggers) and environmental criteria (including triggers and thresholds)
- systematically adapting management and mitigation measures and monitoring to meet the environmental objectives.

Any changes to the Project will instigate a review and consideration of management actions. Assumptions and uncertainties will be evaluated against collected monitoring data on a recurrent basis in a process of continual improvement and establishing early response indicators/criteria. Any review and consideration of management actions or additions to this plan made in relation to adaptive management will be submitted to DWER within 21 days for formal review. Examples of adaptive management throughout operations include:

- the introduction of a different / alternative monitoring initiative to better understand monitoring of the VEZs
- the outcome of additional preclearance surveys which significantly change conservation significant flora species population impacts
- the identification of more effective trigger criteria or early response triggers in light of more comprehensive monitoring information
- updated modelling and revision of trigger criteria or early response triggers in a system responding differently to that predicted in original modelling, for example:
 - The <0.6 index of Chlorophyll fluorescence (CF) CF is applied for plant health monitoring to indicate significant decline(s) in plant health and condition as outlined in Table 2-1. The relative CF measure is both species and environmentally specific. The applicability and appropriateness of this trigger will be reviewed once baseline data has been collected over two seasons. Should triggers be exceeded at any point, monitoring intensity shall be reviewed, and potentially increased if required and remain increased until such time as the trigger is no longer exceeded.
 - A management target of 10 g/m² is set for dust monitoring in the absence of evidence to suggest at what dust loads certain plant species may become stressed and experience a reduction in health. The management target of 10 g/m² has been adopted for this FVMP, however, this will be reviewed based on monitoring of the health and condition of the keystone species and may be reduced or increased after the initial 24 months of monitoring.
- changes to management actions and targets in response to monitoring data
- changes in technology.

4.1 Early response triggers

Early response triggers have been established for the management-based provisions in Table 2-3, as shown in Table 4-2.



Table 4-2: Early response triggers and actions

Management targets	Early response trigger	Early response action	Early response trigger justification
Minimisation of dust emissions	<ul style="list-style-type: none"> Dust deposition results at a single VEZ site exceeds 5 g/m² for two consecutive months. 	<ul style="list-style-type: none"> Report internally that early response trigger has been met in accordance with internal procedures. Review dust monitoring program. Determine whether the changes observed in the VEZ are comparable with control monitoring sites. Review dust mitigation measures Investigate and determine improvement strategy Investigate the cause of the exceedance to determine if it is attributable to proposal related activities. Where the trigger is attributed to clearing, construction or operational activities, report the exceedance to DWER within 7 days of the exceedance being identified. 	<p>Whilst 10 g/m² a month is the adopted management target for dust deposition, adopting an early response trigger limit will identify trends of increasing dust emissions. Also, managing dust deposition to 5 mg/m² or less will reduce the risk of dust deposition leading to a decline in plant health or function.</p>
Minimise new weeds introduced to site	<ul style="list-style-type: none"> One new weed species sighted during annual monitoring but with limited to negligible coverage. 	<ul style="list-style-type: none"> Report internally that early response trigger has been met in accordance with internal procedures. Review weed control programme and amend as required. Staff training and awareness to include information on weed species and preventative measures such as vehicle/ weed hygiene procedures. Review weed monitoring program. Trigger response actions may include the following: <ul style="list-style-type: none"> Review monitoring frequency (quarterly for initial 12 months then annually), adjust accordingly. Adjust timing of monitoring if appropriate, so that infestations of invasive species that establish can be eradicated before the plants can flower and set seed. Review suitability of weed monitoring locations, adjust accordingly. Determine whether the changes observed are comparable with control monitoring sites. If after the two consecutive monitoring events, a threshold exceedance has not been identified, resume standard monitoring. 	<p>The potential for indirect effect on the health of vegetation within the VEZs due to weed impacts is currently unknown as impacts to populations have not been quantified. As population monitoring data is gathered, trending will indicate any threats (including weeds) and acceptable population changes. In the interim, the early response trigger has been established to identify trends with relation to weeds that could result in a potential indirect impact to flora and vegetation of the VEZ and provide an indication if the management actions detailed in Table 2-3 require review.</p>



Table 4-2: Early response triggers and actions

Management targets	Early response trigger	Early response action	Early response trigger justification
Prevent fires attributed to mining and associated activities	<ul style="list-style-type: none"> A fire occurrence within the Development Envelope that impacts on native vegetation. 	<ul style="list-style-type: none"> Report internally that early response trigger has been met in accordance with internal procedures. Internal audit of fire management plan Review fire mitigation strategies to limit spread of fire. Staff training and awareness to include information on the prevention and management of fires. Investigate the cause of the exceedance to determine if it is attributable to proposal related activities. 	The management actions are considered sufficient to prevent fire impacts to the VEZs. However, in the event a fire occurs within the Development Envelope that impacts on native vegetation, this is an indicator that further refinement of the management actions is required.
<p>10% regional population total impact for any conservation significant species; with the exception of total impact to 6,957 individuals of <i>Microcorys elatoides</i> and 11.47% regional population total impact for <i>Acacia undosa</i>;</p> <p>Any impact to EPBC Act listed species; with the exception of 0.27% regional population total impact for <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i></p>	<ul style="list-style-type: none"> Pre-clearance surveys result in total impacts to a conservation significant species population impact exceeding 10% 	<ul style="list-style-type: none"> Apply the Mitigation Measures detailed in Section 3.4 Undertake consultation with EPA and DBCA regarding outcome of mitigation measures Project activities which may exceed the regional population total impact target will not proceed. 	The mitigation measures will be applied to decrease population impacts prior to exceeding the management target.



4.2 Benchmarking and Best-Practice

For some environmental factors, environmental outcomes may include compliance with state, national or international standards, guidance or legislation. Covalent will conduct ongoing benchmarking against best practice options. Adaptive management in this context may include initiatives to implement improvements in technology and emission control technologies to meet best-practice in the relevant industry, proponent-driven improvements in operations, and keeping up-to-date with improvements in monitoring methods and standards for implementation.

4.3 Plan Revisions

The proponent will update this Management Plan as required to include any adaptive management updates based on information gathered from monitoring results. These amendments will involve regulatory consultation and be submitted to EPA for review. If the Proponent has gathered sufficient information through research and long-term monitoring to propose revisions to management targets, the plan may be revised and resubmitted to the EPA for approval.

Furthermore, in accordance with condition 6-8(2) of MS1118, the proponent will update this FVMP as and when directed by the EPA.

5. Stakeholder consultation

5.1 Key Stakeholders

Covalent have undertaken extensive consultation with key stakeholders, including:

- State government
- Federal government
- Local government
- Non-government organisations and interest groups.

A comprehensive list of key stakeholders is provided in Table 5-1.

Table 5-1: Key Stakeholders

Stakeholder Group	Stakeholder	Key Interests
State Government	Environmental Protection Authority (EPA)	<ul style="list-style-type: none"> • Administration of the <i>Environmental Protection Act 1986</i> (EP Act) • Part IV (EP Act) Environmental Impact Assessments.
	Department of Mines, Industry Regulation and Safety (DMIRS)	<ul style="list-style-type: none"> • Administration of the <i>Mining Act 1978</i> (Mining Act) • Tenement conditions • Mining proposals and programs of work • Mining Rehabilitation Fund (MRF) • Closure and rehabilitation • Safety.
	Department of Biodiversity, Conservation and Attractions (DBCA)	<ul style="list-style-type: none"> • Administration of the <i>Biodiversity Conservation Act 2016</i> (BC Act) • Flora, fauna and habitat conservation.
	Department of Planning, Lands and Heritage (DPLH)	<ul style="list-style-type: none"> • Native title and indigenous requirements • Heritage sites.
	Department of Fire and Emergency Services (DFES)	<ul style="list-style-type: none"> • Emergency services • Fire breaks • Fire reduction.
	Main Roads Western Australia (MRWA)	<ul style="list-style-type: none"> • Use of public roads.
Federal Government	Department of Agriculture, Water and Environment (DAWE)	<ul style="list-style-type: none"> • Administration of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)



		<ul style="list-style-type: none"> Referral and assessment of environmental impact assessments of matters of national environmental significance.
Local Government	Shire of Yilgarn and Shire of Kondinin	<ul style="list-style-type: none"> Use of public roads and infrastructure.
Non-government organisations and interest groups	Conservation Council of Western Australia; Wilderness Society; National Malleefowl Recovery Team	<ul style="list-style-type: none"> Protection of conservation significant species Potential interest in baseline flora and fauna survey data.

5.1.1 Stakeholder Engagement Process

Stakeholder engagement with State Departments and Local Government Authorities commenced in late 2016. The Proponent has since developed and implemented an external stakeholder consultation strategy for ongoing social engagement and community investment. As the joint venture manager, Covalent will be responsible for all engagement moving forward.

The stakeholder consultation strategy has adopted the principles from the Ministerial Council on Mineral and Petroleum Resources (MCMPPR) *Principles for Engagement with Communities and Stakeholders* (2005). This includes:

- open and effective communication:
- two-way communication
- clear, accurate and relevant information
- timeliness
- transparency, requiring a process for communication and feedback
- collaboration, working cooperatively to seek mutually beneficial outcomes
- inclusiveness, with the aim of recognising, understanding and involving stakeholders early and throughout the process
- integrity, with engagement undertaken in a manner that fosters mutual respect and trust.

The outcomes of the consultation strategy are recorded in the Stakeholder Consultation Register. Consultation to date has been comprised predominately of meetings and correspondence with a number of State and Federal Departments and Agencies, Local Government Authorities, Traditional Owners and non-government organisations and interest groups.

The Proponent is committed to ongoing stakeholder identification, communication, engagement and consultation through the planning and approval phase, and through to construction, operational and closure phases of the Project.

5.1.1.1 Stakeholder Consultation

Ongoing stakeholder consultation has been underway since late 2016. Key engagement to date is summarised in the Mining Proposal (approval pending).



6. Definitions

Term	Definition
Adverse	Impacts likely to change the conservation status or significantly change the local population numbers of a species.
Direct impact	Impact through direct loss of conservation significant flora and vegetation from vegetation clearing
Indirect impact	Effects which are considered to potentially reduce the health of flora and vegetation including: <ul style="list-style-type: none"> • dust, during construction and mining operations • weed infestation during construction and mining operations • Change in fire regimes Individuals within a 50m buffer of the proposed mine layout, whereby potential indirect impacts may be predominantly more apparent to flora and vegetation. This is based on the DWER Clearing Regulation Fact Sheet 24: Environmentally Sensitive Areas (August 2014), whereby a declared environmentally sensitive area is considered the area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located.
Plant condition	Qualitative measure of the condition of single plants based on leaf colour, new growth, foliage cover and general plant vigour.
Plant health	Quantitative measure of plant physiological function
Rate of mortality	Individual plant mortalities over a time period
Weeds	Flora species that are non-native to the bioregion
Unauthorised clearing	Clearing of vegetation or individual flora species without an approved internal clearing permit.



7. Acronyms and short titles

Abbreviation	Full Description
BC Act	<i>Biodiversity Conservation Act 2016</i>
CAR	Compliance Assessment Report
DBCA	Department of Biodiversity, Conservation, and Attractions
DFES	Department of Fire and Emergency Services
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESD	Environmental Scoping Document
FVMP	Flora and Vegetation Management Plan
IUCN	International Union of Conservation of Nature
MCMPR	Ministerial Council on Mineral and Petroleum Resources
MNES	Matter of National environmental significance
NMRT	National Malleefowl Recovery Team
PER	Public Environmental Review
SQM	Sociedad Química y Minera
TSF	Tailings Storage Facility
VEZ	Vegetation Exclusion Zone
WRD	Waste Rock Dump



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Appendix A Preclearance Survey Report

THREATENED AND PRIORITY FLORA ASSESSMENT

EARL GREY LITHIUM PROJECT

PRE-CLEARANCE SURVEYS

Prepared By



Mattiske Consulting Pty Ltd

Prepared For
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December 2019



DOCUMENT STATUS				
DOCUMENT REFERENCE: CLL1901/021/19				
VERSION	TYPE	AUTHOR/S	REVIEWER/S	DATE DISTRIBUTED
V1	Internal review	DA	EMM	19/12/2019
V2	Draft for client	DA	EMM	20/12/2019
V3	Revision with clarification in Methods Section	DA	EMM	2/06/2020



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- 25: *Hibbertia tuberculata* K,R. Thiele, sp. nov. (P1) distribution
- 26: *Hibbertia* sp. nov. distribution
- 27a: *Labichea rossii* (P1) local distribution
- 27b: *Labichea rossii* (P1) regional distribution
- 28a: *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) local distribution
- 28b: *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) regional distribution
- 29: *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) distribution
- 30a: *Olearia laciniifolia* (P2) local distribution
- 30b: *Olearia laciniifolia* (P2) regional distribution
- 31a: *Orianthera exilis* (P2) local distribution
- 31b: *Orianthera exilis* (P2) regional distribution
- 32a: *Stylidium sejunctum* (P3) local distribution
- 32b: *Stylidium sejunctum* (P3) regional distribution
- 33a: *Teucrium* sp. dwarf (R Davis 8813) (P3) local distribution
- 33b: *Teucrium* sp. dwarf (R Davis 8813) (P3) regional distribution
- 34a: *Verticordia stenopetala* (P3) local distribution
- 34b: *Verticordia stenopetala* (P3) regional distribution
- 35a: *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) local distribution
- 35b: *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) regional distribution
- 36a: *Rinzia medifila* (P1) local distribution
- 36b: *Rinzia medifila* (P1) regional distribution

PLATES

- 1: *Acacia undosa* (P3) juveniles growing in burnt woodland to the east of the proposed waste rock dump
- 2: H1 vegetation community

APPENDICES

- A1: Threatened and priority flora definitions
- A2: Threatened and priority ecological community definitions
- B: Assessment of threatened and priority flora potentially present in the Earl Grey Lithium Project infrastructure footprint
- C: List of WAH accession numbers and plant identifications
- D: Vegetation communities and conservation significant flora distribution
- E: Threatened and Priority Flora report forms

LIST OF ABBREVIATIONS

BAM Act:	<i>Biosecurity and Agriculture Management Act 2007 (WA)</i>
BC Act:	<i>Biodiversity Conservation Act 2016 (WA)</i>
BOM:	Bureau of Meteorology
Covalent	Covalent Lithium Pty Ltd
DBCA	Department of Biodiversity, Conservations and Attractions
DE	development envelope
DotEE:	Department of the Environment and Energy
EGLP	Earl Grey Lithium Project
EGLP DE	Earl Grey Lithium Project Development Envelope
EP Act:	<i>Environmental Protection Act 1986 (WA)</i>
EPA:	Environmental Protection Authority
EPBC Act:	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
IBRA:	Interim Biogeographical Regionalisation for Australia
Kidman	Kidman Resources Limited
Mattiske Consulting	Mattiske Consulting Pty Ltd
PEC:	Priority ecological community
Strategen	Strategen JBS&G
TEC:	Threatened ecological community
TPFL	Threatened and Priority Flora
TSSC:	Threatened Species Scientific Committee
WAHerb:	Western Australian Herbarium
Wescef	Wesfarmers Chemicals, Energy and Fertilisers Limited

EXECUTIVE SUMMARY

On the 21st November 2019, on advice from the Environmental Protection Authority, the Minister for the Environment issued Ministerial Statement 1118 approving implementation of the Earl Grey Lithium Project, subject to conditions, following a formal assessment of the project at the level of Public Environmental Review. Condition 6-2 in Ministerial Statement 1118 states that:

"Prior to the commencement of ground disturbing activities, the proponent must undertake pre-clearance vegetation and flora survey(s) within the development envelope in accordance with *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*."

Mattiske Consulting Pty Ltd was commissioned Covalent Lithium Pty Ltd to undertake a targeted survey for all potential conservation significant taxa which may be present within the infrastructure footprint of the mine development envelope in order to satisfy Condition 6-2 of Ministerial Statement 1118.

Over the course of 2019 Mattiske Consulting Pty Ltd completed 10 surveys between March and November to complete the **pre-clearance survey of the project's infrastructure footprint**. The searches for conservation significant flora were based on searches of 10 m spaced transects within the Earl Grey Lithium Project, with approximately 2,865 km of search lines traversed on foot in order to meet the requirements of the pre-clearance survey. In addition to the surveys completed by Mattiske Consulting Pty Ltd, data from surveys undertaken by Strategen JBS&G and AECOM within and in the region about the Earl Grey Lithium Project was incorporated to provide a comprehensive set of data for impact assessment.

The pre-clearance surveys resulted in 29 conservation significant species being recorded. Of these six were new species uncovered either during the pre-clearance surveys or from past surveys undertaken by Mattiske Consulting Pty Ltd as part of the flora and vegetation assessment of the Earl Grey Lithium Project. The 29 conservation significant species recorded were:

Acacia sp. Forrestania (D. Angus DA 3001) (P1)
Acacia sp. Mt Holland (B. Ellery BE 1147) (P1)
Acacia undosa (P3)
Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)
Banksia sphaerocarpa var. *dolichostyla* (T)
Brachyloma stenolobum (P1)
Calamphoreus inflatus (P4)
Chamelaucium sp. Parker Range (B.H. Smith 1255) (P1)
Chorizema circinale (P3)
Daviesia sarissa subsp. *redacta* (P2)
Eremophila biserrata (P4)
Eremophila verticillata (T)
Eutaxia lasiocalyx (P2)
Eutaxia sp. North Ironcap (P. Armstrong PA 06/898) (P1)
Grevillea lissopleura (P1)
Grevillea marriottii (P1)
Gyrostemon ditrigynus (P4)
Hakea pendens (P3)
Hibbertia tuberculata K.R.Thiele, sp. nov. (P1)
Hibbertia sp. novel
Labichea rossii (P1)
Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)
Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
Olearia laciniifolia (P2)
Orianthera exilis (P2)

Rinzia medifila (P1)
Stylidium sejunctum (P3)
Teucrium sp. dwarf (R Davis 8813) (P3)
Verticordia stenopetala (P3)

The direct impacts to each taxon at the local level was calculated using the proposed infrastructure footprint layout. The results of the direct impacts assessment determined that:

- 11 taxa were calculated to have no impacts to their local or regional populations;
- 5 taxa were calculated to experience impacts to their local and regional populations of between 0.01% and 1%;
- 5 taxa were calculated to experience impacts to their local or regional populations of between 1% and 10%; and,
- 8 taxa were calculated to experience impacts to either their local or regional populations in excess of 10%.

The assessment concluded that percentage direct impacts were not the sole determinant of the potential to impact a species, particularly when many species had a highly localized distribution. This was in part due to the low level of botanical surveys in the Forrestania region.

With respect to the direct impacts to the range of 29 conservation significant taxa recorded at the Earl Grey Lithium Project, the impacts to the following taxa are of highest priority as the risks are higher, based on clearing of the infrastructure footprint used for assessment in this report:

<u>Taxon</u>	<u>Risks associated with respect to clearing</u>
<i>Hibbertia</i> sp. novel:	potential extinction of known population
<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1):	high direct impact; few known populations outside EGLP]
<i>Eutaxia lasiocalyx</i> (P2):	high direct impact and locally highly restricted distribution
<i>Acacia</i> sp. Mt Holland (B. Ellery BE 1147) (P1):	low direct impact, but only two populations known outside the EGLP
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397) (P1):	high impact, but a number of populations located outside the EGLP
<i>Stylidium sejunctum</i> (P3):	direct impacts high but the taxon is regionally well represented
<i>Acacia undosa</i> (P3):	whilst direct impact high the taxon is regionally well represented
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001) (P1):	nil current direct impacts, potential for indirect impacts, only single population known
<i>Hibbertia tuberculata</i> K.R.Thiele, sp. nov. (P1):	nil current impacts; currently in exclusion zone within EGLP; highly restricted distribution and vegetation community association,

The other 20 conservation significant taxa are at lower risks of changes to their conservation status because of the combination of the calculated direct impacts and regional representation. Impacts to the species at higher risks can be alleviated to an extent by re-assessing elements of the infrastructure footprint layout.

1. INTRODUCTION

The Earl Grey Lithium Project (EGLP) is owned by Covalent Lithium Pty Ltd (Covalent). Covalent is a joint venture between Wesfarmers Chemicals, Energy and Fertilisers Limited (Wescef) and Sociedad Quimica y Minera de Chile. In 2016 Kidman Resources Limited (Kidman) discovered a pegmatite-hosted lithium deposit at its Earl Grey Prospect, south of Southern Cross, near Mt Holland in Western Australia. Covalent proposes to develop the EGLP. The proposed development will comprise open cut mining and processing of lithium ore, with transport of lithium concentrate to a refinery in Kwinana, Western Australia.

On the 21st November 2019, on advice from the Environmental Protection Authority (EPA), the Minister for the Environment issued Ministerial Statement 1118 (Government of Western Australia 2019) approving implementation of the project, subject to conditions, following a formal assessment of the project at the level of Public Environmental Review. Condition 6-2 in Ministerial Statement 1118 states that:

"Prior to the commencement of ground disturbing activities, the proponent must undertake pre-clearance vegetation and flora survey(s) within the development envelope in accordance with *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*."

Mattiske Consulting Pty Ltd (Mattiske Consulting) was commissioned in March 2019 by Covalent to undertake a targeted survey for all potential conservation significant taxa which may be present within the infrastructure footprint of the mine development envelope in order to satisfy Condition 6-2 of Ministerial Statement 1118. This report summarises the results of these surveys (hereinafter referred to as pre-clearance surveys), as well as additional survey work, subsequently undertaken to further characterize the distribution and populations of conservation significant flora to assist in mine infrastructure planning so as to minimise impacts to conservation significant flora.

1.1 Location and Scope of Project

The EGLP, which is located approximately 105 km southeast of the town of Southern Cross, is situated on the abandoned Mt Holland Mine Site (Figure 1). The Earl Grey Lithium Project Development Envelope (EGLP DE) occupies an area of 1,993.59 ha. The scope of the survey was to undertake an intensive targeted survey for any threatened and priority flora taxa which may be present within the proposed infrastructure footprint (Figure 2).

1.2 Environmental Legislation and Guidelines

The following key Commonwealth (federal) legislation relevant to this survey is the:

- *Environment Protection and Biodiversity Conservation Act 1999*.

The following key Western Australian (state) legislation relevant to this survey include the:

- *Biodiversity Conservation Act 2016* (BC Act);
- *Biosecurity and Agriculture Management Act 2007* (BAM Act);
- *Environmental Protection Act 1986* (EP Act); and,
- *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*.

Furthermore, key Western Australian guidelines relevant to this survey are the:

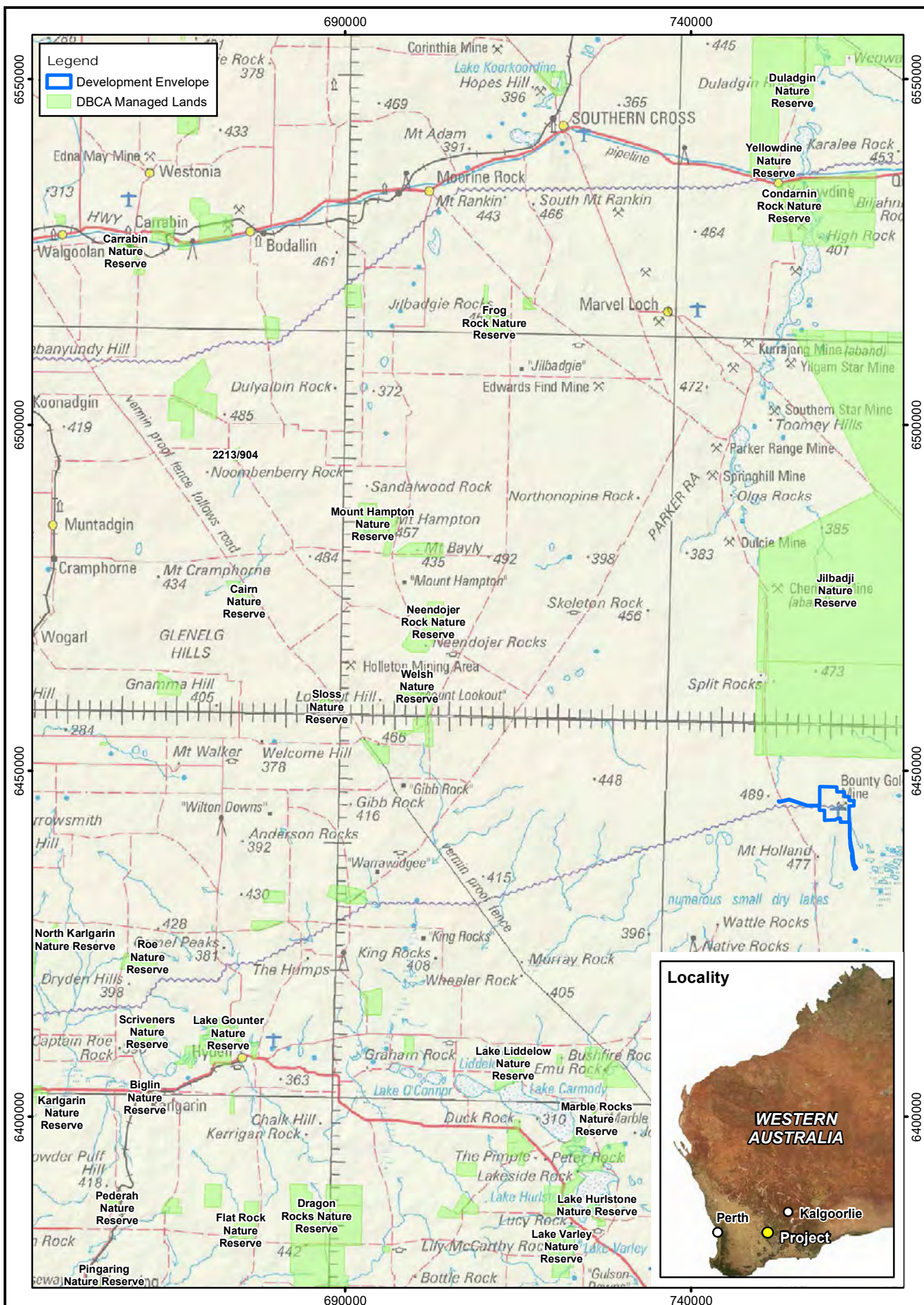
- *Environmental Factor Guideline: Flora and Vegetation* (EPA 2016a); and
- *Technical Guidance – Flora and vegetation surveys for environmental impact assessment* (EPA 2016b).

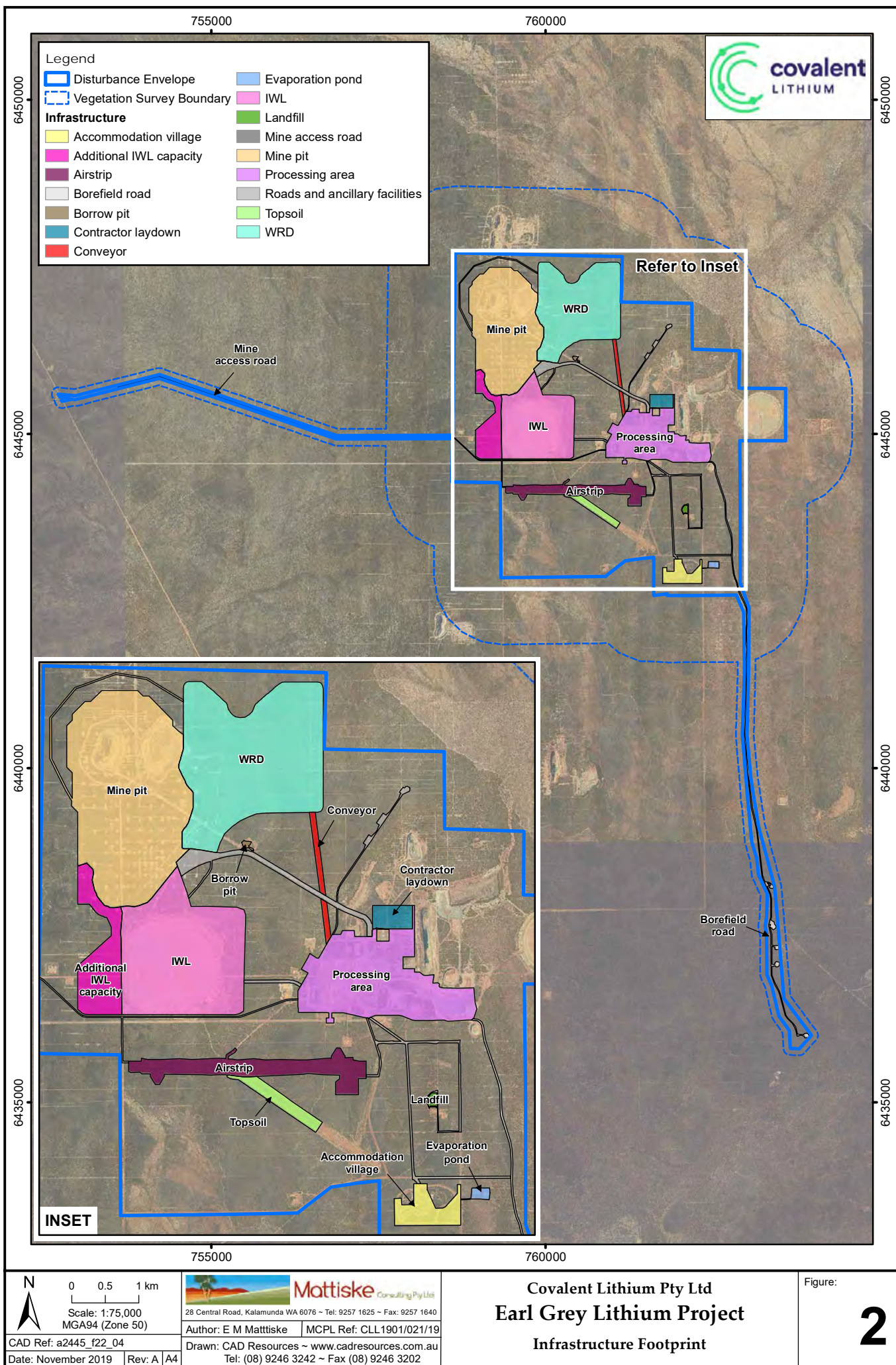
Definitions of flora and vegetation terminology commonly used throughout this report are provided in Appendix A1-4.

2. OBJECTIVES

The objective of this survey was to complete a targeted search for conservation significant flora within the infrastructure footprint of the EGLP. Specifically, the objectives included:

- Undertake a desktop assessment to evaluate the range of potential threatened and priority flora which have the potential to be recorded within the EGLP. This assessment was designed to provide more up to date data compared to the assessment undertaken for the vegetation survey of 2017 (Mattiske Consulting 2018a);
- Review previous literature and current databases associated with the EGLP;
- On the basis of the reviews, provide summaries to assist in the assessment of the potential range conservation significant species;
- Undertake a targeted search for the range of conservation significant taxa identified by the desktop assessment, based on foot traverses along 10 m spaced transects spanning the EGLP infrastructure footprint;
- Review the conservation status of the vascular plant species recorded by reference to current literature and current listings by the Department of Biodiversity, Conservation and Attractions (DBCA) and plant collections held at the Western Australian State Herbarium (WAHerb), and listed by the Department of the Environment (DotEE) under the *Environment Protection and Biodiversity Conservation Act 1999*;
- Evaluate the distributions of any conservation significant flora recorded within the EGLP and evaluate their regional significance;
- Prepare a report summarizing the findings.





3. METHODS

Mattiske Consulting has undertaken a range of flora and vegetation surveys associated with the EGLP. The surveys and their respective timings are set out in Table 1. The targeted search for a range of threatened and priority flora taxa which may be present within the EGLP infrastructure footprint was completed over the course of 10 field trips in 2019. All searches were based on foot traverses of 10 m spaced transect paths which traversed the search areas. In addition to the field surveys completed in 2019, data from surveys completed prior to 2019, and which formed a component of the flora and vegetation surveys associated with the EGLP were incorporated to maximise the sources of conservation significant flora data used when evaluating impacts associated with clearing for infrastructure construction at the EGLP. These reports included flora and vegetation surveys completed in 2016 for a range of exploration prospects (Mattiske Consulting 2016, 2017), a flora and vegetation survey of the EGLP (Mattiske Consulting 2018a), targeted surveys for *Banksia sphaerocarpa* var. *dolichostyla* (T) (Mattiske Consulting 2018b), and a targeted search for conservation significant flora (Mattiske Consulting 2018c).

The survey was completed to the standards set out in Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016b) and Environmental Factor Guideline: Flora and Vegetation (EPA 2016a).

3.1 Desktop Survey

The desktop assessment in relation to flora and vegetation associated with the EGLP area was undertaken using the resources of the Department of Biodiversity, Conservation and Attractions (DBCA 2007-, 2019a, 2019c, 2019d), the DotEE (2019a, 2019b, 2019c) and the Western Australian Herbarium (WAHerb 1998-) databases. The search parameters used were a 40 km radius 'by circle' at 760778 mE, 6445372 mN (MGA94, Zone 50). These databases were utilised to identify the possible occurrence of threatened and priority flora known to occur within the vicinity of the EGLP.

In addition, historical documentation and vegetation mapping of the region, principally that of Mattiske Consulting (2016, 2017, 2018a, 2018b, 2018c), which represented contemporary surveys in the area provide extensive resource material for the floristics and vegetation of the survey area, was reviewed.

3.2 Regional Flora Data

Regional flora data, with respect to the range of conservation significant flora recorded at the EGLP, was requested from the DBCA on the 25th October 2019. Data extracted from the DBCA's Threatened and Priority Flora (TPFL) database and the WAHerb Specimen database was received on the 5th November 2019 (DBCA Ref. 03-1119FL). This data was used for both spatial mapping of individual species distribution as well as regional population number calculations. In the case of the latter, due to the manner in which the frequency of plants was reported in either the TPFL or WAHerb records, rules were applied to the interpretation of the frequency data reported as follows:

1. Where a specific number of plants is stated, this was accepted;
2. Where no frequency is stated, only one plant was assumed;
3. Where a range is stated, the minimum number in the range has been used as the frequency;
4. Where a descriptive phrase (minimum, approximate, etc.) is used the minimum frequency stated has been used; and,
5. Where descriptive phrases, such as "rare", "common", "abundant", etc. have been used without any numerical value being included, only a single plant has been assumed.

The use of the TCPL/WAHerb records was evaluated for individual species to enable some distinction to be made between records that could be considered to be local to the EGLP, those which would duplicate

recordings made within the EGLP, and those that would be classed as being regional. To achieve this, the distribution of TCPL/WAHerb records was reviewed taking into account the locations in the context of the pre-European vegetation associations in the vicinity of the EGLP, the locations in relation to the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community (DBCA 2019c) within which the EGLP is situated, and the spatial distance between the TPFL/WAHerb records and recordings of individual conservation significant flora species within the EGLP.

3.3 Field Survey

Intensive searches for conservation significant flora were based on searching 10 m wide transects which spanned the survey area. During the field surveys, botanists had access to all relevant data in the Esri iOS application, Collector for ArcGIS on Apple iPads (provided and maintained by CAD Resources). Data layers accessible in the field included the EGLP DE and the EGLP infrastructure footprint (Figure 2), locations of all known conservation significant flora from both historical and contemporary surveys and aerial imagery supplied by either Covalent or acquired by CAD Resources. The entirety of the EGLP DE was populated with transects spaced 10 m apart in a north-south and east-west orientation. These transects were used as guides for foot traverses. The locations of any conservation significant flora were recorded with the Esri iOS application, Collector for ArcGIS. During the field survey botanists also had access to detailed data on all potential conservation significant species which may potentially be encountered during the field survey.

The targeted searches included, not only the known threatened flora (*Banksia sphaerocarpa* var. *dolichostyla* and *Eremophila verticillata*), the more recently uncovered, and now Priority 1 taxa (*Acacia* sp. Mt Holland (B. Ellery BE 1147), *Acacia* sp. Forrestania (D. Angus DA 3001), *Microcorys* sp. Mt Holland (D. Angus DA 2397), *Hibbertia tuberculata*, and *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)), but also the full range of species either known to be present or which have the potential to be present within the EGLP (Table 2). In addition, currently undescribed, but newly recognised taxon *Hibbertia* sp. Novel, which does not currently have a conservation ranking, formed a component of the targeted search. Specimens of all known conservation significant taxa were collected for verification by an independent taxonomist at the WAHerb. Specimens of any plant which was not readily identifiable in the field as a non-conservation significant taxon, were collected for subsequent identification.

All botanists held a valid collection license to collect flora for scientific purposes, issued under the Regulation 62 of the *Biodiversity Conservation Regulations 2018*. Additionally, at least one botanist held a valid permit to take Declared Rare Flora, issued under Section 40 of the BC Act.

3.4 Identification of collected plant specimens

All plant specimens collected during the field survey were dried and processed in accordance with the requirements of the Western Australian Herbarium (WAHerb). Conservation significant flora specimens were submitted to the WAHerb for formal identification. Nomenclature of the species recorded is in accordance with the WAHerb (1998-).

Table 1: Record of Mattiske Consulting surveys associated with the EGLP

SURVEY	REPORT REFERENCE	SURVEY DATES	NUMBER OF PERSONNEL	SURVEY EFFORT (PERSON DAYS)	
1	Reconnaissance survey of the Earl Grey, Irish Breakfast and Prince of Wales Prospects. (Mattiske Consulting 2017)	24/10/16 to 26/10/16	2	6	Pre-clearing surveys
2	Reconnaissance survey of the Earl Grey, Irish Breakfast and Prince of Wales Prospects. (Mattiske Consulting 2017)	9/11/16 to 10/11/16	2	4	
2	Reconnaissance survey of the Van Uden Prospect. (Mattiske Consulting 2016)	8/11/16	2	2	
3	Reconnaissance regional survey of vegetation surrounding the EGLP (Western Wildlife 2017)	16/01/17 – 20/01/17	1	5	
4	Detailed flora and vegetation survey of the EGLP. (Mattiske Consulting 2018a)	6/9/17 to 14/9/17	4	36	
5	Targeted survey of <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T). (Mattiske Consulting 2018b)	30/04/18 to 4/05/18	3	12	
6	Targeted survey of <i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T). (Mattiske Consulting 2018b)	12/06/18 to 18/06/18	4	24	
7	Targeted survey of significant flora. (Mattiske Consulting 2018c)	4/11/18 to 10/11/18	5	30	
8	Threatened and priority flora assessments of proposed tracks and drill holes locations in tenements M77/215, M77/418, M77/542, M77/1065, M77/1067, and M77/1068 (Mattiske Consulting 2019 a-f)	11/03/19 – 16/03/19	4	20	
8	Targeted survey of significant flora. (this report)	7/03/19 to 13/03/19	2	12	
9	Targeted survey of significant flora. (this report)	25/03/19 to 1/04/19	4	24	
10	Targeted survey of significant flora. (this report)	12/04/19 to 18/04/19	5	30	
11	Targeted survey of significant flora. (this report)	4/07/19 to 10/07/19	5	30	
12	Targeted survey of significant flora. (this report)	31/07/19 to 6/08/19	4	24	
13	Targeted survey of significant flora. (this report)	21/08/19 to 27/08/19	6	36	
14	Targeted survey of significant flora. (this report)	9/09/19 to 15/09/19	3	18	
15	Targeted survey of significant flora. (this report)	8/10/19 to 12/10/19	3	12	Additional Surveys
16	Targeted survey of significant flora. (this report)	29/10/19 – 4/11/19	4	24	
17	Targeted survey of significant flora. (this report)	19/11/19 to 25/11/19	4	24	
Total effort (person days)				373	

4. DESKTOP SURVEY RESULTS

4.1 Climate

Beard (1990) described the climate of the wider region within which the EGLP is situated as Mediterranean, with a pronounced winter maximum and long dry summer, and annual precipitation of just over 330mm, consistent with descriptions of a characteristically arid to semi-arid climate with 200-300 mm of precipitation (Beard 1990, Cowan *et al.*, 2001). Hyden, which is located approximately 85 km to the south-west of the EGLP has an average annual rainfall of 343.9 mm (Bureau of Meteorology, BOM 2019). Rainfall and temperature data for Hyden is illustrated in Figure 3. The rainfall and temperature data displayed spans the period January 2016 to November 2019, and covers the period during which Mattiske Consulting has undertaken surveys either at or associated with the EGLP. Rainfall for the period January to November 2019 was 199.2 mm, which is approximately 60% of the long-term average for the corresponding period. The summer of 2019 was dry compared to the long-term rainfall pattern (Figure 3). Winter rainfall (June-August) in 2019 amounted to 119.4 mm, which is approximately 87% of the long-term average for Hyden.

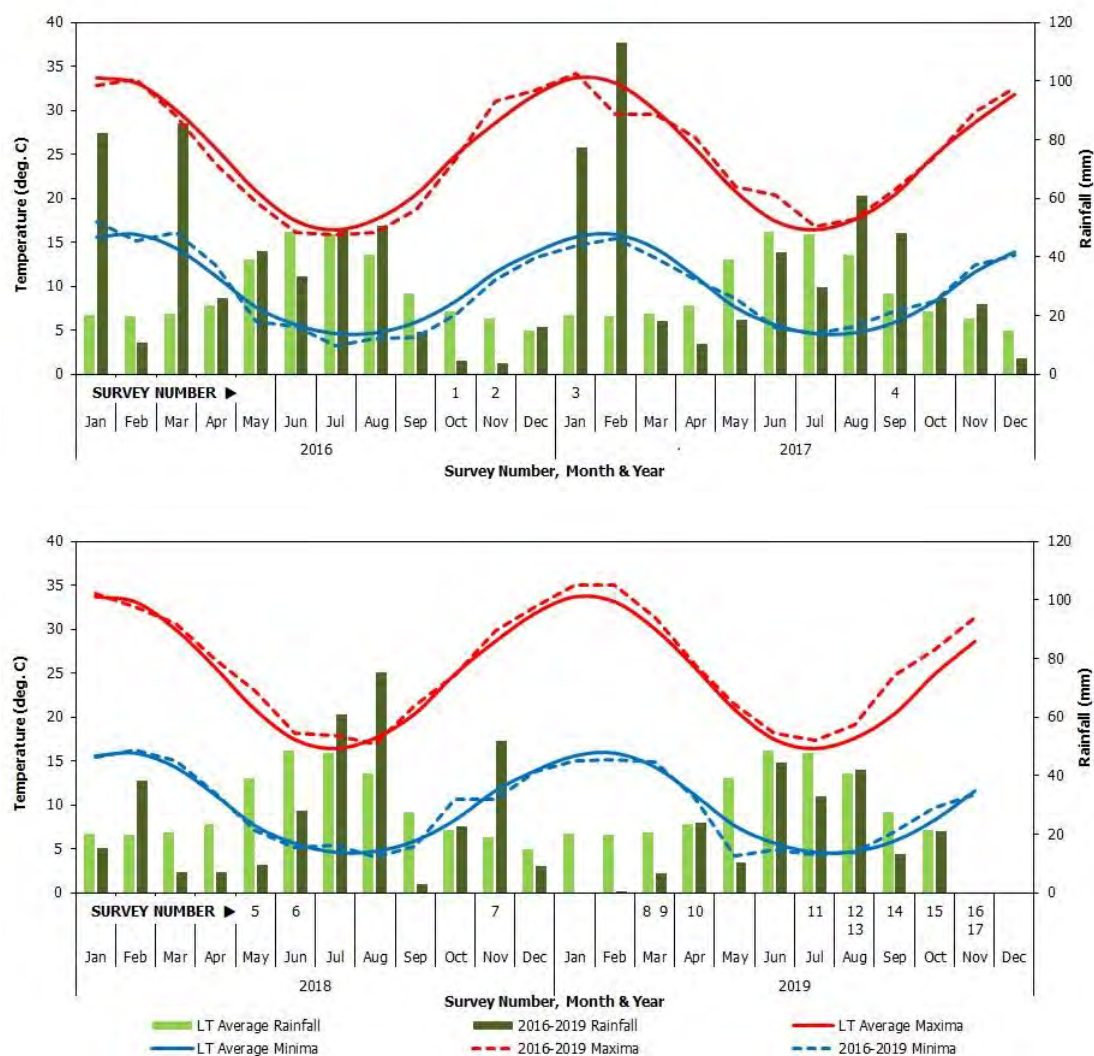


Figure 3: Rainfall and temperature data for Hyden

Long term average rainfall and temperature data, together with monthly rainfall data for the period January 2016 to November 2019 are shown (BOM 2019). The numbered markers indicate the timing of flora and vegetation surveys. Refer to Table 1 for survey number corresponding dates.

4.2 Potential Threatened and Priority Flora

A total of 114 conservation significant flora were identified as having the potential to occur within the EGLP (Table 2). The 114 conservation significant flora comprised:

- 1 extinct species
- 6 threatened taxa
- 31 Priority 1 taxa
- 17 Priority 2 taxa
- 43 Priority 3 taxa
- 16 Priority 4 taxa

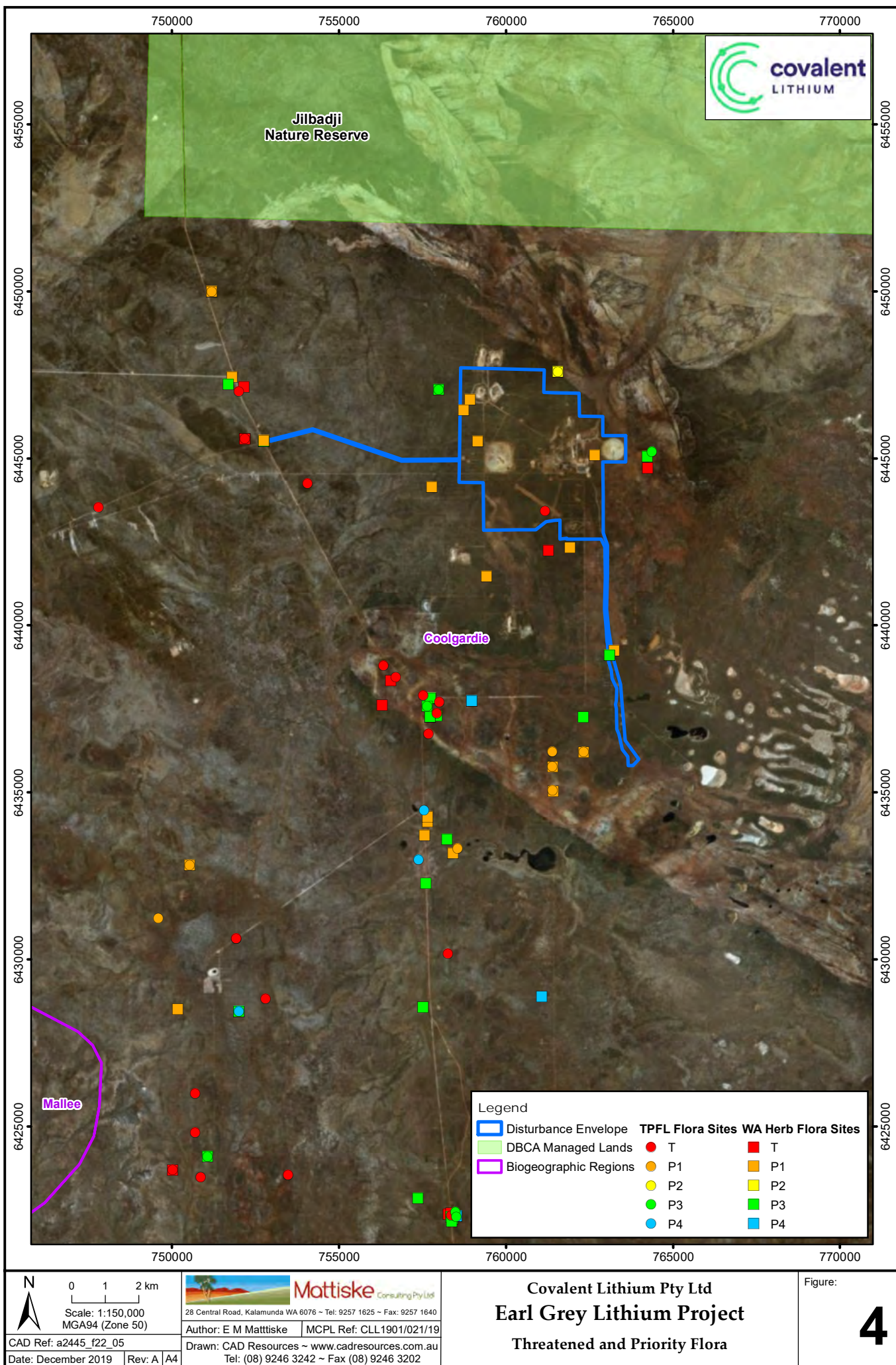
The distribution of known threatened and priority flora taxa, based on the DBCA's TPFL and WAHerb Specimen databases in the vicinity of the EGLP DE, are illustrated in Figure 4.

An assessment of the likelihood of recording any of the listed threatened and priority taxa within the EGLP infrastructure footprint, based on factors including known soil type, topography and distribution, is set out in Appendix B. Table 2 sets out the taxa and summarises the assessed likelihood of recording each of the 114 conservation significant flora within the EGLP infrastructure footprint. Based on this assessment, 15 taxa were ranked as being highly likely to be recorded as they had either been previously recorded within the EGLP area in 2016 (Mattiske Consulting 2016, 2017) or 2017 (Mattiske Consulting 2018a), or were deemed to have a high probability of being recorded within the EGLP infrastructure footprint because of their preferred soil type, topography and distribution. These taxa are:

Banksia sphaerocarpa var. *dolichostyla* (T)
Acacia sp. Mt Holland (B. Ellery BE 1147) (P1)
Grevillea lissopleura (P1)
Labichea rossii (P1)
Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)
Daviesia sarissa subsp. *redacta* (P2)
Eutaxia lasiocalyx (P2)
Acacia undosa (P3)
Chorizema circinale (P3)
Grevillea pilosa subsp. *redacta* (P3)
Hakea pendens (P3)
Seringia adenogyna (P3)
Stylidium sejunctum (P3)
Teucrium sp. dwarf (R. Davis 8813) (P3)
Verticordia stenopetala (P3)

Of the above taxa, *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) and *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) were previously unknown taxa uncovered during the vegetation surveys of 2016 (Mattiske Consulting 2017) and 2017 (Mattiske Consulting 2018a).

Of the remaining taxa, determined to have either a medium or low probability of being recorded within the EGLP infrastructure footprint, *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) which was determined to have a medium probability of being recorded, was a previously unknown taxa uncovered during the vegetation surveys 2017 (Mattiske Consulting 2018a).



A review of the flowering periods for the 114 conservation significant flora is presented in Figure 5. The data used to evaluate the timing of flowering for each species was extracted from WAHerb (1998-). The data demonstrates that the majority (51.80%) of the taxa flower in the spring months, and that the winter and spring months accounted for 72.30% of the total annual flowering. In 2019, flowering commenced in mid-August and continued through to early November. This 2.5-month period constituted the main flowering period in 2019 (field observation).

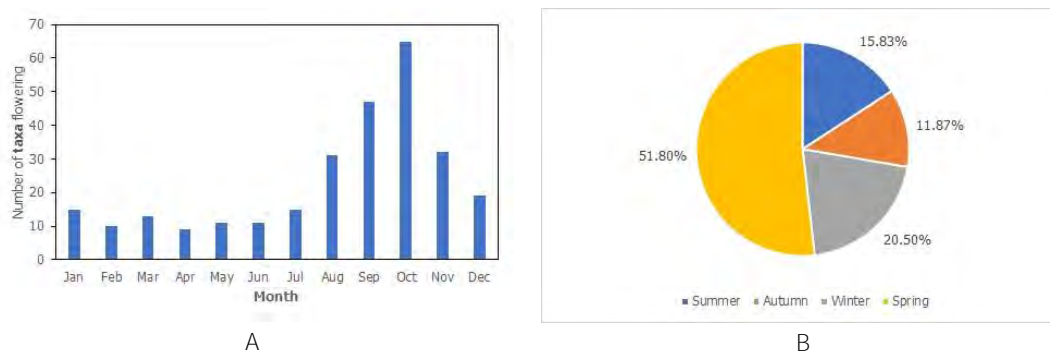


Figure 5: Timing of flowering for the range of conservation significant flora identified from the desktop assessment
(A) number of conservation significant taxa flowering per month, and (B) proportion of total flowering months as a function of season. The data used to derive the plots is based on the conservation significant taxa listed in Table 2.

Table 2: Potential conservation significant flora in the vicinity of the EGLP development envelope

SPECIES	BC Act / DBCA Listing	EPBC Act	FAMILY	LIKELIHOOD TO RECORD
<i>Thomasia gardneri</i>	X	Ex	Malvaceae	unlikely
<i>Acacia lanuginophylla</i>	T	E	Fabaceae	low
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	T	V	Proteaceae	high
<i>Calectasia pignattiana</i>	T	V	Dasypogonaceae	low
<i>Eremophila verticillata</i>	T	E	Scrophulariaceae	medium
<i>Eucalyptus steedmanii</i>	T	V	Myrtaceae	medium
<i>Paragoodia crenulata</i>	T	CE	Fabaceae	low
<i>Acacia</i> sp. Mt Holland (B. Ellery BE 1147)	P1		Fabaceae	high
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001)	P1		Fabaceae	medium
<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	P1		Poaceae	low
<i>Austrostipa</i> sp. Mt Holland (W.A. Thompson & J. Allen 948)	P1		Poaceae	low
<i>Baeckea</i> sp. Blue Haze Mine (P. Armstrong 06/910)	P1		Myrtaceae	medium
<i>Baeckea</i> sp. Crossroads (B.L. Rye & M.E. Trudgen 241186)	P1		Myrtaceae	low
<i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105)	P1		Myrtaceae	low
<i>Baeckea</i> sp. Lake Cronin (K.R. Newbey 9191)	P1		Myrtaceae	low
<i>Baeckea</i> sp. North Ironcap (R.J. Cranfield 10580)	P1		Myrtaceae	low
<i>Baeckea</i> sp. Sheoaks Rocks (M.E. Trudgen MET5452)	P1		Myrtaceae	low
<i>Brachyloma nguba</i>	P1		Ericaceae	low

Table 2: Potential conservation significant flora in the vicinity of the EGLP development envelope (continued)

SPECIES	BC Act / DBCA Listing	EPBC Act	FAMILY	LIKELIHOOD TO RECORD
<i>Brachyloma stenolobum</i>	P1		Ericaceae	medium
<i>Dicrastylis capitellata</i>	P1		Lamiaceae	low
<i>Drummondia wilsonii</i>	P1			low
<i>Eremophila lucida</i>	P1		Myrtaceae	low
<i>Eucalyptus myriadena</i> subsp. <i>parviflora</i>	P1		Myrtaceae	low
<i>Eucalyptus retusa</i>	P1		Myrtaceae	low
<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	P1		Fabaceae	low
<i>Gastrolobium tenue</i>	P1		Fabaceae	low
<i>Grevillea lissopleura</i>	P1		Proteaceae	high
<i>Grevillea marriottii</i>	P1		Proteaceae	medium
<i>Hemigenia</i> sp. Newdegate (E. Bishop 75)	P1		Lamiaceae	low
<i>Hysterobaeckea pterocera</i>	P1		Myrtaceae	low
<i>Labichea rossii</i>	P1		Fabaceae	high
<i>Lepidosperma amantiferrum</i>	P1		Cyperaceae	low
<i>Lepidosperma ferriculmen</i>	P1		Cyperaceae	low
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397)	P1		Lamiaceae	high
<i>Mirbelia taxifolia</i>	P1		Fabaceae	low
<i>Rinzia medifila</i>	P1		Myrtaceae	low
<i>Scaevola tortuosa</i>	P1		Goodeniaceae	low
<i>Stylidium validum</i>	P1		Stylidiaceae	medium
<i>Acacia asepalae</i>	P2		Fabaceae	low
<i>Acacia kerryana</i>	P2		Fabaceae	low
<i>Bentleya diminuta</i>	P2		Pittosporaceae	low
<i>Boronia westringioides</i>	P2		Rutaceae	low
<i>Caesia viscida</i>	P2		Hemerocallidaceae	low
<i>Conospermum sigmoideum</i>	P2		Proteaceae	low
<i>Dampiera orchardii</i>	P2		Goodeniaceae	low
<i>Daviesia sarissa</i> subsp. <i>redacta</i>	P2		Fabaceae	high
<i>Eutaxia hirsuta</i>	P2		Fabaceae	medium
<i>Eutaxia lasiocalyx</i>	P2		Fabaceae	high
<i>Guichenotia asteriskos</i>	P2		Malvaceae	low
<i>Logania nanophylla</i>	P2		Loganiaceae	low
<i>Olearia laciniifolia</i>	P2		Asteraceae	low
<i>Orianthera exilis</i>	P2		Loganiaceae	low
<i>Stylidium thylax</i>	P2		Stylidiaceae	low
<i>Verticordia multiflora</i> subsp. <i>solox</i>	P2		Myrtaceae	medium
<i>Verticordia pulchella</i>	P2		Myrtaceae	low
<i>Acacia inophloia</i>	P3		Fabaceae	low
<i>Acacia repanda</i>	P3		Fabaceae	low
<i>Acacia undosa</i>	P3		Fabaceae	high
<i>Adenanthos gracilipes</i>	P3		Proteaceae	low
<i>Angianthus micropodioides</i>	P3		Asteraceae	low

Table 2: Potential conservation significant flora in the vicinity of the EGLP development envelope (continued)

SPECIES	BC Act / DBCA Listing	EPBC Act	FAMILY	LIKELIHOOD TO RECORD
<i>Baeckea</i> sp. Hatter Hill (K.R. Newbey 3284)	P3		Myrtaceae	medium
<i>Banksia lullfitzii</i>	P3		Proteaceae	low
<i>Banksia rufa</i> subsp. <i>flavescens</i>	P3		Proteaceae	medium
<i>Banksia viscida</i>	P3		Proteaceae	medium
<i>Banksia xylothemelia</i>	P3		Proteaceae	low
<i>Bossiaea atrata</i>	P3		Fabaceae	low
<i>Bossiaea celata</i>	P3		Fabaceae	low
<i>Chorizema circinale</i>	P3		Fabaceae	high
<i>Comesperma calcicola</i>	P3		Polygalaceae	low
<i>Cryptandra polyclada</i> subsp. <i>polyclada</i>	P3		Rhamnaceae	medium
<i>Daviesia implexa</i>	P3		Fabaceae	low
<i>Elatine macrocalyx</i>	P3		Elatinaceae	low
<i>Eucalyptus exigua</i>	P3		Myrtaceae	medium
<i>Eutaxia acanthoclada</i>	P3		Fabaceae	medium
<i>Eutaxia nanophylla</i>	P3		Fabaceae	medium
<i>Eutaxia rubricarina</i>	P3		Fabaceae	medium
<i>Frankenia drummondii</i>	P3		Frankeniaceae	low
<i>Grevillea pilosa</i> subsp. <i>redacta</i>	P3		Proteaceae	high
<i>Hakea pendens</i>	P3		Proteaceae	high
<i>Hibbertia pachyphylla</i>	P3		Dilleniaceae	medium
<i>Hydrocotyle eichleri</i>	P3		Araliaceae	low
<i>Isolepis australiensis</i>	P3		Cyperaceae	low
<i>Melaleuca macronychia</i> subsp. <i>trygonoides</i>	P3		Myrtaceae	low
<i>Melaleuca ochroma</i>	P3		Myrtaceae	low
<i>Microcybe</i> sp. Windy Hill (G.F. Craig 6583)	P3		Rutaceae	low
<i>Mirbelia densiflora</i>	P3		Fabaceae	low
<i>Notisia intonsa</i>	P3		Asteraceae	low
<i>Oxymyrrhine plicata</i>	P3		Myrtaceae	low
<i>Persoonia cymbifolia</i>	P3		Proteaceae	low
<i>Pityrodia scabra</i> subsp. <i>dendrotricha</i>	P3		Lamiaceae	low
<i>Pterostylis echinulate</i>	P3		Orchidaceae	low
<i>Pultenaea daena</i>	P3		Fabaceae	low
<i>Rinzia torquata</i>	P3		Myrtaceae	medium
<i>Seringia adenogyna</i>	P3		Malvaceae	high
<i>Stylidium sejunctum</i>	P3		Stylidiaceae	high
<i>Teucrium</i> sp. dwarf (R. Davis 8813)	P3		Lamiaceae	high
<i>Verticordia gracilis</i>	P3		Myrtaceae	medium
<i>Verticordia stenopetala</i>	P3		Myrtaceae	high
<i>Banksia shanklandiorum</i>	P4		Proteaceae	low
<i>Calamphoreus inflatus</i>	P4		Scrophulariaceae	medium
<i>Eremophila biserrata</i>	P4		Scrophulariaceae	low
<i>Eremophila caerulea</i> subsp. <i>merrallii</i>	P4		Scrophulariaceae	low

Table 2: Potential conservation significant flora in the vicinity of the EGLP development envelope (continued).

SPECIES	BC Act / DBCA Listing	EPBC Act	FAMILY	LIKELIHOOD TO RECORD
<i>Eremophila racemosa</i>	P4		Scrophulariaceae	low
<i>Eucalyptus cerasiformis</i>	P4		Myrtaceae	low
<i>Eucalyptus deflexa</i>	P4		Myrtaceae	low
<i>Eucalyptus georgei</i> subsp. <i>fulgida</i>	P4		Myrtaceae	low
<i>Eucalyptus rhomboidea</i>	P4		Myrtaceae	low
<i>Grevillea neodissecta</i>	P4		Proteaceae	medium
<i>Grevillea prostrata</i>	P4		Proteaceae	medium
<i>Gyrostemon ditrigynus</i>	P4		Gyrostemonaceae	medium
<i>Haegiela tatei</i>	P4		Asteraceae	low
<i>Microcorys</i> sp. Forrestania (V. English 2004)	P4		Lamiaceae	medium
<i>Myriophyllum petraeum</i>	P4		Haloragaceae	low
<i>Stenanthemum bremerense</i>	P4		Rhamnaceae	medium

5. FIELD SURVEY RESULTS

The pre-clearance surveys of the EGLP infrastructure footprint (Figure 2) were undertaken between March and November 2019, with the majority of the surveys taking place between March and October of 2019. The **data from the current year's surveys has been supplemented with** conservation significant flora data from past surveys (Mattiske Consulting 2016, 2017, 2018a, 20158b, 2018c) to provide a comprehensive set of data. With respect to the surveys completed in 2019, the total length of the 10 m spaced paths searched during the pre-clearance surveys is approximately 2,865 km. When the additional surveys undertaken (Table 1) since the completion of the pre-clearing surveys is taken into account, the total length of 10 m spaced search paths is approximately 3,224 km.

5.1 Field Survey Coverage, Limitations and Constraints

The coverage of the EGLP, based on tracks and foot traverses is illustrated in Figure 6. An assessment of the survey against a range of factors which may have had an impact on the outcomes of the present survey was prepared (Table 3). Based on this assessment, the survey of the EGLP infrastructure footprint has been subject to a few minor constraints which may have influenced the thoroughness of the survey and the conclusions which have been formed.

5.2 Conservation Significant Flora

A total of 29 threatened or priority taxa were recorded during the targeted searches of the EGLP infrastructure footprint and surrounding area. The overall distribution of all conservation significant flora recorded is illustrated in Figure 7. The taxa and numbers of individuals recorded, together with the direct impacts to each taxon calculated based on the infrastructure footprint (Figure 2) are set out in Table 4. Table 5 sets out the numbers of each conservation significant taxon with respect to the area of the infrastructure footprint where direct impacts are calculated to take place. Appendix C sets out the accession numbers and identification of all specimens lodged with the WAHerb for identification. Appendix D shows the distribution of all conservation significant taxa recorded with respect to the vegetation communities mapped by Mattiske Consulting in 2017 (Mattiske Consulting 2018a). The legend which is presented in Figure 7 applies to the conservation significant flora shown in Appendix D.

DBCA Threatened and Priority Flora report forms for all conservation significant flora recorded during the pre-clearance and subsequent surveys described in this report are presented in Appendix E. These forms, together with individual species spatial shapefiles will be forwarded to the DBCA.

Two previously unknown taxa were uncovered during the course of the targeted searches of the EGLP infrastructure footprint and surrounding areas. These were *Hibbertia* sp. nov., and *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1). At the time of preparing this report, *Hibbertia* sp. nov. had not been formally named or assigned a conservation classification.

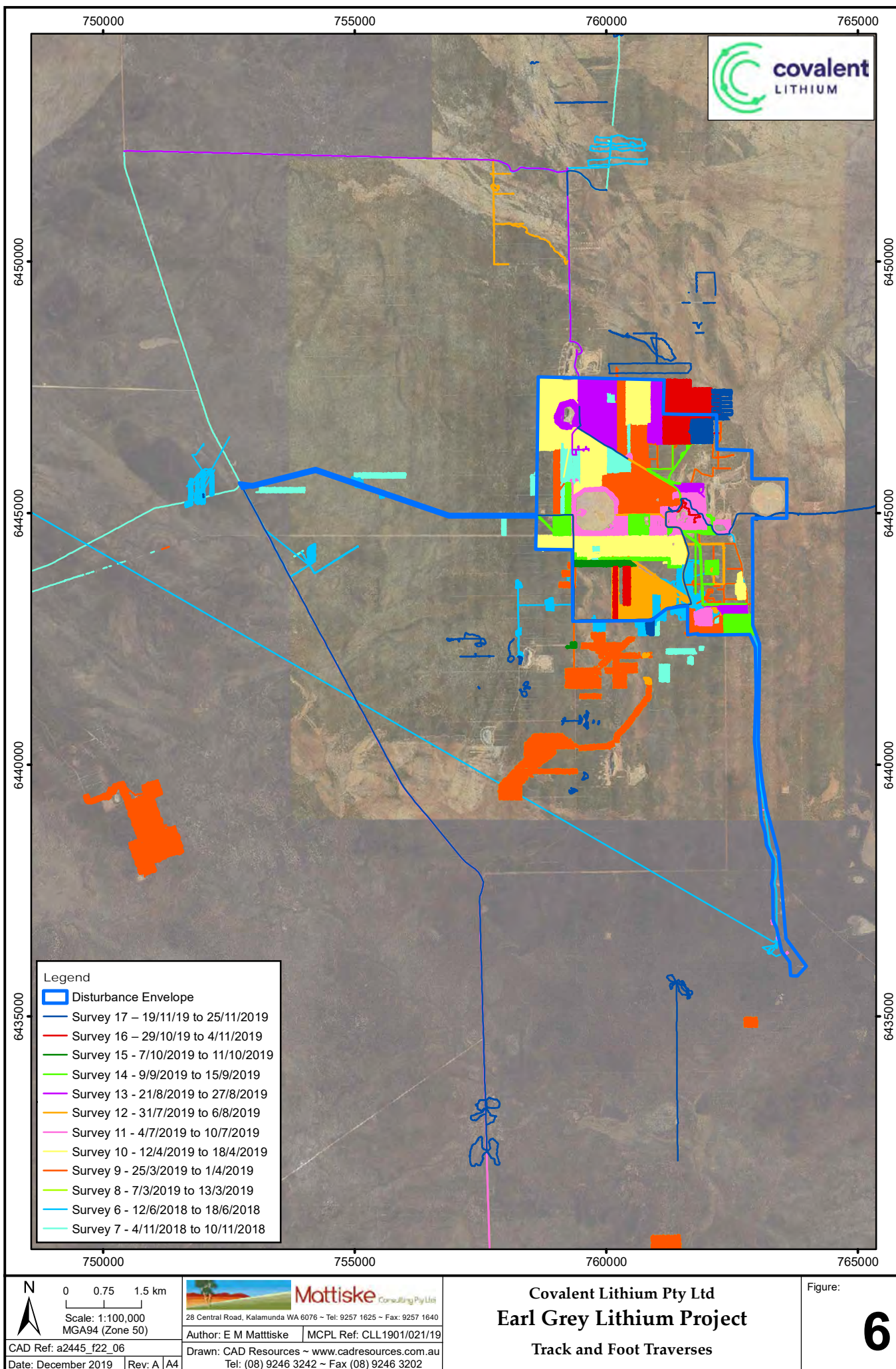


Table 3: Potential flora and vegetation survey limitations for the EGLP infrastructure footprint

POTENTIAL SURVEY LIMITATION	IMPACT ON SURVEY
Sources of information and availability of contextual information (i.e. pre-existing background versus new material).	Not a constraint. Reference resources such as Beard's mapping, historical survey data in both the vicinity of the survey area (Consultant's reports) and in the broader region (Gibson's series of Flora and Vegetation surveys of the Eastern Goldfield Ranges / Newbey & Hnatiuk's Biological Surveys of the Eastern Goldfields) , recent survey work completed by Mattiske Consulting specifically for the EGLP, together with online flora and vegetation information, has provided a comprehensive level of information for the current survey.
Scope (i.e. what life forms, etc., were sampled).	Not a constraint. Vascular flora, which was the focus of the present survey of the EGLP infrastructure footprint, was thoroughly sampled.
Proportion of flora collected and identified (based on sampling, timing and intensity).	<p>Minor constraint. The survey of the EGLP infrastructure footprint and surrounding areas was undertaken over the course of 17 field visits, spread over 16 months. Surveys took place in all months of the year excluding the December to February period (Figure 3). Based on the review of timing of the flowering periods for the range of potential conservation significant flora (Figure 5), the timing of the surveys has ensured that the range of conservation significant flora present would have been detected. The use of a consistent team of botanists to undertake the surveys, some of which have worked in the area for up to three of years, increases the level of confidence in detecting and recording the conservation significant taxa.</p> <p>It is acknowledged that some of the conservation significant taxa would prove to be difficult to detect outside their flowering period, either because of their insignificant physical size (e.g. <i>Chorizema circinale</i> (P3)), or because the absence of flowers would make distinguishing non-conservation significant species from conservation significant species from the same genus in the field difficult (e.g. species of <i>Baeckea</i>, <i>Rinzia</i>, <i>Verticordia</i>, and other small-leafed myrtle species). This was overcome by (1) targeting areas based on soil type and topography more likely to support the more cryptic species during their principle flowering period, and (2) ensuring the range of soil and topography types were searched during the principle flowering periods and sampling any representatives of suspected taxa such as <i>Baeckea</i> and <i>Verticordia</i>, which may prove more difficult to identify conclusively in the field. By undertaking the survey in this manner, the risks associated with not locating conservation significant taxa outside their flowering period was minimised. This was critical given the large area requiring survey, and which in itself would require several field visits.</p>
Completeness and further work which might be needed (i.e. was the relevant survey area fully surveyed).	Not a constraint. The survey of the EGLP infrastructure footprint was completed, based on a series of search transects spaced 10 m apart. No further work in the areas searched is required.
Mapping reliability.	Not a constraint. The aerial imagery used and spatial coverage of the survey area is considered to be excellent.
Timing, weather, season, cycle.	Minor constraint. The EPA (2016b) recommends that flora and vegetation surveys in the Coolgardie region should be undertaken after the main rainfall period in the winter months. The targeted survey of the EGLP infrastructure footprint spanned the autumn, winter and spring months. Whilst this may have the potential to result in reduced ability to recognise some conservation significant flora, the majority of the flora being searched for were identifiable when sterile. In the case of those taxa which were potentially more problematic to recognise when sterile, as discussed above, the timing of the surveys in some soil/habitat types was planned for the peak flowering period.

Table 3: Potential flora and vegetation survey limitations for the EGLP infrastructure footprint (continued)

POTENTIAL SURVEY LIMITATION	IMPACT ON SURVEY
Disturbances (fire, flood, accidental human intervention, etc.).	Not a constraint. The EGLP infrastructure footprint exhibits moderate to high levels of disturbance from past mining activities. This includes the old Bounty Mine infrastructure areas, together with historical drill tracks and exploration drill holes associated with resource evaluation associated with the EGLP. Covalent are opting to make use of as much of the existing disturbance areas for infrastructure construction in an attempt to reduce the overall environmental impacts associated with mine construction.
Intensity (in retrospect, was the intensity adequate).	Not a constraint. The intensity of the survey effort of the EGLP infrastructure footprint was considered to be excellent.
Resources (i.e. were there adequate resources to complete the survey to the required standard).	Not a constraint. Resources, in terms of equipment, support and personnel were good.
Access problems (i.e. ability to access survey area).	Not a constraint. Vehicle access to the EGLP infrastructure footprint was via a range of tracks that traversed the length and width of the prospect. These provided excellent access to the entirety of the survey area.
Experience levels (e.g. degree of expertise in plant identification to taxon level).	Not a constraint. To a large extent, Mattiske Consulting has maintained the same group of botanists working on this project. This has ensured personnel familiar with the range of conservation significant flora are undertaking the surveys.

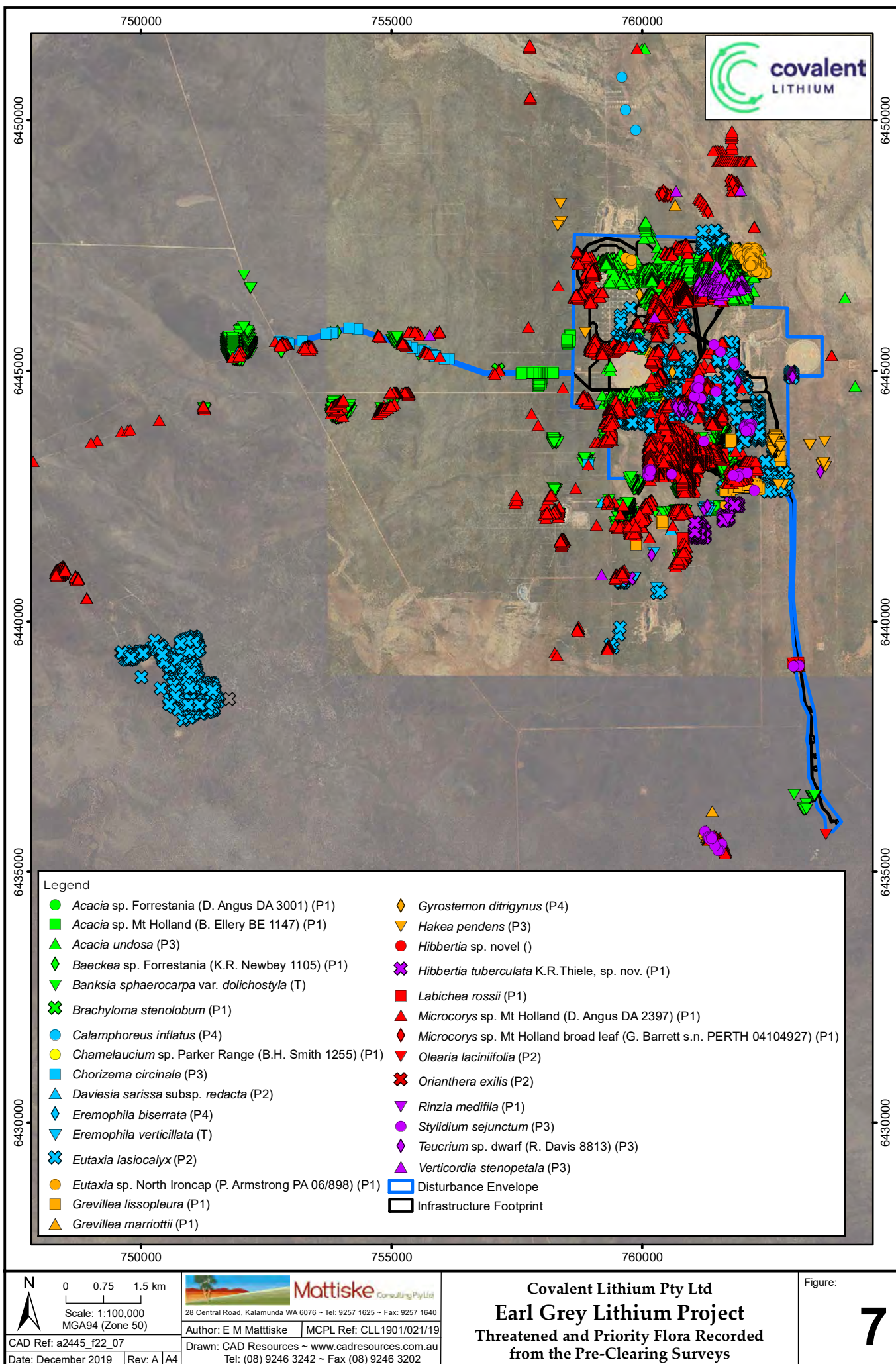


Table 4: Conservation significant flora recorded during the targeted surveys of the EGLP infrastructure footprint

SPECIES	CONSERVATION STATUS		NUMBER OF PLANTS RECORDED FROM SURVEYS ¹	REGIONAL POPULATION DATA				POPULATION IMPACTS			
	BC Act / DBCA LISTING	EPBC ACT		FROM TPFL & WAHerb RECORDS ²	RECORDS CLASSED AS DUPLICATES ³	RECORDS CLASSED AS LOCAL ⁴	ADJUSTED REGIONAL NUMBER	ADJUSTED LOCAL NUMBER OF PLANTS	NUMBER OF PLANTS TO BE DIRECTLY IMPACTED ⁵	LOCAL (%) ⁶	REGIONAL (%) ⁶
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001)	P1		6,654	1	1	0	0	6,654	0	0.00	0.00
<i>Acacia</i> sp. Mt Holland (B. Ellery BE 1147)	P1		3,089	25	25	0	0	3,089	67	2.17	2.17
<i>Acacia undosa</i>	P3		58,478	128	2	0	126	58,479	11,678	19.97	19.93
<i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105)	P1		21	2	0	1	1	20	0	0.00	0.00
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	T	V	18,207	9,913	3,505	2,502	3,906	20,709	2	0.01	0.01
<i>Brachyloma stenolobum</i>	P1		1	651	0	151	500	152	0	0.00	0.00
<i>Calamphoreus inflatus</i>	P4		3	125,444	0	2,101	123,343	2,104	0	0.00	0.00
<i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255)	P1		2	37	0	0	37	2	0	0.00	0.00
<i>Chorizema circinale</i>	P3		119	476	0	51	425	170	18	10.59	3.03
<i>Daviesia sarissa</i> subsp. <i>redacta</i>	P2		489	12	0	0	12	489	5	1.02	1.00
<i>Eremophila biserrata</i>	P4		352	1,269	0	2	1,267	354	3	0.85	0.19
<i>Eremophila verticillata</i>	T	E	3,217	1,906	3	0	1,903	3,217	0	0.00	0.00
<i>Eutaxia lasiocalyx</i>	P2		42,674	16	5	2	9	42,677	6,250	14.65	14.64
<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	P1		2,338	3	0	0	3	1	3	0.13	0.13
<i>Grevillea lissopleura</i>	P1		1,815	8	0	0	8	1,815	1	0.06	0.05
<i>Grevillea marriottii</i>	P1		724	9,113	0	9,113	0	9,837	15	0.15	0.15
<i>Gyrostemon ditrigynus</i>	P4		27	52,602	0	1	52,601	28	3	10.71	0.01
<i>Hakea pendens</i>	P3		1,149	131	0	2	129	1,151	0	0.00	0.00
<i>Hibbertia tuberculata</i> K.R. Thiele, sp. nov.	P1		4,732	0	0	0	0	4,732	0	0.00	0.00
<i>Hibbertia</i> sp. nov.			13	0	0	0	0	13	13	100.00	100.00
<i>Labichea rossii</i>	P1		3,985	101	0	0	101	3,985	210	5.14	5.14
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397)	P1		59,813	12	12	0	0	59,814	8,641	14.60	14.60

Table 4: Conservation significant flora recorded during the targeted surveys of the EGLP infrastructure footprint

SPECIES	CONSERVATION STATUS		NUMBER OF PLANTS RECORDED FROM SURVEYS ¹	REGIONAL POPULATION DATA				POPULATION IMPACTS			
	BC Act / DBCA LISTING	EPBC ACT		FROM TPFL & WAHerb RECORDS ²	RECORDS CLASSED AS DUPLICATES ³	RECORDS CLASSED AS LOCAL ⁴	ADJUSTED REGIONAL NUMBER	ADJUSTED LOCAL NUMBER OF PLANTS	NUMBER OF PLANTS TO BE DIRECTLY IMPACTED ⁵	LOCAL (%) ⁶	REGIONAL (%) ⁶
<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)	P1		1,983	1	1	0	0	1,983	233	11.75	11.75
<i>Olearia laciniifolia</i>	P2		2	60	0	0	60	2	0	0.00	0.00
<i>Orianthera exilis</i>	P2		1	63	0	2	61	3	0	0.00	0.00
<i>Rinzia medifila</i>	P1		1	3	0	0	0	1	0	0.00	0.00
<i>Stylidium sejunctum</i>	P1		674	5,415	1	5	5,409	678	216	31.81	3.55
<i>Teucrium</i> sp. dwarf (R Davis 8813)	P3		20,696	23,557	0	0	23,557	13,196	365	1.76	0.82
<i>Verticordia stenopetala</i>	P3		1,587	48	0	1	47	1,588	20	1.26	1.22

Notes:

- 1 Plants records from surveys is the sum of recordings made during the pre-clearance surveys and additional surveys completed subsequent to the pre-clearance surveys (refer Table 2).
- 2 With the exception of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) and *Rinzia medifila* (P1), the TPFL & WAHerb records represent data supplied by the DBCA (2019e). Regional data for *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) and *Rinzia medifila* (P1) was extracted directly from individual Florabase records (WAHerb 1998-) associated with each taxon.
- 3 Regional data records which coincide with records made by Mattiske Consulting were excluded from impact calculations.
- 4 Regional record data was evaluated to determine if any regional records should be classified as part of a local (EGLP) population for impact calculations. This evaluation included a review of the vegetation associations (pre-European), banded ironstone PEC associations, and spatial separation between records and the EGLP.
- 5 The number of plants to be directly impacted was determined from the intersection of the infrastructure footprint (Figure 2) with the species location data recorded for each taxon.
- 6 Cells have been coloured coded to highlight impacts as follows:

NIL 0.00%	LOW 0.01% -1.00%	MODERATE 1.00% - 10.00%	HIGH > 10%
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Table 5: Numbers of conservation significant flora directly impacted within each infrastructure element¹ at the EGLP

SPECIES ²	Accommodation Village	Additional IWL Capacity	Airstrip	Borefield Road	Borrow Pit	Contractor Laydown	Conveyor	IWL	Landfill	Mine Access Road	Mine Pit	Processing Area	Roads and Ancillary Facilities	Topsoil	WRD	Total
<i>Acacia</i> sp. Mt Holland (B. Ellery BE 1147) (P1)										67						67
<i>Acacia undosa</i> (P3)		1	223					124			1,163		120		10,047	11,678
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (T)										1			1			2
<i>Chorizema circinale</i> (P3)										17		1				18
<i>Daviesia sarissa</i> subsp. <i>redacta</i> (P2)														5		5
<i>Eremophila biserrata</i> (P4)	3															3
<i>Eutaxia lasiocalyx</i> (P2)	1		2,673	2		8		2,311			129	655	405	66		6,250
<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898) (P1)											3					3
<i>Grevillea lissopleura</i> (P1)													1			1
<i>Grevillea marriottii</i> (P1)								15								15
<i>Gyrostemon ditrigynus</i> (P4)											2	1				3
<i>Hibbertia</i> sp. nov.												13				13
<i>Labichea rossii</i> (P1)												182		28		210
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397) (P1)	328	91	268		11	39	5	1,349		23	982	221	260	9	5,055	8,641
<i>Microcorys</i> sp. Mt Holland broad leaf (G. Barrett s.n. PERTH 04104927) (P1)												230		3		233
<i>Stylidium sejunctum</i> (P3)	15								185			9	7			216
<i>Teucrium</i> sp. dwarf (R. Davis 8813) (P3)			115									250				365
<i>Verticordia stenopetala</i> (P3)													20			20

Note:

1. Refer to Figure 2 for infrastructure layout.
2. Only species calculated to be directly impacted are listed.

5.3 Distribution of Individual Conservation Significant Flora Taxa

Sections 5.3.1 through 5.3.29 describe the results of the targeted searches for conservation significant flora on a species by species basis, both in terms of distribution of the recorded taxa and the potential impacts associated with mine infrastructure construction. Figure 8 through 36b, which are local and regional species distribution maps referred to in the text, have been grouped together after the Reference section of this report.

5.3.1 *Acacia* sp. Forrestania (D. Angus DA 3001) (P1)

A total of 6,654 *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) were recorded during the pre-clearance surveys of the EGLP. No *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) were recorded in surveys completed subsequent to the preclearance surveys. *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) is a new taxon, uncovered during the vegetation mapping in 2017 (Mattiske Consulting 2018a). It is presently only known from a small area to the south of the EGLP DE envelope (Figure 8), in vegetation communities S1 and W9 (Appendix D, Mattiske Consulting 2018a).

Acacia sp. Forrestania (D. Angus DA 3001) (P1) intersects the most southern portion of the EGLP development envelope, but does not intersect the infrastructure footprint (Figure 8). *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) will not be directly impacted by infrastructure construction associated with the EGLP.

There are no regional records of *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) as its current distribution is restricted to the single known population located south of the EGLP DE in relation to the proposed accommodation village area (Figure 8).

5.3.2 *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1)

A total of 3,089 *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 9). *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) is a new taxon, uncovered during the vegetation mapping of the EGLP in 2017 (Mattiske Consulting 2018a). At the time of completion of the pre-clearance surveys, this taxon was only known from a small area to the west of the EGLP development envelope (Figure 9), in vegetation community W4 (Appendix D, Mattiske Consulting 2018a). *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) intersects the EGLP infrastructure footprint in some sections of the eastern extent of the mine access road into the EGLP from the Forrestania Road (Figure 9).

Surveys undertaken since the completion of the pre-clearance surveys have uncovered a second population of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1), located 6 km to the north of the EGLP DE in the southern section of the Jilbadji Nature Reserve (Figure 9, AECOM pers. comm.). An additional 131 individual were recorded in this second population. Mattiske Consulting verified this population in November 2019, but did not undertake a population census. The current recorded population of this taxon across its two known populations is 3,089 individuals. Both known population of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) were recorded growing on similar soils, consisting of light brown sandy clay soils with quartz pebbles and rocks on flats and gentle slopes. Both populations of this taxon were growing in undisturbed vegetation, with the exception of the population intersected by the mine access road into the EGLP from the Forrestania Road.

Based on the infrastructure footprint (Figure 2), a total of 67 *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represent 2.17% of both the local and regional populations of this taxon (Table 4). The direct

impacts to *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) are associated with clearing for the mine access road (Table 5, Figure 9).

5.3.3 *Acacia undosa* (P3)

A total of 58,478 *Acacia undosa* (P3) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 10a). Of these 58,478 individuals, 19,669 were recorded during the pre-clearance surveys, and the remaining 38,809 were recorded subsequent to the pre-clearance surveys. *Acacia undosa* (P3) was recorded in vegetation communities S2, W9, W11, and W13 (Appendix D, Mattiske Consulting 2018a).

Within the EGLP DE, *Acacia undosa* (P3) is present as three relatively discrete populations: one situated in the proposed waste rock dump and mine pit areas; one situated south of an old tailing storage facility partially intersecting the integrated waste landform area; and a third population partially intersecting the proposed airstrip (Figure 10a).

Surveys undertaken since the completion of the pre-clearance surveys have revealed that the *Acacia undosa* (P3) population located in the proposed waste rock dump area extends 1.2 km to the east (Figure 10a), largely outside the boundary of the EGLP DE. Part of this population is situated in vegetation which was subject to a fire in early 2016. In this situation *Acacia undosa* (P3) juveniles were present in high density (Plate 1). Based on a randomly selected area within burnt and adjacent unburnt vegetation which supports *Acacia undosa* (P3), the density of *Acacia undosa* (P3) was 885 plants per hectare in unburnt vegetation and 3,265 plants per hectare in the burnt vegetation.

A fourth discrete population of *Acacia undosa* (P3) occurs within the EGLP development envelope to the south-east of the waste rock dump population, and is separated from the latter by heath vegetation. The surveys undertaken since the completion of the pre-clearance surveys recorded an additional 38,809 *Acacia undosa* (P3). The majority of these were recorded to the east of the EGLP DE (Figure 10a). Two discrete populations of *Acacia undosa* (P3) were recorded to the south of and within the southern extent of the Jilbadji Nature Reserve (Figure 10a).

At the regional level *Acacia undosa* (P3) has been recorded in the Avon Wheatbelt, Coolgardie, and Mallee bioregions (Figure 10b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 128 *Acacia undosa* (P3) regionally. Of these two are situated within the EGLP DE. As these records would represent duplication of Mattiske Consulting records from the present surveys, they were removed from impact calculations (Table 4).

Based on the infrastructure footprint (Figure 2), a total of 11,678 *Acacia undosa* (P3) would be directly impacted by clearing associated infrastructure construction with the EGLP DE. This represents 19.97% of the local and 19.93% of the regional populations of this taxon (Table 4). The direct impacts to *Acacia undosa* (P3) are primarily associated with clearing to accommodate the waste rock dump, and to a lesser extent the integrated waste landform and airstrip (Table 5, Figure 10a).



Plate 1: *Acacia undosa* (P3) juveniles (indicated by red markers) growing in burnt woodland to the east of the proposed waste rock dump

5.3.4 *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1)

A total of 21 *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 11a). Of these 21 individuals, three were recorded during the pre-clearance surveys and the remaining 18 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1) was recorded in the W6, W9 and W13 vegetation communities (Appendix D).

At the regional level *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1) has been recorded in both the Coolgardie and Mallee bioregions (Figure 11b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of two *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1) regionally, one of which is located at the western end of the mine access road, and hence was classified as being local for the purposes of impact calculations (Table 4).

No *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1) would be directly impacted by clearing with infrastructure construction within the EGLP DE.

5.3.5 *Banksia sphaerocarpa* var. *dolichostyla* (T)

A total of 18,207 *Banksia sphaerocarpa* var. *dolichostyla* (T) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 12a). Of these 18,207 individuals, 17,779 were recorded during the pre-clearance surveys and the remaining 428 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Banksia sphaerocarpa* var. *dolichostyla* (T) was recorded principally in the S3, and to a minor extent in the S1, W5, W11, and W22 vegetation communities (Appendix D).

At the regional level *Banksia sphaerocarpa* var. *dolichostyla* (T) occurs in the Avon Wheatbelt, Coolgardie and Mallee bioregions (Figure 12b). Data acquired from the DBCA (TPFL & WAHerb records) record a total of 9,913 *Banksia sphaerocarpa* var. *dolichostyla* (T) regionally. Based on an analysis of pre-European vegetation associations, banded ironstone formation and proximity of these records to the EGLP DE, 2,502 of these individuals which were in vegetation association 125 (Forrestania) and which are within or proximate to the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, were classified as being part of the local population for impact calculations. A further 3,505 individuals, which represented records within areas searched by Mattiske Consulting during the present or past (Mattiske Consulting 2018b, 2019d, 2019e, 2019f) surveys associated with the EGLP were excluded from impact calculations as they would represent record duplication (Table 4).

Based on the infrastructure footprint (Figure 2), a total of two *Banksia sphaerocarpa* var. *dolichostyla* (T) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 0.01% of the local and 0.01% of the regional populations of this taxon (Table 4). The direct impacts to *Banksia sphaerocarpa* var. *dolichostyla* (T) are associated with clearing associated with the mine access road and the roads and ancillary service areas (Table 5, Figure 12a).

5.3.6 *Brachyloma stenolobum* (P1)

A total of one *Brachyloma stenolobum* (P1) was recorded during the pre-clearance surveys of the EGLP (Figure 13a). No *Brachyloma stenolobum* (P1) were recorded in surveys completed subsequent to the preclearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Brachyloma stenolobum* (P1) was recorded in vegetation community W13 (Appendix D), along the eastern extent of the mine access road into the EGLP from the Forrestania Road (Figure 13a) during the vegetation mapping survey in 2017 (Mattiske Consulting 2018a).

At the regional level *Brachyloma stenolobum* (P1) has only been recorded within the Coolgardie IBRA bioregion (Figure 13b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 651 *Brachyloma stenolobum* (P1) regionally. Of these, two populations are situated within 5 km to the north of the EGLP DE, and have been classified as being local for the purposes of impact calculations (Table 4).

No *Brachyloma stenolobum* (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE.

5.3.7 *Calamphoreus inflatus* (P4)

A total of three *Calamphoreus inflatus* (P4) were recorded during the pre-clearance surveys of the EGLP (Figure 14a). No *Calamphoreus inflatus* (P4) were recorded in surveys completed subsequent to the preclearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Calamphoreus inflatus* (P4) was recorded in vegetation communities MW3 and MW4 (Mattiske Consulting 2017), within the Prince of Wales prospect, located to the north of the EGLP.

At the regional level *Calamphoreus inflatus* (P4) has been recorded within the Coolgardie and Mallee IBRA bioregions (Figure 14b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 125,444 *Calamphoreus inflatus* (P4) regionally. Whilst three of these populations are located between 6 km and 17 km south of the EGLP DE, they are situated on a different pre-European vegetation associations to the EGLP DE, as well as being external to the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community. Consequently, for the purposes of impact calculations these were classified as part of the regional population of this taxon.

No *Calamphoreus inflatus* (P4) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE.

5.3.8 *Chorizema circinale* (P3)

A total of 119 *Chorizema circinale* (P3) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 15a). Of these 119 individuals, 84 were recorded during the pre-clearance surveys and the remaining 35 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Chorizema circinale* (P3) was principally recorded growing in the W5 and W6 vegetation communities (Appendix D), which are situated on sandy or clayey sand soils which supports the vegetation on the mid to western extent of the mine access road from the Forrestania Rd (Figure 15a).

At the regional level, *Chorizema circinale* (P3) has been recorded in Coolgardie, Mallee and Esperance Plains IBRA bioregions (Figure 15b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 476 *Chorizema circinale* (P3) regionally. Of these, two records (51 plants), one situated adjacent to the Forrestania Rd near the EGLP mine access road, and a second located approximately 10 km north along the Forrestania Rd in similar vegetation, have been included as local records for the purposes of impact assessment (Table 4).

Based on the infrastructure footprint (Figure 2), a total of 18 *Chorizema circinale* (P3) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 10.59% of the local and 3.03% of the regional populations of this taxon (Table 4). The direct impacts to *Chorizema circinale* (P3) are associated principally with clearing for the mine access road, and to a lesser extent the processing area (Table 5, Figure 15a).

5.3.9 *Daviesia sarissa* subsp. *redacta* (P2)

A total of 489 *Daviesia sarissa* subsp. *redacta* (P2) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 16a). Of these 489 individuals, 224 were recorded during the pre-clearance surveys and the remaining 265 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Daviesia sarissa* subsp. *redacta* (P2) was principally recorded growing in the W11 and W13 vegetation communities, and to a minor extent in the S3 and W5 vegetation communities (Appendix D). *Daviesia sarissa* subsp. *redacta* (P2) was also recorded growing along the edges of the existing airstrip on the disturbed ground, where it was noted to be growing to a larger size than was typically noted within undisturbed vegetation.

At the regional level, *Daviesia sarissa* subsp. *redacta* (P2) has only been recorded in Coolgardie IBRA bioregion to the north of the EGLP (Figure 16b). The recording of *Daviesia sarissa* subsp. *redacta* (P2) within the EGLP DE represents a 90 km southern extension to the known range of this taxon. Data acquired from the DBCA (TPFL & WAHerb records) records a total of 12 *Daviesia sarissa* subsp. *redacta* (P2) regionally (Table 4).

Based on the infrastructure footprint (Figure 2), a total of 5 *Daviesia sarissa* subsp. *redacta* (P2) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 1.02% of the local and 1.00% of the regional populations of this taxon. The direct impacts to *Daviesia sarissa* subsp. *redacta* (P2) are associated with clearing associated with the topsoil area (Table 5, Figure 16a).

5.3.10 *Eremophila biserrata* (P4)

A total of 352 *Eremophila biserrata* (P4) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 17a). Of these 352 individuals, 3 were recorded during the pre-clearance surveys and the remaining 349 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Eremophila biserrata* (P4) was recorded growing on cleared lands within the area planned for the accommodation village (Appendix D). *Eremophila biserrata* (P4) was not associated with a specific vegetation community (Mattiske Consulting 2018a) within the EGLP DE. The majority (352 individuals) of *Eremophila biserrata* (P4) were recorded in vegetation along or near the Forrestania Rd, approximately 10 km south of the EGLP DE.

At the regional level *Eremophila biserrata* (P4) has been recorded in both the Coolgardie and Mallee IBRA bioregions (Figure 17b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 1,269 *Eremophila biserrata* (P4) regionally (Table 4). Two of these individuals, located between 6 km and 7 km of the EGLP DE have been classified as being local for the purposes of impact assessment (Table 4).

Based on the infrastructure footprint (Figure 2), a total of three *Eremophila biserrata* (P4) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 0.85% of the local and 0.19% of the regional populations of this taxon. The direct impacts to this taxon relate to the clearing of plants situated on previously cleared lands associated with the accommodation village (Table 5, Figure 2).

5.3.11 *Eremophila verticillata* (T)

A total of 3,217 *Eremophila verticillata* (T) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 18a). Of these 3,217 individuals, 80 were recorded during the pre-clearance surveys and the remaining 3,137 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Eremophila verticillata* (T) was recorded in vegetation community W9 (Appendix D). The populations of *Eremophila verticillata* (T) located south of the EGLP DE, and described by polygons (Figure 18a) were conservatively estimated.

At the regional level, *Eremophila verticillata* (T) has previously only been recorded in the Mallee IBRA bioregion, approximately 115 km to 150 km to the south-west of the EGLP (Figure 18b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 1,906 *Eremophila verticillata* (T) regionally, of which three are associated with the EGLP, and represent duplication of current survey records.

No *Eremophila verticillata* (T) would be directly impacted by clearing associated with the EGLP.

5.3.12 *Eutaxia lasiocalyx* (P2)

A total of 42,674 *Eutaxia lasiocalyx* (P2) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 19a). Of these 42,674 individuals, 28,565 were recorded during the pre-clearance surveys and the remaining 14,109 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Eutaxia lasiocalyx* (P2) was recorded principally in the W9 and W11 vegetation communities, and to a lesser extent in the W8, W12 and MW6 vegetation communities (Appendix D).

At the regional level *Eutaxia lasiocalyx* (P2) has been recorded in both the Coolgardie and Avon Wheatbelt IBRA bioregions (Figure 19b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 16 *Eutaxia lasiocalyx* (P2) regionally. Five of the *Eutaxia lasiocalyx* (P2) were recorded within the EGLP DE and have been excluded from impact calculations as they would duplicate records by Mattiske Consulting from the current surveys. Two other records to the south of the EGLP DE, and which are

located within the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, were included as local records due to the landform similarity.

Based on the infrastructure footprint (Figure 2), a total of 6,250 *Eutaxia lasiocalyx* (P2) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 14.65% of the local population and 14.64% of the regional population of this taxon (Table 4). The direct impacts to *Eutaxia lasiocalyx* (P2) are primarily related to clearing associated with construction of the airstrip, and to a lesser extent with clearing associated with the integrated waste landform (Table 5, Figure 19a).

5.3.13 *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1)

A total of 2,338 *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 20a). Of these 2,338 individuals, one was recorded during the pre-clearance surveys and the remaining 2,337 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) was recorded principally in the W13 vegetation community, and to a lesser extent in the W8 vegetation community (Appendix D).

At the regional level *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) has only been recorded in the Coolgardie IBRA bioregions (Figure 20b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of five *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) regionally, all situated at North Ironcap, approximately 20 km from the population at the EGLP. For the purposes of impact calculations (Table 4), the records at North Ironcap have been treated as regional records, given that these records are located both spatially distant from those at the EGLP, but also that they are situated in a different pre-European vegetation association to those at the EGLP.

Based on the infrastructure footprint (Figure 2), a total of three *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 0.13% of the local population and 0.13% of the regional population of this taxon (Table 4). The direct impacts to *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) are from clearing associated with construction of the mine pit (Table 5, Figure 20a). All three *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) which would be directly impacted are growing either on or at the base of the old Earl Grey pit waste rock dump.

5.3.14 *Grevillea lissopleura* (P1)

A total of 1,815 *Grevillea lissopleura* (P1) were recorded from the pre-clearance surveys at the EGLP (Figure 21a). No *Grevillea lissopleura* (P1) have been recorded since the completion of the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Grevillea lissopleura* (P1) was recorded in the W9 and W11 vegetation communities (Appendix D).

At the regional level *Grevillea lissopleura* (P1) has been recorded in both the Avon Wheatbelt, Coolgardie and Mallee IBRA bioregions (Figure 21b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 8 *Grevillea lissopleura* (P1) regionally. All regional records of *Grevillea lissopleura* (P1) are situated a minimum of 22 km from the EGLP, and are both external to the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, and occur in pre-European vegetation associations which are different from those occurring within the EGLP. Consequently, none of the regional records was deemed to form a component of the local population (Table 4).

Based on the infrastructure footprint (Figure 2), one *Grevillea lissopleura* (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 0.06% of the local and 0.05% of the regional populations of this taxon. The direct impact to *Grevillea lissopleura* (P1) is associated with clearing for roads and ancillary services to east of the accommodation village (Figure 21a).

5.3.15 *Grevillea marriottii* (P1)

A total of 724 *Grevillea marriottii* (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 22a). Of these 724 individuals, 54 were recorded during the pre-clearance surveys and the remaining 670 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Grevillea marriottii* (P1) was recorded in the W13 and W15 vegetation communities (Appendix D). *Grevillea marriottii* (P1) was also recorded on the disturbed land surrounding the old Bounty Mine tailings storage facility which is currently the location for the integrated waste landform (Figure 2).

At the regional level *Grevillea marriottii* (P1) has only been recorded Coolgardie IBRA bioregion immediately to the south and south-west of the EGLP DE (Figure 22b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 9,113 *Grevillea marriottii* (P1) regionally. All of the records fall within 15 km of the EGLP DE, with no two records being separated by more than 6 km, and are situated in the Forrestania (941 and 1413.4) pre-European vegetation association, and form a continuous band in vegetation with a similar appearance from available aerial data. Consequently, for the purposes of impact calculations, all TPFL and WAHerb records were treated as being part of a local population (Table 4).

Based on the infrastructure footprint (Figure 2), a total of 15 *Grevillea marriottii* (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 0.15% of the local population and 0.15% of the regional population of this taxon. The direct impacts to *Grevillea marriottii* (P1) are related to clearing associated with construction of the integrated waste landform (Table 5, Figure 22a).

5.3.16 *Gyrostemon ditrigynus* (P4)

A total of 27 *Gyrostemon ditrigynus* (P4) were recorded from the pre-clearance and subsequent surveys at the EGLP (Figure 23a). Of these 27 individuals, 26 were recorded during the pre-clearance surveys and the remaining single individual was recorded subsequent to the pre-clearance surveys. *Gyrostemon ditrigynus* (P4) was recorded exclusively growing on cleared land, principally being drill pads. *Gyrostemon ditrigynus* (P4) was not recorded growing within undisturbed vegetation.

At the regional level *Gyrostemon ditrigynus* (P4) has been recorded in the Coolgardie and Mallee IBRA bioregions, with the majority of records being within the Mallee bioregion to the south and south-east of the EGLP DE (Figure 23b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 52,602 *Gyrostemon ditrigynus* (P4) regionally. One regional record (1 plant) located 5 km south of the EGLP DE, within the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, was included as part of the local population. All other records, situated a minimum of 21 km from the EGLP DE were classed as regional records for the purposes of impact calculations (Table 4).

Based on the infrastructure footprint (Figure 2), a total of 3 *Gyrostemon ditrigynus* (P4) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 10.71% of the local population and 0.01% of the regional population of this taxon. The direct impacts to *Gyrostemon ditrigynus* (P4) are related to clearing associated with construction of mine pit and processing area (Table 5, Figure 23a).

5.3.17 *Hakea pendens* (P3)

A total of 1,149 *Hakea pendens* (P3) were recorded from the pre-clearance surveys at the EGLP (Figure 24a). No *Hakea pendens* (P3) have been recorded since the completion of the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Hakea pendens* (P3) was principally recorded growing in vegetation community W17 (Appendix D).

At the regional level *Hakea pendens* (P3) has been recorded in the Avon Wheatbelt and Coolgardie IBRA bioregions, with the majority of records occurring to the north-west of the EGLP DE (Figure 24b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 131 *Hakea pendens* (P3) regionally. Two records (two plants) were located within the EGLP vegetation survey boundary (Mattiske Consulting 2018a) and were classified as being part of the local population for the purposes of impact calculations. The remaining records, which were located a minimum of 26 km from the EGLP DE, and which were situated on a different pre-European vegetation association compared to the EGLP, and distant from the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, were treated as forming the regional population for the purposes of impact calculations (Table 4).

No *Hakea pendens* (P3) would be directly impacted by clearing associated with the EGLP.

5.3.18 *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1)

This taxon was previously referred to as *Hibbertia* aff. *oligantha*. Thiele (2019) sets out the description of this taxon.

A total of 4,732 *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 25). Of these 4,732 individuals, 4,731 were recorded during the pre-clearance surveys and the remaining single individual was recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1) was recorded growing in vegetation community H1 within the EGLP vegetation survey area (Appendix D).

Hibbertia tuberculata K.R. Thiele, sp. nov. (P1) is a new taxon, uncovered during the vegetation mapping in 2017 (Mattiske Consulting 2018a). According to Thiele (2019) this taxon is only known from three locations within the Coolgardie IBRA bioregion – from Lake Cronin to North Ironcap and Mt Holland. No regional population record data was available at the time of preparation of this report. All records of this taxon were considered local for the purposes of impact calculations (Table 4)

No *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE (Table 5).

5.3.19 *Hibbertia* sp. nov.

A total of 13 *Hibbertia* sp. novel were recorded from the pre-clearance and subsequent surveys at the EGLP (Figure 26). Of these 13 individuals, one was recorded during the pre-clearance surveys and the remaining 12 individuals were recorded subsequent to the pre-clearance surveys. *Hibbertia* sp. novel is a new taxon, uncovered during the pre-clearing surveys in 2019. It is presently only known from a small area of cleared land which forms part of the processing area (Figure 2), where the majority of plants are growing in a small drainage channel.

There are no regional records of *Hibbertia* sp. novel as its current distribution is restricted to the single known population located within the processing area of the EGLP DE. All 13 *Hibbertia* sp. novel would be

directly impacted by clearing associated with the EGLP DE. This represents 100% of the currently known population of this taxon at both the local and regional level (Table 4).

5.3.20 *Labichea rossii* (P1)

A total of 3,985 *Labichea rossii* (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 27a). Of these 3,985 individuals, 2,407 were recorded during the pre-clearance surveys and the remaining 1,578 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Labichea rossii* (P1) was recorded growing in the S3, W5, W12 and W13 vegetation communities (Appendix D).

At the regional level *Labichea rossii* (P1) has only been recorded in Coolgardie IBRA bioregion (Figure 27b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 101 *Labichea rossii* (P1) regionally. All regional records of *Labichea rossii* (P1) are situated in the Mt Holland area, in the vicinity of the borefield road (Figures 2 and 27a). Consequently, all regional records were classified as being part of the local population for the purposes of impact calculations (Table 4).

Based on the infrastructure footprint (Figure 2), a total of 210 *Labichea rossii* (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 5.14% of both the local population and regional populations of this taxon. The direct impacts to *Labichea rossii* (P1) are related to clearing associated with construction of the processing and topsoil areas (Table 5, Figure 23a).

5.3.21 *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1)

A total of 59,183 *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 28a). Of these 59,183 individuals, 51,181 were recorded during the pre-clearance surveys and the remaining 8,002 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) was recorded principally in the S3 and W13 vegetation communities, and to a lesser extent in the W6 and W11 vegetation communities (Appendix D). In the S3 vegetation community, which is the primary habitat for *Banksia sphaerocarpa* var. *dolichostyla* (T), *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) occurs generally throughout the community. In the other vegetation communities, which are eucalypt mallee shrublands or woodlands, *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) preferentially occurs in the vicinity of the eucalypt mallee trees.

Microcorys sp. Mt Holland (D. Angus DA 2397) (P1) was recorded growing in disturbed land such as old exploration tracks, drill pads, and disturbed areas associated with the old Bounty Mine infrastructure areas, particularly the existing airstrip and near the power sub-station. *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) was recorded growing in areas which were fire burnt approximately 3.5 years ago. This includes areas to the south-west of the existing airstrip and to the north-east of the EGLP DE (Figure 28a). *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) was noted to be growing more densely in the recently fire burnt areas.

No regional location data for *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) is currently available from the DBCA. *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) was initially uncovered during the vegetation mapping of the EGLP in 2017 (Mattiske Consulting 2018a). The regional mapping of *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) presented in this report (Figure 28b) has been the result of surveys undertaken by Mattiske Consulting (this report) and Strategen JBS&G (2019a, b).

Based on the infrastructure footprint (Figure 2), a total of 8,641 *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) would be directly impacted by clearing associated with infrastructure construction within the

EGLP DE. This represents approximately 14.60% of the local and regional population of this taxon. The direct impacts to *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) are primarily related to clearing associated with construction of the waste rock dump, and to a lesser extent with clearing associated with the mine pit, integrated waste landform, and airstrip (Table 5, Figure 28a).

5.3.22 *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)

A total of 1,983 *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 29). Of these 1,983 individuals, 542 were recorded during the pre-clearance surveys and the remaining 1,441 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) was recorded principally in fire burnt areas of the W11 vegetation community and the disturbed lands immediately to the north of the electrical sub-station, and to a lesser extent in the W13 and W16 vegetation communities to the north of the waste rock dump (Appendix D).

Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) was recorded in dense numbers in the areas which were fire burnt approximately 3.5 years ago. *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) was also common on the disturbed lands associated with the electrical sub-station and in areas along the Blue Vein mine haul road.

No regional location data for *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) is currently available from the DBCA. *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) was initially uncovered during the pre-clearance surveys at the EGLP in 2019.

Based on the infrastructure footprint (Figure 2), a total of 233 *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 11.75% of both the local and regional populations of this taxon. The direct impacts to *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) are related with clearing associated with the construction of the processing plant, which would impact the population of *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) located to the immediate north of the electrical sub-station (Table 5, Figure 29).

5.3.23 *Olearia laciniifolia* (P2)

A total of 2 *Olearia laciniifolia* (P2) were recorded during the pre-clearance surveys at the EGLP (Figure 30a). No *Olearia laciniifolia* (P2) have been recorded since the completion of the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Olearia laciniifolia* (P2) was recorded growing in the W21 vegetation community within the EGLP vegetation survey area (Appendix D).

At the regional level *Olearia laciniifolia* (P2) has been recorded in the Coolgardie and Mallee IBRA bioregions (Figure 30b), with the majority of records being attributed to the Mallee IBRA bioregion. Data acquired from the DBCA (TPFL & WAHerb records) records a total of 60 *Olearia laciniifolia* (P2) regionally (Figure 30b). The recording of *Olearia laciniifolia* (P2) within the EGLP DE represents an approximately 24 km northern extension to its presently known range (Figure 30b). Whilst four of the regional records are situated within the same pre-European vegetation association as those recorded within the EGLP DE (Forrestania 125), all regional records have been classified as such for the purposes of impact calculations (Table 4). The reason for using this approach was a combination of recognizing that the species, to date, has a more southern distribution, together with the large distance of separation between the specimens recorded within the EGLP DE and the closest TPFL/WAHerb records.

No *Olearia laciniifolia* (P2) would be directly impacted by clearing associated with the EGLP.

5.3.24 *Orianthera exilis* (P2)

A total of one *Orianthera exilis* (P2) was recorded from the pre-clearance surveys at the EGLP (Figure 31a). No *Orianthera exilis* (P2) have been recorded since the completion of the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Orianthera exilis* (P2) was recorded growing in the W15 vegetation community within the EGLP vegetation survey area (Appendix D).

At the regional level *Orianthera exilis* (P2) has been recorded in the Coolgardie and Mallee IBRA bioregions (Figure 31b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 63 *Orianthera exilis* (P2) regionally. Two records (2 plants) were located within 5 km of the EGLP vegetation survey boundary (Mattiske Consulting 2018a) and were classified as being part of the local population for the purposes of impact calculations (Table 4), as they were both spatially adjacent to the EGLP and within the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, within which the EGLP is situated.

No *Orianthera exilis* (P2) would be directly impacted by clearing associated with the EGLP.

5.3.25 *Stylidium sejunctum* (P3)

A total of 674 *Stylidium sejunctum* (P3) have been recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 32a). Of these 673 individuals, 383 were recorded during the pre-clearance surveys and the remaining 291 were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Stylidium sejunctum* (P3) was recorded growing in the W11 and W13 vegetation communities (Appendix D). In the case of the latter, it was recorded growing commonly in the areas which were fore burnt approximately 3.5 years ago. *Stylidium sejunctum* (P3) was also recorded commonly rehabilitated land designated to be used as a landfill site and occasionally on disturbed land associated with the planned processing area.

At the regional level *Stylidium sejunctum* (P3) has been recorded in both the Coolgardie and Mallee IBRA bioregions (Figure 32b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 63 *Stylidium sejunctum* (P3) regionally. For the purposes of impact calculations (Table 4), six of the WAHerb records, totaling 6 plants, were included as part of the local population. These records, like those recorded during the pre-clearing surveys at the EGLP, were situated within the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community, within which the EGLP is situated, and were spatially a maximum of 6 km from the EGLP DE. Other regional records have a more southerly distribution.

Based on the infrastructure footprint (Figure 2), a total of 216 *Stylidium sejunctum* (P3) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 31.86% of the local and 3.55% of the regional population of this taxon. The direct impacts to *Stylidium sejunctum* (P3) are principally associated with clearing to accommodate the landfill site, and to a lesser extent the small numbers associated with the processing plant area (Table 5, Figure 32a).

5.3.26 *Teucrium sp. dwarf* (R Davis 8813) (P3)

A total of 20,696 *Teucrium sp. dwarf* (R Davis 8813) (P3) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 33a). Of these 20,696 individuals, 720 were recorded during the pre-clearance surveys and the remaining 19,976 were recorded subsequent to the pre-clearance surveys. The majority of the *Teucrium sp. dwarf* (R Davis 8813) (P3) recorded since the completion of the pre-clearance surveys were located in an area to the south of a tailings storage facility on the eastern side of the EGLP DE. In this location, *Teucrium sp. dwarf* (R Davis 8813) (P3) was present in dense numbers, and an estimate of the number in each 10 m x 10 m quadrat was made by accurately recording numbers

in five 1 m x 1 m sub-quadrats and extrapolating the average of these to the 10 m x 10 m quadrat. Based on the vegetation mapping of Mattiske Consulting (2018a), *Teucrium* sp. dwarf (R Davis 8813) (P3) was recorded growing in the W9 vegetation community in very powdery clay soils (Appendix D).

At the regional level *Teucrium* sp. dwarf (R Davis 8813) (P3) has been recorded in the Avon Wheatbelt and Coolgardie IBRA bioregions (Figure 33b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 23,557 *Teucrium* sp. dwarf (R Davis 8813) (P3) regionally. The nearest regional record of *Teucrium* sp. dwarf (R Davis 8813) (P3) is 26 km distant from the EGLP, and is situated in a different pre-European vegetation association compared to those within the EGLP DE. Hence, for the purposes of impact calculations (Table 4), none of the regional records was classified as being part of the local population.

Based on the infrastructure footprint (Figure 2), a total of 365 *Teucrium* sp. dwarf (R Davis 8813) (P3) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 2.77% of the local and 0.99% of the regional population of this taxon (Table 4). The direct impacts to *Teucrium* sp. dwarf (R Davis 8813) (P3) are principally associated with clearing to accommodate the airstrip, and to a lesser extent the small numbers associated with the processing plant area (Table 5, Figure 33a).

5.3.27 *Verticordia stenopetala* (P3)

A total of 1,587 *Verticordia stenopetala* (P3) were recorded across the pre-clearance and subsequent surveys at the EGLP (Figure 34a). Of these 1,587 individuals, two were recorded during the pre-clearance surveys and the remaining 1,585 were recorded subsequent to the pre-clearance surveys. The *Verticordia stenopetala* (P3) recorded since the completion of the pre-clearance surveys were located in an area to the east of the waste rock dump, primarily in a small area of low heath-type vegetation.

At the regional level *Verticordia stenopetala* (P3) has been recorded in the Avon Wheatbelt, Coolgardie and Mallee IBRA bioregions (Figure 34b). Data acquired from the DBCA (TPFL & WAHerb records) records a total of 48 *Verticordia stenopetala* (P3) regionally. One of these records (one plant) is situated in the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community and the same pre-European vegetation association as the nearest record of this taxon at the EGLP. This record has been classified as part of the local population for impact calculations.

Based on the infrastructure footprint (Figure 2), a total of 20 *Verticordia stenopetala* (P3) would be directly impacted by clearing associated with infrastructure construction within the EGLP DE. This represents 1.26% of the local and 1.22% of the regional population of this taxon (Table 4). The direct impacts to *Verticordia stenopetala* (P3) are principally associated with clearing for road and ancillary facilities (Table 5, Figure 33a).

5.3.28 *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)

A total of two *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) have been recorded across the pre-clearing and subsequent surveys at the EGLP (Figure 35a). Of these, none were recorded during the pre-clearance surveys and two were recorded subsequent to the pre-clearance surveys. Based on the vegetation mapping of Mattiske Consulting (2018a), *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) was recorded growing in the S3 and W13 vegetation communities (Appendix D).

At the regional level, and based on data extracted from Florabase (WAHerb 1998-), *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) has been recorded in the Avon Wheatbelt and Coolgardie IBRA bioregions (Figure 35b). Florabase (WAHerb 1998-) records a total of 37 *Chamelaucium* sp. Parker Range

(B.H. Smith 1255) (P1) regionally. All regional records of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) are located a minimum of 50 km to the north and north-west of the EGLP, with the largest cluster being in the vicinity of the Parker Range. The recording of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) within the EGLP represents a southerly extension to its currently known range.

No *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) would be directly impacted by clearing associated with the EGLP.

5.3.29 *Rinzia medifila* (P1)

One *Rinzia medifila* (P1) has been recorded at the EGLP (Figure 36a), south of the EGLP DE, within the 2017 vegetation survey buffer area (Mattiske Consulting 2018a). Based on the vegetation mapping of Mattiske Consulting (2018a), *Rinzia medifila* (P1) was recorded growing in the H1 vegetation community (Appendix D).

At the regional level, and based on data extracted from Florabase (WAHerb 1998-), *Rinzia medifila* (P1) has been recorded in the Avon Wheatbelt and Coolgardie IBRA bioregions (Figure 36b). The recording of *Rinzia medifila* (P1) at the EGLP represent a southerly 20 km extension to its currently known range.

No *Rinzia medifila* (P1) would be directly impacted by clearing associated with the EGLP.

6. DISCUSSION

On the 21st November 2019, on advice from the EPA, the Minister for the Environment issued Ministerial Statement 1118 (Government of Western Australia 2019) approving implementation of the Earl Grey Lithium Project, subject to conditions, following a formal assessment of the project at the level of Public Environmental Review. Condition 6-2 in Ministerial Statement 1118 states that:

"Prior to the commencement of ground disturbing activities, the proponent must undertake pre-clearance vegetation and flora survey(s) within the development envelope in accordance with *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*."

This report summarises the results of the pre-clearance flora and vegetation surveys. To satisfy Condition 6-2 of the Ministerial Statement, data from a total of 15 surveys undertaken between March and November of 2019, together with earlier surveys within the EGLP between 2016 and 2019 (Mattiske Consulting 2016, 2017, 2018a, 2018b, 2018c) were combined to provide a comprehensive dataset to evaluate the potential for impacts to conservation significant flora within the EGLP. Of the 15 surveys completed in 2019, 10 were completed by Mattiske Consulting, and four by Strategen JBS&G (Strategen 2019a, 2019b). Some of the Mattiske Consulting survey data was recorded as part of conservation significant flora surveys undertaken in relation to local and regional Program of Works applications by Kidman (Mattiske Consulting 2019a-f). Conservation significant flora survey data related to proposed Program of Works applications, recorded by AECOM (report in preparation) on behalf of Wescefc, was acquired to provide additional relevant regional data.

Specifically, within 2019, the targeted conservation significant flora surveys have been completed using 10 m spaced search transects across the EGLP DE (Figure 6). In total, approximately 3,224 km of search paths have been traversed on foot to complete the surveys. This has included the infrastructure footprint, areas within the EGLP DE which do not form part of the infrastructure footprint, together more regionally based searches to identify areas which may provide habitat for conservation significant flora likely to be directly impacted within the EGLP. The latter searches were designed to provide a more comprehensive understanding of the distribution of conservation significant flora regionally, and to enable local impacts within the EGLP DE to be placed in context. To date, approximately 70% of the EGLP DE has been searched using 10 m spaced search transects. The areas within the EGLP DE which have not been searched to date are predominantly undisturbed vegetation in areas where no infrastructure is currently planned to be constructed, as well as disturbed grounds on the eastern side of the EGLP DE which were a component of the old Bounty Mine.

Overall, a total of 29 threatened and priority taxa were recorded during the pre-clearance and subsequent surveys within the EGLP (Table 4). The 29 taxa comprised two threatened taxa, 14 Priority 1 taxa, four Priority 2 taxa, five Priority 3 taxa, three Priority 4 taxa, and one taxon, newly uncovered, which has not been assigned a conservation status. During the course of the surveys between 2016 and 2019, six newly uncovered taxa have been recorded.

6.1 Survey Constraints

The targeted searches for conservation significant flora within the EGLP DE to satisfy the requirements of Condition 6-2 of the Ministerial Statement 1118 (Government of Western Australia 2019) were primarily undertaken between March and November of 2019. According to the *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016), flora and vegetation surveys within the south-west and interzone areas, which encompasses the EGLP, should take place in the spring months (September to November) after the main rainfall period, as this is the most suitable period to enable detection and identification of the range of flora species which may occur. Approximately half of all survey

work associated with the EGLP, which has taken place between 2016 and 2019, has been undertaken in the spring months (Figure 3).

The climate data for 2019 (Figure 3) demonstrates that there were below average levels of rainfall, based on the climate data for Hyden (BOM 2019), with winter/spring rainfall in 2019 being approximately 77% of the long-term average. Based on field observations in 2019, the main flowering period in the Mt Holland area, which includes the EGLP, commenced in mid-August. Flowering continued through until mid-November. Consequently, surveys 13 through 17 (Table 1, Figure 3), which account for half of all surveys undertaken in 2019 by Mattiske Consulting, can be considered as satisfying the preferential timing for botanical surveys in the Mt Holland area.

Due to the practicalities associated with searching the infrastructure footprint, which occupied approximately 670 ha, it was necessary to undertake survey work both within and outside the optimal period for surveys in the area. This was managed in the following ways:

1. Using the same survey botanists as much as possible to ensure consistency. Some of the personnel who undertook the survey work had been working in the area for up to three years and were familiar with the range of conservation significant flora present – particularly when only sterile material was present;
2. Ensuring that areas known to have higher levels of conservation significant flora which would be difficult to identify without flowering material were searched in the spring;
3. Ensuring that overall, a portion of different sections of the infrastructure footprint were searched in the spring to provide a level of certainty as to the presence of the range of conservation significant flora which may be present;
4. The collection of multiple specimens of conservation significant flora for formal identification by a taxonomist at the State Herbarium to provide a high level of confidence in the field survey work, particularly during the autumn and early winter period when flowering specimens were not generally available; and,
5. the collection of multiple specimens of flowering small-leaved myrtles and members of the Fabaceae during the main flowering period to enable formal identification of species known to be more difficult to identify when not fertile. This was considered particularly important given the range of these taxa identified from the desktop assessment, as potentially being present in the vicinity of Mt Holland.

Overall, and given the level of familiarity of the survey botanists with the local flora, we consider that the constraints associated with survey timing have been managed appropriately and that the manner of undertaking the surveys has contributed to minimizing the risks in undertaking a proportion of the targeted surveys outside the optimal survey period. In the view of the author, there are some exceptions to this, particularly in relation to point (5) above. With respect to the 29 conservation significant species recorded (Table 4), a summary on the degree of difficulty in identifying each of the taxa in the field when only sterile material is available is presented in Table 6. Whilst many of the conservation significant species are readily identifiable when sterile, some, such as *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) may be less easily recognized, and more importantly, a number of other taxa may be mistaken for *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1), including *Westringia cephalantha*, which can co-occur with *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1). Taxa which are difficult to either recognize or to discriminate between conservation and non-conservation significant species include *Baeckea* spp., *Brachyloma stenolobum* (P1), *Chorizema circinale* (P2), *Eutaxia* spp., *Rinzia medifila* (P1), and *Verticordia* spp.

Table 6: Ease of identification of conservation significant flora recorded at the EGLP outside their flowering period

SPECIES	CONSERVATION STATUS		FIELD IDENTIFICATION OF CONSERVATION SIGNIFICANT TAXA WHEN STERILE	
	BC Act / DBCA LISTING	EPBC ACT	EASE OF IDENTIFICATION	REASON (S)
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001)	P1		high	Characteristic growth habit, and phyllode shape, colour and pungency unique
<i>Acacia</i> sp. Mt Holland (B. Ellery BE 1147)	P1		high	Characteristic growth habit with phyllodes held upright, together with wooly stem tips and wooly old retained pods are unique
<i>Acacia undosa</i>	P3		high	Characteristic growth habit, phyllode shape and pattern of nerves on phyllode. Can be potentially confused with <i>Acacia evenulosa</i> in the field, at a distance, by inexperienced personnel. <i>Acacia evenulosa</i> grows in similar habitats as <i>Acacia undosa</i> (P3).
<i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105)	P1		low	Easily confused with other small-leaved myrtles, especially <i>Baeckea</i> spp. Several conservation significant <i>Baeckea</i> spp. area recognized as potentially being present in the area (Table 2).
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	T	V	high	Characteristic growth habit, leaf shape, colour and arrangement. Old fruit are retained on the plant.
<i>Brachyloma stenolobum</i>	P1		low	Plants small and tend to be in relatively dense low shrublands. Potentially mistakenly recognized as one of the common <i>Leucopogon</i> spp. in the area.
<i>Calamphoreus inflatus</i>	P4		low	Nothing particularly characteristic from a vegetative perspective.
<i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255)	P1		medium	Could be mistaken, at a distance, for a <i>Melaleuca</i> spp., however it does not have old fruit retained on stems. Leaf shape, curved tip, and pattern of oil glands makes it characteristic. This taxon has been mistaken in the field by inexperienced personnel as <i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397) (P1), however unlike the latter, the arrangement of leaves on the stem is opposite, whereas the leaf arrangement on <i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397) (P1) is usually in whorls of three.
<i>Chorizema circinale</i>	P3		low	Very difficult to recognise as it is a very small and straggly shrub with small leaves sparsely spread on stems. The plants are typically growing in amongst other shrubs, which adds to the difficulty in recognizing it.
<i>Daviesia sarissa</i> subsp. <i>redacta</i>	P2		high	Characteristic growth habit is unique.
<i>Eremophila biserrata</i>	P4		high	Characteristic growth habit, where it tends to grow in ground-hugging mats on sandy soils is unique.

Table 6: Ease of identification of conservation significant flora recorded at the EGLP outside their flowering period (continued)

SPECIES	CONSERVATION STATUS		FIELD IDENTIFICATION OF CONSERVATION SIGNIFICANT TAXA WHEN STERILE	
	BC Act / DBCA LISTING	EPBC ACT	EASE OF IDENTIFICATION	REASON (S)
<i>Eremophila verticillata</i>	T	E	high	Characteristic growth habit with hairy leaves tightly clasped about the stem, is characteristic. This taxon has only been recorded growing in soft powdery clay soils in the Mt Holland area, so recognizing the preferred soil habitat aids in detecting this taxon.
<i>Eutaxia lasiocalyx</i>	P2		medium	Easily recognized as a <i>Eutaxia</i> spp., however as there are several conservation significant <i>Eutaxia</i> spp. in the Mt Holland area, all should be treated as potentially of conservation significance. In the drier parts of the year <i>Eutaxia lasiocalyx</i> (P2) can be easily mistaken for dead vegetation as the plant appears to be very stressed.
<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	P1		medium	Easily recognized as a <i>Eutaxia</i> spp., however as there are several conservation significant <i>Eutaxia</i> spp. in the Mt Holland area, all should be treated as potentially of conservation significance.
<i>Grevillea lissopleura</i>	P1		medium	Has a characteristic leaf and tip growth form. Does not retain old pods, and does not have some of the common <i>Grevillea</i> characteristic features (e.g. silky new growth)
<i>Grevillea marriottii</i>	P1		high	Very characteristic growth habit and “chunky” tips to the leaves.
<i>Gyrostemon ditrigynus</i>	P4		high	Characteristic habit, viscid nature and preference for disturbed lands.
<i>Hakea pendens</i>	P3		high	Characteristic habit, leaf shape, and size and arrangement of old fruits.
<i>Hibbertia tuberculata</i> K.R. Thiele, sp. nov.	P1		medium	Without flowers, this taxon could easily be mistaken for other <i>Hibbertia</i> spp. except for its tuberculate leaves, and that it has only been recorded within one type of vegetation community (H1 vegetation, Mattiske Consulting 2018a) in the Mt Holland area, to date.
<i>Hibbertia</i> sp. nov.			low	Its bluish, hairy leaves are characteristic, but it may not be recognized as an <i>Hibbertia</i> spp. without flowers.
<i>Labichea rossii</i>	P1		high	Characteristic growth habit and leaf shape.
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397)	P1		high	Characteristic habit, leaf form and arrangement. Inexperienced personnel can easily mistake other species, particularly <i>Westringia cephalantha</i> , amongst others, for this taxon.
<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)	P1		medium	Characteristic habit, leaf form and color. When sterile it may be overlooked by inexperienced personnel.

Table 6: Ease of identification of conservation significant flora recorded at the EGLP outside their flowering period (continued)

SPECIES	CONSERVATION STATUS		FIELD IDENTIFICATION OF CONSERVATION SIGNIFICANT TAXA WHEN STERILE	
	BC Act / DBCA LISTING	EPBC ACT	EASE OF IDENTIFICATION	REASON (S)
<i>Olearia laciniifolia</i>	P2		low	Characteristic leaf shape and margins, but could be mistaken for other species.
<i>Orianthera exilis</i>	P2		medium	Characteristic growth habit and leaves.
<i>Rinzia medifila</i>	P1		low	Potentially easily mistaken for other small leafed myrtle species.
<i>Stylidium sejunctum</i>	P1		high	Characteristic growth habit, as grassy tufts, often with old flowering stems and open fruit capsules present on mature individuals.
<i>Teucrium</i> sp. dwarf (R Davis 8813)	P3		medium	This taxon has only been recorded growing in powdery clay soils in the Mt Holland area. Its small size, often less than 10 cm high, and sparse and very small leaves can make it difficult to spot. However, its growth habit, leaf shape and square stem, are characteristic.
<i>Verticordia stenopetala</i>	P3		medium	Has characteristic blue-green leaves. However, it may not be recognized as a <i>Verticordia</i> by inexperienced personnel.

6.2 Overview of Direct Impacts to Conservation Significant Taxa

Based on the data recorded during the targeted surveys, the infrastructure footprint (Figure 2) has been used to calculate direct impacts to the range of 29 conservation significant flora recorded. The results of these calculations are presented in Table 4. Of the 29 conservation significant taxa recorded:

- 11 taxa were calculated to have no impacts to their local or regional populations;
- 5 taxa were calculated to experience impacts to their local and regional populations of between 0.01% and 1%;
- 5 taxa were calculated to experience impacts to their local or regional populations of between 1% and 10%; and,
- 8 taxa were calculated to experience impacts to either their local or regional populations in excess of 10%.

Whilst the last impact category (> 10%) reflects higher impacts, particularly for the recently uncovered taxa because of the low levels of knowledge on their distribution and biology, placing the other taxa which are calculated to be less directly impacted in context is nonetheless relevant, given that they may experience indirect impacts. The following sections review each of the taxa included in each of the impact categories to place the calculated impacts into a broader context.

6.3 Taxa calculated to have no direct impacts as a result of clearing associated with the EGLP

The 11 taxa calculated to not be directly impacted by clearing associated with infrastructure construction at the EGLP are:

- *Acacia* sp. Forrestania (D. Angus DA 3001) (P1)
- *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1)
- *Brachyloma stenolobum* (P1)
- *Calamphoreus inflatus* (P4)
- *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)
- *Eremophila verticillata* (T)
- *Hakea pendens* (P3)
- *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1)
- *Olearia laciniifolia* (P2)
- *Orianthera exilis* (P2)
- *Rinzia medifila* (P1)

Two of the taxa included in this group of were only recorded external to the EGLP DE. These taxa were *Calamphoreus inflatus* (P4), which was only recorded in 2016 within Kidman's Prince of Wales Prospect (Mattiske Consulting 2017), and *Eremophila verticillata* (T), which was initially recorded during the vegetation mapping in 2017 (Mattiske Consulting 2018a) to the south of the EGLP DE, within the vegetation survey boundary.

Several of the other species which will not be directly impacted by clearing associated with infrastructure construction within the EGLP are located within the EGLP DE. These taxa are *Acacia* sp. Forrestania (D. Angus DA 3001) (P1), *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1), *Brachyloma stenolobum* (P1), *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1), *Hakea pendens* (P3), *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1), *Olearia laciniifolia* (P2), *Orianthera exilis* (P2), and *Rinzia medifila* (P1).

Each of these taxa are discussed in the following paragraphs.

Calamphoreus inflatus (P4)

Calamphoreus inflatus (P4) has only been recorded by Mattiske Consulting during a reconnaissance survey of the Prince of Wales prospect for Kidman in 2016 (Mattiske Consulting 2017). The plants recorded were located in areas which had been the subject of fire less than one year prior to the survey. No recordings of this taxon have been made within the EGLP DE. The recording of *Calamphoreus inflatus* (P4) within the Prince of Wales prospect is within the known regional distribution for this taxon (Figure 14b). Given that this species is recognised as having often been recorded on open areas and often on disturbed soils (Chinnock 2007), its recording in a recently burnt area which has undergone some level of clearing for exploration drilling, may in part explain its presence. Given that this taxon has not been directly recorded within the EGLP to date, that there are 36 combined TPFL/WAHerb records (DBCA 2019e) of this taxon, that it currently has a Priority 4 DBCA conservation ranking, and that there are no calculated impacts to this taxon associated with clearing related to infrastructure construction within the EGLP.

Eremophila verticillata (T)

Eremophila verticillata (T) was originally recorded during the vegetation mapping of the EGLP in 2017 (Mattiske Consulting 2018a). Prior to its recording at Mt Holland, this taxon was previously only known around the Lake Cobham area in the Shire of Lake Grace (DotEE 2019d), located approximately 150 km to the south-west of Mt Holland. In November of 2019 during regional searches for conservation significant taxa in the Mt Holland area, three further areas which supported populations of *Eremophila verticillata* (T) were recorded (Figure 18a). These areas were between 1.5km and 2.5 km south of EGLP DE, and immediately to the north of the old Blue Vein mine pit. Time constraints at the time precluded making a detailed assessment of the sizes and extents of the populations of *Eremophila verticillata* (T) at the three locations. Estimates made at the time indicate that the population size across the three areas will be in the thousands, based on small subset sampling. In all cases, the *Eremophila verticillata* (T) growing in the Mt Holland area have been recorded growing on hill tops and slopes in very fine powdery clay soils.

Whilst there are no impacts to *Eremophila verticillata* (T) resulting from clearing associated with infrastructure construction at the EGLP, the significance of potentially large populations of this threatened taxon in the vicinity of planned mining operations warrants further survey work to accurately determine population boundaries to ensure that the species is protected from potential future impacts, both direct and indirect.

Acacia sp. Forrestania (D. Angus DA 3001) (P1)

Acacia sp. Forrestania (D. Angus DA 3001) (P1) is a new taxon, uncovered during the vegetation mapping in 2017 (Mattiske Consulting 2018a). It is presently only known from a small area to the south of the EGLP DE envelope (Figure 8), in vegetation communities S1 and W9 (Appendix D, Mattiske Consulting 2018a). Clearing associated with infrastructure construction at the EGLP will not directly impact this taxon, however this taxon has been recorded within 110 m of the south-west corner of the planned accommodation village. Over the course of 14 surveys completed by Mattiske Consulting (Table 1) since September 2017, both locally and more regionally since this taxon was originally recorded, no further populations of this taxon have been located. Given that the only known population of this taxon exists in relatively close proximity to planned infrastructure areas we would recommend that:

1. the distribution of this taxon within the EGLP DE in the vicinity of the proposed accommodation village be properly defined and used as the basis for establishing an exclusion zone, at least within the DE;
2. the boundary of the entire population of *Acacia* sp. Forrestania (D. Angus DA 3001) (P1) be ascertained to inform any future decision which may impact the vegetation to the south of the current DE; and,
3. That there be continued regional searches to determine if there are other populations of this taxon to provide a broader level of understanding of its preferred habitat and provide for a greater level of security to this taxon.

Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)

Baeckea sp. Forrestania (K.R. Newbey 1105) (P1), which was recorded both along the main access road into the EGLP, as well as south of the proposed airstrip, was detected during the spring of 2019 (Figure 11a). This taxon has been highlighted Section 6.1 of this discussion as potentially being difficult to identify when fertile material is not available. Information provided by a taxonomist at the State Herbarium (M. Hislop pers. comm.) via email is that *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1) belongs to a difficult species group to identify. There are currently a number of phrase-named *Baeckea* species that occur in the Forrestania area which are currently being re-assessed by a Myrtaceae taxonomist at the State Herbarium. Current advice indicates that there is likely to be a grouping of a number of the currently phrase-named *Baeckea* species from the Mt Holland area, and that this is also will also have implications for the conservation ranking of this likely merged group. There are currently two records of *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1), with one of these records being situated near the EGLP (Figure 11b). Given the relatively low level of botanical knowledge in the Forrestania area, this taxon may be more common than currently known. Given the comments made in regard to the range of phrase-named *Baeckea* in the Forrestania area, at this juncture, whilst there are no calculated impacts to *Baeckea* sp. Forrestania (K.R. Newbey 1105) (P1), it would be recommended that searches for this taxon be primarily undertaken during the main flowering period unless or until sufficient confidence can be provided that its identification when sterile can be made accurately.

Brachyloma stenolobum (P1)

Brachyloma stenolobum (P1) has only been recorded once during the course of multiple surveys at the EGLP (Mattiske Consulting 2018a, Figure 13a). This was in a location in vegetation off the main access road into the EGLP. That no other recordings of this taxon have been made during searches of the EGLP suggests it may be uncommon in the area. The regional records (Figure 13b) would support this, with a total of five records of this taxon available from the combined TPFL/WAHerb records (DBCA 2019e), all situated within the Coolgardie IBRA region. Given that only one recording of this taxon has been made within the EGLP to date, that there are no direct impacts to this taxon from clearing related to infrastructure construction at the EGLP, there is a minimal risk to this taxon.

Chamelaucium sp. Parker Range (B.H. Smith 1255) (P1)

Chamelaucium sp. Parker Range (B.H. Smith 1255) (P1) was recorded at two locations within the EGLP DE (Figure 35a), but not within an infrastructure footprint area. A sterile specimen of this taxon was originally lodged for identification at the State Herbarium in October 2019. The State Herbarium taxonomist was unable to place the identity of the specimen. Subsequently, in November 2019, this taxon was located in flower, and a specimen lodged with the State Herbarium was identified. The recording of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) within the EGLP DE represents a southerly extension to its presently known range, which is primarily in the vicinity of the Parker Range (Figure 35b).

Whilst the present records of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) within the EGLP DE do not indicate any direct impacts, there is a level of risk in that this taxon may be more common than indicated by current results. Given the difficulty of its identification by a taxonomist at the State Herbarium when sterile, this is may also likely to be the case in the field. The locations at which *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) was recorded within the EGLP DE were also areas where *Microcorys* sp. Mt. Holland (D. Angus DA 2397) (P1) was recorded. Whilst further assessment of the habitat of *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) would be needed to confirm this co-occurrence, the preference for Covalent to minimise impacts to *Microcorys* sp. Mt. Holland (D. Angus DA 2397) (P1) would have the effect of also minimising impacts to this taxon, if indeed it is more widespread than current results indicate.

Hakea pendens (P3)

Hakea pendens (P3) was recorded at several locations within the EGLP DE (Figure 24a), but not within the infrastructure footprint. The single largest population of some 1,122 individuals are situated on a low rocky hill the near the eastern boundary of the EGLP DE, and are protected under an exclusion zone specified in Ministerial Statement 1118 (Government of Western Australia 2019). At the regional level,

this taxon is distributed across the Avon Wheatbelt and Coolgardie IBRA bioregions (Figure 24b), where, based on the combined TPFL/WAHerb records (DBCA 2019e), there are 64 individual records. Initial searches of a population of *Hakea pendens* (P3) near the eastern boundary of the 2017 vegetation survey boundary (Figure 24a) indicate that the population in this location is also large in size, but this has yet to be quantified.

Given the greater number of regional records of this taxon, its distribution, that there are no current planned impacts to this taxon within the EGLP, and that the single largest known population within the EGLP DE is protected under an exclusion zone, then there are minimal risks to this taxon as a result of clearing related to infrastructure construction within the EGLP.

Hibbertia tuberculata K.R. Thiele, sp. nov. (P1)

Hibbertia tuberculata K.R. Thiele, sp. nov. (P1) was a new taxon, first uncovered during the vegetation mapping within the EGLP in 2017 (Mattiske Consulting 2018a). This taxon was recently described (Thiele 2019). Within the EGLP vegetation survey boundary, *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1) has been recorded exclusively within the H1 vegetation community (Mattiske Consulting 2018a, Appendix D). This community was the most restricted vegetation community described by Mattiske Consulting (2018a), where it occupied a total of 2 ha or 0.04% of the area mapped. The H1 vegetation community where *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1) has exclusively been recorded to date, exists as open shrublands within woodland areas (Plate 2).



Plate 2: H1 vegetation community

All areas of H1 vegetation recorded consist of rocky soft clay soils, and contain a restricted suite of species (Mattiske Consulting 2018a) dominated by *Melaleuca cliffortioides*, *Allocasuarina campestris* and *Dodonaea adenophora*. The Priority 1 *Grevillea lissopleura* is a common feature of the H1 vegetation community. *Rinzia medifila* (P1), described further on, has also been recorded within the H1 vegetation community. In the spring of 2019, small areas of H1 vegetation were recorded within the EGLP DE, in an area of W9 woodland (Mattiske Consulting 2018a), similar to the areas where it was recorded in 2017. The areas recorded in 2019 are located to the north of the accommodation village, between the existing airstrip and the landfill area (Figure 2, Appendix D). These areas would warrant further investigation, given that the H1 vegetation is known to be a habitat for *Grevillea lissopleura* (P1) and *Rinzia medifila* (P1) and, at the present time, the only known habitat for *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1). The H1

vegetation located within the EGLP DE falls within a conservation significant flora exclusion zone which was set out in Ministerial Statement 1118 (Government of Western Australia 2019), and thus this area is currently effectively protected.

Whilst there are no direct impacts to *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1) as a result of clearing to accommodate infrastructure construction within the EGLP, given the present highly restricted distribution of both this taxon and its associated vegetation community, it would be prudent to ensure any future planned activities do not impact these areas until further knowledge of this taxon is available.

Olearia laciniifolia (P2)

Olearia laciniifolia (P2) was recorded at two locations, external to the EGLP DE during the 2017 vegetation mapping of the EGLP (Mattiske Consulting 2018a, Figure 30a). At the regional level (Figure 30b), *Olearia laciniifolia* (P2) has a more southern distribution, being more commonly represented within the Mallee IBRA bioregion. The recording of *Olearia laciniifolia* (P2) near the EGLP DE represents a northern extension to its known range. *Olearia laciniifolia* (P2) was exclusively recorded in vegetation mapped as W21 (Appendix D) by Mattiske Consulting (2018a). This vegetation type was relatively restricted within the vegetation survey area (Mattiske Consulting 2018a). There are minimal risks to *Olearia laciniifolia* (P2), given its recording at the EGLP in a vegetation community which will not be disturbed by infrastructure construction within the EGLP, as well as its broad representation at the regional level.

Orianthera exilis (P2)

Orianthera exilis (P2) was recorded at a single location within the EGLP DE (Figure 31a) within mapped vegetation community W15 (Appendix D, Mattiske Consulting 2018a). At the regional level (Figure 31b), whilst *Orianthera exilis* (P2) is only known from the Coolgardie and Mallee IBRA bioregions, from nine combined TPFL/WAHerb records (DBCA 2019e), it has a broad geographical distribution. There are minimal risks to *Orianthera exilis* (P2) given it is located in an area which will not be disturbed by infrastructure construction at the EGLP, and that it is reasonably well represented at the regional level.

Rinzia medifila (P1)

Rinzia medifila (P1), which was recorded at a single location within the EGLP vegetation survey boundary (Figure 36a) within an area of vegetation classified as H1 by Mattiske Consulting (2018a). The *Rinzia medifila* (P1) recorded formed a component of a permanent vegetation monitoring quadrat. There has not been a detailed assessment of its distribution within the H1 vegetation community, nor elsewhere, within the EGLP DE. Whilst there will be no direct impacts to *Rinzia medifila* (P1), nor the associated H1 vegetation community as a result of infrastructure construction associated with the EGLP, the protection of the H1 vegetation community is warranted, as discussed previously with respect to *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1).

At the regional level, *Rinzia medifila* (P1) is primarily known from the Parker Range (Figure 36a). Only three records of this taxon are recorded on Florabase (WAHerb 1998-). The recording of *Rinzia medifila* (P1) near to the EGLP represents a southerly extension to its known range. Species of *Rinzia*, which are a part of a group of myrtaceous plants commonly referred to as small-leafed myrtles, can be difficult to identify when sterile. The specimen collected in 2019 was fertile, thus facilitating its identification. Unless it can be reliably identified when sterile, we would recommend that surveys for this taxon be restricted to the main flowering period. Further investigations into the local distribution of this taxon are warranted to determine if it is exclusively associated with the H1 vegetation community or is more commonly distributed, particularly given its current highly restricted known range.

6.4 Taxa calculated to have direct impacts of between 0.01% and 1% to their local or regional population as a result of clearing associated with the EGLP

The five taxa calculated to have between 0.01% and 1% of their local or regional populations directly impacted by clearing associated with infrastructure construction at the EGLP were:

- *Banksia sphaerocarpa* var. *dolichostyla* (T)
- *Eremophila biserrata* (P4)
- *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1)
- *Grevillea lissopleura* (P1)
- *Grevillea marriottii* (P1)

Banksia sphaerocarpa var. *dolichostyla* (T)

Banksia sphaerocarpa var. *dolichostyla* (T) was the subject of targeted surveys by Mattiske Consulting (2018b) prior to the commencement of the pre-clearance surveys which are the subject of this report. A total of 16,503 *Banksia sphaerocarpa* var. *dolichostyla* (T) were recorded in 2018 by Mattiske Consulting (2018b). Since the surveys of 2018, a further 1,688 *Banksia sphaerocarpa* var. *dolichostyla* (T) have been recorded both locally and regionally (Strategen 2019a, b). *Banksia sphaerocarpa* var. *dolichostyla* (T) has been the subject of more targeted regional searches given its threatened status, and the requirement to provide for offsets under Condition 8-1 of Ministerial Statement 1118 (Government of Western Australia (2019).

The local and regional surveys for *Banksia sphaerocarpa* var. *dolichostyla* (T) have resulted in new populations of *Banksia sphaerocarpa* var. *dolichostyla* (T) being recorded both locally (Figure 12a) and regionally (Figure 12b), with the latter recording four clusters of *Banksia sphaerocarpa* var. *dolichostyla* (T) across four locations to the west of the EGLP, two of which extend the current known western extent of this taxon.

Clearing related to infrastructure construction at the EGLP will result in two *Banksia sphaerocarpa* var. *dolichostyla* (T) being cleared. This represents 0.01% of both the currently known local and regional populations of this taxon. In numerical terms, this represents a minor direct impact to the known population. Whilst *Banksia sphaerocarpa* var. *dolichostyla* (T) within the EGLP DE are the subject of an exclusion zone, given the density of *Banksia sphaerocarpa* var. *dolichostyla* (T) at some locations within the EGLP, particularly south of the WRD, about the old airstrip, and in the vicinity of the accommodation village, the potential for indirect impacts remains a higher risk. This can be in part alleviated, by the implantation of an appropriate monitoring program and associated plan to take action where indirect impacts are recorded.

Eremophila biserrata (P4)

Eremophila biserrata (P4) within the EGLP DE has only been recorded growing within the accommodation village area, on a sand mound on cleared land (Figure 17a). Three plants are situated at this location, and will be cleared as a result of infrastructure construction associated with the EGLP. A large local population of *Eremophila biserrata* (P4), comprising 349 plants exists approximately 10 km from the EGLP. These plants were deemed to represent part of a local population on the basis that they formed part of the population within the Ironcaps Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill (BIF), a Priority 3 ecological community (DBCA 2019c), within which the EGLP is situated, and were spatially close to the plants growing on disturbed lands within the EGLP. Additionally, the three plants within the accommodation village area are unlikely to have arisen from plants in the immediate vicinity because:

1. no *Eremophila biserrata* (P4) has been recorded at any other location within the EGLP DE;
2. the undisturbed vegetation locally (S1 vegetation, Mattiske Consulting 2018a) about the accommodation village is predominantly an *Allocasuarina acutivalvis* / *Allocasuarina spinosissima* tall closed shrubland on lateritic clay soils;

3. the preferred habitat for *Eremophila biserrata* (P4) is listed as being sandy or sandy clay soils (WAHerb 1998-);
4. the *Eremophila biserrata* (P4) record immediately south of the EGLP DE was recorded on the soil type described in (4) above; and,
5. the three *Eremophila biserrata* (P4) present in the accommodation village area are growing on a mound of waste sandy soil.

At the regional level (Figure 17b), *Eremophila biserrata* (P4) is well represented within the Coolgardie and Mallee IBRA bioregions, and to a lesser extent in the Avon Wheatbelt IBRA bioregion. The clearing of the three *Eremophila biserrata* (P4) within the EGLP DE to facilitate construction of the accommodation village will represent 0.85% of the local and 0.19% of the regional population of this taxon. There are minimal risks in terms of impacts to this taxon as a consequence of clearing related to infrastructure construction at the EGLP.

Eutaxia sp. North Ironcap (P. Armstrong PA 06/898) (P1)

Eutaxia sp. North Ironcap (P. Armstrong PA 06/898) (P1) was initially recorded as isolated plants growing on or at the base of an old waste rock dump opposite the old Earl Grey pit (Figure 20a). Subsequently a large population was recorded to the east of the EGLP DE growing in an area which had been the subject of a fire approximately 3.5 years ago. (Figure 20a). The plants in this location are in a post-fire recovery area in which large numbers of *Acacia undosa* (P3) are also growing (Plate 1).

The single regional record for *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) is located in the vicinity of North Ironcap and the old Blue Haze mine pit (Figure 20b). The recording of *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) at the EGLP and to the south of the EGLP indicate that the distribution of this taxon is not well known, and that this is likely due to the low levels of botanical surveys in the Forrestania region. The biology of *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) is not known, and in particular its response to fire is not understood. That it is growing in considerable numbers in an area recovering from a recent fire would indicate it responds to and recovers after a fire event.

Clearing of vegetation to accommodate infrastructure construction at the EGLP will result in the loss of the three *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1) growing in the vicinity of the old Early Grey waste rock dump. This corresponds to 0.13% of the local and regional populations of this taxon. Impacts to this taxon are not numerically considered an issue. However, the lack of data on the distribution of this taxon is a more long-term matter that needs addressing, given that at present it is only known from four locations – three in the vicinity of the EGLP and the original record near North Ironcap.

Grevillea lissopleura (P1)

Grevillea lissopleura (P1) was recorded principally in the south of the EGLP DE, both in a drainage channel which is present to the south of the accommodation village, as well as within vegetation community H1, as defined by Mattiske Consulting (2018a, Figure 21a, Appendix D). The regional records for this taxon are situated within the Avon Wheatbelt, Coolgardie, and Mallee IBRA bioregions (Figure 21b). The recording of *Grevillea lissopleura* (P1) at the EGLP represents the largest recorded population of this taxon to date, but this is likely to be reflection of the level of survey intensity.

In term of impacts to *Grevillea lissopleura* (P1) resulting from clearing associated with infrastructure construction at the EGLP, only one *Grevillea lissopleura* (P1), located in a road alignment on the eastern side of the EGLP DE, is calculated to be directly impacted. This represents 0.06% of the local and 0.05% of the regional populations of this taxon, which is a minimal impact given that there is a degree of bioregional diversity in terms of this species distribution.

Locally, *Grevillea lissopleura* (P1) is associated with the H1 vegetation community as described by Mattiske Consulting (2018a). This community, as previously discussed with respect to *Hibbertia tuberculata* K.R. Thiele, sp. nov. (P1), was the most spatially restricted community mapped within the EGLP vegetation survey boundary. This vegetation community also supports *Rinzia medifila* (P1), and whilst the majority

of the mapped H1 community is south of and external to the EGLP, areas located to the north of the accommodation village which correspond to H1 vegetation were located during the pre-clearance surveys in 2019. The H1 vegetation located within the EGLP DE falls within a conservation significant flora exclusion zone which was set out in Ministerial Statement 1118 (Government of Western Australia 2019), and thus this area is currently effectively protected. Another area which supports a large number of *Grevillea lissopleura* (P1) is a drainage channel to the south of the accommodation village. Whilst no direct impacts to *Grevillea lissopleura* (P1) are calculated to occur in this area, some of the recorded locations of *Grevillea lissopleura* (P1) are situated within 30 m of the accommodation village southern boundary, and thus may potentially be indirectly impacted in the short to long term. The association of the *Grevillea lissopleura* (P1) with the drainage channel, where spillage events or run-off from the accommodation village may result in adverse impacts to the drainage channel. This drainage channel intersects and is effectively closed off by the north-south powerline easement which exists to the immediate east of the accommodation village.

Grevillea marriottii (P1)

Grevillea marriottii (P1) was recorded primarily on disturbed lands surrounding the old Bounty Mine tailings storage facility which is situated within the EGLP integrated waste landform (Figure 2), as well as within the W13 vegetation community (Mattiske Consulting 2018a, Figure 22a). Scattered recordings of *Grevillea marriottii* (P1) were also made within the 2017 vegetation survey boundary and in an area along the borefields access road to the south of the EGLP. During surveys in the vicinity of the EGLP, populations of *Grevillea marriottii* (P1) were recorded in areas to the south and south-west of the EGLP.

The regional records for *Grevillea marriottii* (P1) (Figure 22b) show that this taxon is regionally restricted in its distribution, based on current knowledge, with the most distant regional records being approximately 15 km from the EGLP DE within the Coolgardie IBRA bioregion. Direct impacts to *Grevillea marriottii* (P1) as a result of clearing associated with infrastructure construction at the EGLP are calculated to amount to 15 plants, which represent 0.15% of both the local and regional population of this taxon. All plants which would be directly impacted are located on the disturbed lands surrounding the old Bounty Mine tailings storage facility which is situated within the EGLP integrated waste landform (Figure 2).

Whilst direct impacts to *Grevillea marriottii* (P1) are low, the restricted, and relatively localized distribution of this taxon increases the risks for this species when an identifiable population is cleared. As is the case with other conservation significant taxa in the Forrestania area, there would appear to be a deficiency in available data in terms of regional distribution, which can only be improved through further regional survey work.

6.5 Taxa calculated to have direct impacts of between 1% and 10% to their local or regional population as a result of clearing associated with the EGLP

The five taxa calculated to have between 1% and 10% of their local or regional populations directly impacted by clearing associated with infrastructure construction at the EGLP are:

- *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1)
- *Daviesia sarissa* subsp. *Redacta* (P2)
- *Labichea rossii* (P1)
- *Teucrium* sp. dwarf (R Davis 8813) (P3)
- *Verticordia stenopetala* (P3)

Acacia sp. Mt Holland (B. Ellery BE 1147) (P1)

Acacia sp. Mt Holland (B. Ellery BE 1147) (P1) is a new taxon, first uncovered during the vegetation mapping of the EGLP in 2017 (Mattiske Consulting 2018a). *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) was associated with the W4 vegetation community (Mattiske Consulting 2018a) the majority of which is situated to the west and external to the EGLP DE (Figure 9, Appendix D). In this area *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) typically grows in open areas on quartzitic pale brown sandy clay soils. A

further two populations of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) were uncovered in November 2019 during regional surveys within the Jilbadji Nature Reserve, first recognised by AECOM (pers. comm.) whilst undertaking surveys for Program of Works Applications on behalf of Wescef. Mattiske Consulting verified one of these populations, although time constraints precluded any attempt to either define the population size or extent. The habitat, in terms of soil and landform, where the second population of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) was recorded was identical to that of the population within the EGLP vegetation survey boundary.

Direct impacts to *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) associated with clearing for infrastructure construction associated with the EGLP, would result in 67 plants being cleared, which represents 2.17% of both the local and regional population of this taxon. The clearing of this number of plants where only three populations are known, and where there is a deficiency in knowledge of its biology and distribution raises the risks to this species. Given that the plants to be cleared form a component of the mine access road alignment (Figure 2), there are additional risks to this taxon with respect to indirect impacts to *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) which are located on the edges of the road, particularly in terms of dust and altered local hydrology. The distribution of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) along the mine road access alignment has not been mapped, but based on the section which has been searched (Figure 9), *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) was recorded growing within 2 metres of the existing mine access road.

The direct impacts to *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) are based on a relatively small portion of each of the known populations having been searched. Within the EGLP vegetation survey boundary, the proportion of the W4 vegetation community which has been searched amounts to approximately 2.2% of its mapped area. Consequently, it is likely that the population of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) within the W4 vegetation community will be large, and the local impacts likely to be correspondingly smaller than the direct impact calculation presented in Table 4. It is not appropriate to make estimates of the overall *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) population size within the W4 vegetation community as there is insufficient data in respect to its distribution pattern within the community, notwithstanding that extrapolating numbers from such a small sample size presents large inherent errors in itself.

Whilst the calculated direct impacts to *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1) are moderate, they are likely to be much smaller than the stated value given that only a small portion of the known populations have been searched. However, direct and indirect impacts potentially threaten the conservation status of this species as it is a relatively newly uncovered taxon and there is a deficiency in the level of knowledge of the taxon, its habitat and distribution.

Daviesia sarissa subsp. *redacta* (P2)

Within the EGLP DE *Daviesia sarissa* subsp. *redacta* (P2) was recorded to the south of the airstrip (Figures 2 & 16a) in the W11 and W13 vegetation communities, as defined by Mattiske Consulting (2018a) (Appendix D). *Daviesia sarissa* subsp. *redacta* (P2) was also recorded growing on the disturbed lands which form the runway safety area of the exiting old airstrip (Figure 2, Appendix D).

At the regional level, *Daviesia sarissa* subsp. *redacta* (P2) has been recorded approximately 100 km to the north-east of the EGLP within the Coolgardie IBRA bioregion. The recording of *Daviesia sarissa* subsp. *redacta* (P2) within the EGLP represents a large southern extension to its previously known distribution.

The direct impacts to *Daviesia sarissa* subsp. *redacta* (P2) resulting from clearing to accommodate infrastructure construction within the EGLP are entirely associated with five plants, corresponding to 1.01% of the local and 1.00% of the regional population of this taxon, located on the margins of the existing airstrip. Whilst the *Daviesia sarissa* subsp. *redacta* (P2) recorded within the EGLP DE represent both a new population as well as an extension to the known range of this taxon, the local impacts are low. Given that the vegetation to the south of the airstrip has only been partially surveyed, it is likely that more *Daviesia sarissa* subsp. *redacta* (P2) would be recorded with additional search effort.

Labichea rossii (P1)

Labichea rossii (P1) was primarily recorded in areas to the south of the airstrip, and in the south-west corner of the processing area (Figures 2 & 27a), in vegetation communities W5, W9, W11, W12, W13, and S3 as defined by Mattiske Consulting (2018a) (Appendix D). *Labichea rossii* (P1) was also recorded growing on disturbed lands associated with the processing area and the runway safety area of the exiting old airstrip (Figure 2, Appendix D).

At the regional level (Figure 27b) the only 2 available records from the combined TPFL/WAHerb records are located within the EGLP DE. The recordings of *Labichea rossii* (P1) made by Mattiske Consulting constitute the majority of records of this taxon. *Labichea rossii* (P1), based on current data is restricted in its distribution to the EGLP and adjacent areas (Figure 27b).

The direct impacts to *Labichea rossii* (P1) resulting from clearing to accommodate infrastructure construction within the EGLP are associated with the processing and topsoil areas (Figure 2). A total of 210 plants, corresponding to 5.14% of both the local and regional populations of this taxon would be directly impacted by clearing associated with infrastructure construction at the EGLP. Of the 210 plants which would be directly impacted, 182 are located in the processing area and the remaining 28 are associated with the topsoil area which is part of the existing airstrip (Figure 2, Appendix D).

Whilst impacts to *Labichea rossii* (P1) are moderate, given the known restricted distribution of this taxon which is likely in part to be a result of the lack of surveys in the region, steps should be taken to both reduce the levels of direct impact, as well as undertaking regional searches for this taxon. In the case of the latter, locating additional populations of *Labichea rossii* (P1) external to the EGLP would provide for a greater level of security in terms of local factors which may directly or indirectly impact the local population.

Teucrium sp. dwarf (R Davis 8813) (P3)

Within the EGLP DE, *Teucrium* sp. dwarf (R Davis 8813) (P3) is principally clustered in two areas – towards the eastern end of the airstrip, and to the south of an old tailings storage facility on the eastern side of the EGLP DE (Figure 33a). The population of *Teucrium* sp. dwarf (R Davis 8813) (P3) located south of the eastern tailings storage facility is large, with nearly 20,000 individuals being recorded within a 0.35 ha area. The population of *Teucrium* sp. dwarf (R Davis 8813) (P3) in this area, as well as its spatial extent was only partially searched, and hence is likely to provide for a larger population than that quoted in this report. *Teucrium* sp. dwarf (R Davis 8813) (P3) has only been recorded in the W9 vegetation community, as defined by Mattiske Consulting (2018a) (Appendix D), where it shows a preference for deep powdery clay soils.

At the regional level, there are 18 records of *Teucrium* sp. dwarf (R Davis 8813) (P3) across both the Avon Wheatbelt and Coolgardie IBRA bioregions (Figure 33b). The recording of *Teucrium* sp. dwarf (R Davis 8813) (P3) within the EGLP represents a new population of this taxon situated approximately in the center of the currently known distribution of this taxon.

A total of 365 *Teucrium* sp. dwarf (R Davis 8813) (P3), associated with the airstrip and processing area (Table 5, Figure 33a), would be cleared to accommodate infrastructure construction at the EGLP. This represents 1.76% of the local and 0.82% of the regional population of this taxon. Given that this taxon has a wide regional distribution and is well represented locally, there is a low risk level to this taxon.

Verticordia stenopetala (P3)

Within the EGLP DE, *Verticordia stenopetala* (P3) is primarily located in an area to the east of the waste rock dump (Figures 2 & 34a) in vegetation defined as the W13 vegetation community by Mattiske Consulting (2018a) (Appendix D). At the regional level, there are 31 well dispersed records of *Verticordia stenopetala* (P3) across the Avon Wheatbelt, Coolgardie and Mallee IBRA bioregions (figure 34b).

A total of 20 *Verticordia stenopetala* (P3) would be directly impacted by clearing to accommodate infrastructure construction within the EGLP. This represents 1.26% of the local and 1.22% of the regional

populations of this taxon. The *Verticordia stenopetala* (P3) to be cleared are all associated with roads and ancillary service areas in the north eastern area of the EGLP DE (Figures 2 & 34a). Given that this taxon has a wide regional distribution and is well represented locally, there is a low risk level to this taxon.

6.6 Taxa calculated to have direct impacts of greater than 10% to their local or regional population as a result of clearing associated with the EGLP

The eight taxa calculated to have greater than 10% of their local or regional populations directly impacted by clearing associated with infrastructure construction at the EGLP are:

- *Acacia undosa* (P3)
- *Chorizema circinale* (P3)
- *Eutaxia lasiocalyx* (P2)
- *Gyrostemon ditrigynus* (P4)
- *Hibbertia* sp. nov.
- *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1)
- *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
- *Stylidium sejunctum* (P3)

This category, which poses high direct impact risks to all the listed taxa contains three of the newer taxa which were uncovered during or subsequent to the 2017 vegetation mapping of the EGLP (Mattiske Consulting (2018a).

Acacia undosa (P3)

Acacia undosa (P3) was recorded in large numbers both within and adjacent to the EGLP DE (Figure 10a). In total, 58,478 *Acacia undosa* (P3) have been recorded across all surveys. Within the EGLP DE, *Acacia undosa* (P3) occurred as a major population which spreads from the mine pit eastwards across the waste rock dump and east beyond the eastern boundary of the DE. Another population is located to south of the integrated waste landform., and a third smaller population on the northern side of the airstrip (Figure 10a). Two populations of *Acacia undosa* (P3) were recorded to the north of the EGLP. One was situated just south of the southern boundary of the Jilbadji Nature Reserve. The other was situated in the southern section of the Jilbadji Nature Reserve. Whilst no systematic population census was made of the latter two populations, a conservative estimate of 1,000 plants was applied to each population. This estimate is considered, based on the observed density of plants and nominal population boundary recorded, to be a conservative estimate.

At the regional level, there are 25 records of *Acacia undosa* (P3) with a broad distribution across the Avon Wheatbelt, Coolgardie and Mallee IBRA bioregions, with a majority of the records being situated within the Mallee IBRA bioregion.

A total of 11,678 *Acacia undosa* (P3) would be directly impacted by clearing associated with infrastructure construction at the EGLP. This represents 19.97% of the local and 19.93% of the regional population of this taxon (Table 4). The principle areas of direct impact to *Acacia undosa* (P3) are the waste rock dump, the integrated waste landform, the mine pit, and the airstrip (Table 5, Figures 2 & 10a).

Mattiske Consulting sought to verify a population of *Acacia undosa* (P3) located approximately 15 km to the north of the town of Bruce Rock, along Belka Road. Five plants were recorded in this location in degraded and salt affected remnant vegetation adjacent to agricultural lands. Additional regional searches for this taxon have been commissioned, however the data from these surveys was not available at the time of preparing this report.

Published information on this taxon describes its preferred habitat as being clayey sand or loam in open shrub mallee (Cowan 2018). This is consistent with the areas both within the EGLP and to the north within

the Jibadji Nature Reserve where Mattiske Consulting recorded this taxon, where the soils were a pale brown clayey sand in open low shrub mallee, typically low in the landscape. Field observations of this taxon in areas which were recovering from fires which occurred in the region 3.5 years ago (Plate 1) indicate that *Acacia undosa* (P3) recovers well as it was present in higher density in burnt areas, compared to unburnt areas. Based on a randomly selected area within burnt and adjacent unburnt vegetation which supports *Acacia undosa* (P3), the density of *Acacia undosa* (P3) was 885 plants per hectare in unburnt vegetation and 3,265 plants per hectare in the burnt vegetation. This observation indicates that this taxon may be a useful species to use for rehabilitation in areas with the appropriate soils, as it may germinate well after smoke treatment prior to seeding.

Whilst the impacts to this taxon from clearing associated with infrastructure construction at the EGLP are on the higher side, the following points are relevant:

1. The largest impact will be associated with clearing associated with the waste rock dump;
2. Only a portion of the overall population associated with the waste rock dump will be cleared, with the majority of the population remaining intact to the east of the waste rock dump;
3. Large populations of *Acacia undosa* (P3) have been located south of and within the Jilbadji Nature Reserve;
4. On a regional scale, multiple populations of *Acacia undosa* (P3) are known to occur across three bioregions; and,
5. The observed rapid recovery of this taxon, post fire, indicates not only the usefulness of this taxon in a rehabilitation context, but also its ability to persist in the environment after a fire event.

Chorizema circinale (P3)

The majority of *Chorizema circinale* (P3) recorded within the EGLP DE were situated in the sandy or sandy clay soils associated with mapped vegetation communities W5 and W6 (Mattiske Consulting 2018a, Appendix D) along the mine access road (Figure 2 & 15a). A few scattered record of *Chorizema circinale* (P3) were recorded was recorded at a few scattered locations within the main body of the EGLP DE and its surrounding vegetation survey boundary (Figure 15a).

At the regional level, based on data from the combines TPFL/WAHerb records (DBCA 2019e), there are 17 records of *Chorizema circinale* (P3) distributed across a broad area of the Coolgardie, Mallee and Esperance Plains IBRA bioregions (Figure 15b).

The direct impacts to *Chorizema circinale* (P3) associated infrastructure construction at the EGLP are related almost exclusively to the mine access road (Table 5). One *Chorizema circinale* (P3) would be cleared within the processing area. A total of 18 *Chorizema circinale* (P3), representing 10.59% of the local population and 3.03% of the regional population (Table 4) would be directly impacted by clearing, which would mainly be associated with any widening of the existing mine access road.

Chorizema circinale (P3) is considered to be a difficult plant to identify when not in flower. The reason for this is that the plants are small in size, have a straggly growth habit and small scattered leaves. The plants tend to grow amongst other low dense shrubs at the EGLP, thus making them virtually invisible without flowers. The vegetation communities where *Chorizema circinale* (P3) was suspected to be present were targeted during the principle flowering period to enable the plants to be identified. Mattiske Consulting would recommend that this taxon be searched for only during the flowering season due the difficulty in detection. Whilst the local impacts to *Chorizema circinale* (P3) are high, the regional impacts are moderate, and given the wide distribution of this taxon, there is a relatively low risk to this taxon as a result of potentially clearing 18 plants. Additionally, the vegetation community in which *Chorizema circinale* (P3) was growing on the mine access road extends north and south of the mine access road alignment. Consequently, it can be reasonably expected that *Chorizema circinale* (P3) is likely to occur more generally in this area.

Eutaxia lasiocalyx (P2)

Eutaxia lasiocalyx (P2) was recorded in large numbers both within the EGLP DE (Figure 19a) and nearby in Tenement M77/478 (Mattiske Consulting 2019b, Figure 19b). A total of 42,674 *Eutaxia lasiocalyx* (P2) have been recorded across all surveys (Table 4). Within the EGLP, *Eutaxia lasiocalyx* (P2) is present across a number of locations in the DE (Figure 19a), with major population intersecting the airstrip, integrated waste landform and processing areas. Based on the vegetation mapping of Mattiske Consulting (2018a), *Eutaxia lasiocalyx* (P2) was predominantly associated with the W9, and to lesser extents the W11, W12, W13, and MW6 vegetation communities (Appendix D).

At the regional level, based on data from the combined TPFL/WAHerb records (DBCA 2019e) there are eight records of *Eutaxia lasiocalyx* (P2) within the Avon Wheatbelt and Coolgardie IBRA bioregions (Figure 19b). The records show a relatively restricted distribution for this taxon, which is restricted to the Parker Range, Mt Holland, Forrestania and Lake Barker areas (Wilkins and Chappill 2007).

The direct impacts to *Eutaxia lasiocalyx* (P2) associated with infrastructure construction at the EGLP are, in order of decreasing direct impacts, related to construction of the airstrip, integrated waste landform, processing area, roads, mine pit, topsoil and accommodation (Table 5). A total of 6,250 *Eutaxia lasiocalyx* (P2), representing 14.65% of the local population and 14.64% of the regional population (Table 4) would be directly impacted by clearing for the aforementioned infrastructure areas. The levels of local and regional impacts are high, with the regional impacts being skewed as a result of the absence of regional survey data. Regional data needs to be viewed from the perspective of assessing the distribution of *Eutaxia lasiocalyx* (P2), as the level of intensity of regional surveys is unlikely to have been as intense as the surveys within the EGLP DE.

The results of the desktop assessment (Table 2) indicated that there are potentially up to six conservation significant *Eutaxia* species which may be present within the EGLP. As part of the assessment of survey constraints it has been noted that *Eutaxia lasiocalyx* (P2) can have a very stressed appearance, which can give the appearance of a dead plant, and which may easily be overlooked given that the plant is small in size, typically 15 cm high (Wilkins and Chappill 2007). Field observation by the present survey botanists indicate that outside the damper and cooler winter/spring period, this stressed appearance is present across the majority of plants. This taxon is potentially more difficult to identify by inexperienced personnel when not in flower, given its stressed appearance and very small leaves, which are typically 0.5 – 2 mm in length (Wilkins and Chappill 2007). Given that the desktop assessment identified the potential for up to six conservation significant *Eutaxia* species to be present within the EGLP, all plants encountered which are suspected to be a species of *Eutaxia* should be treated as being of conservation significance until demonstrated to be otherwise.

Gyrostemon ditrigynus (P4)

Gyrostemon ditrigynus (P4) was recorded at four locations within the EGLP DE (Figure 23a), all of which represented disturbed lands. Three of the four locations where *Gyrostemon ditrigynus* (P4) was recorded were recently used exploration drill pads. A total of 27 *Gyrostemon ditrigynus* (P4) were recorded during the pre-clearance and subsequent surveys of the EGLP (Table 4).

At the regional level, *Gyrostemon ditrigynus* (P4) occurs across the Coolgardie and Mallee IBRA bioregions. *Gyrostemon ditrigynus* (P4) is particularly broadly distributed across the Mallee IBRA bioregion (Figure 23b). Based on data extracted from the combined TPFL/WAHerb records (DBCA 2019e), there were 33 records of this taxon across the Coolgardie and Mallee IBRA bioregions. Regional population data for this taxon is considerable with there being in excess of 50,000 plants recorded regionally (Table 4).

Direct impacts to *Gyrostemon ditrigynus* (P4) associated with infrastructure construction at the EGLP would result in 3 plants being cleared from the mine pit and processing areas (Figure 23a, Table 4). This corresponds to 10.71% of the local and 0.01% of the regional population of this taxon.

Gyrostemon ditrigynus (P4), in common with other members of the Gyrostemonaceae is a fire-opportunist and is often associated with disturbed lands (George 1982). Whilst at the local level, the direct impacts are high, regionally this taxon is both common and well represented with a broad distribution. Its presence within the EGLP, especially on old drill pads is a reflection of its known preference for disturbed lands. It is unlikely that the clearing of three plants within the EGLP DE would have a detrimental impact to this taxon.

Hibbertia sp. nov.

Hibbertia sp. nov. is a new taxon, recently uncovered during the pre-clearance surveys of the EGLP DE in 2019. *Hibbertia* sp. nov. was recorded in a single location within the processing area (Figures 2 & 26), where 13 plants are growing in or adjacent to a small drainage channel. No conservation status has been assigned to this taxon to date. No recordings of this taxon have been made at other locations within the EGLP DE, nor during surveys external to EGLP DE.

At this time, it is unknown, because of the deficiency in data for this taxon, whether the plants recorded in the processing area are from a local population or have been transported to the current location as a result of biotic or other mechanisms. Direct impacts to *Hibbertia* sp. nov. as a result of clearing to accommodate infrastructure construction at the EGLP would result in all 13 plants, representing 100% of both the local and regional populations of this taxon, being cleared. This level of impact is not appropriate given the absence of knowledge about the taxon and its distribution.

Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)

Microcorys sp. Mt Holland (D. Angus DA 2397) (P1) was a new taxon, first uncovered during the 2017 vegetation mapping of the EGLP (Mattiske Consulting 2018a). To date a total of 59,813 *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) have been recorded from both within the EGLP DE (Table 4, Figure 28a), and externally to the EGLP DE, both on the western side of the Forresteria Rd, as well as to the north within the Jilbadji Nature Reserve (Figure 28b). With the exception of the landfill and borefield road (Figure 2 & 28a), *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) is present within all other proposed infrastructure areas, with the waste rock dump containing the greatest number of plants (Table 5). Within the EGLP *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) was recorded growing in vegetation communities S2, S3, W11, W13, and MW6, based on the vegetation mapping of Mattiske Consulting (2018a). It typically co-occurs with *Banksia sphaerocarpa* var. *dolichostyla* (T) in the S3 vegetation community, and shows a preference to grow under the canopies of mallee trees in the more open mallee woodlands.

As a result of surveys for *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) beyond the boundary of the EGLP DE, additional plants have been recorded, spanning a distance up to 28 km north and 14 km west of the EGLP DE. The purpose of these surveys has been to gain an understanding of the extent and distribution of this taxon. These surveys are ongoing, and no firm conclusions as to the extent of this **taxon's distribution** can accurately be made at this time, although its absence outside the Forresteria area to date may indicate a more localized distribution. The potential associations of this taxon with respect to underlying geology, soils, topography and other factors is being studied in an attempt to better understand locations where *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) may be located.

Clearing of *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) within the EGLP DE to accommodate infrastructure construction would result in the clearing of 8,641 plants, representing 14.60% of both the local and regional population of this taxon. At present, and without further study, all records of *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) have been classified as being part of a local population. This is because the majority of the recordings of this taxon are situated within one pre-European vegetation association (Skeleton Rock) and individual records have a spatial separation of no more than 4 km. Whilst the proposed proportion of plants to be cleared is high, particularly given that *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) is a relatively new taxon, and that there is a deficiency of data on this taxon's biology, habitat and distribution, that populations of this taxon are being located at greater distances from

the EGLP over the course of the regional surveys, and that the plants are present in numbers at these locations, provides a degree of certainty for the populations continuity as a whole.

Microcorys sp. Mt Holland (D. Angus DA 2397) (P1) has been recorded not only as part of mature populations in undisturbed vegetation, but also in post-fire recovering vegetation, as well as on disturbed lands, where it is commonly present on old drill tracks and pads. These observations would support the proposition that *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) not only recovers well after fires, but **is likely to be a suitable candidate for use in rehabilitation, given that it's observed recovery in disturbed areas indicates a lack of recalcitrance from a rehabilitation perspective.** It is unknown at this time if fire provides a stimulus to seed germination.

Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)

Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) is a newly uncovered taxon, recorded for the first time during the pre-clearance surveys of the EGLP DE. To date a total of 1,983 *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) have been recorded within the EGLP DE (Figure 29). The majority of *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) within the EGLP DE have been recorded growing on either disturbed land partially intersecting the processing area or in the post-fire recovering vegetation to the south of the airstrip (Figure 29).

Searches for *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) have taken place external to the EGLP DE. To date this has resulted in *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) being recorded to the north of the EGLP DE, including within the Jilbadji Nature Reserve. Regional searches for this taxon are at a very early stage.

Clearing of *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) to accommodate infrastructure construction within the EGLP DE would result in the clearing of 233 plants, 230 of which are located in the processing area and three on the runway safety area of the existing airstrip. The clearing of all of these plants would represent 11.76% of both the local and regional population of this taxon. Given that this taxon is less well understood than *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1), the clearing of this number of plants when there is a large deficiency in the understanding of its biology, habitat and distribution is not appropriate. Given that the majority of plants recorded to date have been located on disturbed land, either the result of either clearing as part of the old Bounty Mine infrastructure or from the recent fires in the area, there is degree of confidence that this taxon may be relatively easily regenerated, and could be used as part of a rehabilitation program. Nonetheless, there is a need for a greater level of security, in terms of understanding the regional destitution of this taxon.

Stylidium sejunctum (P3)

Stylidium sejunctum (P3) was typically recorded as scattered plants within the EGLP DE, except where it occurred on disturbed lands, such as the landfill area, or in areas which had been the subject of recent fire, approximately 3.5 years ago (Figures 2 & 32a). Based on the vegetation mapping of Matiske Consulting (2018a), *Stylidium sejunctum* (P3) was recorded in the W9, W11 and W13 vegetation communities. *Stylidium sejunctum* (P3) was also recorded by Matiske Consulting growing in a fire burnt area to the south of the EGLP DE (Figure 32a).

At the regional level, and based on the combined TPFL/WAHerb records (DBCA 2019e), there are 48 records of *Stylidium sejunctum* (P3) distributed across the Coolgardie and Mallee IBRA bioregions (Figure 32b). *Stylidium sejunctum* (P3) is broadly distributed regionally, and there are 5,415 plants associated with these records.

Direct impacts to *Stylidium sejunctum* (P3) associated with infrastructure construction at the EGLP would result in 216 plants being cleared from the landfill, accommodation village, processing area and roads areas (Figure 32a, Table 5). This represents 31.81% of the local and 3.55% of the regional populations of this taxon. The landfill area represents the greatest level of direct impact, accounting for approximately

85% of all plants which would be cleared to accommodate infrastructure constrictions. Notwithstanding the high local impacts calculated, given that *Stylidium sejunctum* (P3) is growing densely on disturbed land (landfill area), the broad regional distribution of this taxon, the modest regional population impact, this provides for a level of confidence that this taxon would not be adversely affected by the proposed clearing. That it is observed to be growing in numbers both on disturbed land and in fire burnt areas indicates that lack of recalcitrance to regeneration may indicate its use in rehabilitation programs.

7. CONCLUSIONS

The assessment of the potential direct impacts to conservation significant flora within the EGLP infrastructure footprint is not as straightforward as ranking species from highest to lowest percentage direct impacts. The results and subsequent review of direct impacts indicates that a number of factors need to be taken into account when forming conclusions about the 29 conservation significant flora recorded during and subsequent to the pre-clearance surveys. These factors include:

- Level of local direct impacts;
- Level of regional impacts;
- The level of distribution of each taxon at the regional level;
- Implications for newly described taxa;
- Implications for taxa in which there is a level of data deficiency, in terms of their biology, preferred habitat and distribution at the local and regional level; and,
- Potential for indirect impacts;

The level of intensity of the pre-clearance and subsequent surveys within and about the EGLP represent the most intensive conservation significant flora surveys within the Forrester area. As a consequence of this, the populations of the individual species recorded naturally reflects this intensity, and from an assessment perspective, this needs to be taken into consideration when drawing conclusions as to the impacts clearing associated with infrastructure constructions at the EGLP will place on each species. In the majority of cases, the number of plants recorded locally greatly exceeds the regional populations, as determined from the DBCA TPFL/WAHerb records (DBCA 2019e). This can have the result of placing a higher level of risk to the conservation status of some species, particularly given that the searches to date have largely been restricted to the EGLP, and there has been only a low level of regional survey work completed.

Overall, impacts to the six newly uncovered taxa, were initially the highest priority for investigation. This was because until regional searches started in the spring of 2019, all six were only known from the immediate EGLP area. Three of the six newly uncovered taxa, namely *Hibbertia* sp. nov. (100% local and regional direct impact), *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) (14.60% local and regional direct impacts), and *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) (11.75% local and regional direct impacts) are not at the same level of impact. *Hibbertia* sp. nov. currently consists of a single known population. *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1) is currently known to exist in several areas both inside the EGLP and external to the EGLP (Figure 29). *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1) is known from multiple locations spread over a wider geographic range (Figure 28b) than either of the former two species. From this perspective, the direct impacts to *Hibbertia* sp. nov. are such that the species, based on current knowledge, would effectively become extinct should clearing take place. Clearly this is not an appropriate situation, notwithstanding comments made in the discussion about how this taxon came to be located on disturbed land within the EGLP, and the suspicion that it is potentially likely to have been brought in from an outside location through some biotic or other mechanism. In the cases of both *Microcorys* species, regional searches have started to uncover more locations for both taxa, in particular *Microcorys* sp. Mt Holland (D. Angus DA 2397) (P1). Consequently, in both cases whilst direct impacts are high, that both taxa are being located beyond the EGLP provides a level certainty that the species is not strictly restricted to the EGLP DE.

In the case of *Stylidium sejunctum* (P3), which is calculated to have 31.81% of its local population directly impacted, there are factors which indicate that this is at lower risk. These include the broad regional distribution of the taxon, the low regional direct impact (3.55%), and that the species has been observed to be colonise disturbed ground and recover well in fire affected areas.

Of the other newly uncovered taxa, all of which have low to nil direct impacts, namely *Acacia* sp. Forrestania (D. Angus DA 3001) (P1), *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1), and *Hibbertia tuberculata* K.R.Thiele, sp. nov. (P1), there is a higher level of data deficiency associated with these three taxa, and with the exception of *Acacia* sp. Mt Holland (B. Ellery BE 1147) (P1), there are no records of these taxa external to EGLP. This places a potentially higher level of risk to these species, despite their current low to nil level of direct impacts. This is because in the absence of knowledge of additional regional populations of each taxon, the potential threat to their persistence, from current indirect impacts, future potential mining operations in the region, together with natural risks such as fires, means that the security of such species is in greater doubt. This situation can be alleviated by undertaking further survey work to determine the regional extent of these species.

Another group of species which are regarded as being data deficient in terms of the current knowledge of their regional distributions include *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1), *Eutaxia lasiocalyx* (P2), *Eutaxia* sp. North Ironcap (P. Armstrong PA 06/898) (P1), *Grevillea marriottii* (P1), *Labichea rossii* (P1), and *Rinzia medifila* (P1). In all cases, with the exception of *Eutaxia lasiocalyx* (P2) which is calculated to incur a 14.65% local and similar regional impact, whilst the direct impacts are nil to low, all species are currently very locally restricted in their distributions. Similar conclusions as to their long terms persistence as a result of the absence of knowledge about each taxon can be drawn as per the preceding paragraph.

The overall conclusion which is inevitably formed from the results of the pre-clearance and subsequent surveys is that for many of the species, there is a large deficiency in knowledge about the biology and distribution of the taxa. This is unsurprising given the lack of botanical surveys in the Forrestania region. That six new taxa have been uncovered just within the EGLP is further evidence with respect to the level of under survey in the region. With respect to the direct impacts to the range of 29 conservation significant taxa recorded at the EGLP, the impacts to the following taxa are of highest priority as the risks are higher, based on clearing of the infrastructure footprint used for assessment in this report:

<u>Taxon</u>	<u>Risks associated with respect to clearing</u>
<i>Hibbertia</i> sp. novel:	potential extinction of known population
<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1):	high direct impact; few known populations outside EGLP]
<i>Eutaxia lasiocalyx</i> (P2):	high direct impact and locally highly restricted distribution
<i>Acacia</i> sp. Mt Holland (B. Ellery BE 1147) (P1):	low direct impact, but only two populations known outside the EGLP
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397) (P1):	high impact, but a number of populations located outside the EGLP
<i>Stylidium sejunctum</i> (P3):	direct impacts high but the taxon is regionally well represented
<i>Acacia undosa</i> (P3):	whilst direct impact high the taxon is regionally well represented
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001) (P1):	nil current direct impacts, potential for indirect impacts, only single population known
<i>Hibbertia tuberculata</i> K.R.Thiele, sp. nov. (P1):	nil current impacts; currently in exclusion zone within EGLP; highly restricted distribution and vegetation community association,

The other 20 conservation significant taxa are at lower risks of changes to their conservation status because of the combination of the calculated direct impacts and regional representation. Impacts to the species at higher risks can be alleviated to an extent by re-assessing elements of the infrastructure footprint layout.

8. ACKNOWLEDGEMENTS

The author would like to thank Mr Mike Hislop of the Western Australian Herbarium for his assistance in identifying a number of the flora collected during the course of the field survey work.

9. PERSONNEL

The following Mattiske Consulting Pty Ltd and Strategen-JBS&G personnel were involved in this project:

NAME	POSITION	SURVEY INVOLVEMENT	FLORA COLLECTION PERMIT
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Mr B. Ellery	Experienced Botanist / Taxonomist	fieldwork, plant identifications	FB62000024 TFL 18-1819
Ms Lauren Taaffe	Botanist	field work	FB62000021
Mr Zac Sims	Botanist	field work	FB62000025
Mr Ashley Pereira	Botanist	field work	FB62000145
Ms Mary Van Wees	Botanist	field work	
Nr Sacha Ruoss	Senior Botanist	field work	FB62000031 TFL 17-1819
Mr Nicholas Watson	Botanist	field work	FB62000146
Mr Tristan Sleigh (Strategen JBS&G)	Botanist	field work	
Mr William Oversby (Strategen JBS&G)	Botanist	field work	
Ms Hannah Sullivan (Strategen JBS&G)	Botanist	field work	
Ms Rachel Pratt (Strategen JBS&G)	Botanist	field work	
Mr Jason Webb	Botanist	field work	

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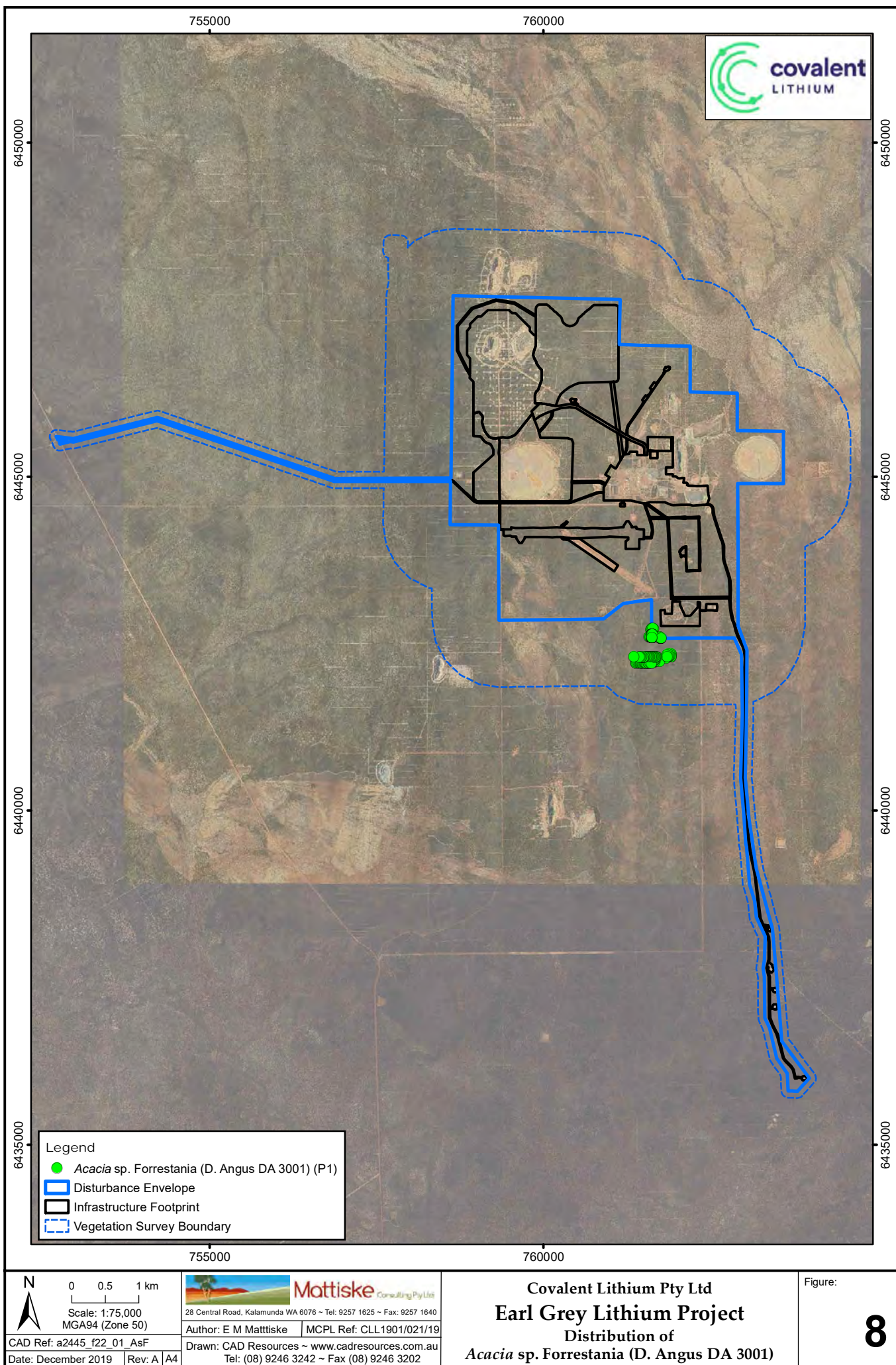
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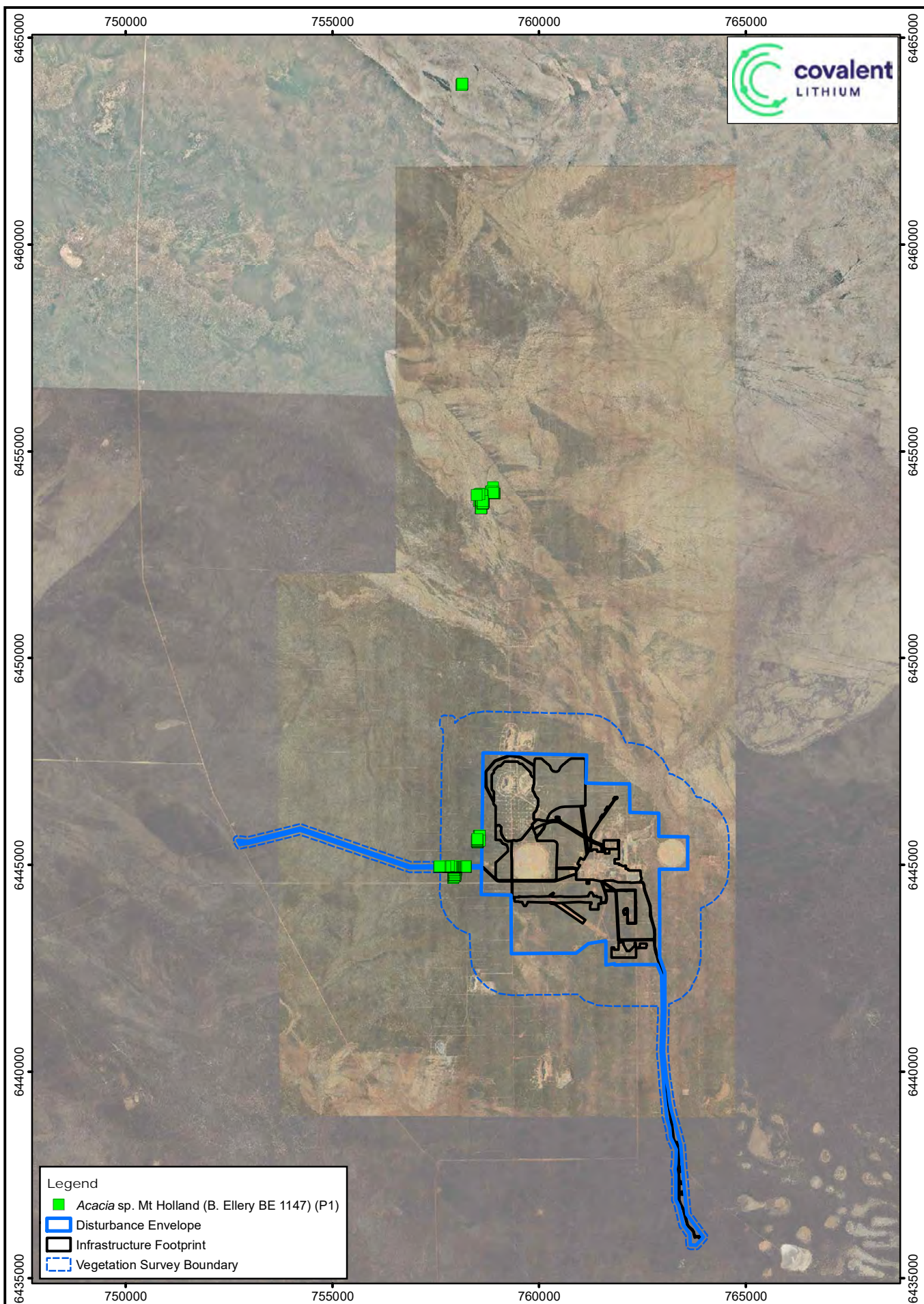
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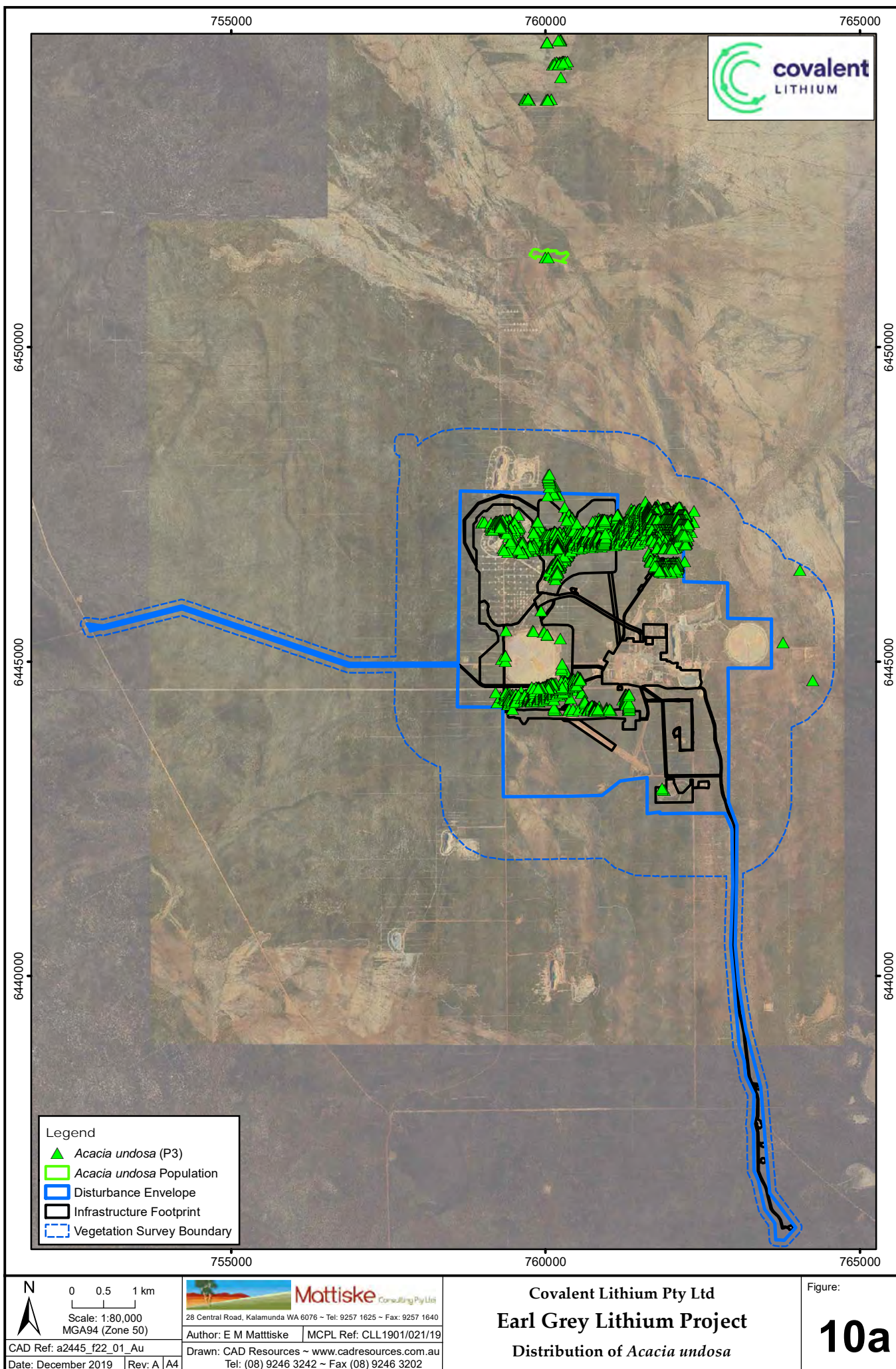
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 - Disturbance Envelope
 - Infrastructure Footprint
 - Vegetation Survey Boundary

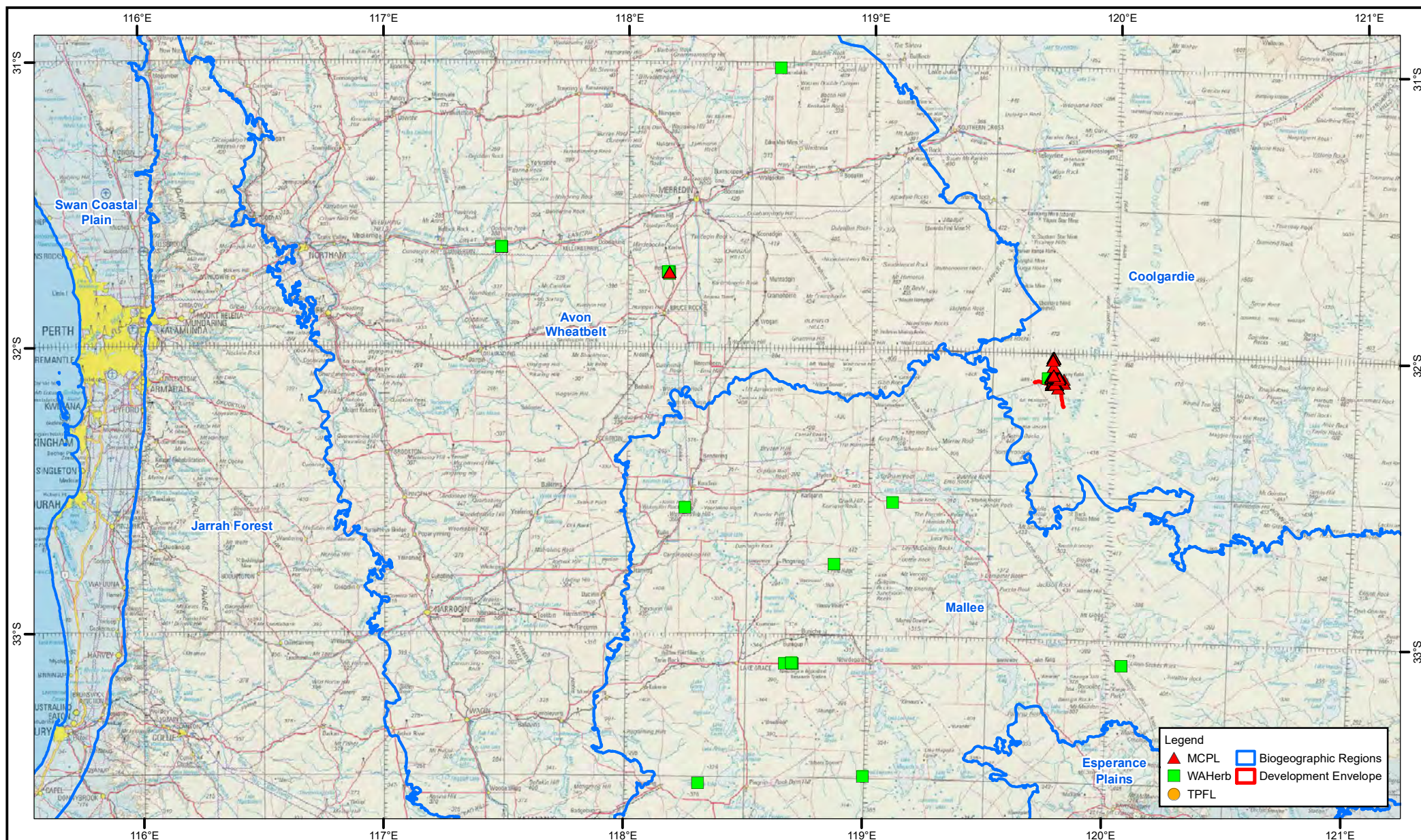
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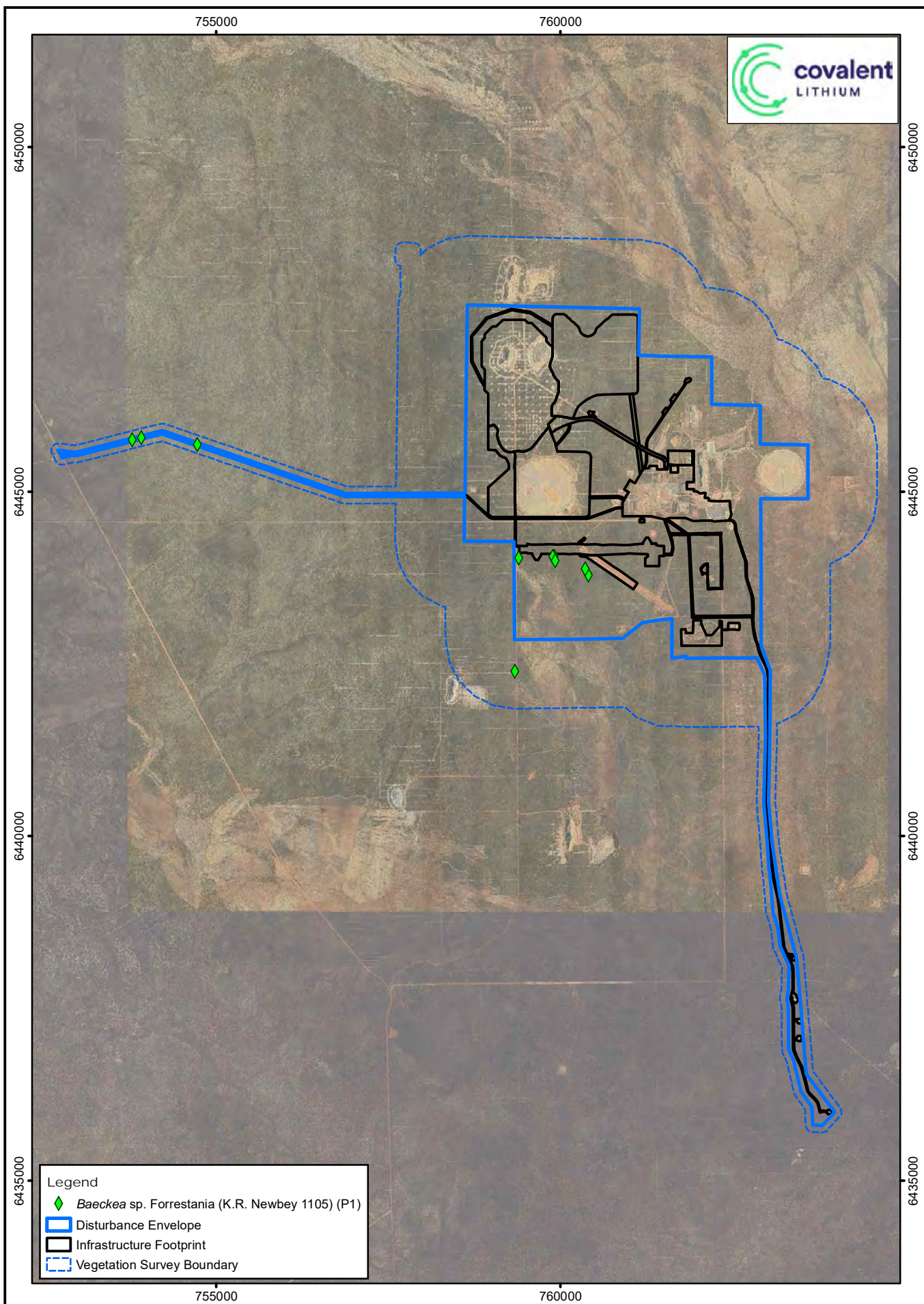
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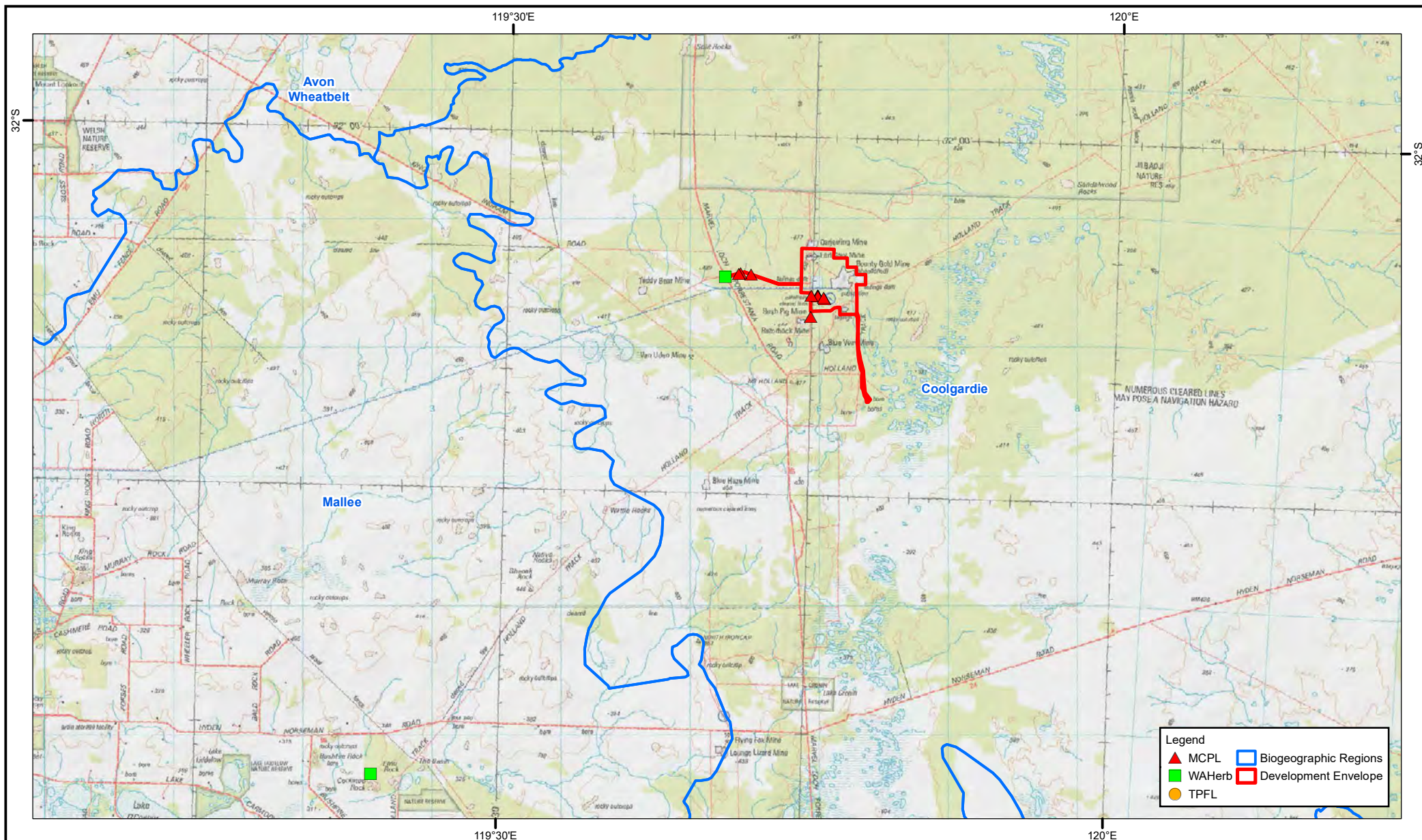
Covalent Lithium Pty Ltd
Earl Grey Lithium Project
Distribution of
Acacia sp. Mt Holland (B. Ellery BE 1147)

Figure:
9

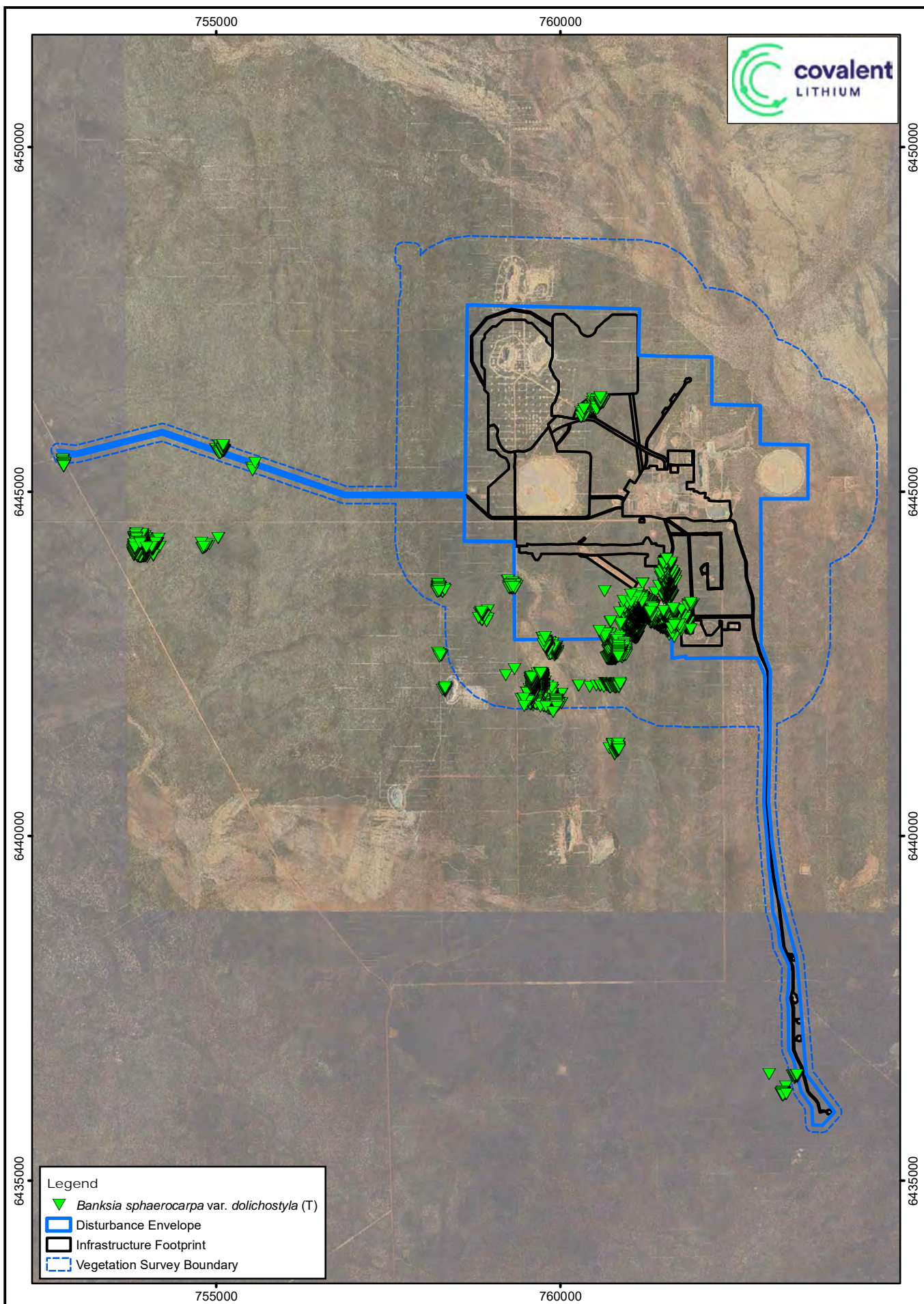


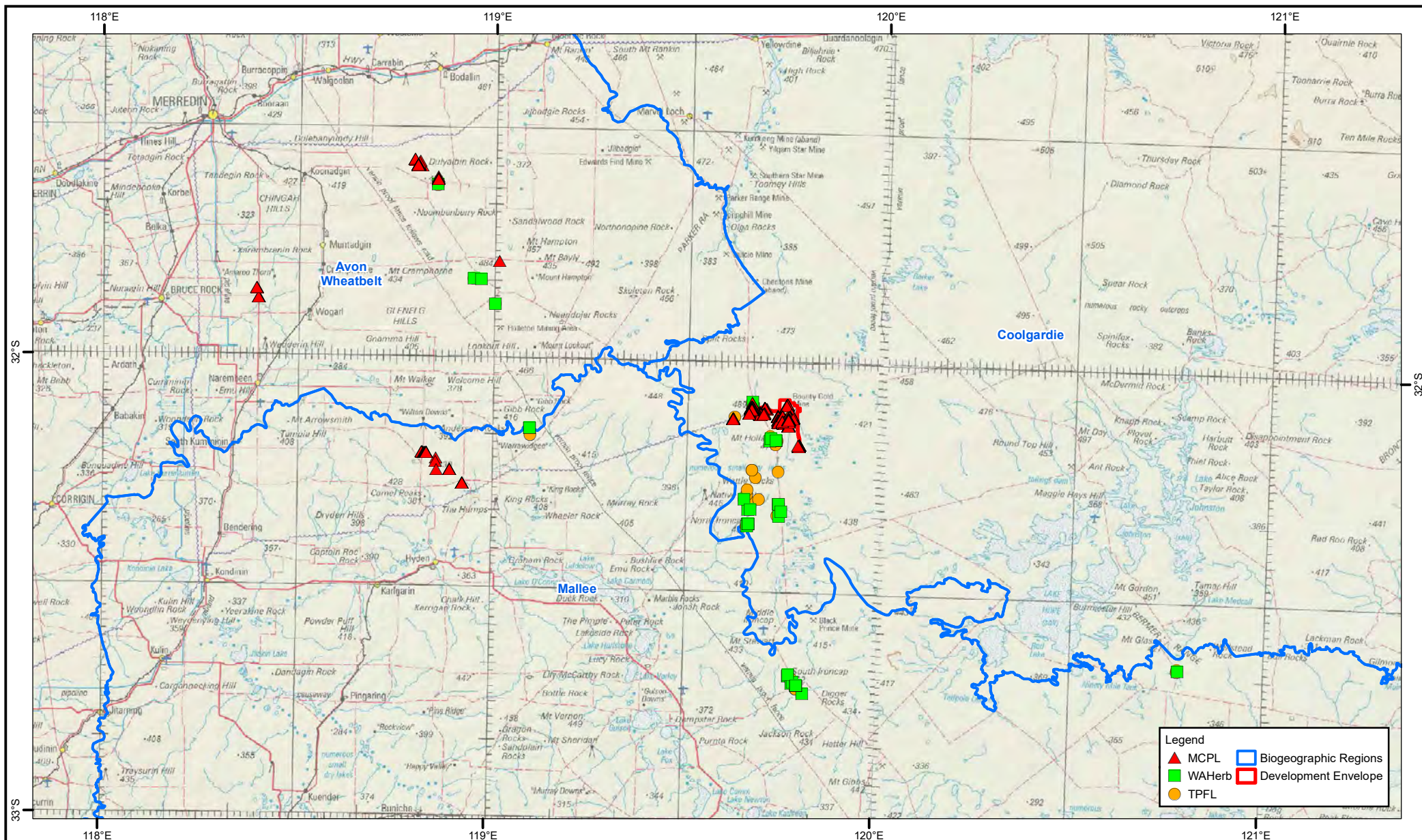


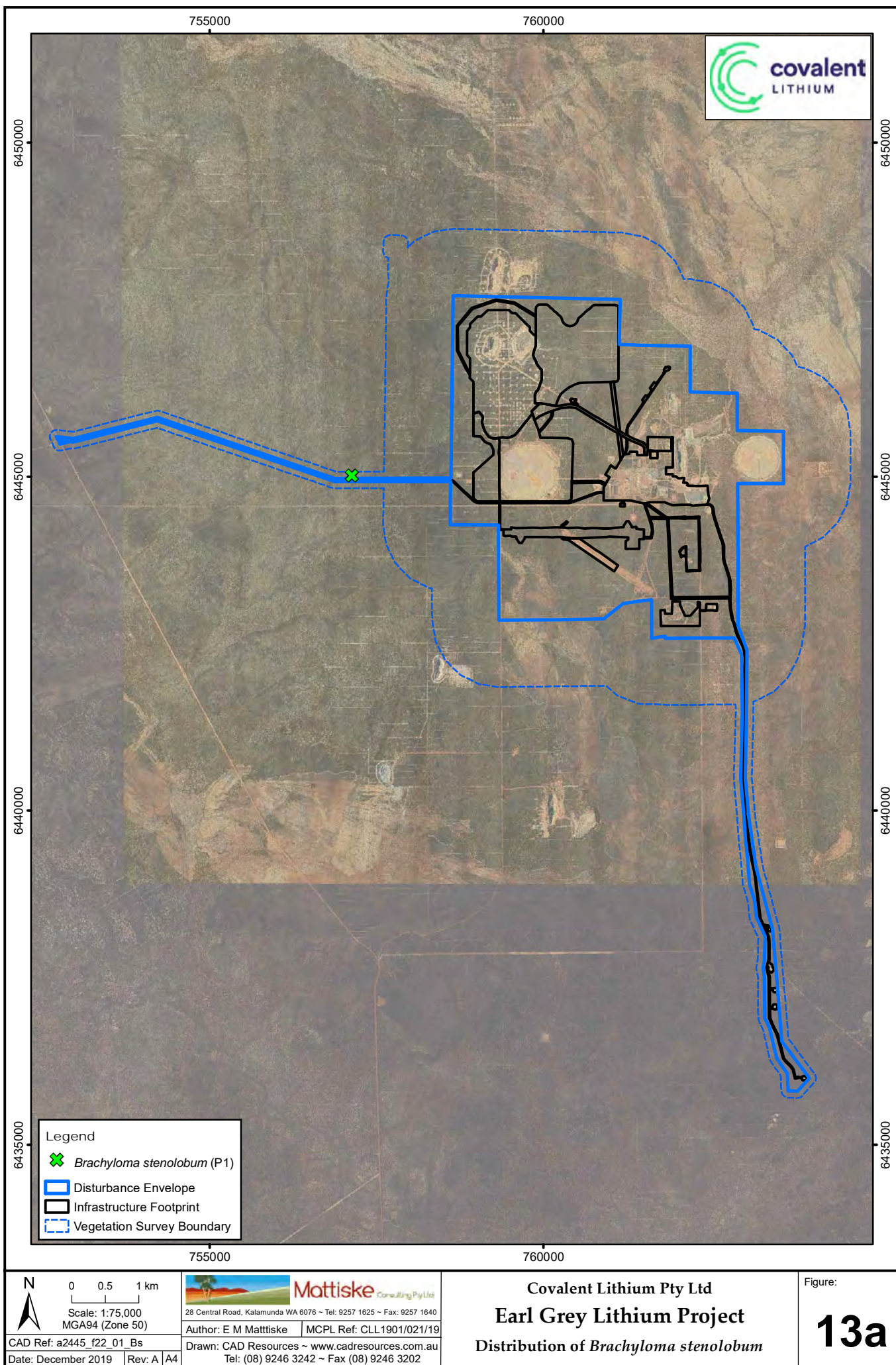


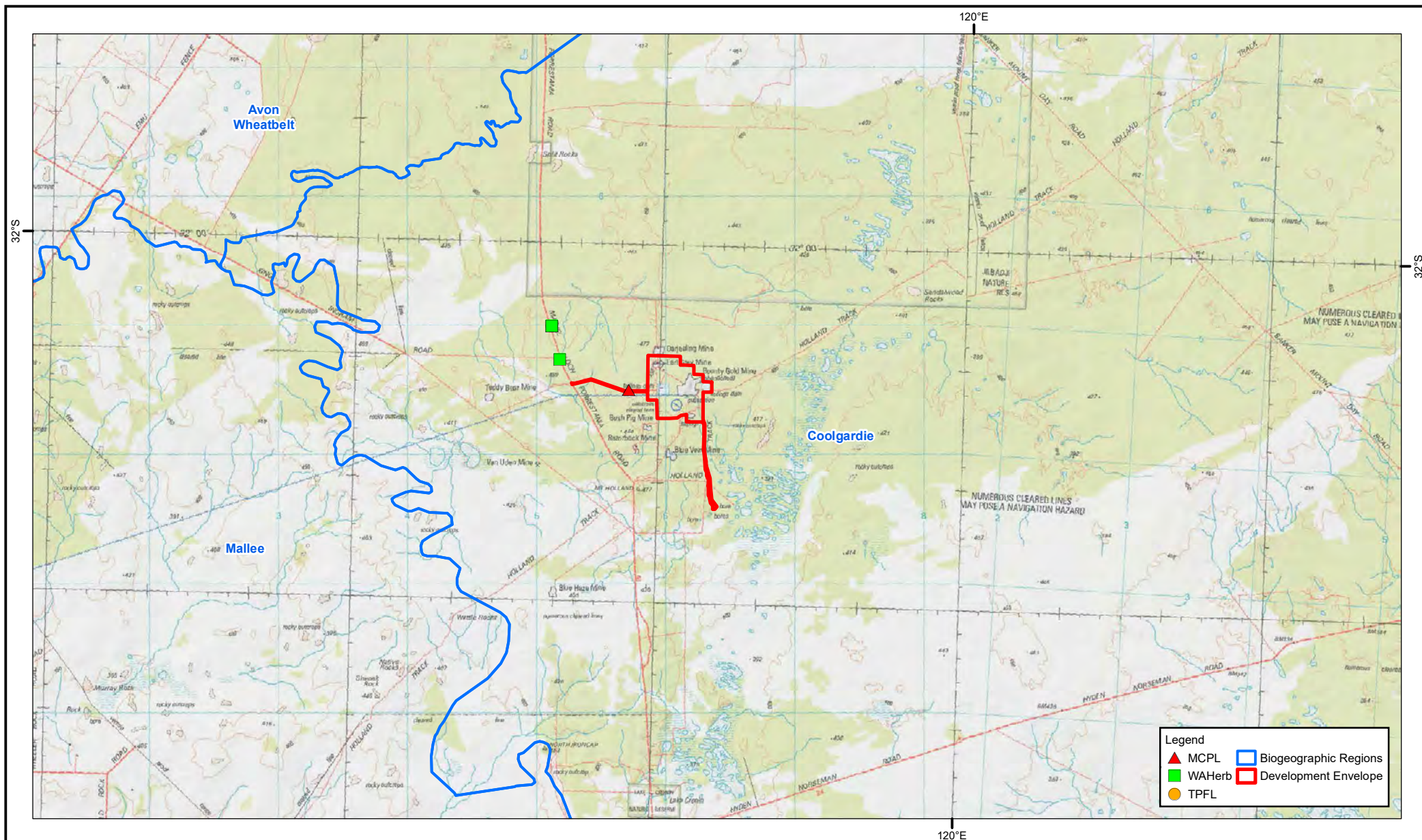


<p>Notes:</p> <p>Background: GSA</p> <p>TPFL and WA Herbarium Flora: DBCA</p>	<p>Client:</p> <p>covalent LITHIUM</p>	<p>0 8km</p> <p>Scale: 1:400,000</p> <p>MGA94 (Zone 50)</p> <p>CAD Ref: a2445_f22_02_BsF</p> <p>Date: December 2019 Rev: A A4</p>	<p>Mattiske Creating Pyl 101</p> <p>28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640</p> <p>Author: E M Mattiske MCPL Ref: CLL1901/021/19</p> <p>Drawn: CAD Resources ~ www.cadresources.com.au</p> <p>Tel: (08) 9246 3242 ~ Fax (08) 9246 3202</p>	<p>Covalent Lithium Pty Ltd</p> <p>Distribution of</p> <p><i>Baeckea sp. Forrestania</i> (K.R. Newbey 1105)</p>	<p>Figure</p> <p>11b</p>
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TPFL and WA Herbarium Flora: DBCA



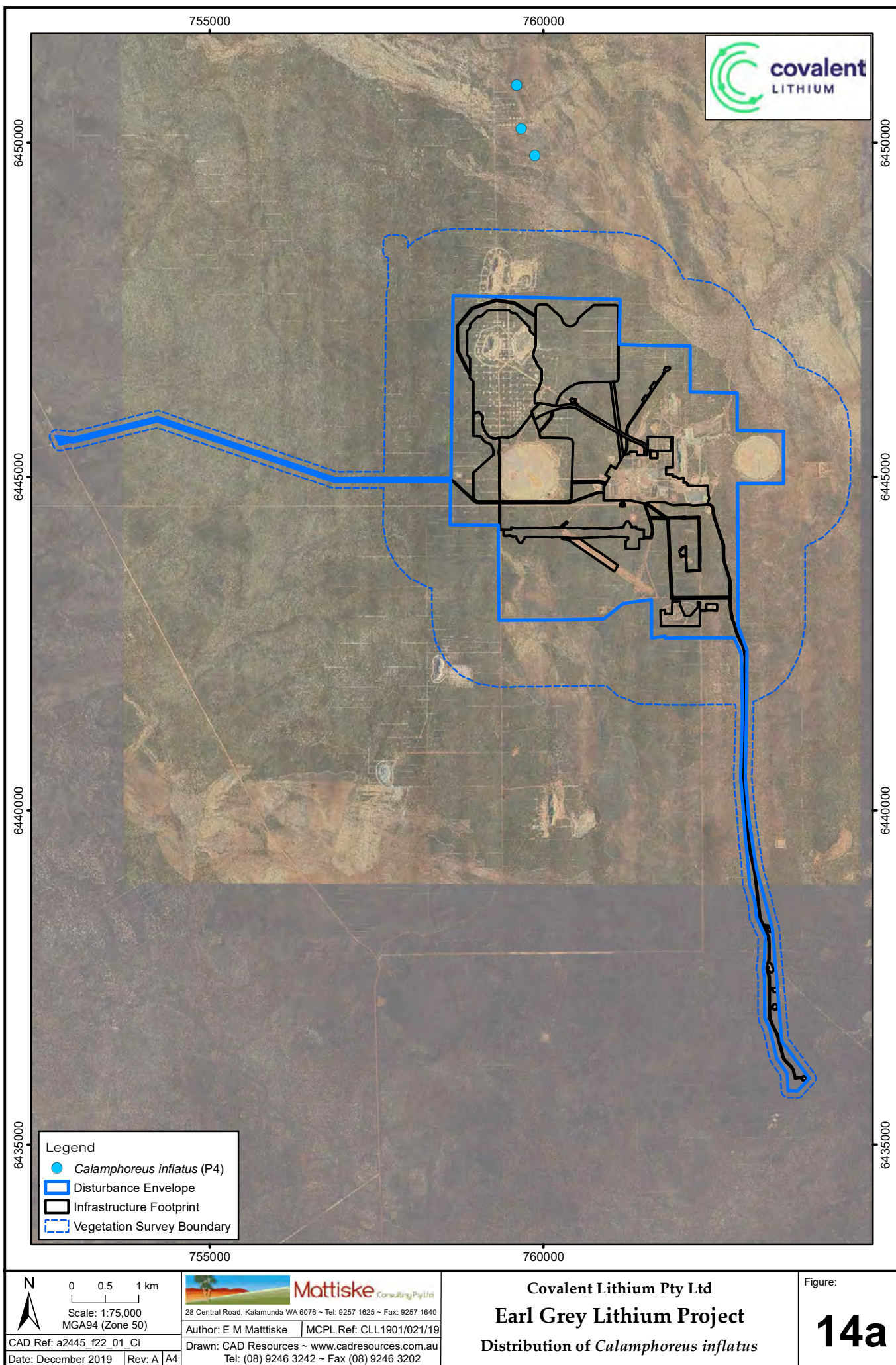
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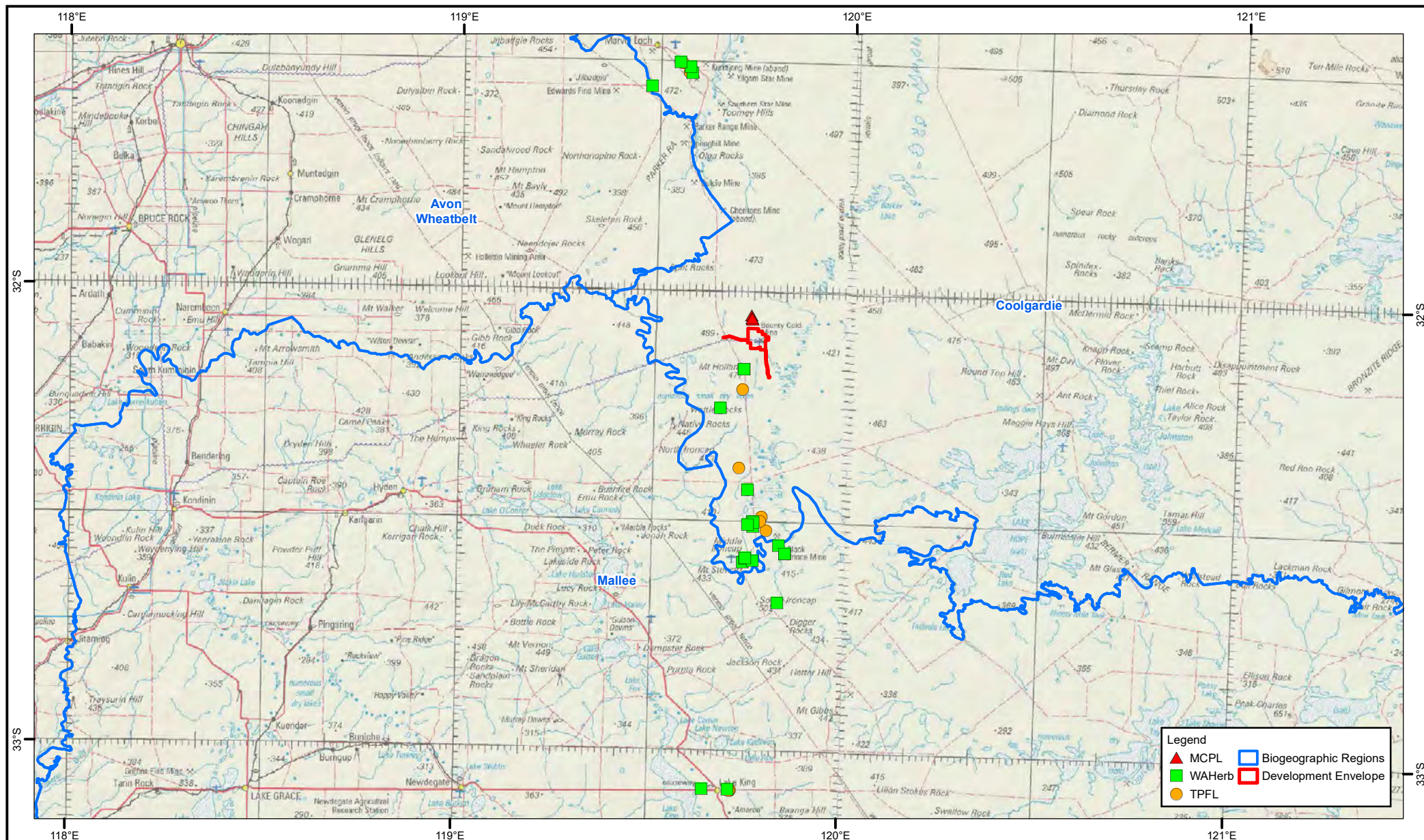
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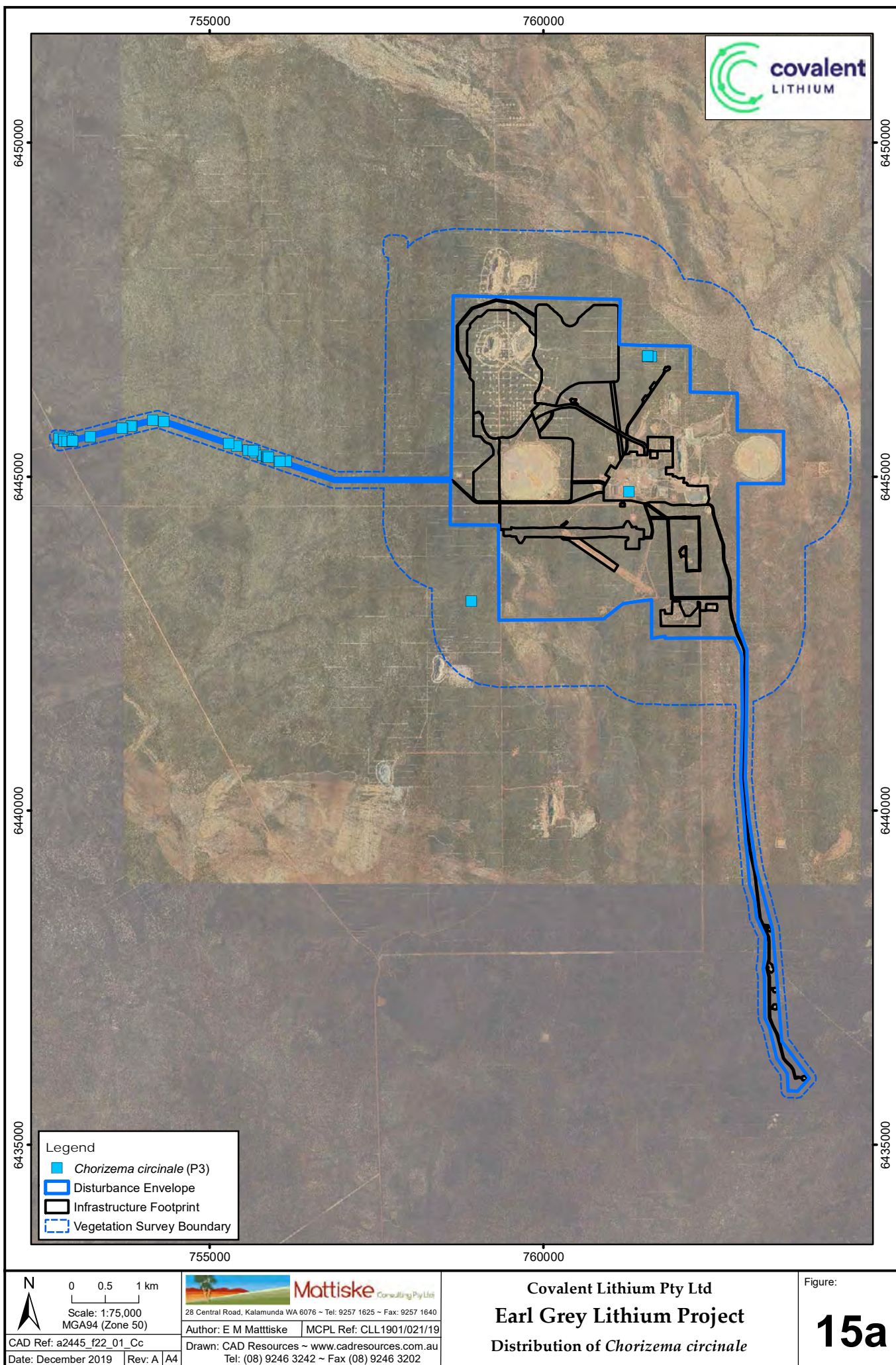
Covalent Lithium Pty Ltd
Distribution of
Brachyloma stenolobum

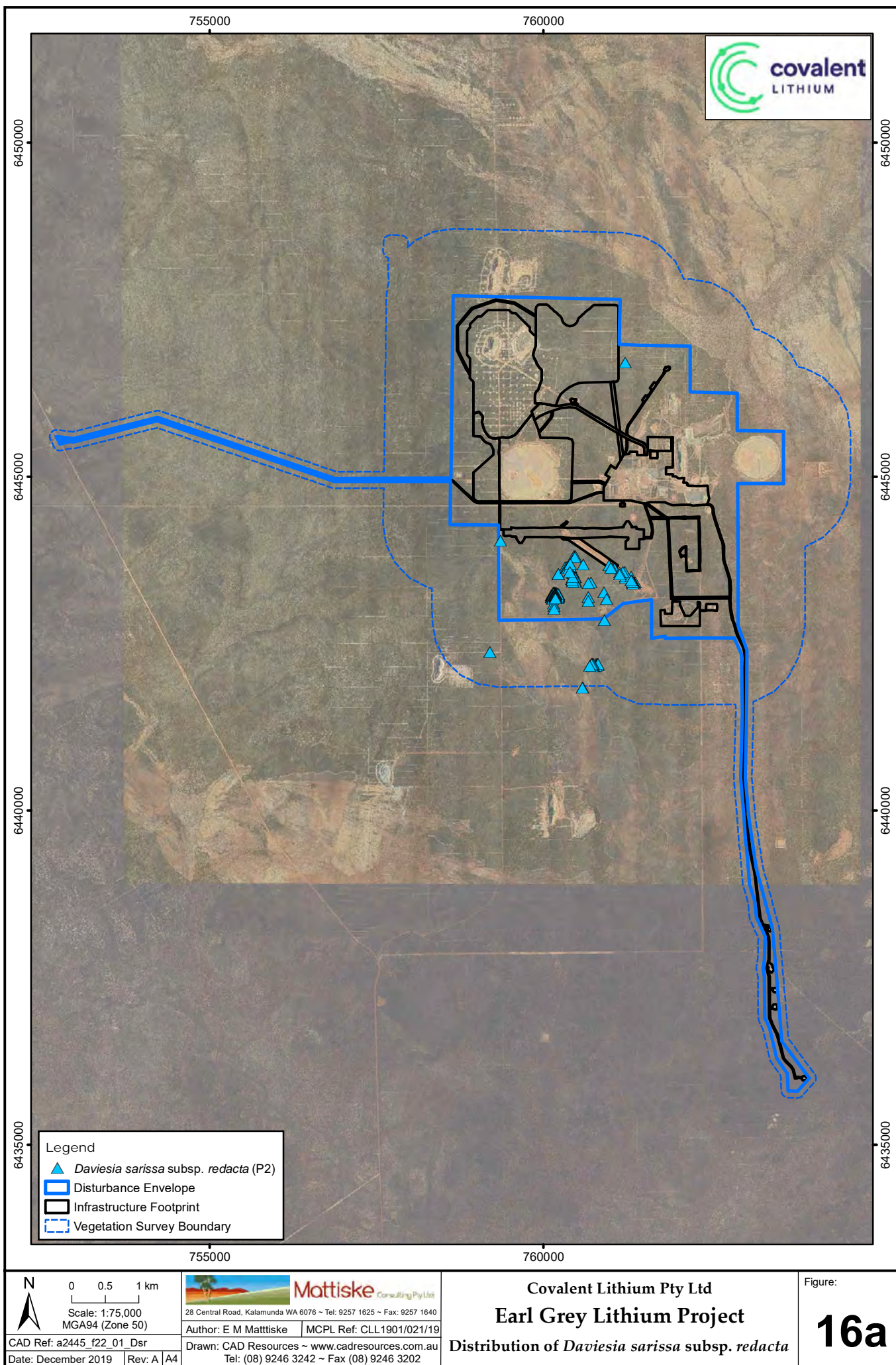
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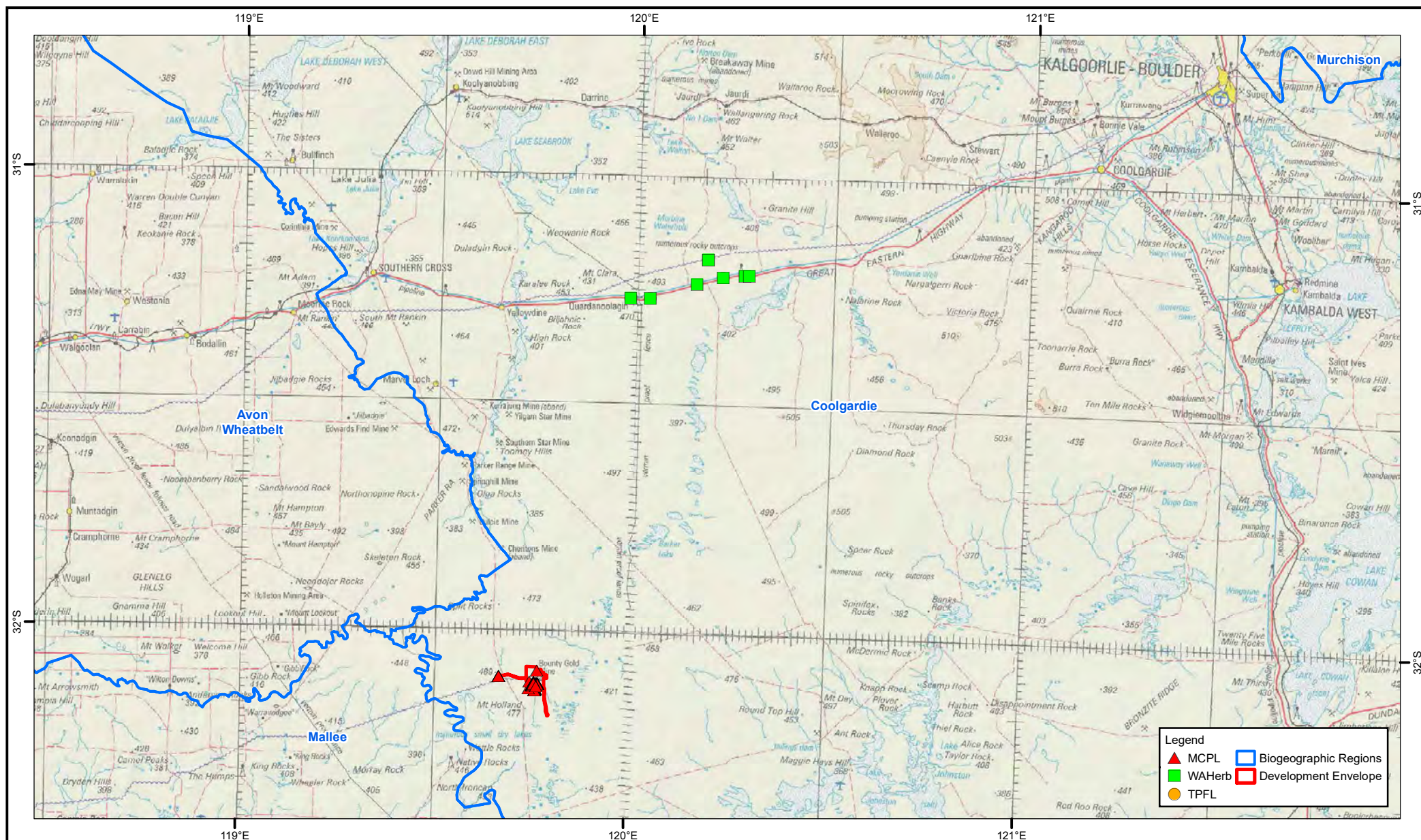
13b











Notes:
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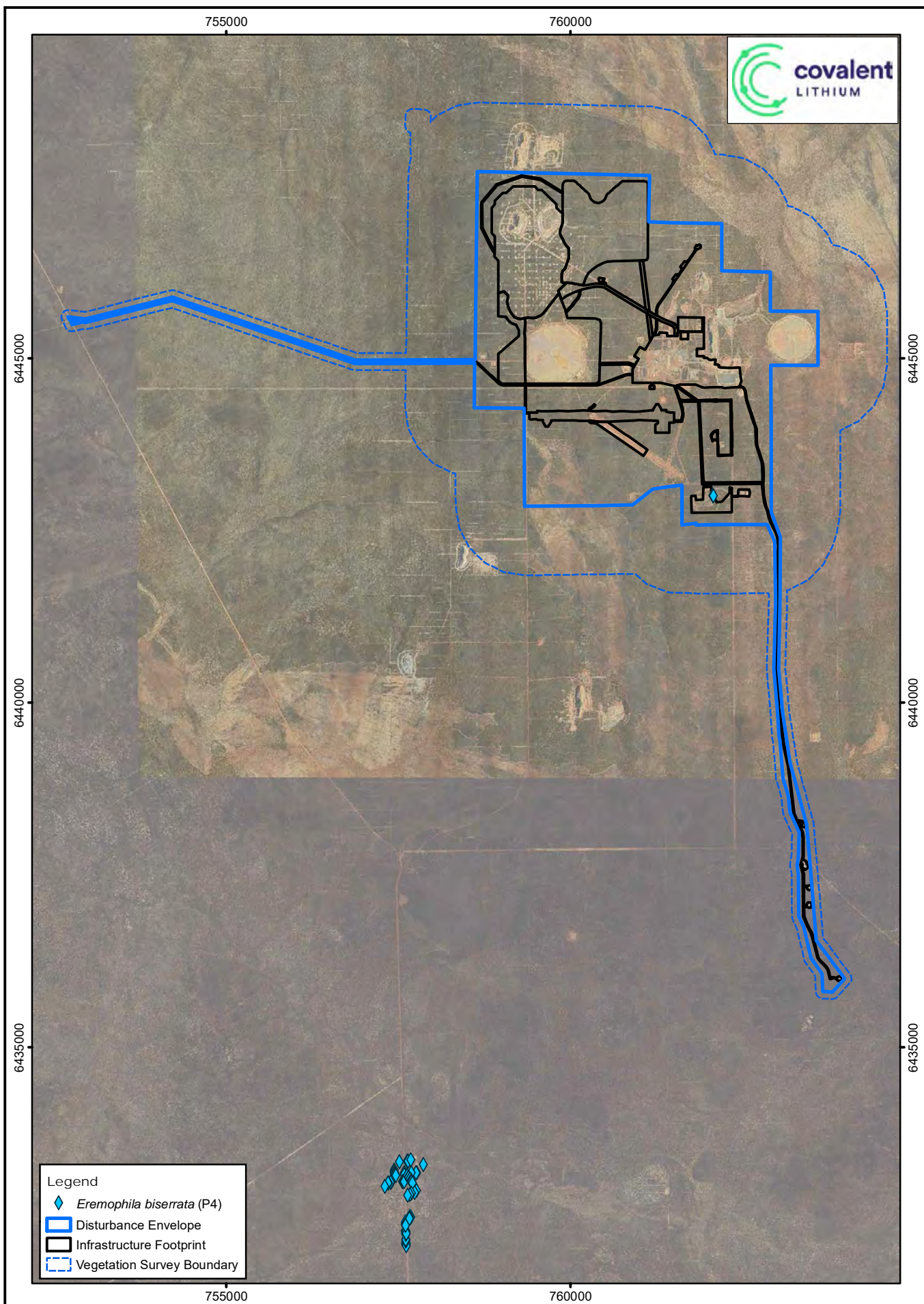


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Covalent Lithium Pty Ltd
Distribution of
Daviesia sarissa subsp. redacta

Figure

16b



0 0.5 1 km
Scale: 1:75,000
MGA94 (Zone 50)



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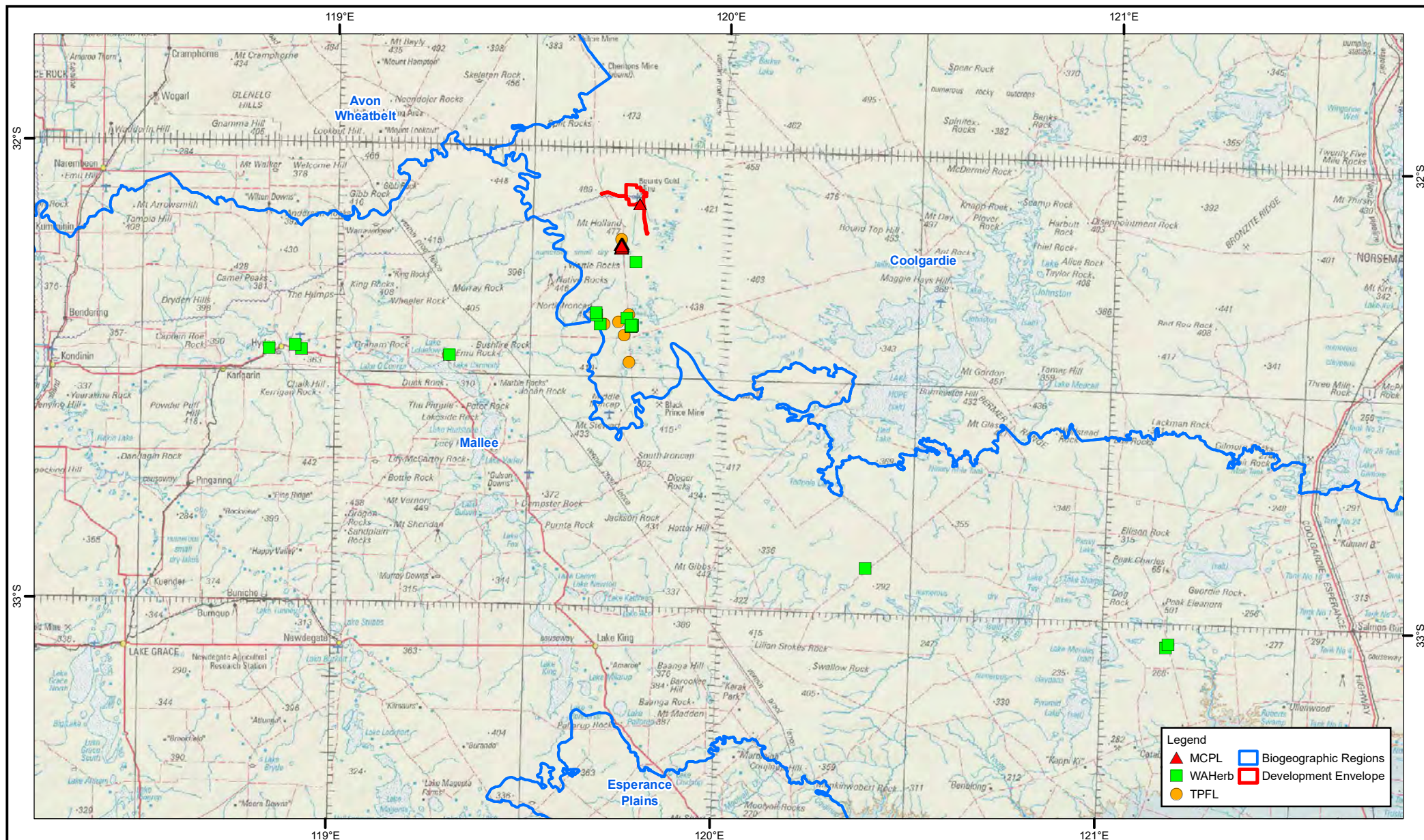
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Date: December 2019 Rev: A A4

Covalent Lithium Pty Ltd
Earl Grey Lithium Project
Distribution of *Eremophila biserrata*

Figure:

17a



Notes:
Background: GSA
TPFL and WA Herbarium Flora: DBCA



0 20 km

Scale: 1:1,250,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_02_Eb

Date: December 2019 Rev: A A4



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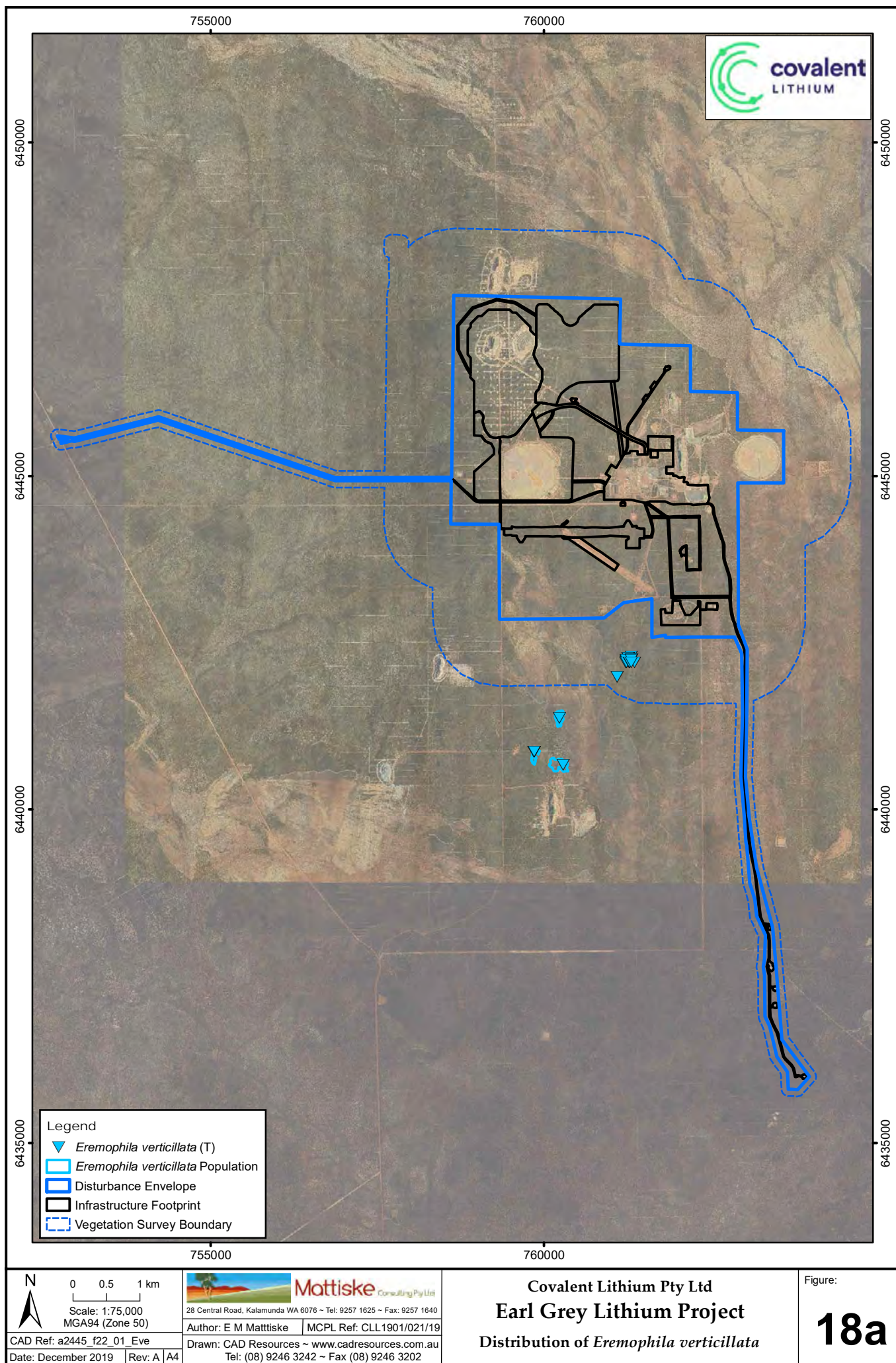
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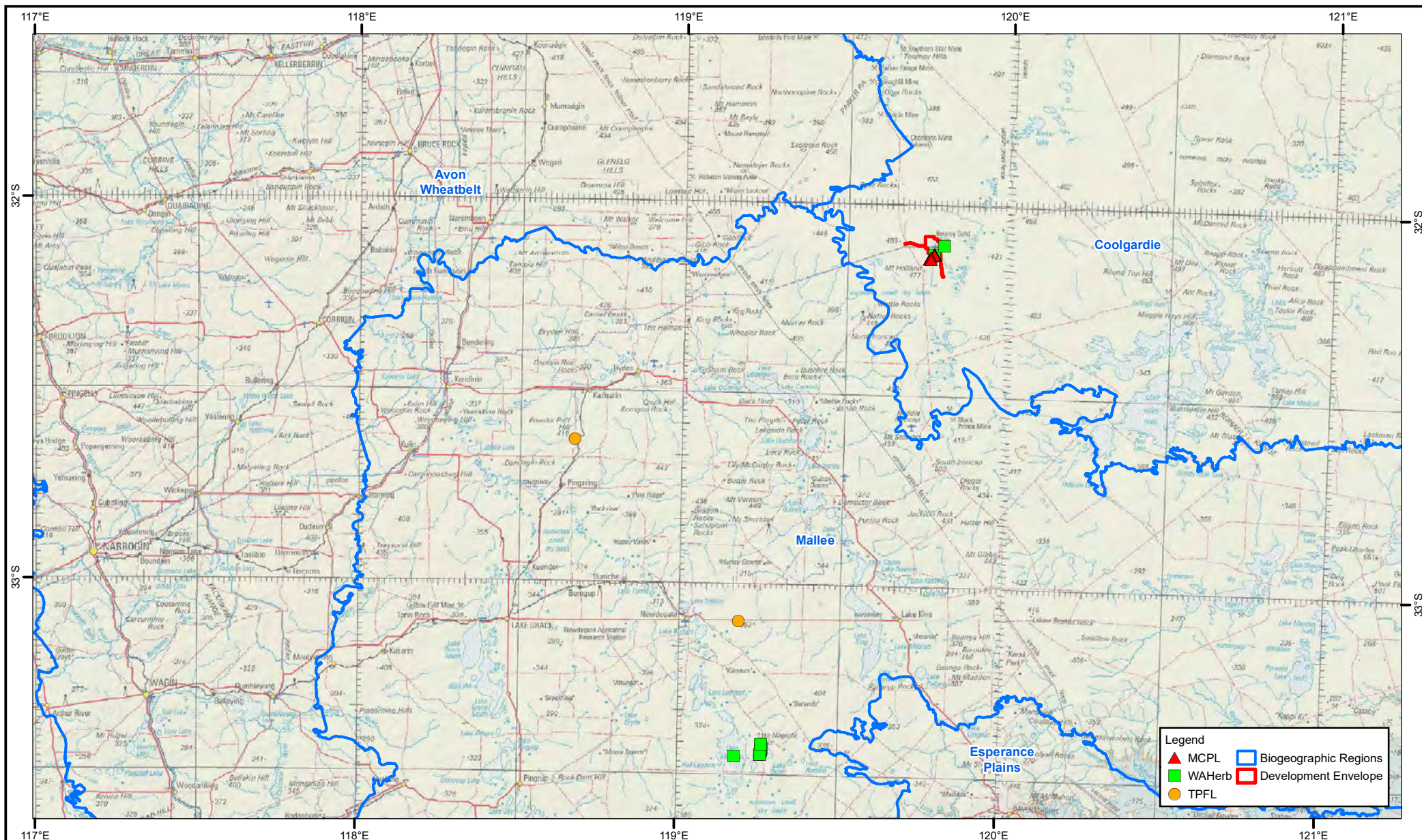
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Covalent Lithium Pty Ltd
Distribution of
Eremophila biserrata

Figure

17b





Notes:
Background: GSA
TPFL and WA Herbarium Flora: DBCA



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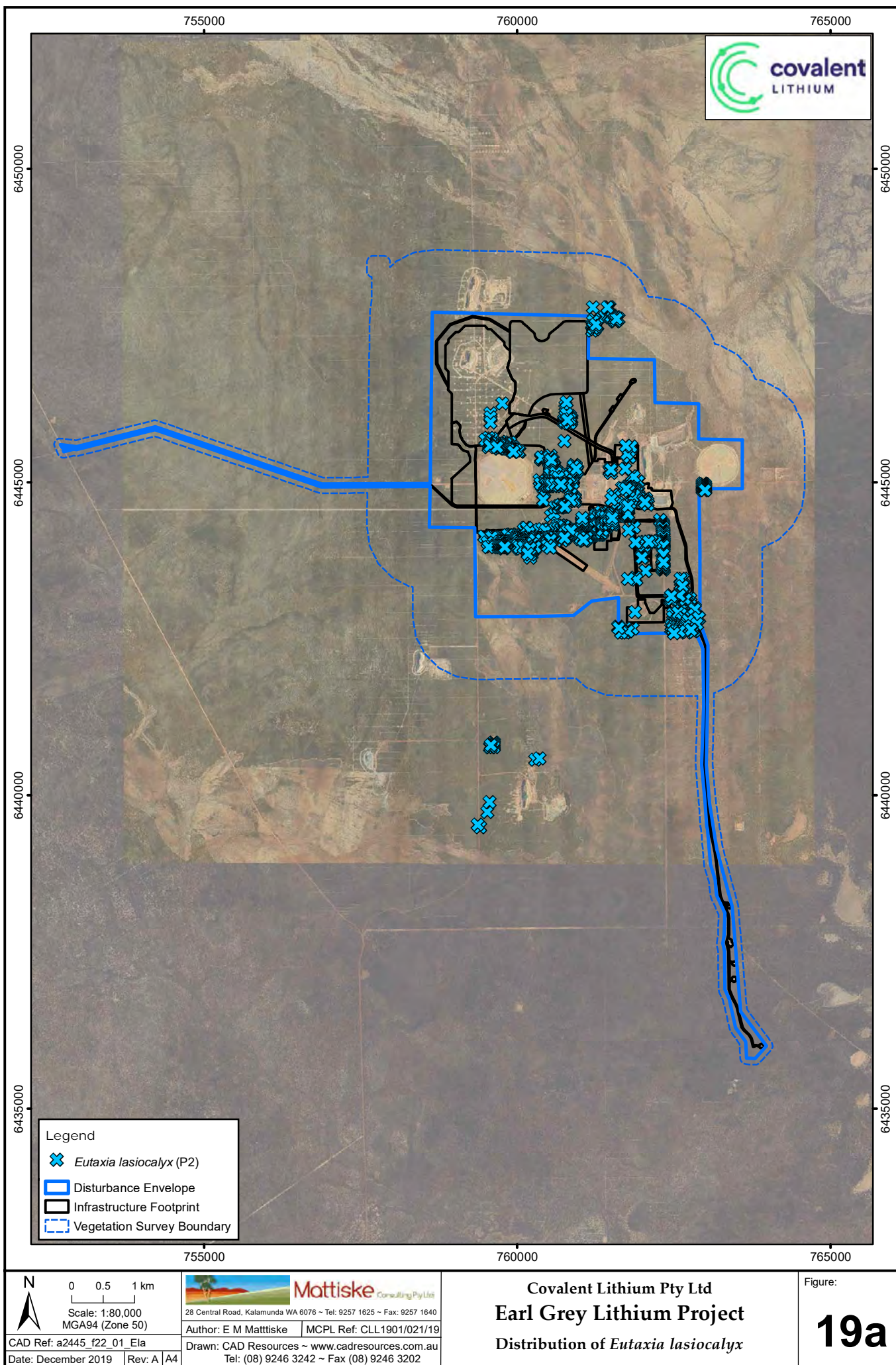


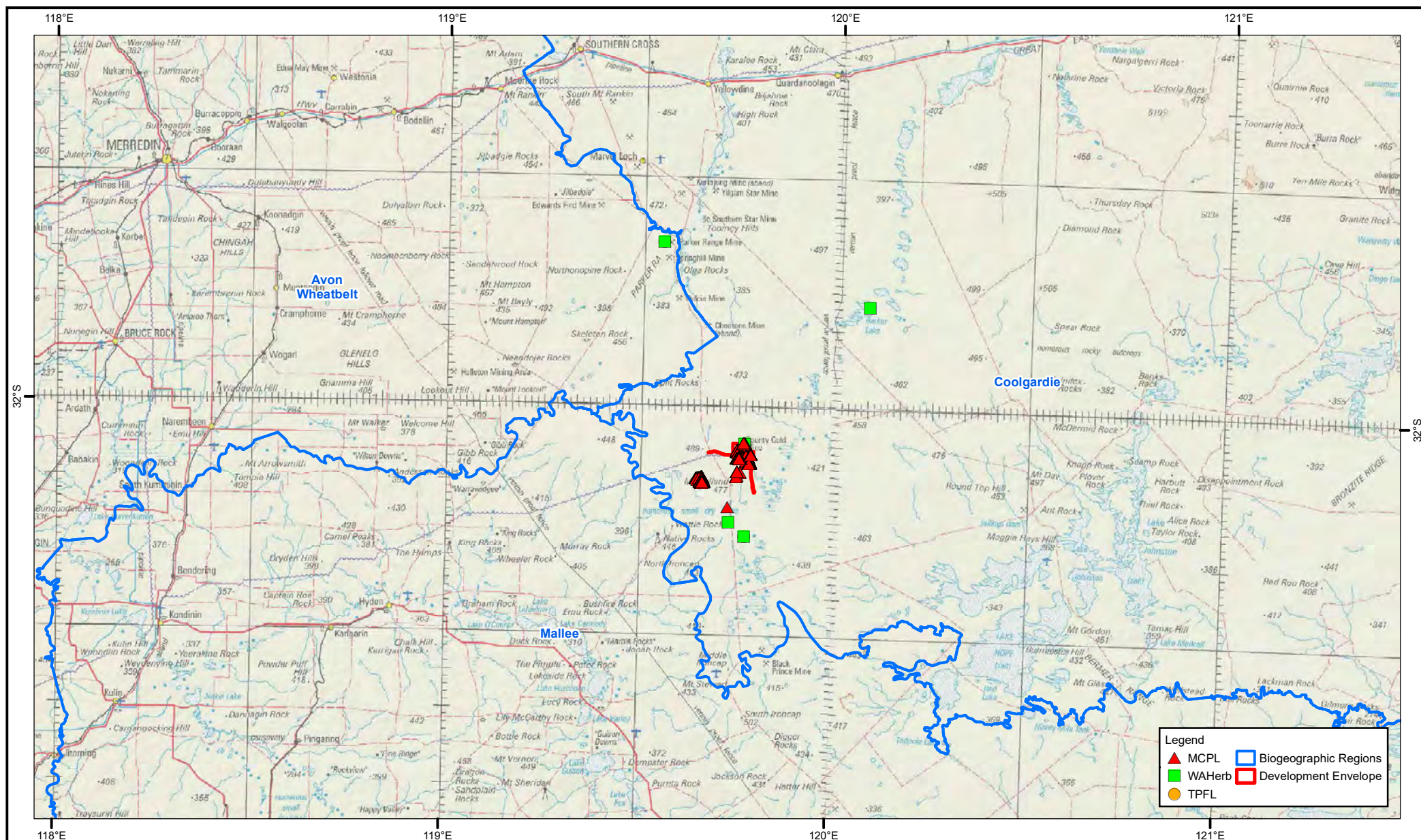
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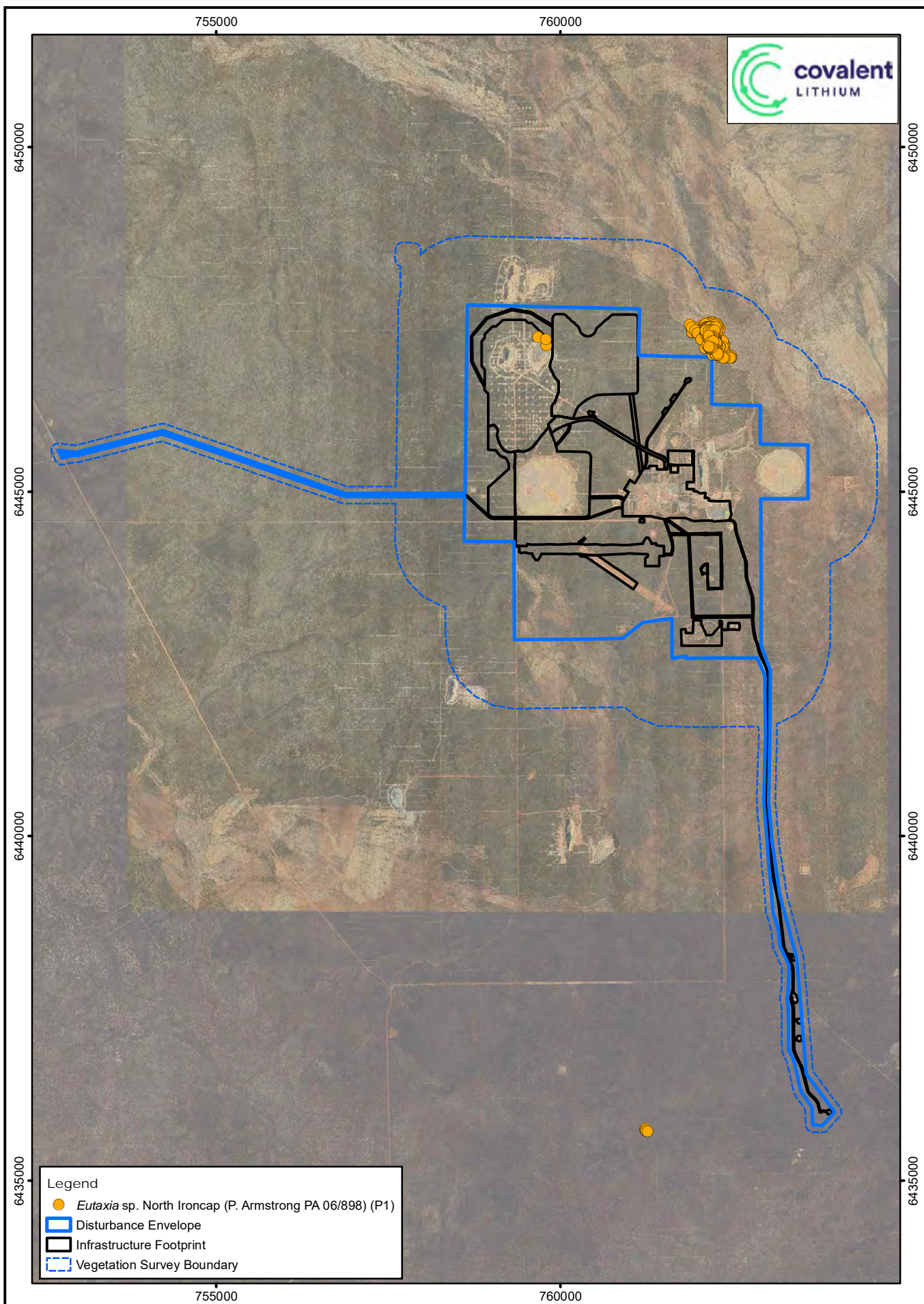
Covalent Lithium Pty Ltd
Distribution of
Eremophila verticillata

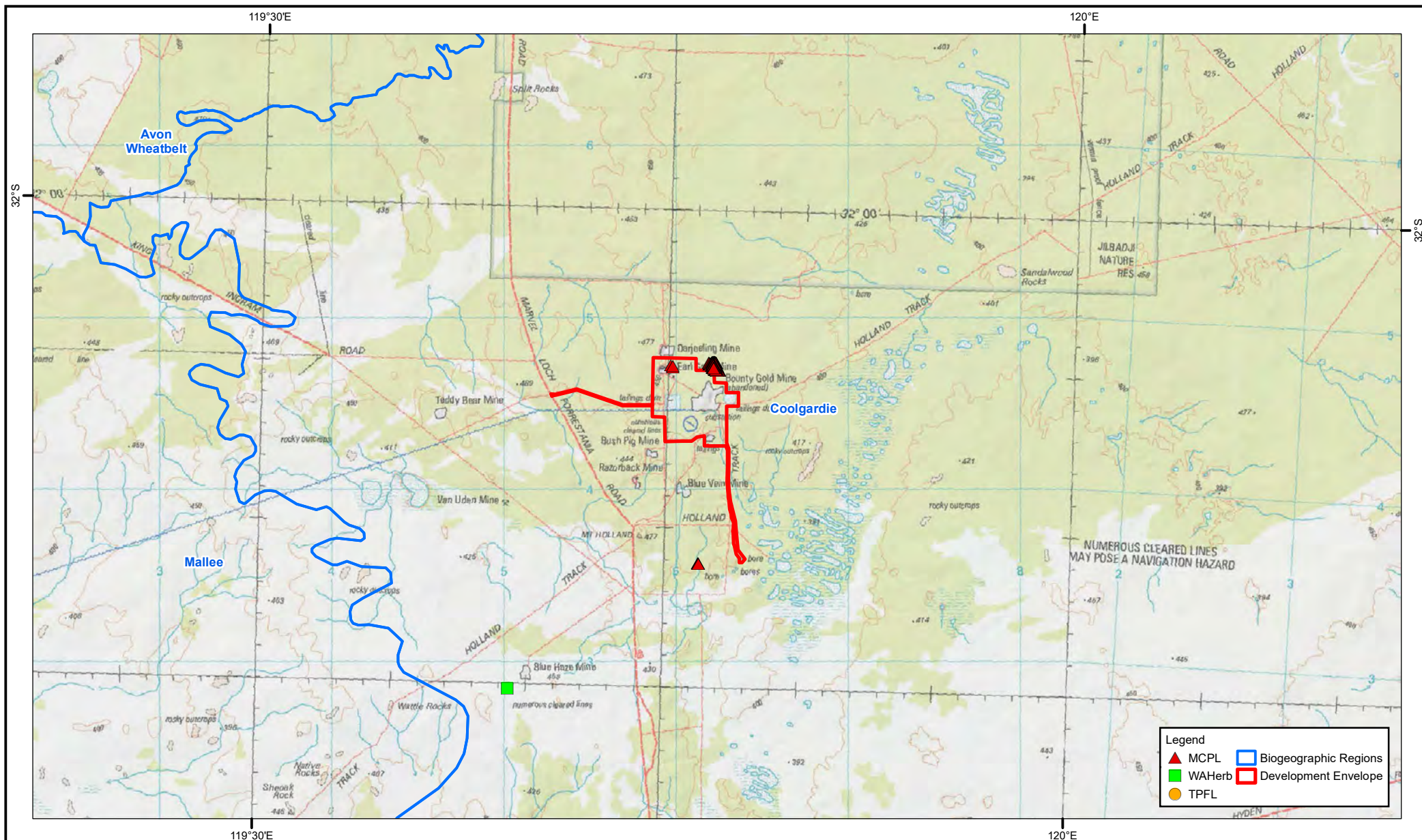
Figure

18b









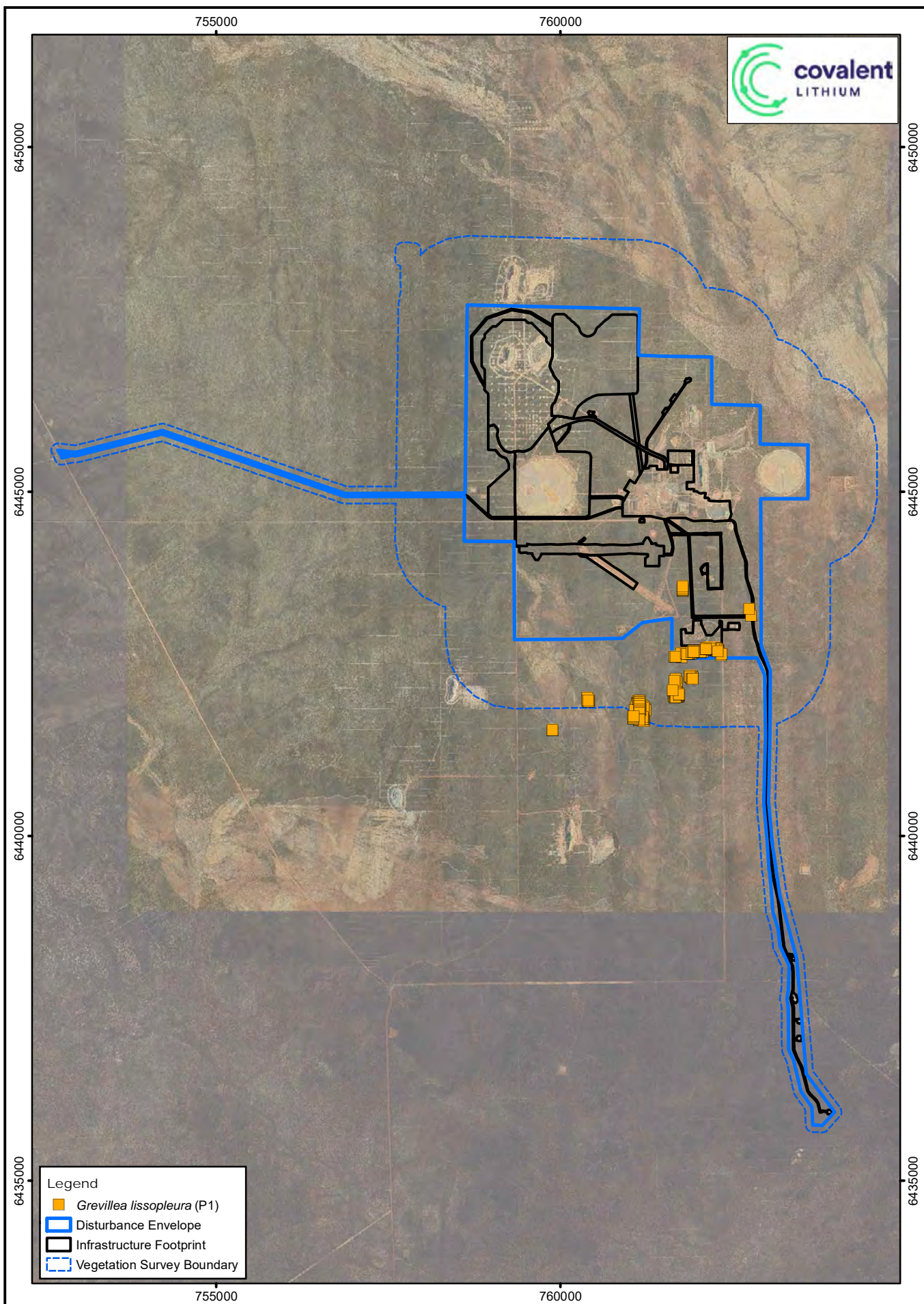
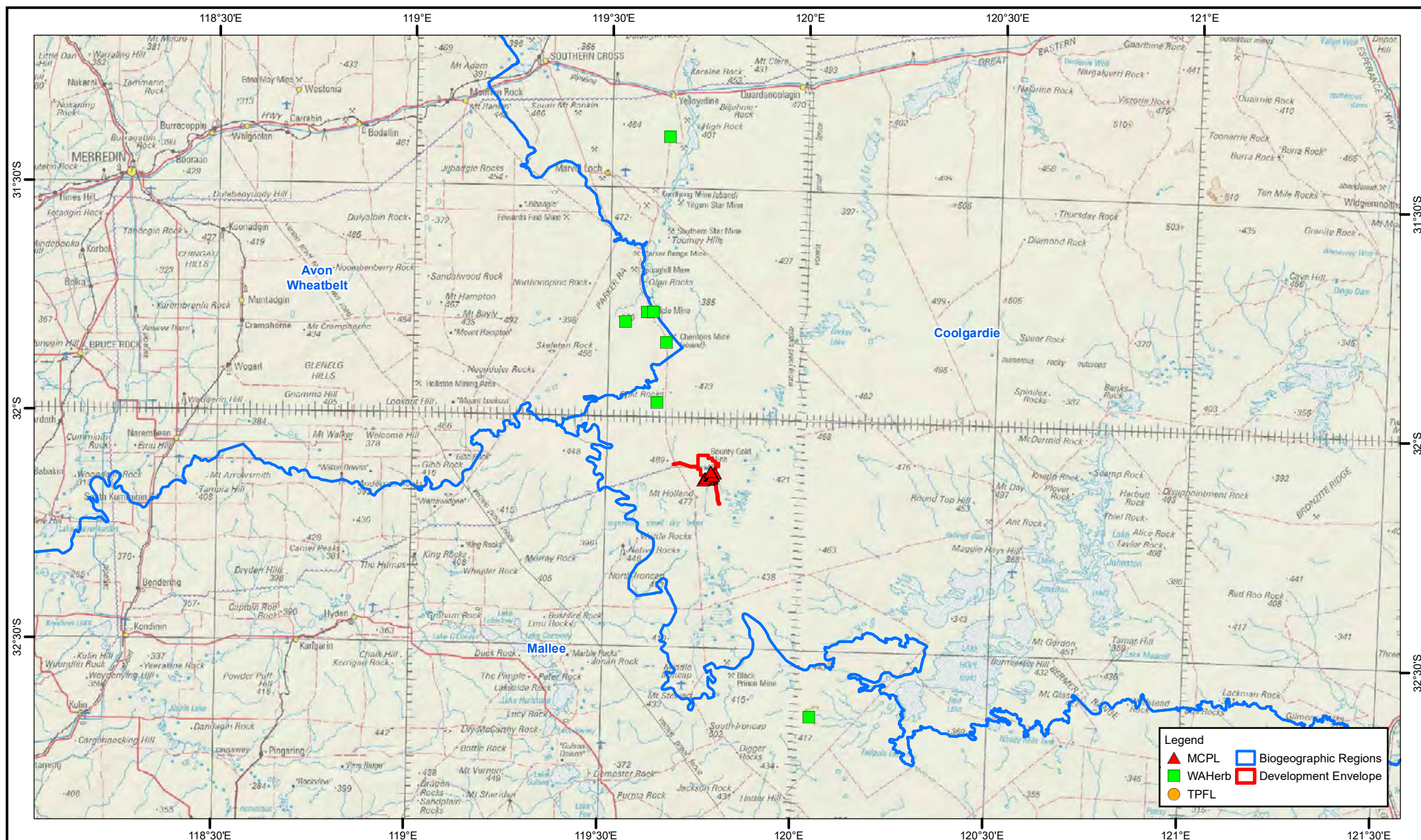
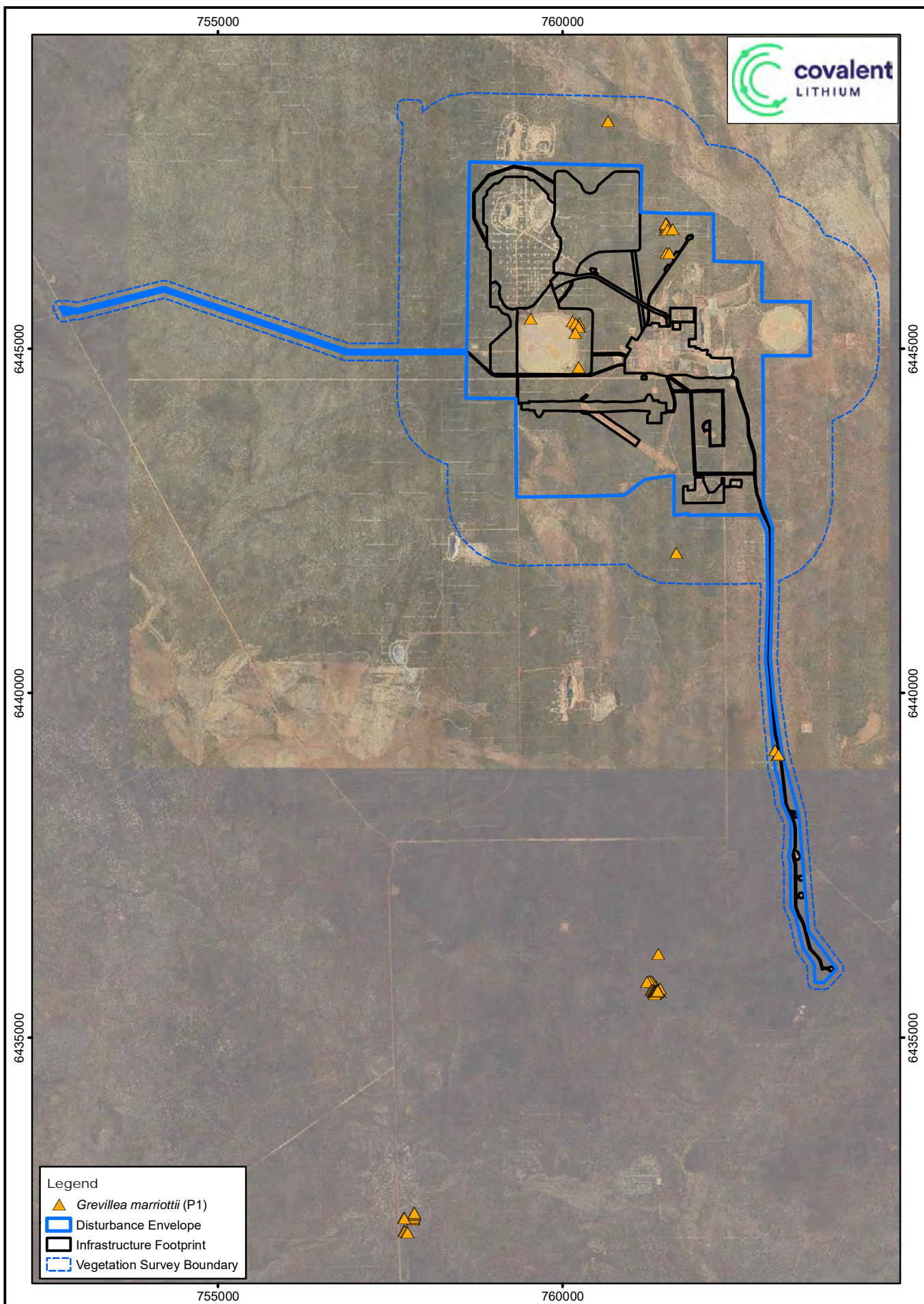
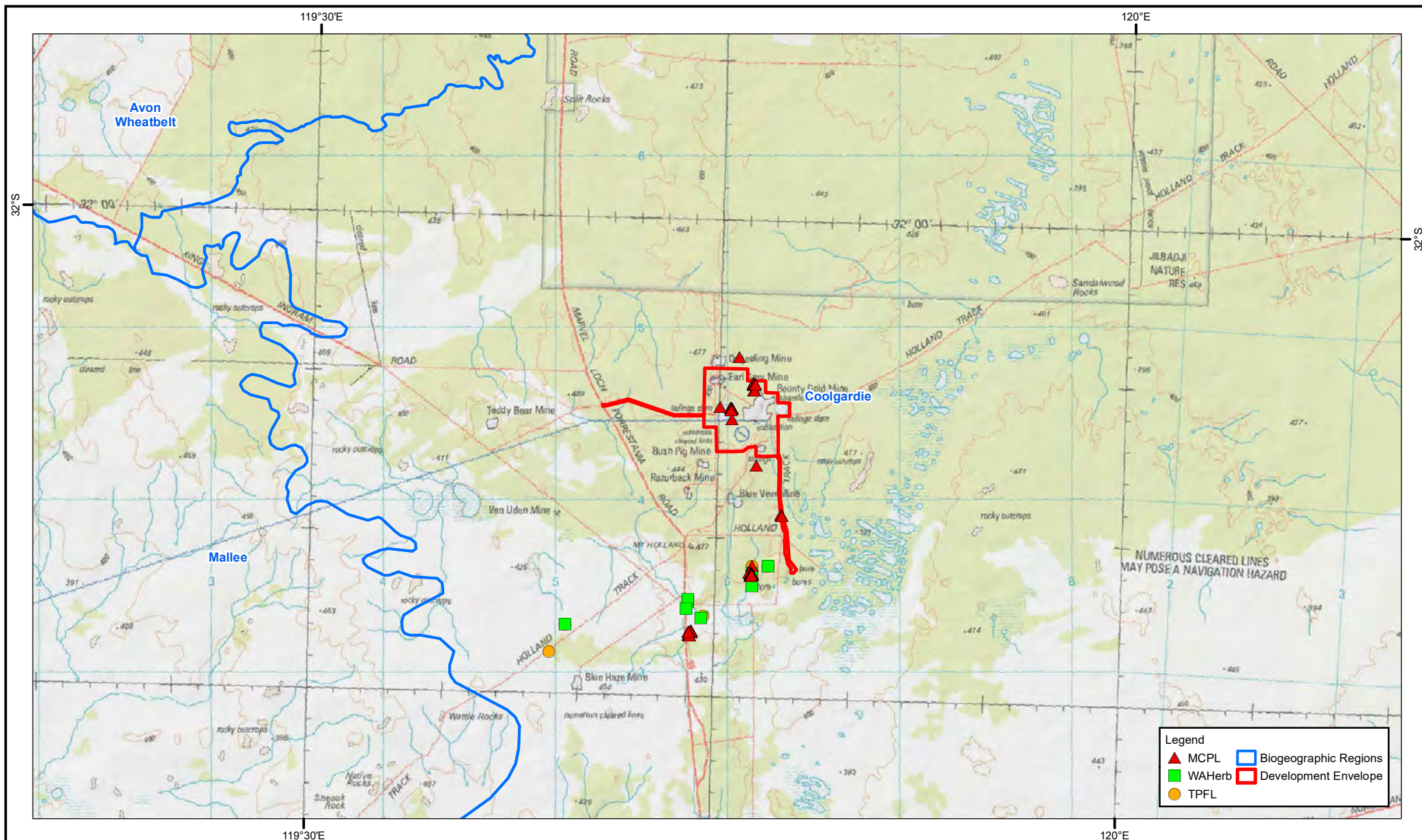


Figure:

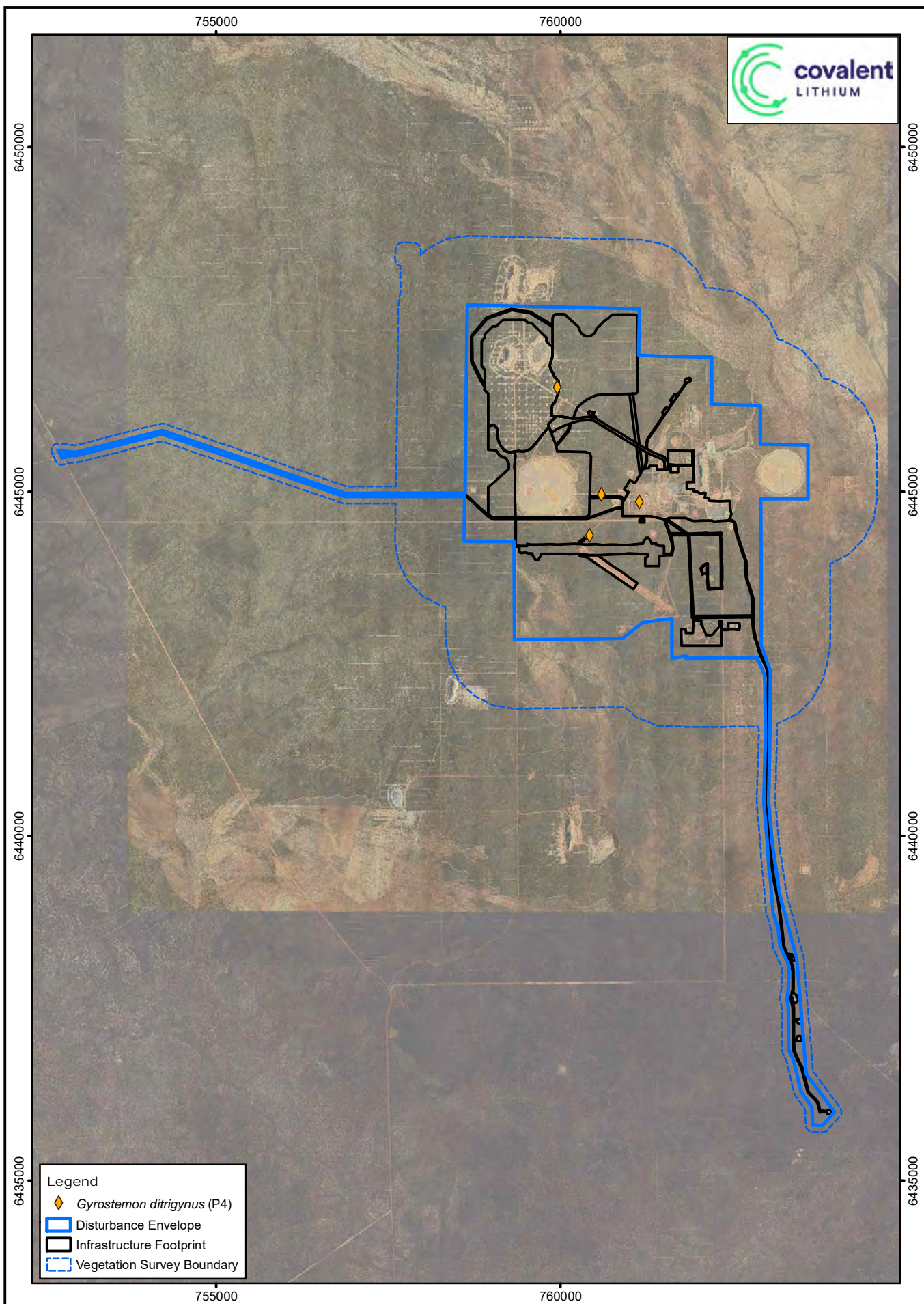
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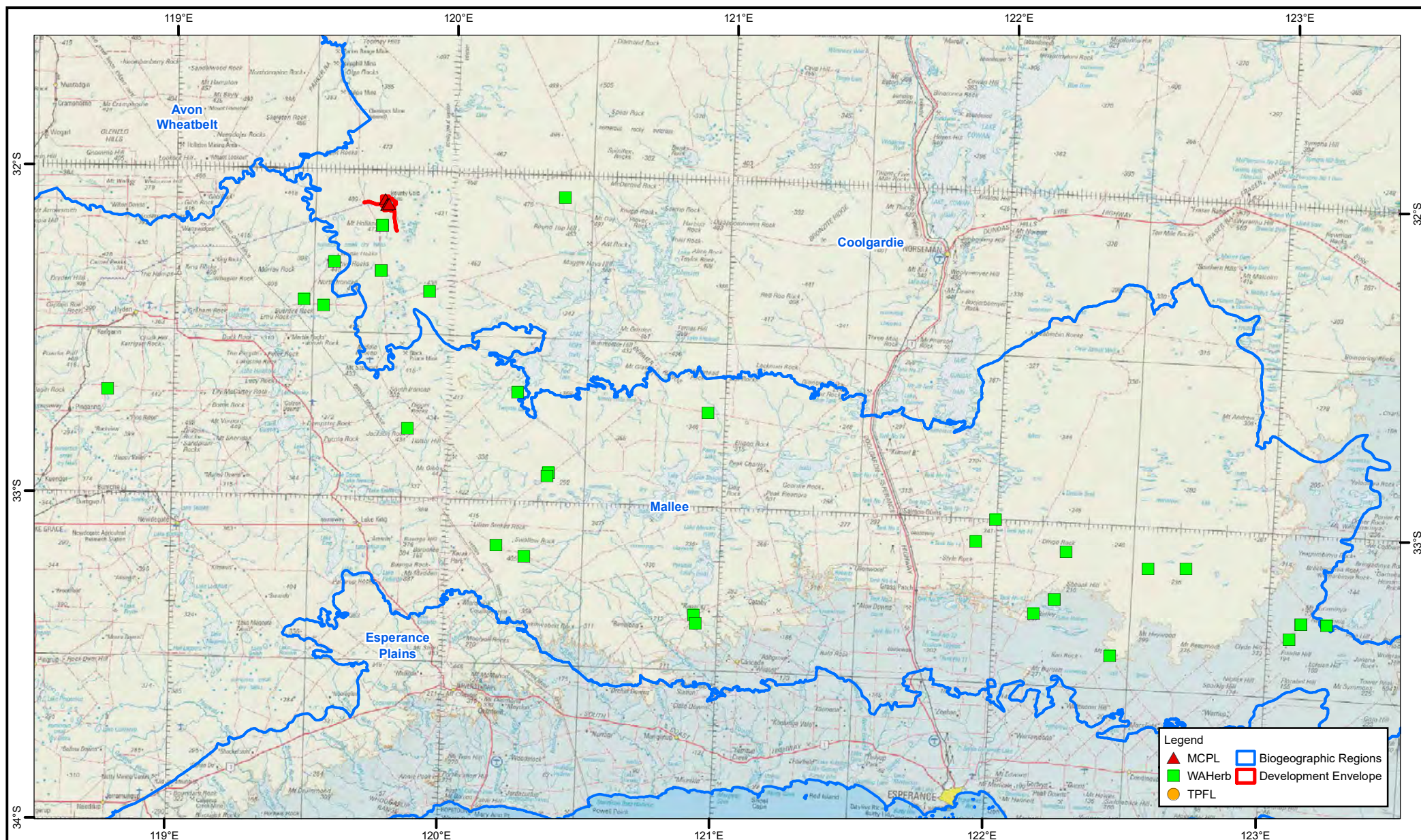


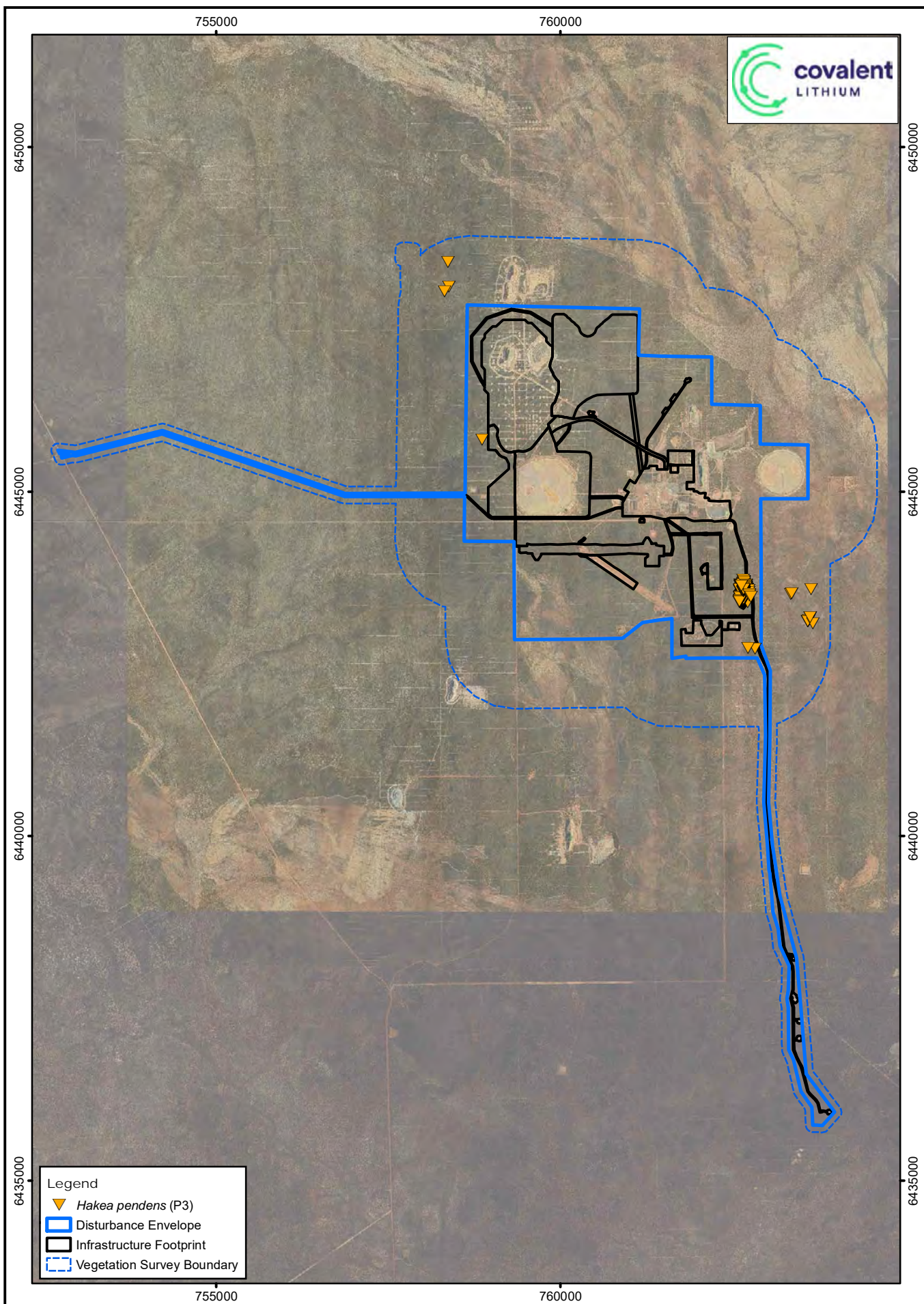


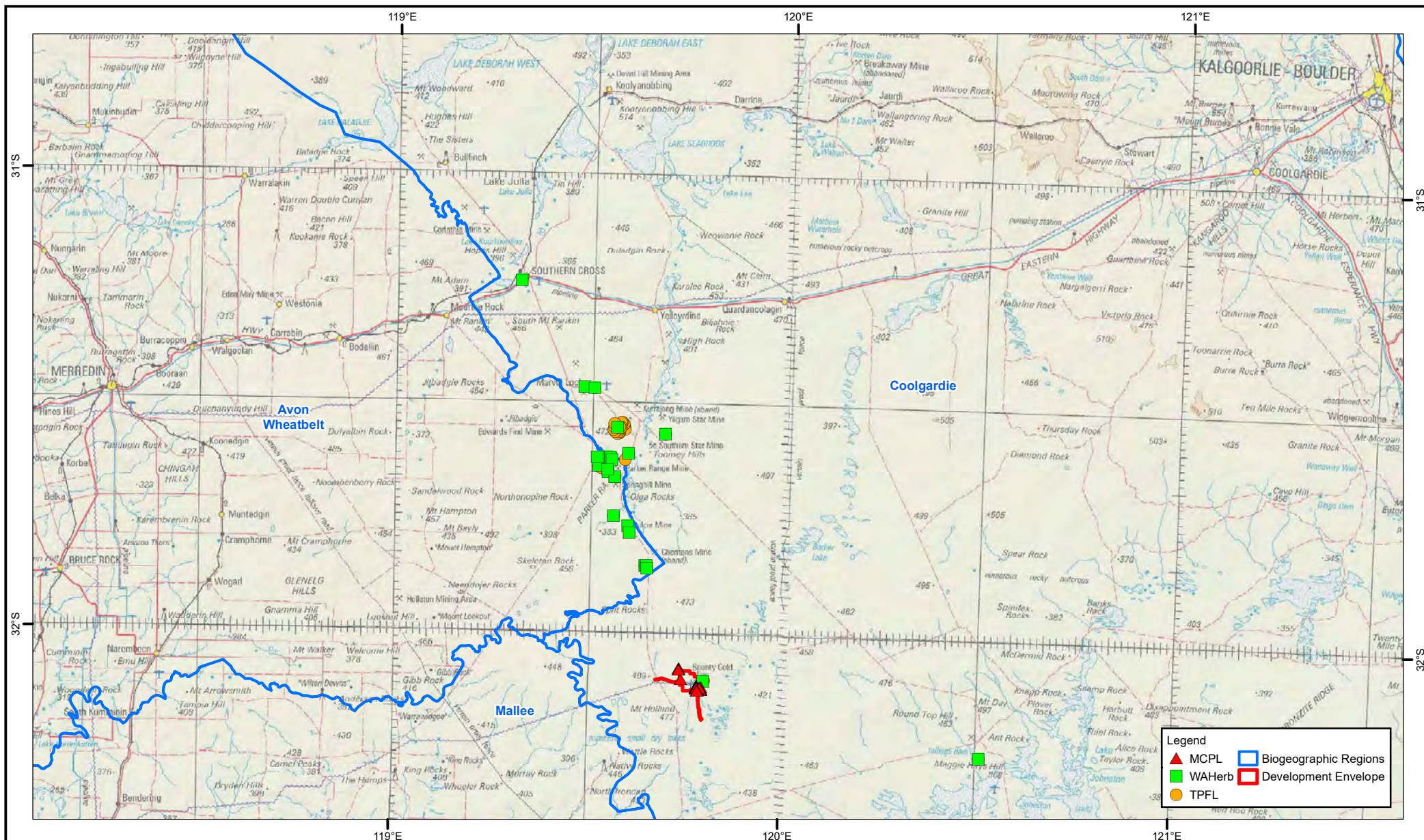


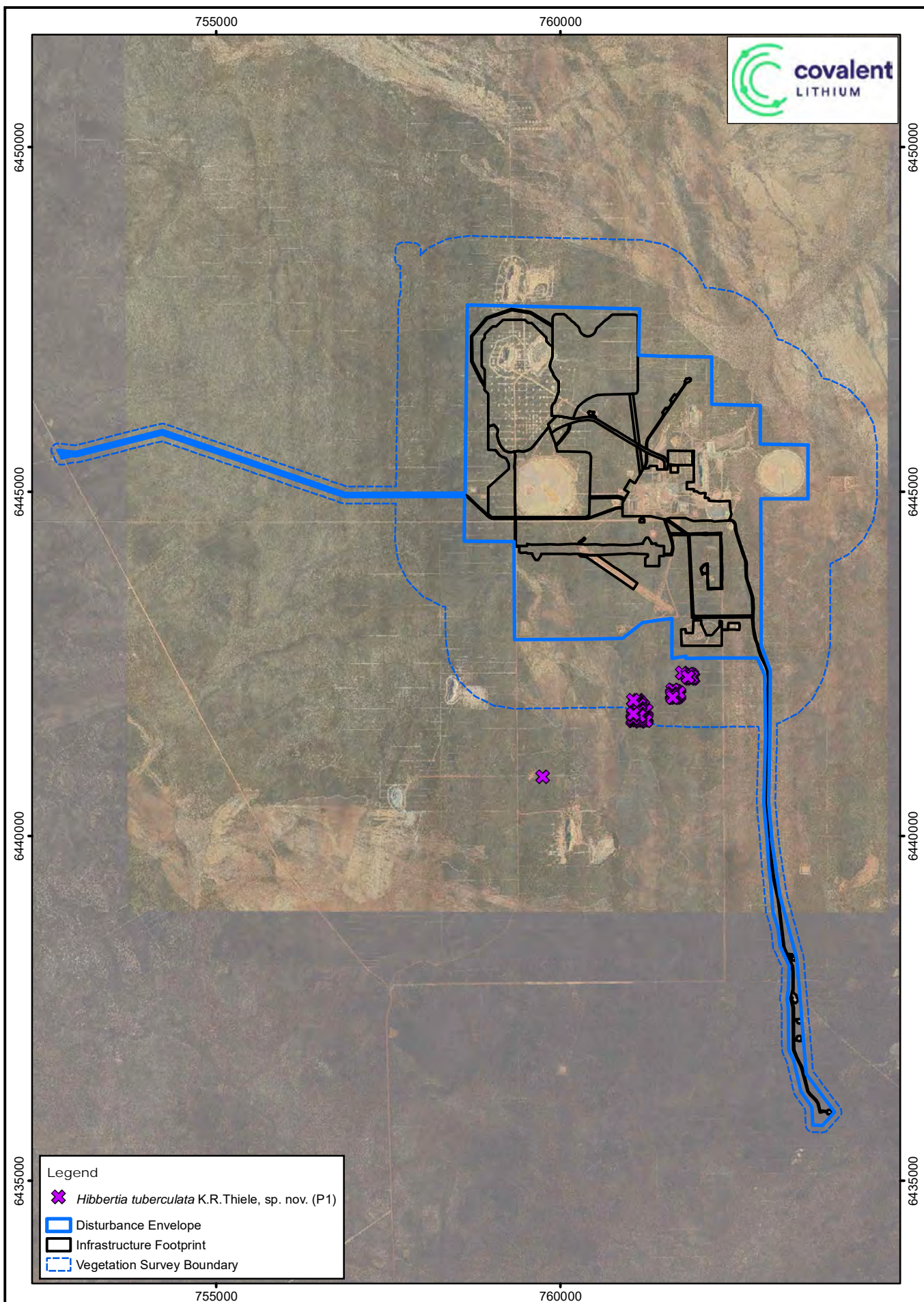
<p>Notes:</p> <p>Background: GSA</p> <p>TPFL and WA Herbarium Flora: DBCA</p>	<p>Client:</p> 	<p>Scale: 1:300,000</p> <p>MGA94 (Zone 50)</p> <p>CAD Ref: a2445_f22_02_Gm</p> <p>Date: December 2019</p> <p>Rev: A</p> <p>A4</p>	 <p>Mattiske Consulting Pty Ltd</p> <p>28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640</p> <p>Author: E M Mattiske</p> <p>MCPL Ref: CLL1901/021/19</p> <p>Drawn: CAD Resources ~ www.cadresources.com.au</p> <p>Tel: (08) 9246 3242 ~ Fax (08) 9246 3202</p>	<p>Covalent Lithium Pty Ltd</p> <p>Distribution of</p> <p><i>Grevillea marriottii</i></p>	<p>Figure</p> <p>22b</p>
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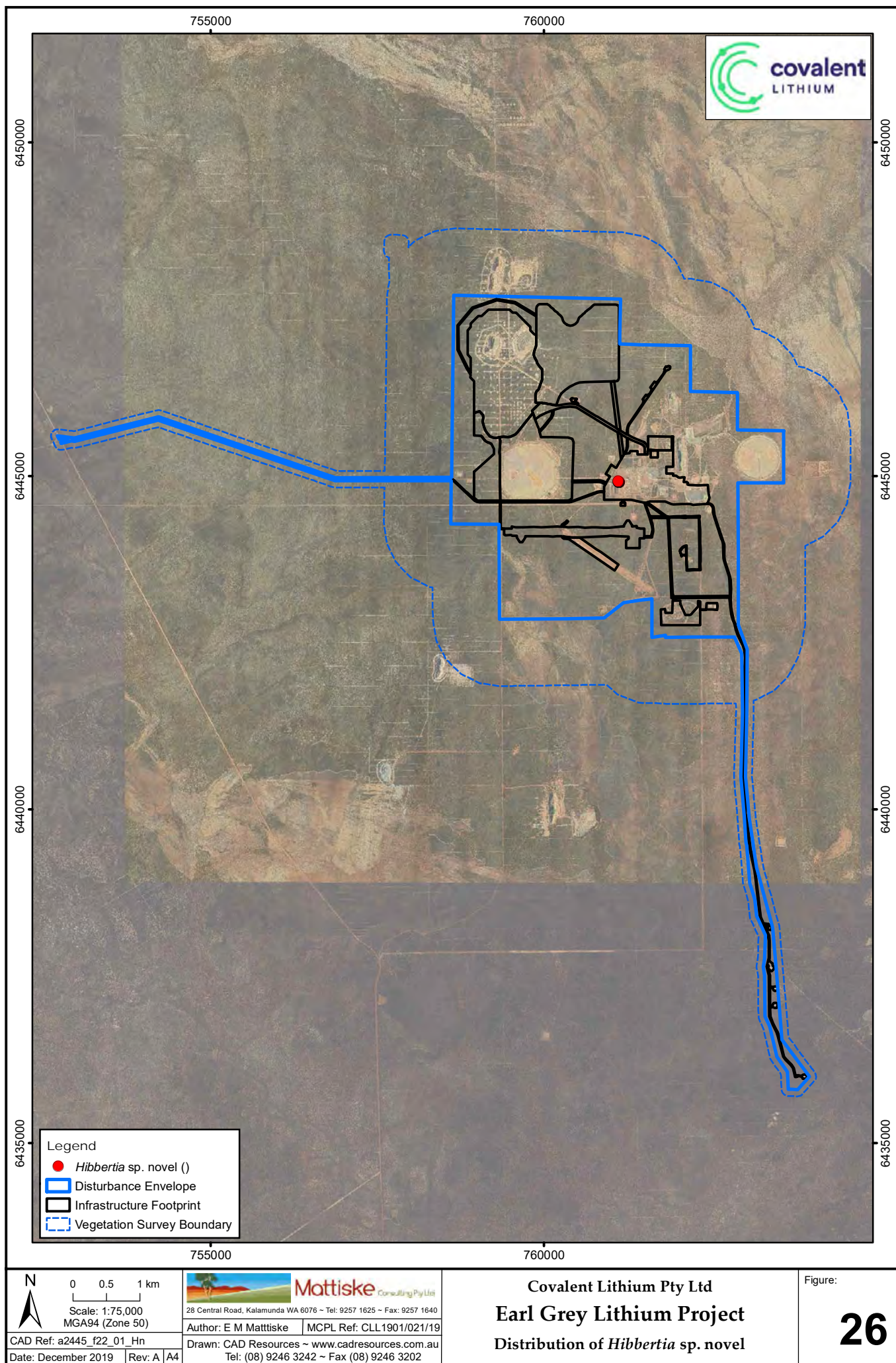


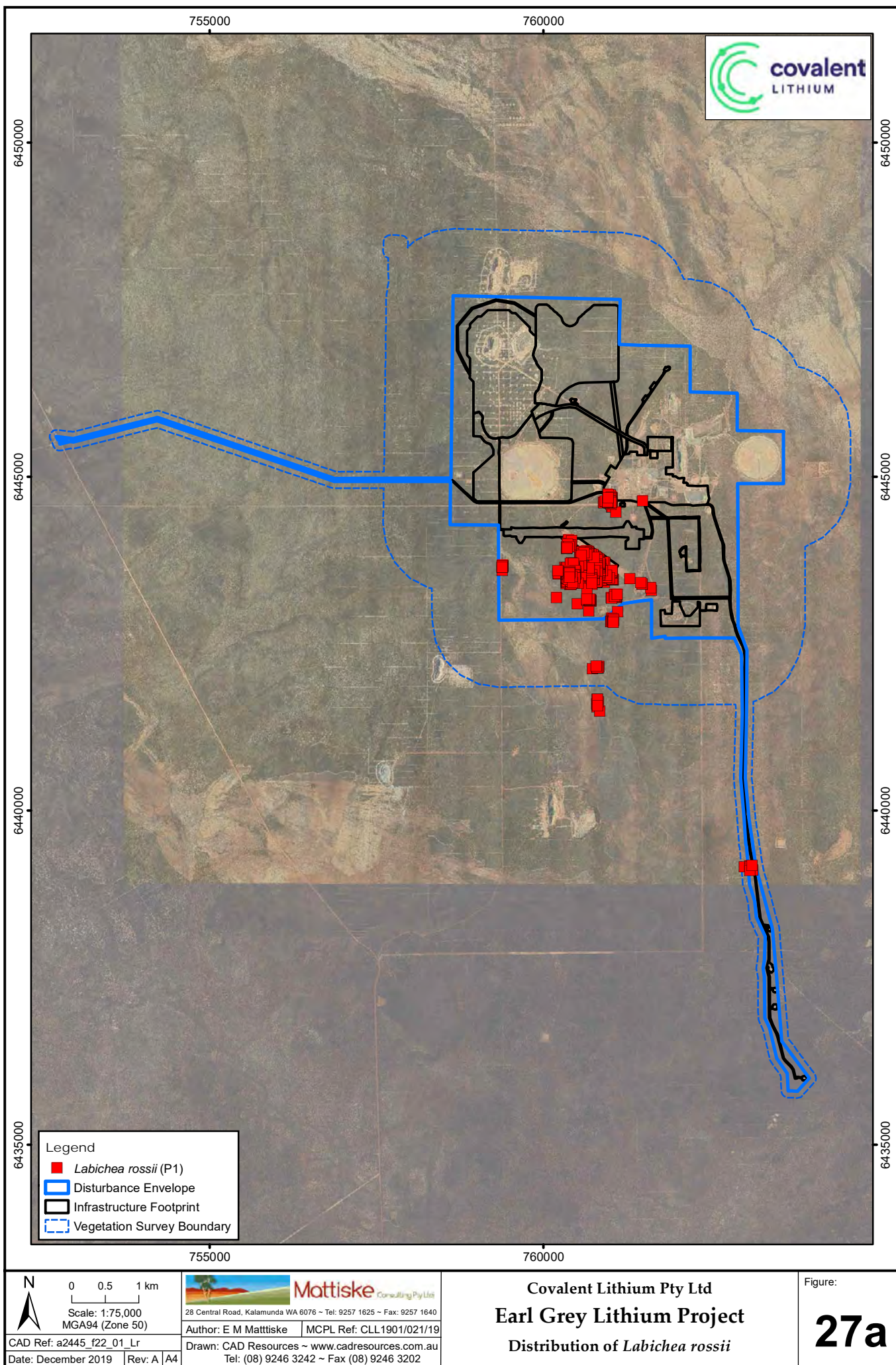


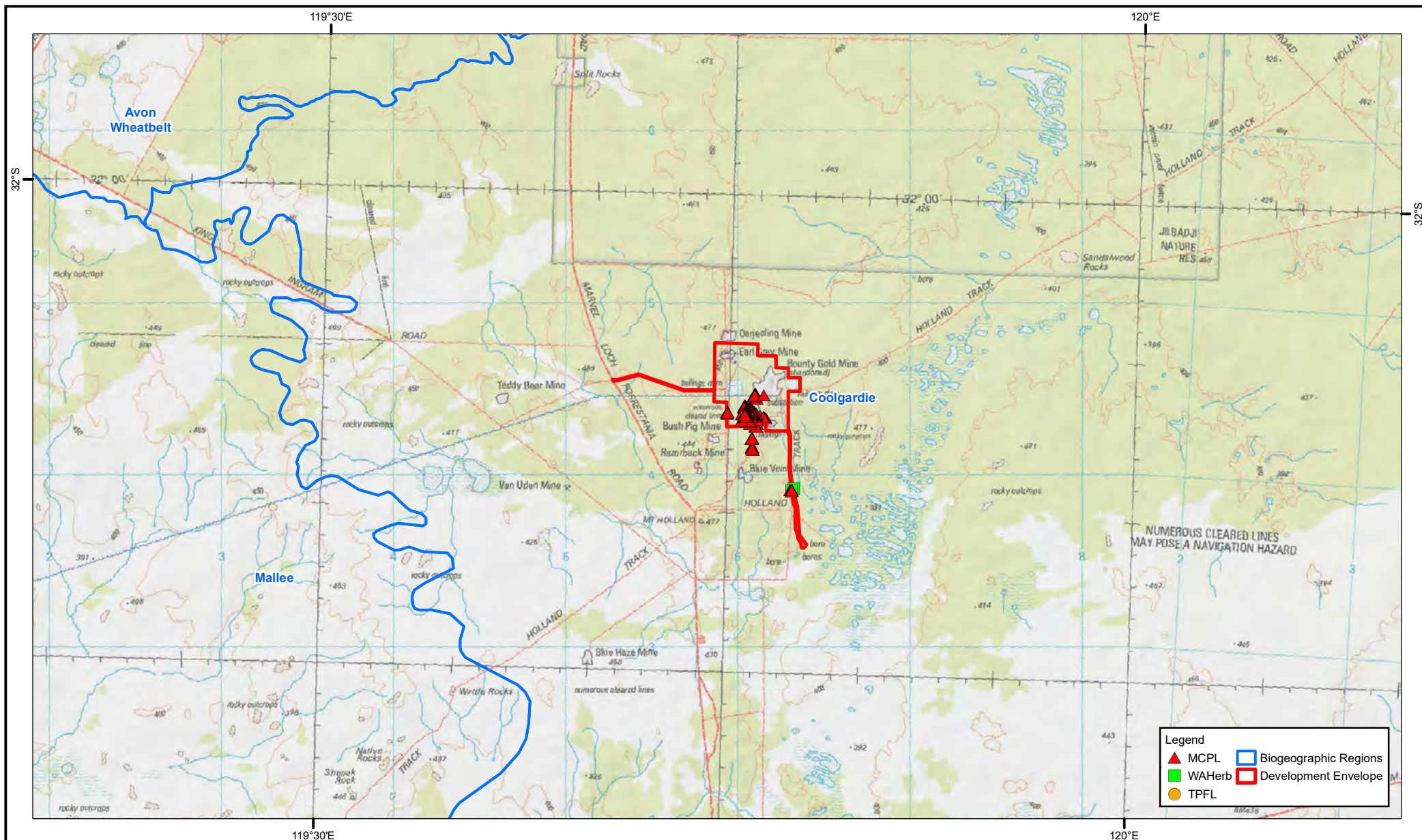


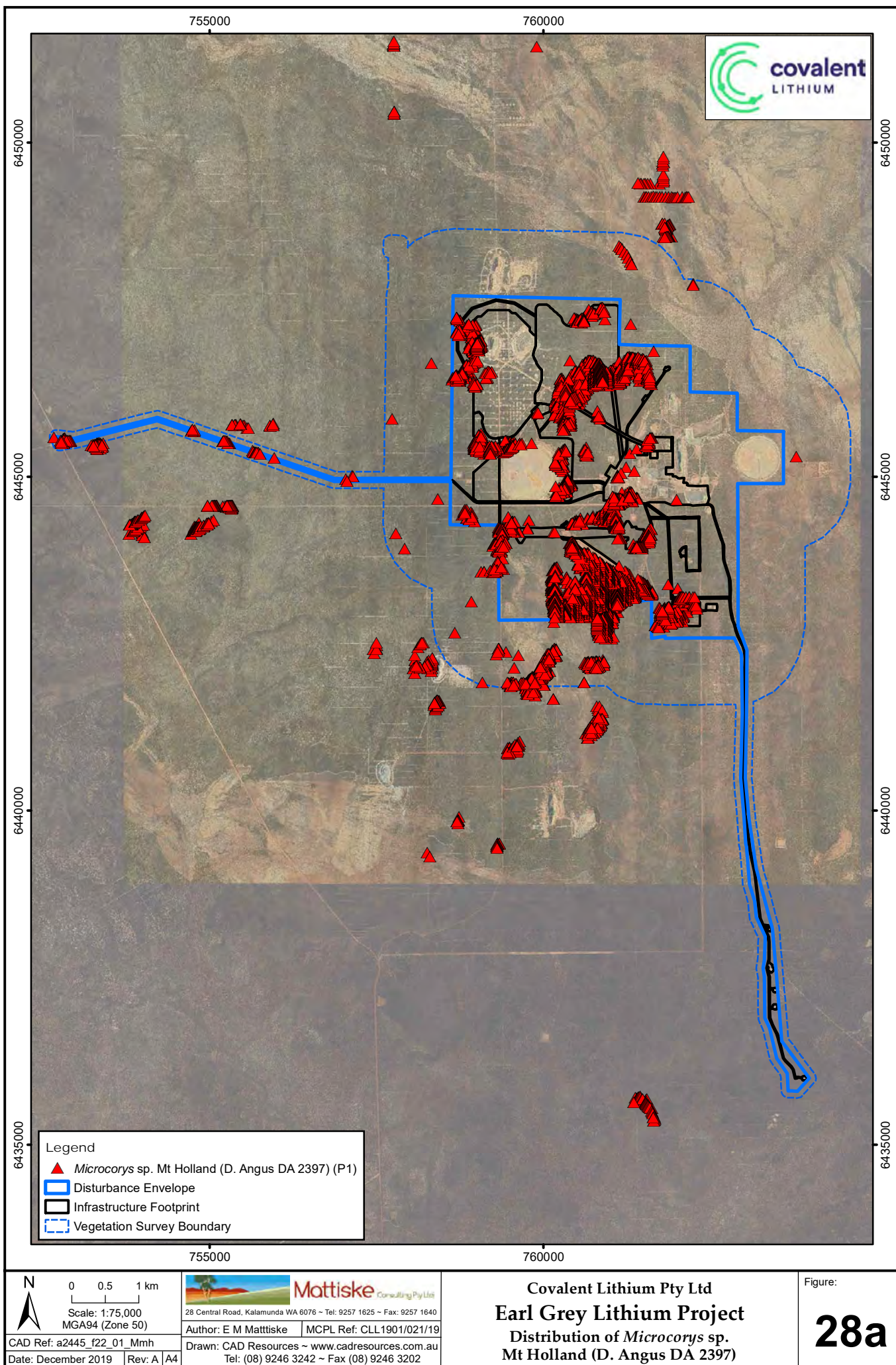


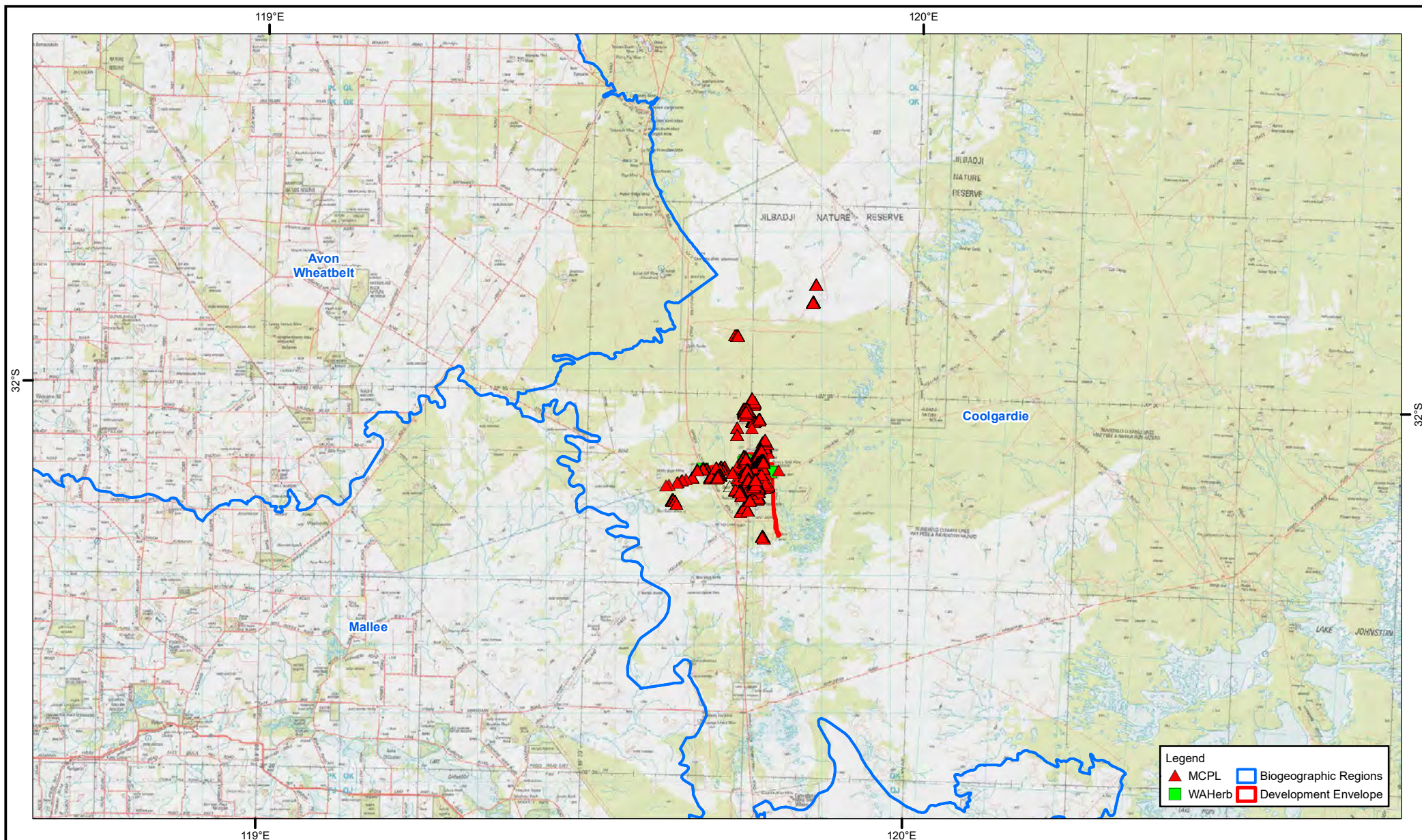












Notes:
Background: GSA
TPFL and WA Herbarium Flora: DBCA



0 16km

Scale: 1:750,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_02_Mmh

Date: December 2019 Rev: A A4

Mattiske Creating Pyl Int

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

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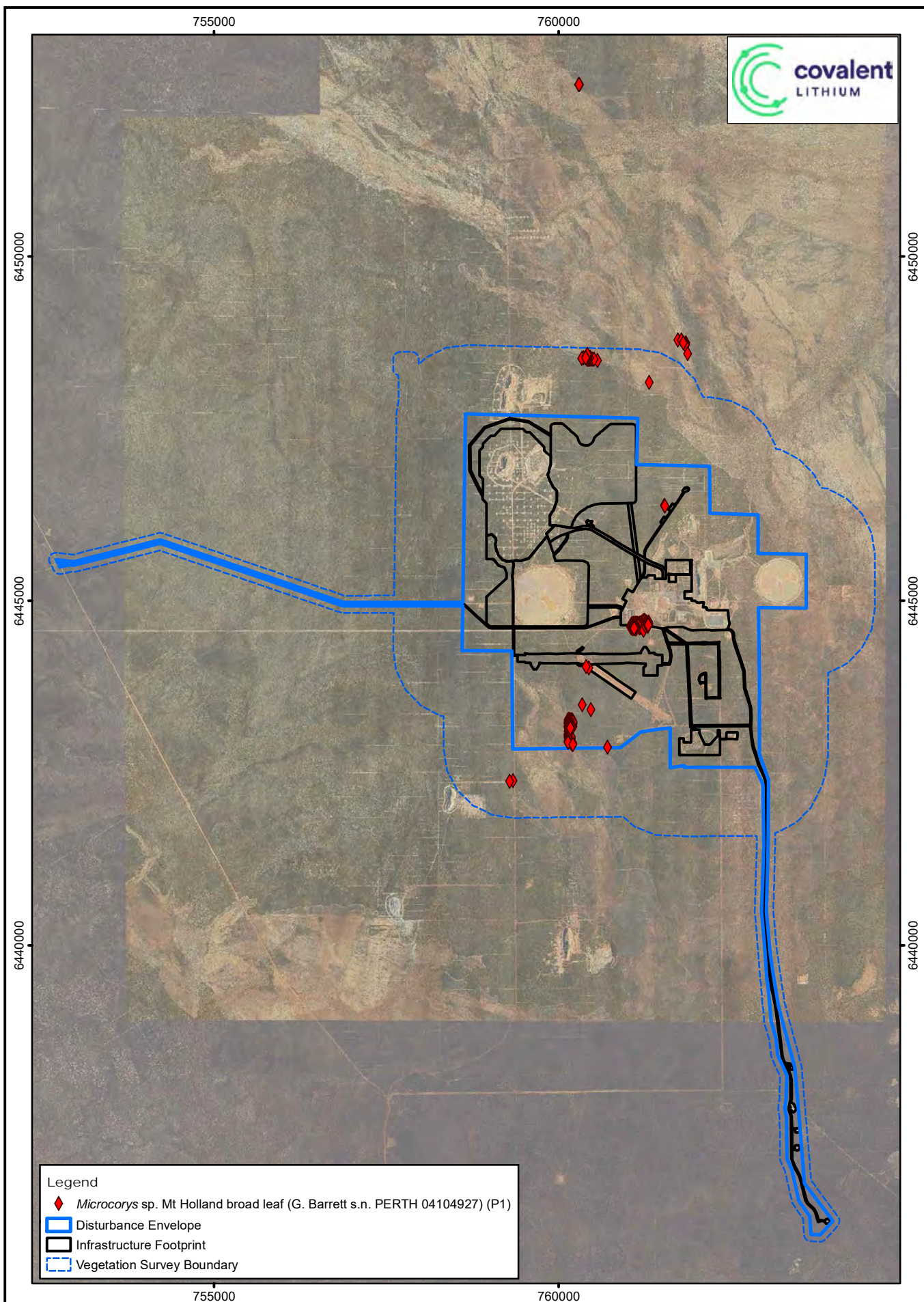
Covalent Lithium Pty Ltd

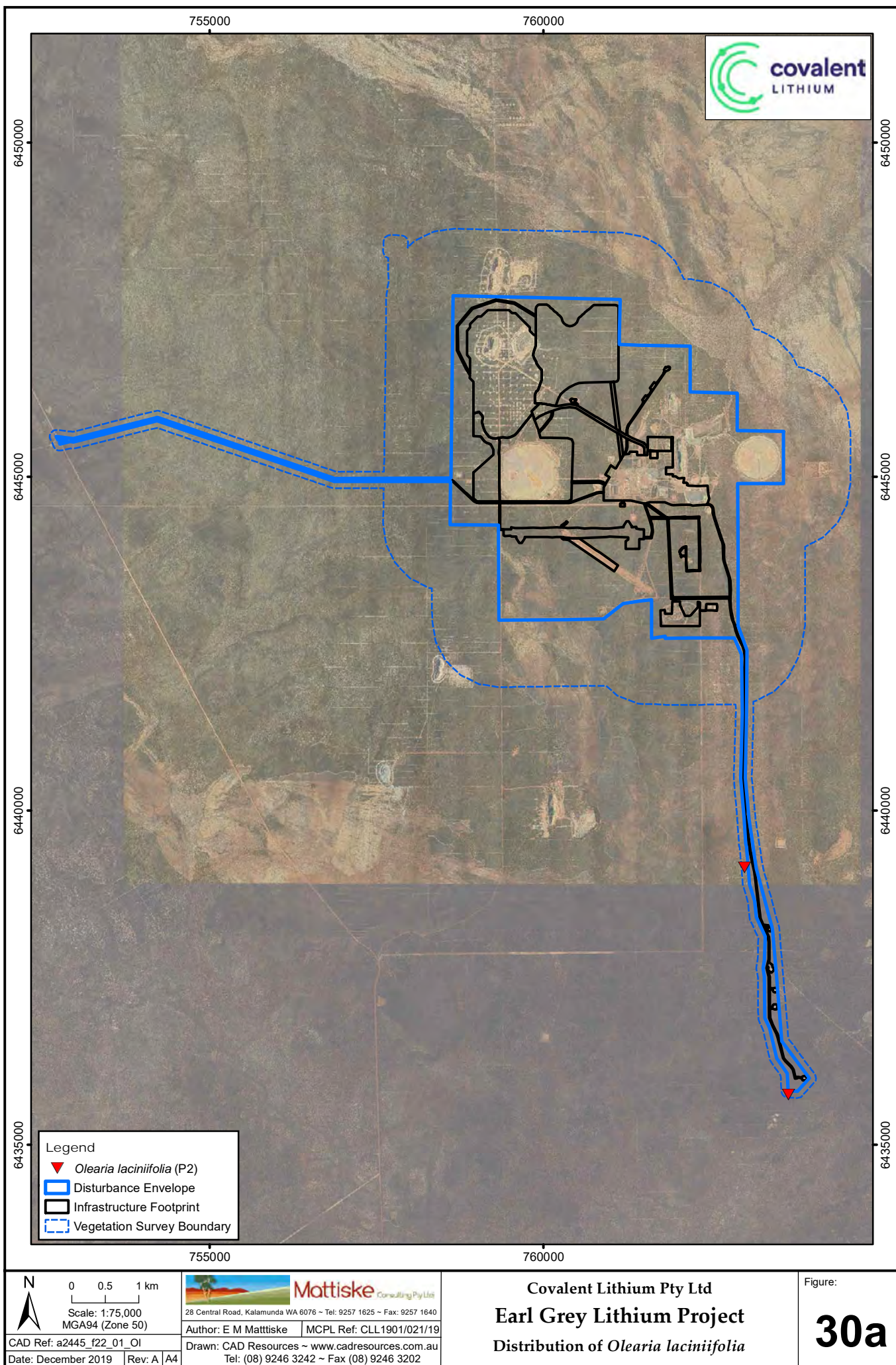
Distribution of

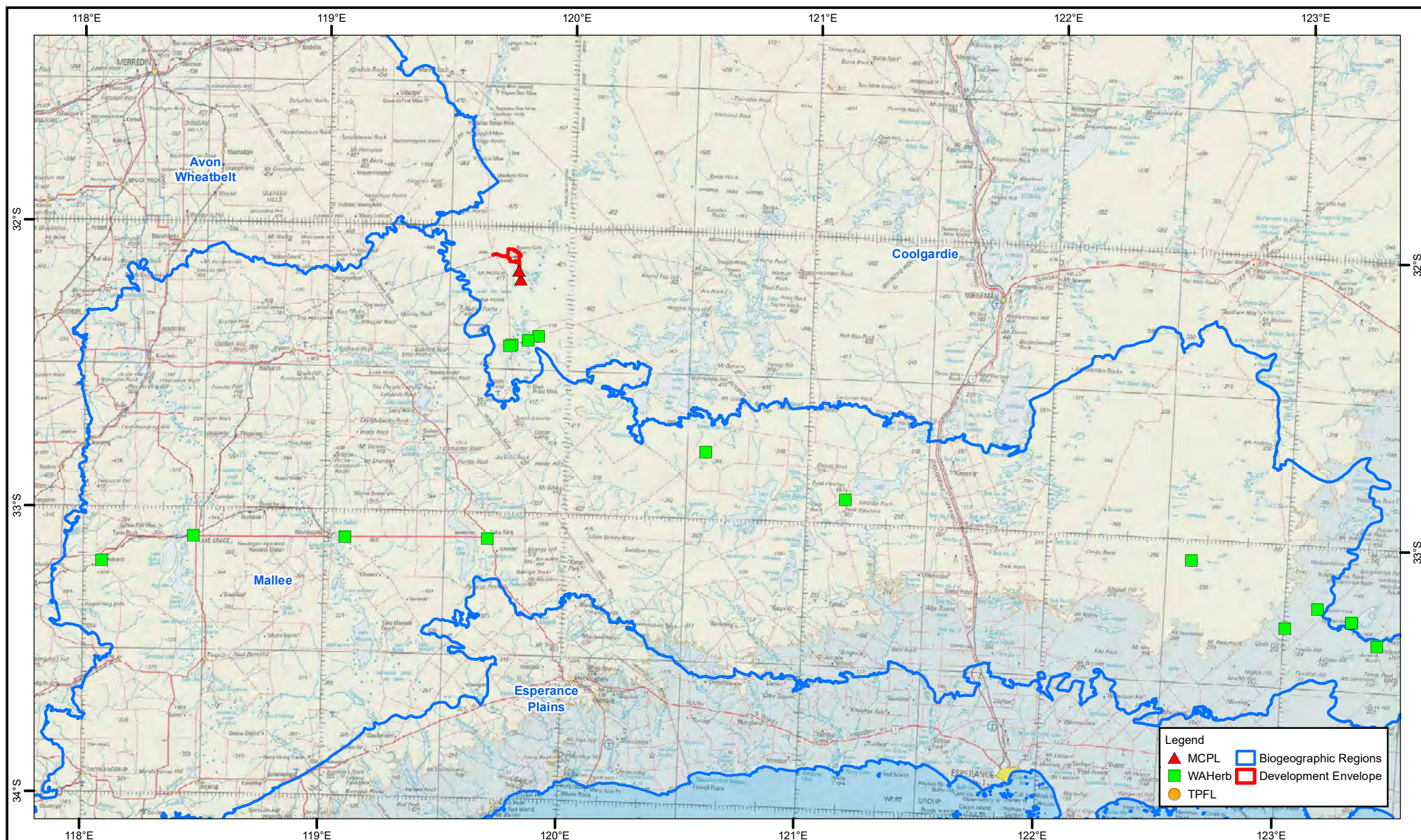
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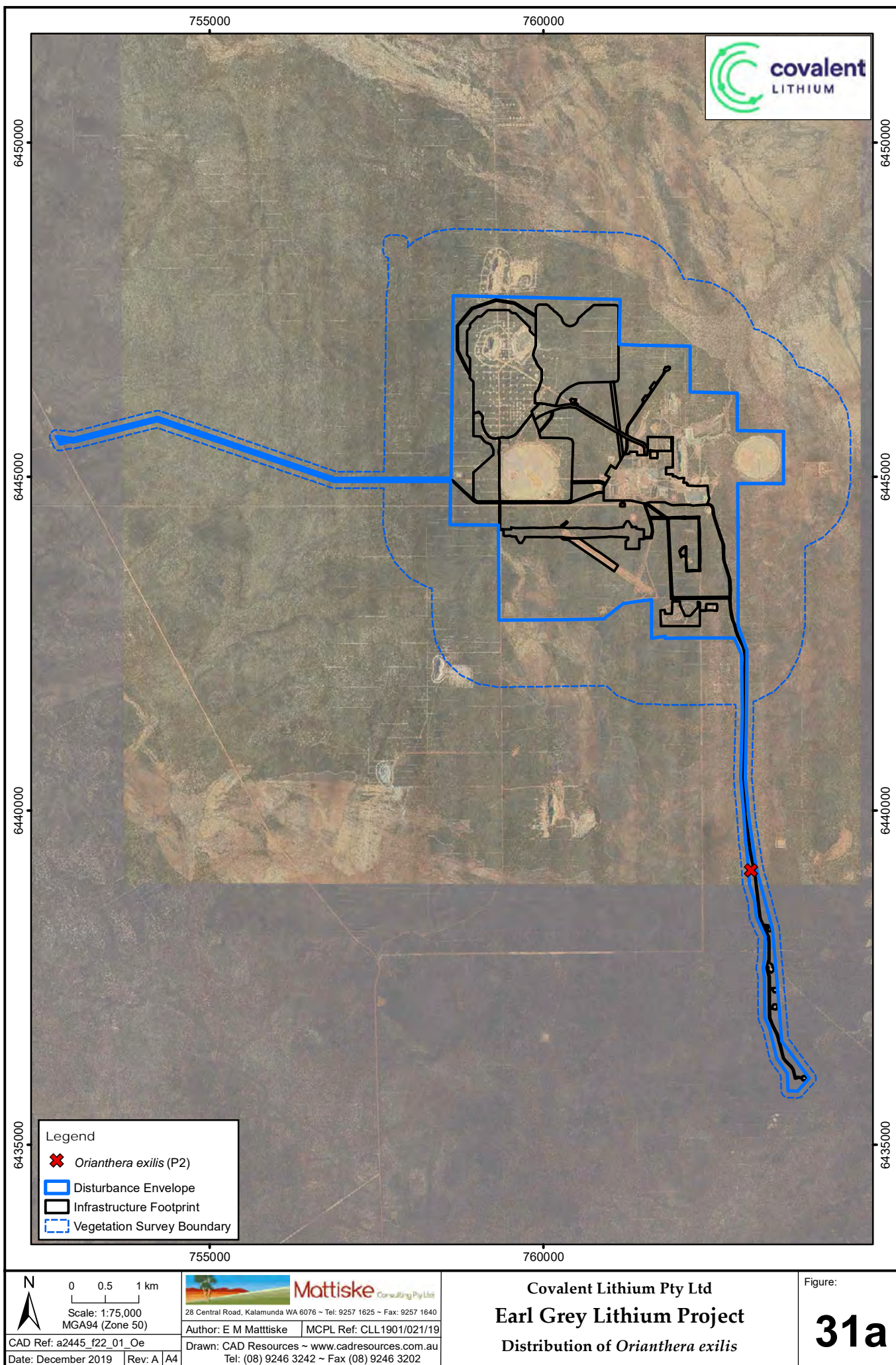
Figure

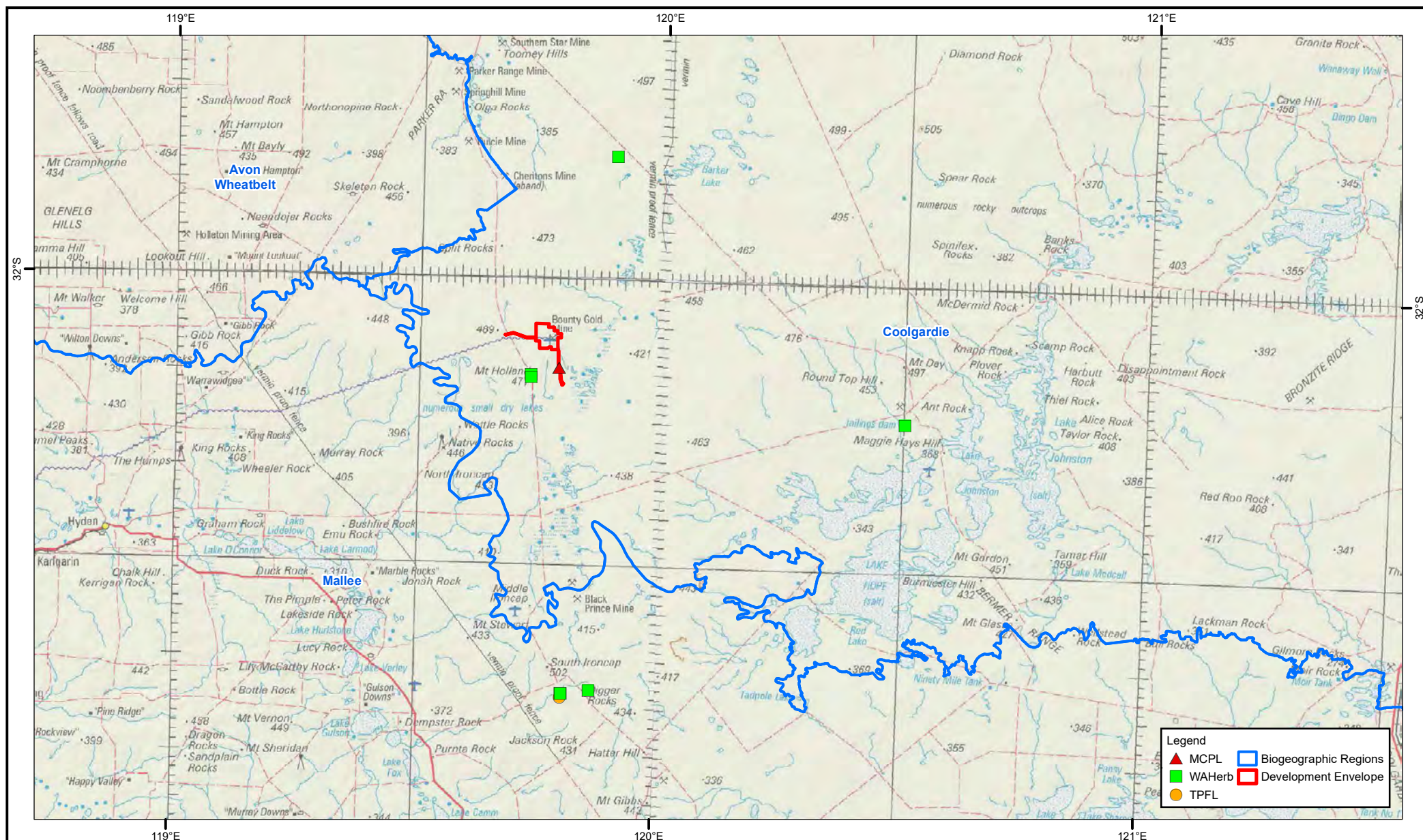
28b











Notes:
Background: GSA
TPFL and WA Herbarium Flora: DBCA



0 20 km
Scale: 1:1,000,000
MGA94 (Zone 50)
CAD Ref: a2445_f22_02_Oe
Date: November 2019 Rev: A A4

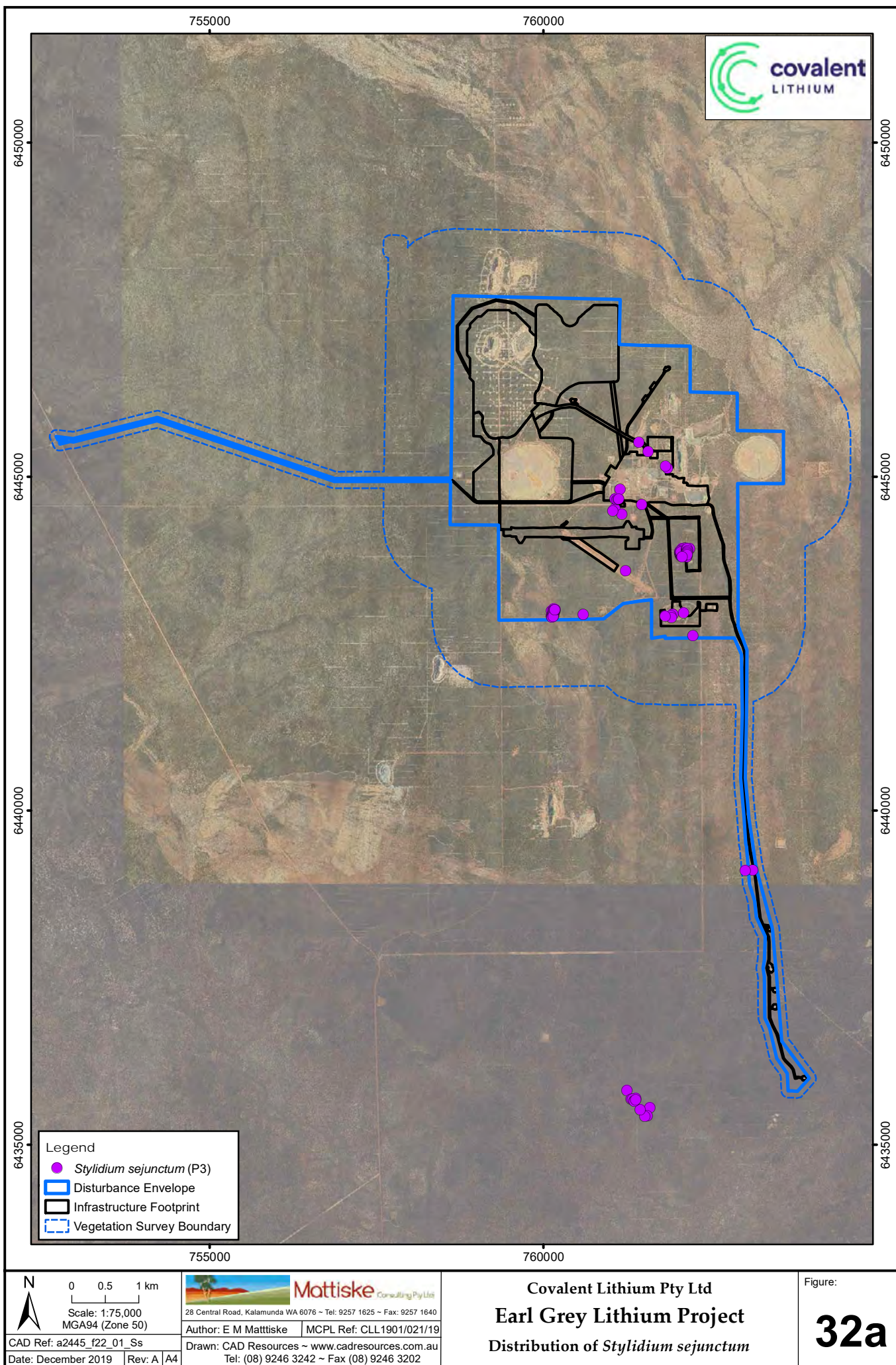


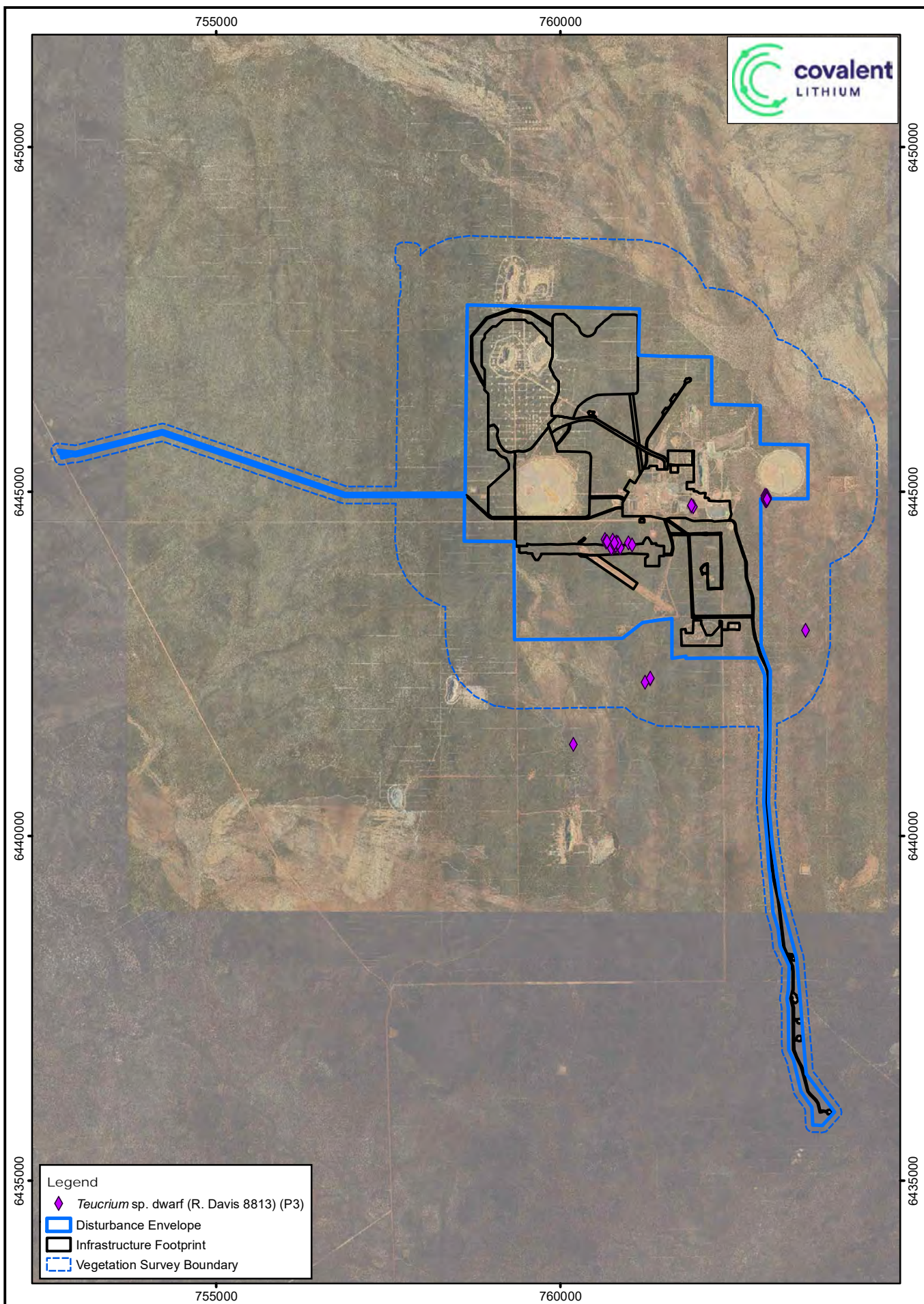
28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640
Author: E M Mattiske MCPL Ref: CLL1901/021/19
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

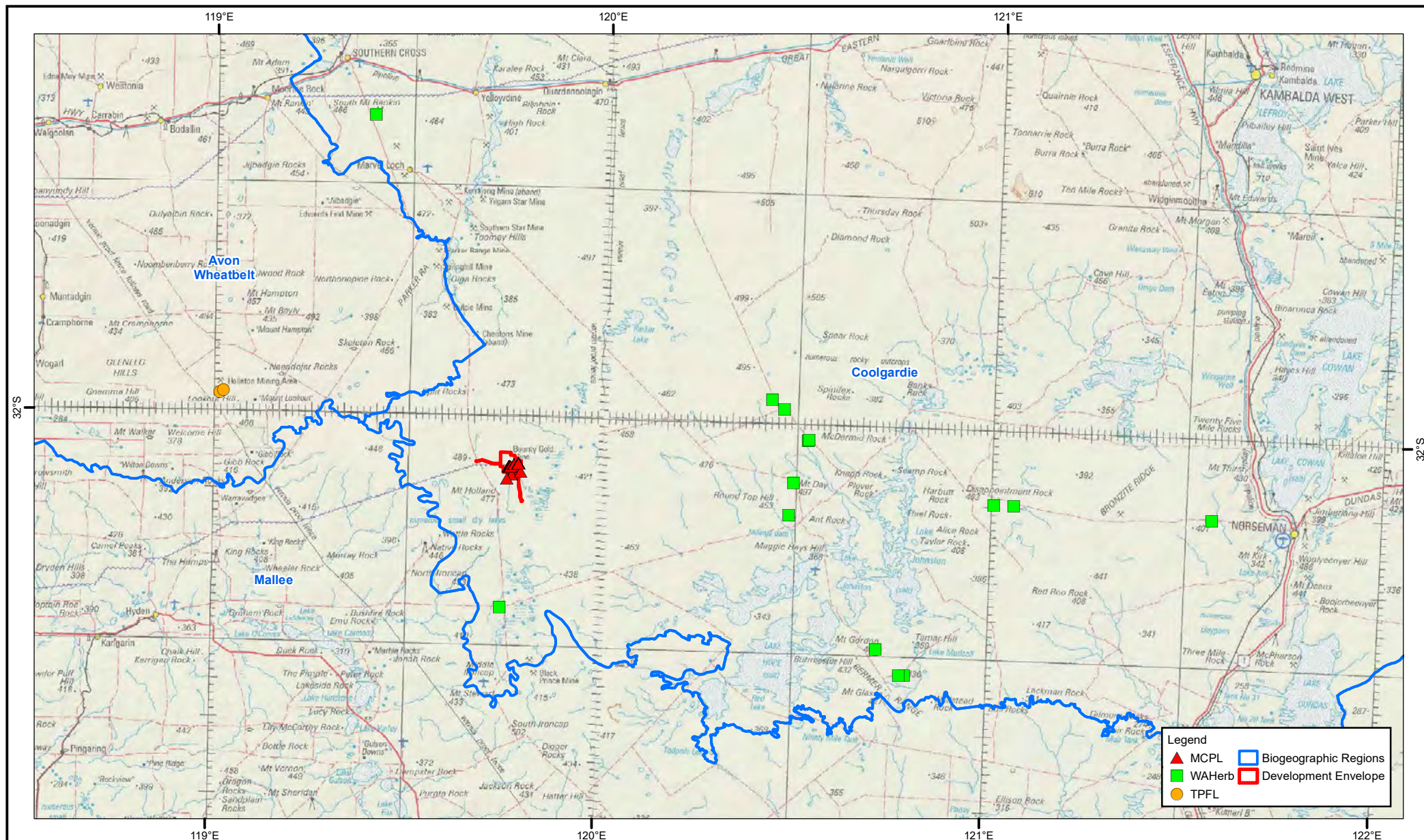
Covalent Lithium Pty Ltd
Distribution of
Orianthera exilis

Figure

31b







Notes:
Background: GSA
TPFL and WA Herbarium Flora: DBCA

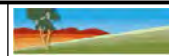


0 20km

Scale: 1:1,250,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_02_Tsd

Date: December 2019 Rev: A A4

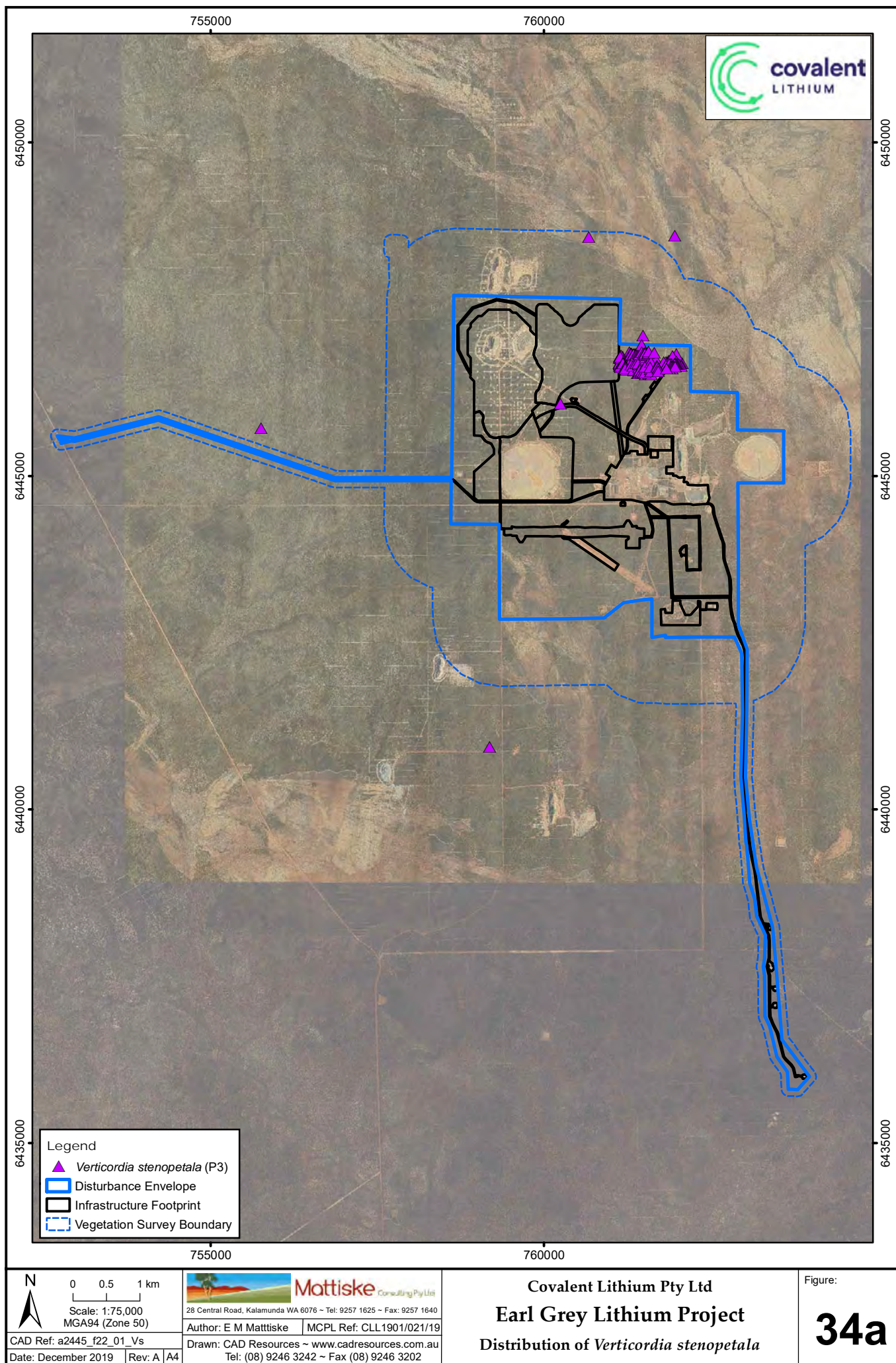


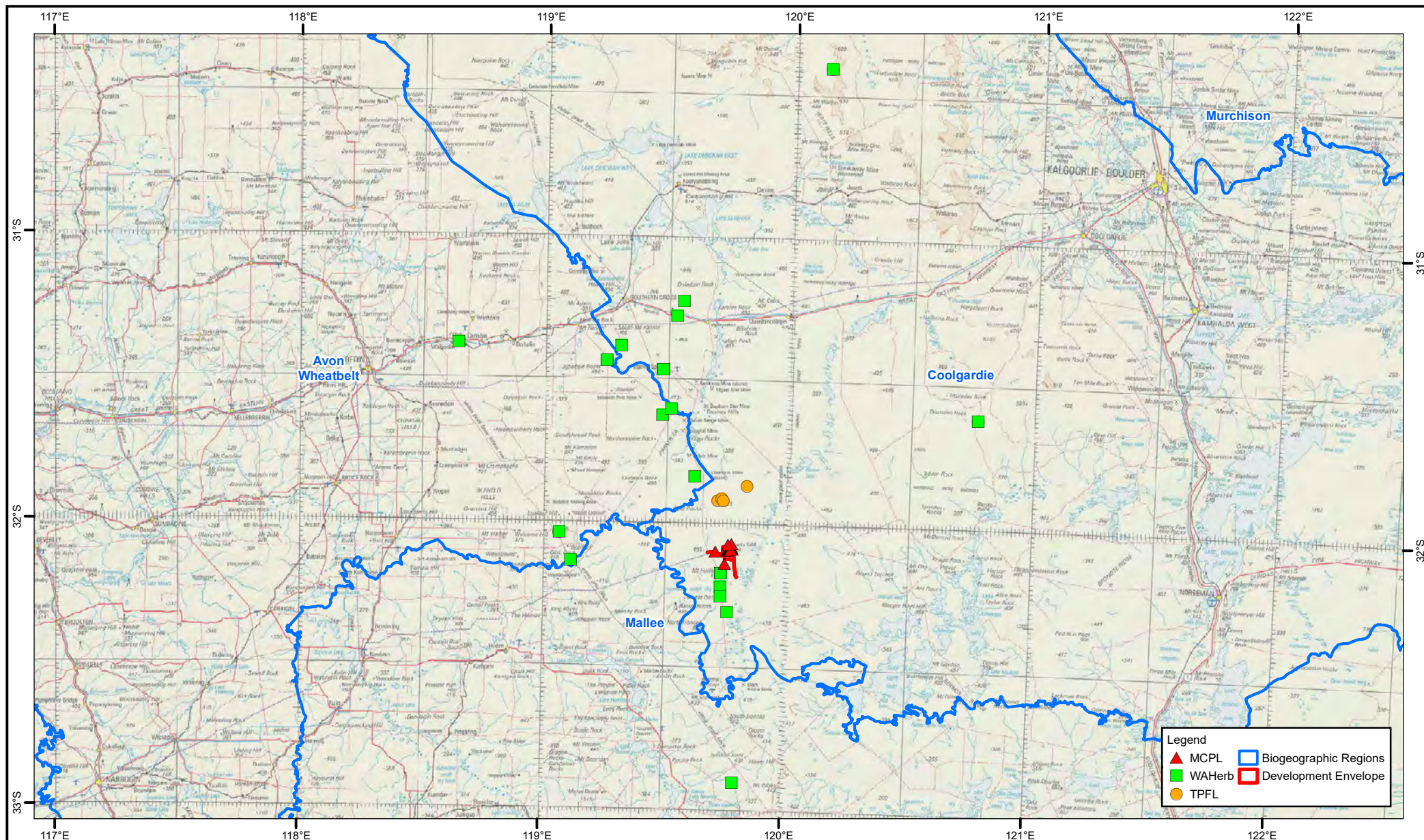
28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640
Author: E M Mattiske MCPL Ref: CLL1901/021/19
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

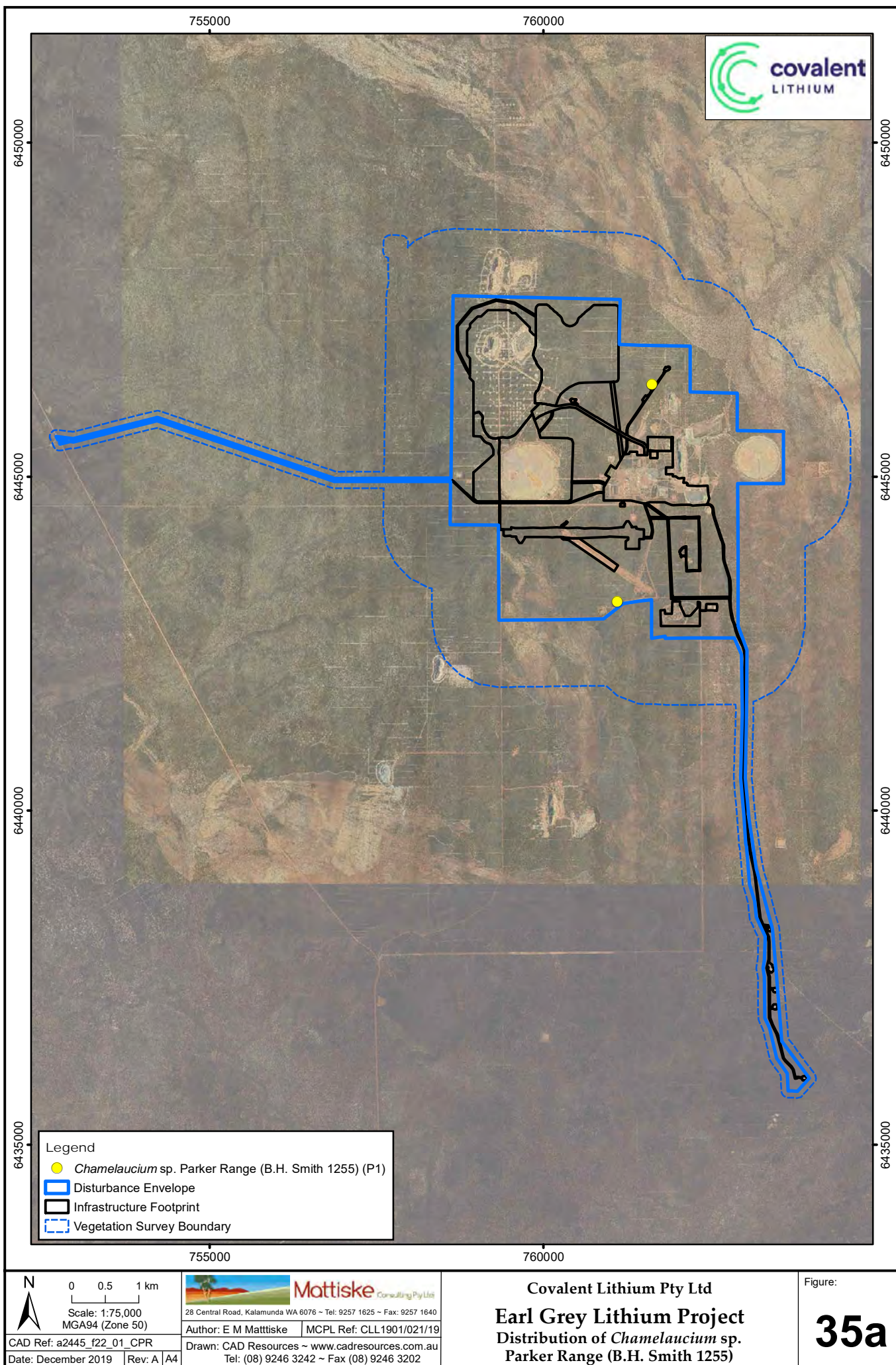
Covalent Lithium Pty Ltd
Distribution of
Teucrium sp. dwarf (R. Davis 8813)

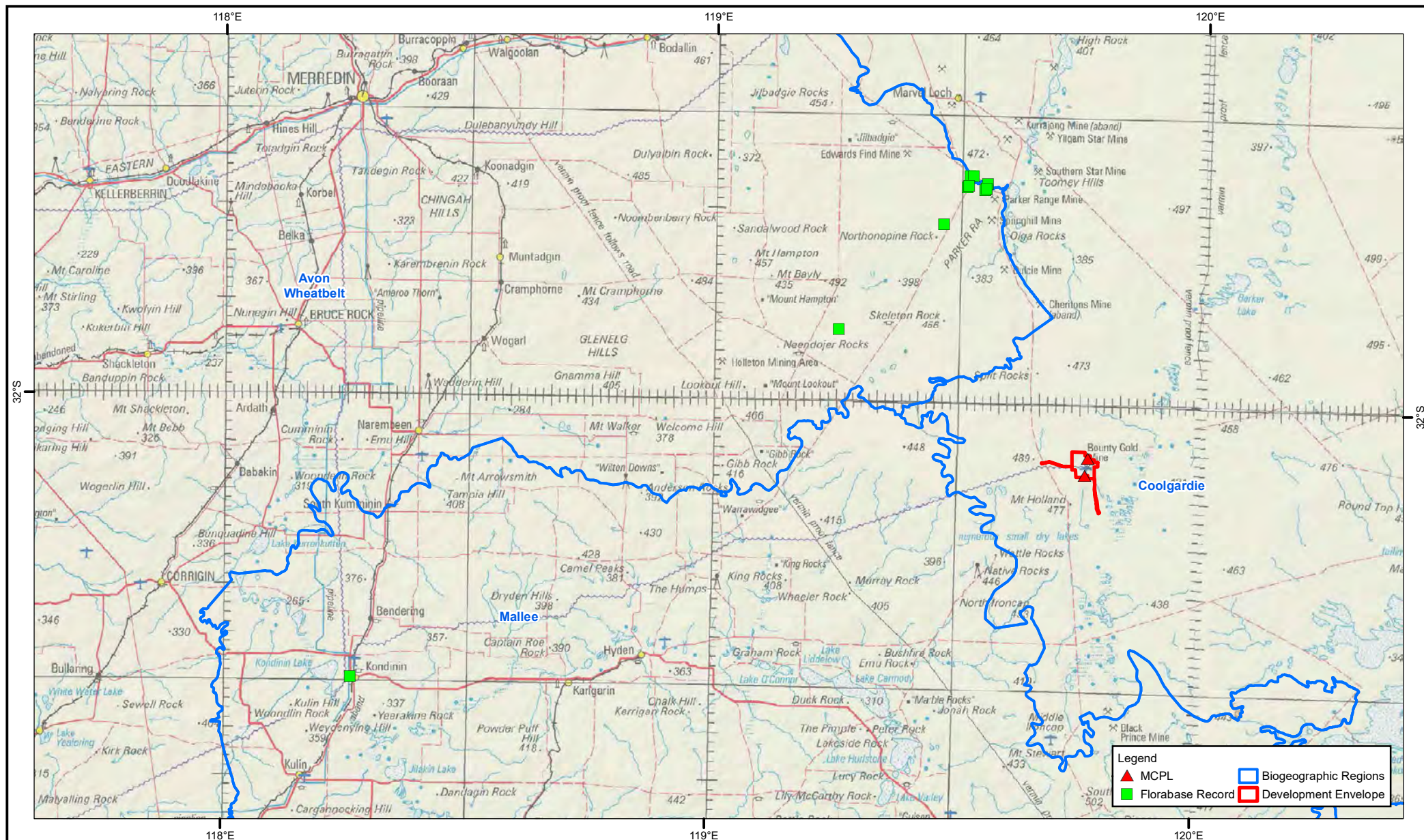
Figure

33b









Notes:
Background: GSA



0 20km

Scale: 1:1,000,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_02_CPR
Date: December 2019 Rev: A A4



28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

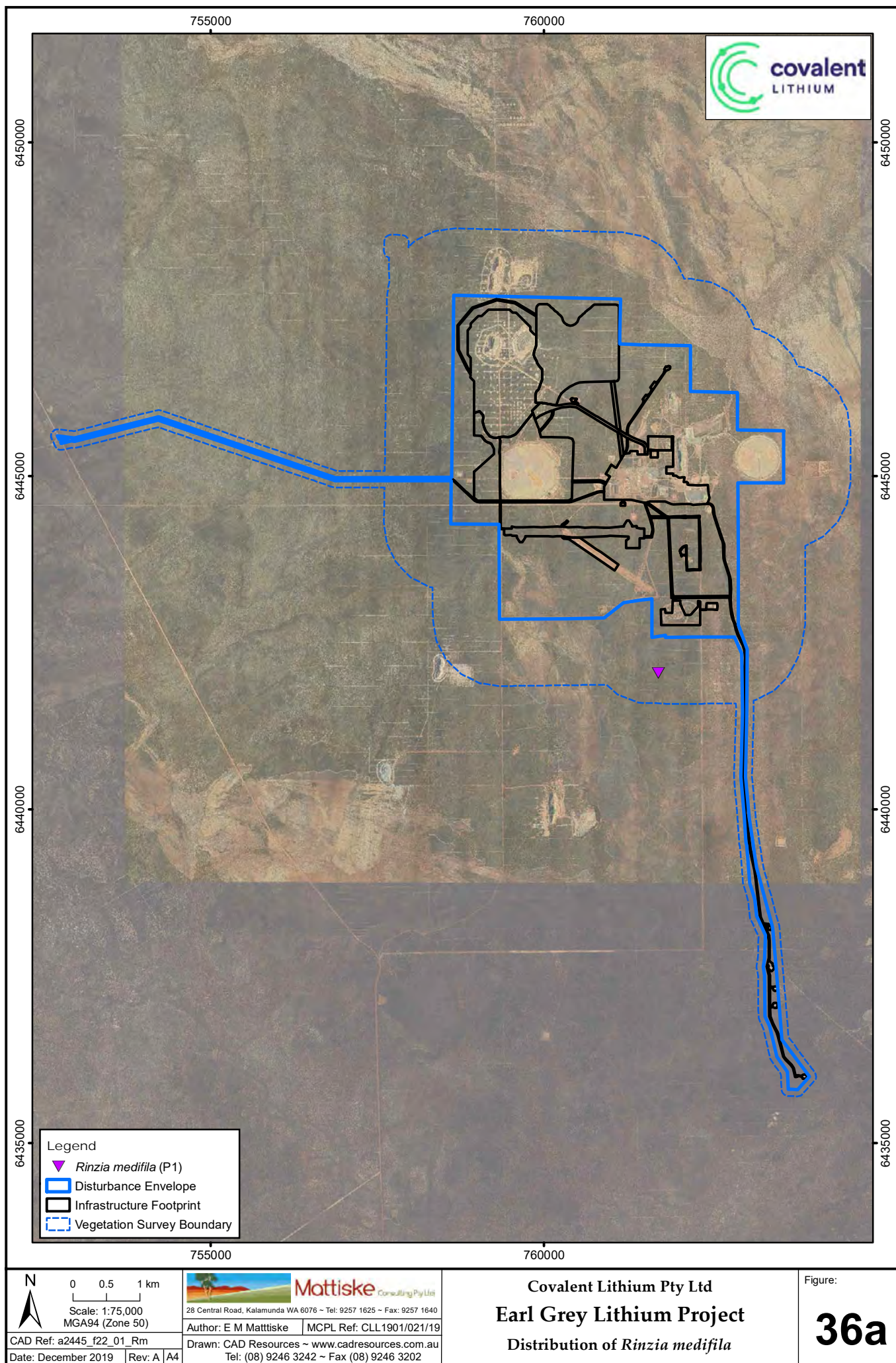
Author: E M Mattiske MCPL Ref: CLL1901/021/19

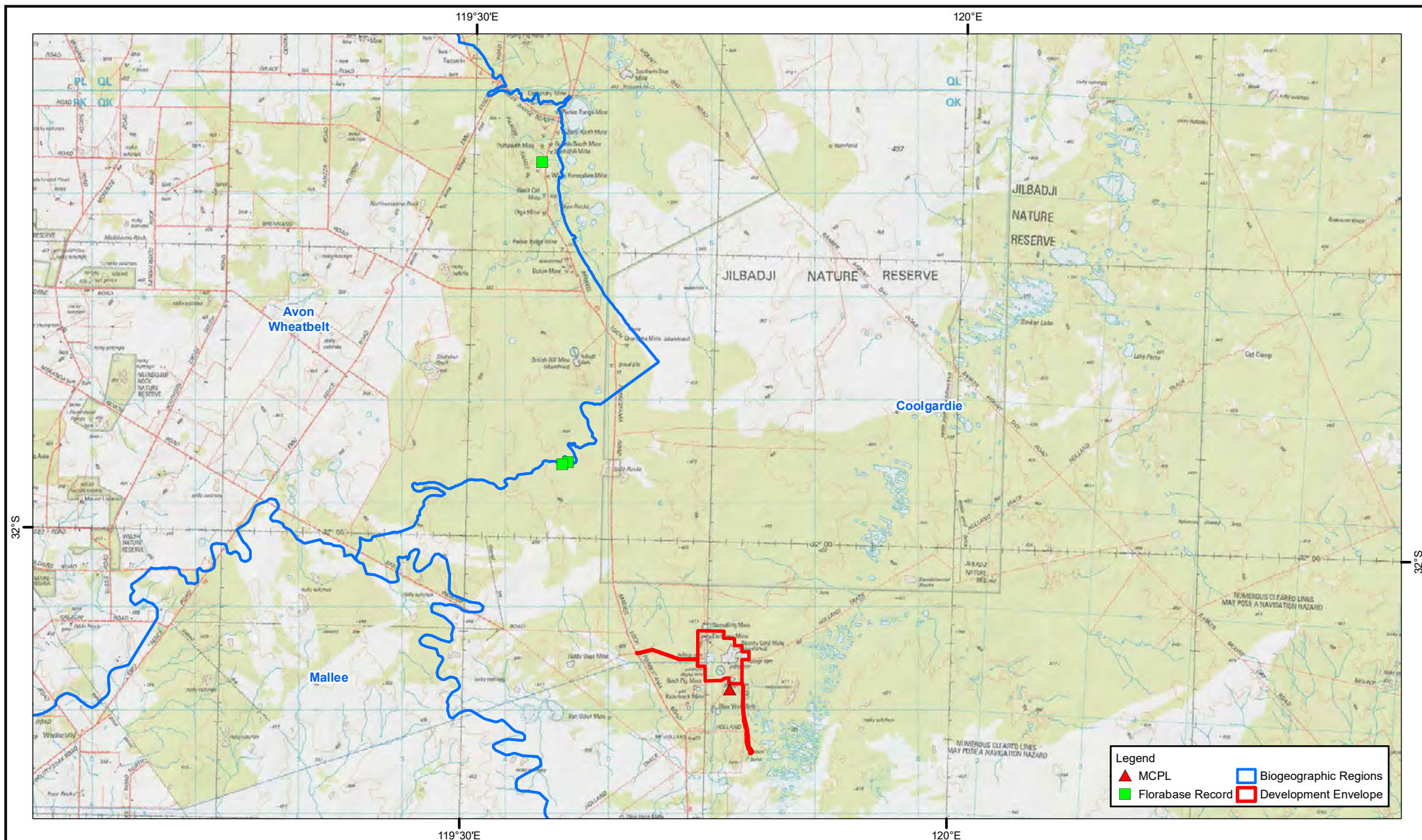
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

Covalent Lithium Pty Ltd
Distribution of
***Chamelaucium* sp. Parker Range (B.H. Smith 1255)**

Figure

35b





APPENDIX A1: THREATENED AND PRIORITY FLORA DEFINITIONS

Under section 179 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), threatened flora are categorised as extinct, extinct in the wild, critically endangered, endangered, vulnerable and conservation dependent (Table A1.1).

Table A1.1 Federal definition of threatened flora species

Note: Adapted from section 179 of the EPBC Act.

CODE	CATEGORY	DEFINITION
Ex	Extinct	Species which at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
ExW	Extinct in the Wild	Species which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CE	Critically Endangered	Species which at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
E	Endangered	Species which is not critically endangered and it is facing a very high risk of extinction in the wild in the immediate or near future, as determined in accordance with the prescribed criteria.
V	Vulnerable	Species which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	Conservation Dependent	Species which at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

The *Biodiversity Conservation Act 2016* (BC Act) provides for (amongst other things) the protection of flora that is facing an extremely high risk of extinction in the wild in the immediate, near or medium-term future in Western Australia under Part 10 (Division 2).

Threatened flora are listed in the *Wildlife Conservation (Rare Flora) Notice 2018* (under Part 2, Division 1, Subdivision 2 of the BC Act; DBCA 2019a) and are categorised under Schedules 1-3. A flora species is defined as threatened if it is facing an extremely high risk of extinction in the wild in the immediate, near or medium-term future, pursuant to sections 20, 21 and 22 of the BC Act. Threatened species are categorised as critically endangered, endangered, and vulnerable (Table A1.2).

Table A1.2 State definition of threatened flora species

Note: Adapted from *Biodiversity Conservation Act 2016* (BC Act);

CODE	CATEGORY	DEFINITION
CR	Critically endangered	Species considered to be facing an extremely high risk of becoming extinct in the wild (listed under Schedule 1 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i>).
EN	Endangered	Species considered to be facing a very high risk of becoming extinct in the wild (listed under Schedule 2 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i>).
VU	Vulnerable	Species considered to be facing a high risk of becoming extinct in the wild (listed under Schedule 3 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i>).

Priority flora species are defined as “possibly threatened species that do not meet the survey criteria, or are otherwise data deficient” or species that are “adequately known, are rare but not threatened, meet criteria for near threatened” or “have recently been removed from the threatened species list for other than taxonomic reasons” (DBCA 2019d). Priority species are not afforded any additional protection under state or federal legislation, however are considered significant under the Environmental Protection Authority’s *Environmental Factor Guideline: Flora and Vegetation* (EPA 2016a). The Department of Biodiversity, Conservation and Attractions categorises priority flora into four categories: Priority 1; Priority 2, Priority 3 and Priority 4 (Table A1.3).

Table A1.3: State definition of priority flora species

Note: Adapted from DBCA (2019d).

CODE	CATEGORY	DEFINITION
P1	Priority 1: Poorly-known species	Known from one or a few locations (< 5) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation; or are otherwise under threat of habitat destruction or degradation. In urgent need of further survey.
P2	Priority 2: Poorly-known species	Known from one or a few locations (< 5). Some occurrences are on lands managed primarily for nature conservation. In urgent need of further survey.
P3	Priority 3: Poorly-known species	Known from several locations and the species does not appear to be under imminent threat; or from few but widespread locations with either a large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. In need of further survey.
P4	Priority 4: Rare, Near Threatened, and other species in need of monitoring	a) Rare - Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. b) Near Threatened - Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. c) Other - Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

APPENDIX A2: THREATENED AND PRIORITY ECOLOGICAL COMMUNITY DEFINITIONS

Under section 181 of the EPBC Act, threatened ecological communities are categorised as critically endangered, endangered and vulnerable (Table A2.1).

Table A2.1 Federal definition of threatened ecological communities

Note: Adapted from section 181 and section 182 of the EPBC Act.

CATEGORY	DEFINITION
Critically Endangered	If, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future.
Endangered	If, at that time, it is not critically endangered and is facing a very high risk of extinction in the wild in the near future.
Vulnerable	If, at that time, it is not critically endangered or endangered, and is facing a high risk of extinction in the wild in the medium-term future.

The *Biodiversity Conservation Act 2016* (BC Act) provides for (amongst other things) some protection of ecological communities at risk of collapse in Western Australia under Part 3 (Division 2).

Threatened ecological communities (TECs) are listed in the *List of Threatened Ecological Communities endorsed by the Western Australian Minister for Environment (28 June 2018)* (under Part 2, Division 2, Subdivision 1 of the BC Act; DBCA 2019b). An ecological community is defined as threatened if it is facing an extremely high risk of collapse in the immediate, near or medium-term future, pursuant to sections 28, 29 and 30 of the BC Act. Threatened ecological communities are categorised as critically endangered, endangered, and vulnerable (Table A2.2). Some of these TECs are also endorsed by the Federal Minister as threatened, and some of these are listed under the EPBC Act and therefore afforded legislative protection at the Commonwealth level.

Table A2.2 State definition of threatened ecological communities

Note: Adapted from *Biodiversity Conservation Act 2016* (BC Act).

CODE	CATEGORY	DEFINITION
CR	Critically Endangered	<p>An ecological community will be listed as CR when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one or more of the following criteria:</p> <ol style="list-style-type: none"> 1. The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification; 2. The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; or 3. The ecological community is highly modified with potential of being rehabilitated in the immediate future.
EN	Endangered	<p>An ecological community will be listed as EN when it has been adequately surveyed and is not CR, but is facing a very high risk of total destruction in the near future. The ecological community must meet any one or more of the following criteria:</p> <ol style="list-style-type: none"> 1. The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short term future, or is unlikely to be substantially rehabilitated in the short term future due to modification; 2. The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; or 3. The ecological community is highly modified with potential of being rehabilitated in the short term future.
VU	Vulnerable	<p>An ecological community will be listed as VU when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one or more of the following criteria:</p> <ol style="list-style-type: none"> 1. The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated; 2. The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution; or 3. The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.

Priority ecological communities (PECs) are defined as possible threatened ecological communities that do not meet the stringent survey criteria for the assessment of threatened ecological communities, and are listed by the Department of Biodiversity, Conservation and Attractions (2019c) in the *Priority Ecological Communities for Western Australia – Version 28 (17 January 2019)*. Similarly, to priority flora, PECs are not afforded legislative protection, however are considered significant under the Environmental Protection Authority's (2016a) *Environmental Factor Guideline: Flora and Vegetation*. The Department of Biodiversity, Conservation and Attractions categorises priority ecological communities into five categories: Priority 1; Priority 2, Priority 3, Priority 4 and Priority 5 (Table A2.3).

Table A2.3 State definition of priority ecological communities

Note: Adapted from Department of Environment and Conservation (2013).

CODE	CATEGORY	DEFINITION
P1	Priority 1 (Poorly known ecological communities)	Ecological communities that are known from very few, restricted occurrences (generally ≤ 5 occurrences or a total area of ≤ 100 ha). Most of these occurrences are not actively managed for conservation (e.g. located within agricultural or pastoral lands, urban areas, or active mineral leases) and for which immediate threats exist.
P2	Priority 2 (Poorly known ecological communities)	Communities that are known from few small occurrences (generally ≤ 10 occurrences or a total area of ≤ 200 ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation.
P3	Priority 3 (Poorly known ecological communities)	1. Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation; 2. Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat; or 3. Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	Priority 4 (Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring)	1. Rare – Communities known from few occurrences that are considered to have been adequately surveyed, sufficient knowledge is available, and are considered not to be currently threatened. 2. Near Threatened – Communities considered to have been adequately surveyed and do not qualify for Conservation Dependent, but are close to qualifying for Vulnerable. 3. Communities that have been removed from the list of threatened communities during the past five years.
P5	Priority 5 (Conservation Dependent ecological communities)	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

APPENDIX A3: OTHER DEFINITIONS

Environmentally sensitive areas

Environmentally sensitive areas are declared by the State Minister under section 51B of the *Environmental Protection Act 1986* (EP Act) and are listed in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*, gazetted 8 April 2005. Specific environmentally sensitive areas relevant to this report include: a defined wetland and the area within 50 metres of the wetland; the area covered by vegetation within 50 metres of rare flora; the area covered by a threatened ecological community; a Bush Forever site – further areas and information are described in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*.

Conservation significant flora

Under the *Environmental Factor Guideline: Flora and Vegetation* (EPA 2016a), flora may be considered significant for a range of reasons, including, but not limited to the following:

- being identified as threatened or priority species;
- locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems);
- new species or anomalous features that indicate a potential new species;
- representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- unusual species, including restricted subspecies, varieties or naturally occurring hybrids; or
- relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Conservation significant vegetation

Under the *Environmental Factor Guideline: Flora and Vegetation* (EPA 2016a), vegetation may be considered significant for a range of reasons, including, but not limited to the following:

- being identified as threatened or priority ecological communities;
- restricted distribution;
- degree of historical impact from threatening processes;
- a role as a refuge; or
- providing an important function required to maintain ecological integrity of a significant ecosystem.

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

Refer to Appendix A for BC Act / DBCA Priority List and EPBC Act conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GAS – Gascoyne; GES – Geraldton Sandplains; GIB – Gibson Desert; GVD – Great Victoria Desert; JAF – Jarrah Forest; MAL – Mallee; MUR – Murchison, YAL – Yalgoo.

TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Thomasia gardneri</i> (Mt Holland Thomasia)	Malvaceae	X	Ex	Habit: Erect, multi stemmed, woody perennial, to 0.5 m high Flowers: Pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> Soils: Insufficient information IBRA Distribution: COO Florabase records: 7	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Unlikely Species is presumed to be extinct. The most recent record is from 1996 (WAH 1998-). Records of this species are from the Mt Holland area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Acacia lanuginophylla</i>	Fabaceae	T	E	Habit: Dense to open, domed, erect or spreading shrub, 0.1 to 1.2 m high, with densely white-woolly branches. Flowers: Yellow, 1 flower per leaf axil Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> Soils: Normally grows in slightly saline grey-white sands over clay and gravelly soils in broad drainage channels. IBRA Distribution: COO, MAL Florabase records: 29	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The nearest record of this taxon is located approximately 10 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

Refer to Appendix A for BC Act / DBCA Priority List and EPBC Act conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GAS – Gascoyne; GES – Geraldton Sandplains; GIB – Gibson Desert; GVD – Great Victoria Desert; JAF – Jarrah Forest; MAL – Mallee; MUR – Murchison, YAL – Yalgoo.

TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i> (Ironcaps Banksia)	Proteaceae	T	V	Habit: Lignotuberous shrub, 1 to 3 m high Flowers: Yellow-orange Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Lateritic gravel: low open woodland and low shrubland IBRA Distribution: AW, COO, MAL Florabase records: 40	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and habitat combination likely to occur within survey area. This taxon has been recorded within the EGLP development envelope (Mattiske Consulting 2017, 2018a, 2018b, 2018c)
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Calectasia pignattiana</i>	Dasypogonaceae	T	V	Habit: Rhizomatous, prickly herb, to 0.5 m high Flowers: Blue-purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand to sandy clay over granite or laterite, gravel. Plains and gentle slopes. IBRA Distribution: MAL Florabase records: 33	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred habitat and soils not known within the body of the development envelope. Sandy soils which may support this taxon are located at the Forrestania end of the access road into the body of the development envelope. The nearest record of this taxon is located approximately 35 km to the south-east of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eremophila verticillata</i> (Whorled Eremophila)	Scrophulariaceae	T	E	Habit: Low spreading shrub to 0.8 m high and 1 m wide Flowers: Purple-violet Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Clay loam, loam over limestone IBRA Distribution: AVW, COO, MAL Florabase records: 11	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soils known to occur within the survey area. Records of this taxon exist within 500 m of the EGLP development envelope southern boundary and represent a new population of this taxon uncovered by the vegetation survey in 2017 (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eucalyptus steedmanii</i> (Steedman's Gum)	Myrtaceae	T	V	Habit: Smooth-barked tree, 2 – 8 (12) m high Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Gravelly loam over ironstone, sand; low hills, undulating plains IBRA Distribution: COO, ESP, MAL Florabase records: 41	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination unlikely to occur within survey area. The nearest record of this taxon is located approximately 25 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Paragoodia crenulata</i>	Fabaceae	T	CE	Habit: Annual prostrate herb to 10 cm high Flowers: Brown & yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Potentially lateritic/gravelly loam on low rise slopes IBRA Distribution: COO Florabase records: 6	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination may occur within survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Acacia</i> sp. Mt Holland (B. Ellery BE1147)	Fabaceae	P1	-	fsHabit: Erect shrub to 1m high Flowers: yellow Flowering period (indicated in green): unknown <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Orange brown sandy clay soils with quartz on flats and slopes. IBRA Distribution: COO Florabase records: 1	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and landforms known to be present adjacent to the EGLP development envelope. Records of this taxon exist in the EGLP vegetation survey area, external to the development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Acacia</i> sp. Forrestania (D. Angus DA 3001)	Fabaceae	P1	-	Habit: Erect shrub to 30 cm high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Orange brown clay soil on slopes. IBRA Distribution: COO Florabase records: 1	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil and landforms likely to occur within the survey area. Records of this taxon exist 300 m south of the EGLP Development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	Poaceae	P1	-	Habit: Grass to approximately 40 cm high Flowers: Undescribed Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Potentially clay loam soils in mallee or eucalypt woodland IBRA Distribution: COO, ESP, MAL Florabase records: 16	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred vegetation and soils may occur within survey area, but existing record of this taxon are sparse within the Coolgardie bioregion.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Austrostipa</i> sp. Mt Holland (W.A. Thompson & J. Allen 948)	Poaceae	P1		Habit: Grass to approximately 0.2 m high (unconfirmed) Flowers: Brown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Brown-red ironstone gravel. Breakaways, outcrops IBRA Distribution: COO Florabase records: 2	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Baeckea</i> sp. Blue Haze Mine (P. Armstrong 06/910)	Myrtaceae	P1	-	Habit: Shrub to 1.2 m Flowers: Pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow-orange lateritic sandy clay loam on undulating plains with open mallee, low to tall shrub heath IBRA Distribution: COO Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soils and associated vegetation potentially present within survey area. The nearest record of this taxon is located approximately 1 km east of the EGLP development envelope in the vicinity of the Holland Track (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Baeckea</i> sp. Crossroads (B.L. Rye & M.E. Trudgen 241186)	Myrtaceae	P1	-	Habit: Spreading shrub to 0.8m high Flowers: Red and white, occasionally blue (unconfirmed) Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Silt and sand over laterite, breakaways (unconfirmed) IBRA Distribution: COO Florabase records: 8	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Baeckea</i> sp. <i>Forrestania</i> (K.R. Newbey 1105)	Myrtaceae	P1	-	Habit: Shrub to 0.6m Flowers: Pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandplains IBRA Distribution: COO, MAL Florabase records: 2	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Baeckea</i> sp. Lake Cronin (K.R. Newbey 9191)	Myrtaceae	P1	-	Habit: Upright, spreading shrub, height unknown Flowers: White-pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Well-drained gravelly sands, undulating plains IBRA Distribution: COO Florabase records: 1	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Baeckea</i> sp. North Ironcap (R.J. Cranfield 10580)	Myrtaceae	P1	-	Habit: Erect, open shrub to 0.4m high Flowers: White-pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Red clay, gently undulating sandplains IBRA Distribution: COO Florabase records: 5	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Baeckea</i> sp. Sheoaks Rocks (M.E. Trudgen MET5452)	Myrtaceae	P1	-	Habit: Open shrub to 0.3m high Flowers: White-pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow-brown silty sand on mid and upper gentle slopes IBRA Distribution: MAL Florabase records: 4	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Brachyloma nguba</i>	Ericaceae	P1	-	Habit: Erect, compact to spreading, mid-dense shrub to 0.8 high Flowers: Red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White to brown sandy clay, shallow sandy loam. Flat plains IBRA Distribution: MAL Florabase records: 11	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and landform combination unlikely to occur within the survey area. Records of this taxon are restricted to the Mallee IBRA region (WAH 1998-).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Brachyloma stenolobum</i>	Ericaceae	P1	-	Habit: Erect shrub to 1.5 m high Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Bare yellow sandy loam flats IBRA Distribution: COO Florabase records: 4	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soils and habitat combination not expected within the survey area One record of this taxon exists within the adjacent EGLP development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Dicrastylis capitellata</i>	Lamiaceae	P1	-	Habit: Low spreading shrub, 0.2 – 0.25 m high Flowers: Blue-purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Loamy sand, sandy loam, with open mallee woodlands IBRA Distribution: COO, MAL Florabase records: 8	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soils and habitat combination potentially present within the survey area. The nearest record of this taxon is located approximately 1 km east of the EGLP development envelope in the vicinity of the Holland Track (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Drummondita wilsonii</i>	Rutaceae	P1	-	Habit: Erect shrub to 1m high Flowers: Red, green and pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Gravelly sand IBRA Distribution: AVW Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil may occur within the survey area, however current records of this taxon are restricted to the Avon Wheatbelt IBRA region (DPaW 2007-). The nearest record of this taxon is located approximately 26 km north-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eremophila lucida</i>	Scrophulariaceae	P1	-	Habit: Shrub to 1.8m high Flowers: Cream-yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy loam. Adjacent to samphire communities and granite outcrops IBRA Distribution: COO, MAL Florabase records: 19	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The nearest record of this taxon is located approximately 36 km south-east of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eucalyptus myriadena</i> subsp. <i>parviflora</i>	Myrtaceae	P1	-	Habit: Mallee or tree, 3-10 m high Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Loam in swamps and on plains IBRA Distribution: AVW, COO Florabase records: 12	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The nearest record of this taxon is located approximately 12 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eucalyptus retusa</i>	Myrtaceae	P1	*	Habit: Mallee < 2m tall Flowers: Green Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Rocky areas, granite IBRA Distribution: COO, ESP Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The majority of the records of this taxon are located within the Esperance Sandplain bioregion. There is a confirmed record of this taxon in the Coolgardie bioregion, approximately 20 km west of the EGLP development envelope (WAH 1998-)
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	Fabaceae	P1	-	Habit: Low shrub to 0.2m high Flowers: Unknown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Red sandy clay. Undulating plains IBRA Distribution: COO Florabase records: 1	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. Insufficient information exists on this taxon.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Gastrolobium tenue</i>	Fabaceae	P1	-	Habit: Low bushy shrub to 0.6m high Flowers: Orange, red and purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow sand or sandy clay. Undulating dunes, stony outcrops IBRA Distribution: AVW, COO Florabase records: 21	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 26 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Grevillea lissopleura</i>	Proteaceae	P1	-	Habit: Erect shrub, 0.5 to 1.2 m high Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Stony loam on banded ironstone; on ridges IBRA Distribution: COO Florabase records: 7	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and habitat combination not expected within the survey area. Species has been recorded in the EGLP development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Grevillea marriottii</i>	Proteaceae	P1	-	Habit: Open, multi-stemmed, lignotuberous shrub, 0.8-1.2 m high Flowers: Green/cream/white Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow or white sand over laterite. On rises or on tops of lateritic cappings IBRA Distribution: COO Florabase records: 8	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil and habitat combination may be present within the survey area. Species has been recorded in the EGLP vegetation survey area (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Hemigenia</i> sp. Newdegate (E. Bishop 75)	Lamiaceae	P1	-	Habit: Spindly, erect to spreading shrub to 0.45m Flowers: Blue- purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Clay loam and disturbed sites IBRA Distribution: AVW, COO, MAL Florabase records: 7	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Hysterobaeckea pterocera</i>	Myrtaceae	P1	-	Habit: Erect shrub to 1 m tall Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow-brown fine sand. Drainage channels IBRA Distribution: COO Florabase records: 7	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. Available information on this taxon is limited.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Labichea rossii</i>	Fabaceae	P1	-	Habit: Subshrub to 50 cm Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Hillslopes with BIF, mallee woodlands on gentle slopes. IBRA Distribution: COO Florabase records: 2	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and habitat combination are likely to occur within survey area. Records of this taxon exist in the EGLP development envelope (Mattiske Consulting 2018a, 2018c).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Lepidosperma amantiferrum</i>	Cyperaceae	P1	-	Habit: Tufted rhizomatous, herb (sedge), leaves 0.15-0.42 m high, culms and leaves distichous Flowers: Unknown Flowering period (indicated in green): unknown <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sandy loam with banded ironstone gravel and rocks. Gentle lower slopes. IBRA Distribution: MAL Florabase records: 14	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. Records of this taxon are in the adjacent Mallee subregion. Available information on this taxon is limited (WAH 1998-).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Lepidosperma ferriculmen</i>	Cyperaceae	P1	-	Habit: Tufted rhizomatous, perennial, herb to 0.4 m high Flowers: Black Flowering period (indicated in green): unknown <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Well-drained orange-red sandy loam with banded ironstone gravel and rocks. Stony slopes IBRA Distribution: COO Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. Available information on this taxon is limited (WAH 1998-).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397)	Lamiaceae	P1	-	Habit: Erect compact shrub to 1.5 m high Flowers: White with purple flecks Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow-brown sandy clay IBRA Distribution: COO Florabase records: 5	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and habitat combination known to occur within the survey area Records of this taxon exist within the EGLP development envelope (Mattiske Consulting 2017, 2018a, 2018c).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Mirbelia taxifolia</i>	Fabaceae	P1	-	Habit: Shrub to 0.9m high Flowers: Orange-yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Red or yellow sand IBRA Distribution: COO Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil not may occur within the survey area. The nearest record of this taxon is located approximately 35 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Rinzia medifila</i>	Myrtaceae	P1	-	Habit: Erect, narrow shrub to 1 high Flowers: Unknown Flowering period (indicated in green): unknown <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow-brown sandy soils. Sometimes with laterite or greenstone. IBRA Distribution: AVW, COO Florabase records: 3	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat may occur within the survey area. Records of this taxon are restricted to the Parker Range (DPaW 2007-).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Scaevola tortuosa</i>	Goodeniaceae	P1	-	Habit: Ascending perennial herb to 0.2m high Flowers: Blue-purple/pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Sandy clay. Margins of salt lakes IBRA Distribution: AVW, COO, MAL Florabase records: 18	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The nearest record of this taxon is located approximately 32 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Stylidium validum</i>	Goodeniaceae	P1	-	Habit: Caespitose perennial herb to 0.3m high Flowers: White-pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Clayey sand or loam, ironstone, greenstone gravel. Hilltops and hill slopes. IBRA Distribution: COO Florabase records: 12	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil and habitat combination may exist within the survey area. The nearest record of this taxon is located approximately 16 km south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Acacia asepala</i>	Fabaceae	P2	-	Habit: Diffuse, much-branched shrub, 0.5 to 1.5 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Red-brown sandy loam. Undulating plains, along drainage lines IBRA Distribution: COO, MAL Florabase records: 17	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination may exist within the survey area. The nearest record of this taxon is located approximately 24 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Acacia kerryana</i>	Fabaceae	P2	-	Habit: Low spreading, domed shrub to 1 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Granitic loamy sand, stony clayey loam or clayey sand IBRA Distribution: COO Florabase records: 15	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and soil parent material not expected within the survey area. The nearest record of this taxon is located approximately 32 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Bentleya diminuta</i>	Pittosporaceae	P2	-	Habit: Rosetted rhizomatous, perennial, herb or shrub, 0.02-0.05 m high, growing in small colonies Flowers: White/yellow-green Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy clay or loam with calcareous nodules IBRA Distribution: COO, MAL Florabase records: 11	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soils are not expected within the survey area. The nearest record of this taxon is located approximately 25 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Boronia westringioides</i>	Rutaceae	P2	-	Habit: Erect shrub to 0.75 m high Flowers: Pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Loamy sand. Plains IBRA Distribution: COO, MAL Florabase records: 15	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 32 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Caesia viscida</i>	Hemerocallidaceae	P2	-	Habit: Rhizomatous and tuberous, tufted perennial, herb, to 0.3 m high. Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Aeolian sand. Low dunes IBRA Distribution: COO, ESP Florabase records: 5	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km north-east of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Conospermum sigmoideum</i>	Proteaceae	P2	-	Habit: Erect shrub, 0.2 – 0.5 m high Flowers: Blue Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sand IBRA Distribution: COO, MAL Florabase records: 13	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil unlikely to be present within the survey area. The nearest record of this taxon is located approximately 15 km south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Dampiera orchardii</i>	Goodeniaceae	P2	-	Habit: Erect perennial herb, 0.2 – 0.4 m high Flowers: Blue Flowering period (indicated in green): unknown <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Sand IBRA Distribution: COO, MAL Florabase records: 10	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil potentially present within the survey area. The nearest record of this taxon is located approximately 12 km to the north-west of the survey area (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Daviesia sarissa</i> subsp. <i>redacta</i>	Fabaceae	P2	-	Habit: Spreading or sprawling, glaucous shrub, to 0.6 m high Flowers: Yellow-red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow sand. Plains IBRA Distribution: COO Florabase records: 8	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil & habitat combination occurs within survey area. Species has been recorded within the EGLP development envelope (Mattiske Consulting 2017, 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eutaxia hirsuta</i>	Fabaceae	P2	-	Habit: Low shrub to 0.4 m high Flowers: Yellow-maroon Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Sandy to gravelly sandplains IBRA Distribution: AVW, COO, MAL Florabase records: 6	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination potentially occur within survey area. The nearest record of this taxon is located approximately 30 km to the south of the survey area (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eutaxia lasiocalyx</i>	Fabaceae	P2	-	Habit: Low, spreading, multi-stemmed shrub, to 0.15 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Red sandy loam, laterite and quartz gravel; gentle lower slopes IBRA Distribution: COO Florabase records: 5	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil & habitat combination may occur within survey area. This taxon has recorded within the nearby Van Uden Prospect (Mattiske Consulting 2016), approximately 10 km to the west of the survey area. The nearest record of this taxon is located 1 km to the east of the survey area (ALA 2019) along the Holland Track.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Guichenotia asteriskos</i>	Malvaceae	P2	-	Habit: Erect, compact shrub, ca 0.35 m high. Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy clay or loam with gravel. IBRA Distribution: AVW, ESP, MAL Florabase records: 21	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination may occur within survey area, however current records of tis taxon are not present within the Coolgardie subregion. The nearest record of this taxon is located approximately 35 km to the south-west of the survey area (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Logania nanophylla</i>	Loganiaceae	P2	-	Habit: Low spreading shrub, 0.1-0.25 m high, to 0.5 m wide. Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White sand, pebbly calcareous sandy clay. Sand dunes. IBRA Distribution: COO Florabase records: 5	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Soils and habitat not known to occur within the survey area. The nearest record of this taxon is located approximately 10 km to the north of the survey area, within the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Olearia laciniifolia</i>	Asteraceae	P2	-	Habit: Erect perennial herb, 0.6 – 1.2 m high Flowers: blue/purple & white/yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White sand, around playa lakes IBRA Distribution: COO, MAL Florabase records: 17	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Soils and habitat not known within survey area. This taxon has been recorded within the EGLP development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Orianthera exilis</i>	Loganiaceae	P2	-	Habit: Leafless shrub to 30cm high Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Brown loam over laterite, Band ironstone (unconfirmed) IBRA Distribution: COO, MAL Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low This taxon has been recorded within the EGLP development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Stylidium thylax</i>	Goodeniaceae	P2	-	Habit: Creeping perennial her to 0.08m high Flowers: White and pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand. Gentle slopes and plains IBRA Distribution: COO, MAL Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred habitat and soils potentially present within the survey area. The nearest record of this taxon is located approximately 40 km to the south-east of the survey area (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Verticordia multiflora</i> subsp. <i>solox</i>	Myrtaceae	P2	-	Habit: Spreading shrub 0.1 to 0.45 m high, to 0.7 m wide Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sand over gravel, sand over granite IBRA Distribution: AVW, COO, MAL Florabase records: 29	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the north-east of the survey area, within the Jilbadji Nature reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Verticordia pulchella</i>	Myrtaceae	P2	-	Habit: Erect to spreading shrub to 0.6 m high Flowers: red & pink/yellow/orange Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy soils over granite. Massive granite areas. IBRA Distribution: AVW, COO Florabase records: 22	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat not known within the survey area. The nearest record of this taxon is located approximately 35 km to the north-west of the survey area (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Acacia inophloia</i>	Fabaceae	P3	-	Habit: Shrub or tree, 1-4 m high, bark fibrous & stringy. Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sand, gravelly granitic soils. IBRA Distribution: AVW, COO, MAL Florabase records: 31	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat potentially present within the survey area. Whilst the majority of the records of this taxon are located within the Avon Wheatbelt and Mallee subregions (WAH 1998-), the nearest records of this taxon are located approximately 40 km to the north-east of the EGLP development envelope, within the Jilbadji Nature Reserve.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Acacia repanda</i>	Fabaceae	P3	-	Habit: Rounded to obconic, single-stemmed shrub to 2 m high, bark 'minni-ritchi' Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Loam, sandy or gravel loam. Near granite outcrops IBRA Distribution: AVW, COO, MAL Florabase records: 19	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil, habitat, and soil parent material not expected within the survey area. The nearest record of this taxon is located approximately 40 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Acacia undosa</i>	Fabaceae	P3	-	Habit: Dense, domed or obconic shrub, 0.3-1.5 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy clay loam, clayey sand. Undulating plains, low-lying areas. IBRA Distribution: AW, COO, MAL Florabase records: 21	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil & habitat combination occurs within the survey area. This taxon had previously been recorded within the EGLP development envelope (Mattiske Consulting 2018a, 2018c).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Adenanthos gracilipes</i>	Proteaceae	P3	-	Habit: Erect, lignotuberous shrub to 1.5m high Flowers: Cream, red, and pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White sand IBRA Distribution: COO, MAL Florabase records: 22	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil not expected within the survey area. The nearest record of this taxon is located approximately 18 km south-east of the development envelope (ALA 2019)
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Angianthus micropodioides</i>	Asteraceae	P3	-	<div>Habit: White-woolly, erect or decumbent annual herb to 15 cm high</div> <div>Flowers: White, yellow-white</div> <div>Flowering period (indicated in green):</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Soils: Saline sandy soils; river edges, saline depressions, clay pans</div> <div>IBRA Distribution: AVW, COO, GSP, SCP</div> <div>Florabase records: 40</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		<div>Low</div> <div>Preferred soil & habitat combination not known to occur within the survey area</div> <div>The majority of records of this taxon are located within the Avon Wheatbelt, Geraldton Sandplain and Swan Coastal Plain subregions (WAH 1998-).</div> <div>The nearest record of this taxon is located approximately 12 km to the north-west of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).</div> <div>This record represents an outlier with respect to the known distribution of this taxon (WAH 1998-)</div>
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Baeckea</i> sp. Hatter Hill (K.R. Newbey 3284)	Myrtaceae	P3	-	<div>Habit: Narrow, open, upright shrub to 1.3 m high</div> <div>Flowers: Pink</div> <div>Flowering period (indicated in green):</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Soils: Yellow-orange coarse sandy loam with laterite gravel, red-brown sandy loam with quartz pebbles. Undulating plains.</div> <div>IBRA Distribution: COO, MAL</div> <div>Florabase records: 22</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		<div>Medium</div> <div>Preferred soil & habitat combination potentially present with the survey area.</div> <div>The nearest record of this taxon is located approximately 32 km south of the EGLP development envelope, in the vicinity of the Lake Cronin Nature Reserve.</div>
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Banksia lullfitzii</i>	Proteaceae	P3	-	Habit: Lignotuberous shrub to 2m high Flowers: Yellow-orange or orange-brown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sandplains IBRA Distribution: AVW, COO, ESP, MAL Florabase records: 23	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil not expected within the survey area. The nearest record of this taxon is located approximately 30 km north-east of the EGLP development envelope.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Banksia rufa</i> subsp. <i>flavescens</i>	Proteaceae	P3	-	Habit: Prostrate shrub to 0.45 m high Flowers: cream-yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy loam or sand with gravel IBRA Distribution: AVW, COO, MAL Florabase records: 28	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil type potentially present within the survey area. The nearest record of this taxon is located approximately 37.5 km to the south-east of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Banksia viscida</i>	Myrtaceae	P3	-	Habit: Densely branched, non-lignotuberous shrub, 0.4 to 1 m high Flowers: Yellow-orange Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Gravelly soils, lateritic rises IBRA Distribution: COO, MAL Florabase records: 27	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil type and habitat potentially present within the survey area. The nearest record of this taxon is located approximately 22.5 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Banksia xylothemelia</i>	Proteaceae	P3		Habit: Often sprawling, lignotuberous shrub, to 1 m high, sometimes suckering. Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy loam, usually over laterite. Sandplains. IBRA Distribution: ESP, MAL Florabase records: 50	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil type and habitat potentially present within the survey area. The majority of the records of this taxon are located in the Mallee subregion (WAH 1998-). The nearest record of this taxon is located approximately 40 km to the north-east of the EGLP development envelope, and represents an outlier with respect to the other records of this taxon (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Bossiaea atrata</i>	Fabaceae	P3	-	Habit: Compact, dense, intricately branched, rigid, spinescent her to 1.2 m high. Flowers: Orange-yellow-red-brown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White sand or sandy loam over laterite or clay, quartzite sand, clay IBRA Distribution: AVW, COO, ESP, MAL Florabase records: 30	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil not expected within the survey area. The majority of the records of this taxon are located within the Mallee and Avon Wheatbelt subregions. The nearest record of this taxon is located approximately 40 km to the south-east of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Bossiaea celata</i>	Fabaceae	P3	-	Habit: Compact, intricately-branched shrub, to 0.8 m high. Flowers: Yellow-red-orange Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Deep sand. Open mallee. IBRA Distribution: COO Florabase records: 17	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil not expected within the survey area. Records of this taxon have a more northern distribution relative to the EGLP development envelope. The nearest record of this taxon is located approximately 40 km to the north-east of the EGLP development envelope, in the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Chorizema circinale</i>	Fabaceae	P3	-	Habit: Prostrate, scrambling, wiry shrub to 0.4 m high Flowers: Yellow, orange and red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sandy soils, sandy clay with gravel; on flats; usually associated with heath vegetation IBRA Distribution: COO, ESP, MAL Florabase records: 15	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil & habitat combination known to occur within the survey area. This taxon has previously been recorded by Mattiske Consulting within the EGLP development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Comesperma calcicola</i>	Polygalaceae	P3	-	Habit: Soft perennial, herb, to 0.3 m high. Flowers: Pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Calcareous or semi-saline clay loams, limestone. Areas around saline water. IBRA Distribution: COO, ESP, MAL Florabase records: 10	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination known to occur within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Cryptandra polyclada</i> subsp. <i>polyclada</i>	Rhamnaceae	P3	-	Habit: Mat-forming or upright shrub to 0.7 m high Flowers: White-cream Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand. Sandplains. IBRA Distribution: AVW, COO, ESP, MAL Florabase records: 18	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil potentially present within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Daviesia implexa</i>	Fabaceae	P3	-	Habit: Dense shrub to 0.75 m high Flowers: Yellow-orange-red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy gravelly soil, gravelly loam, lateritic soils, disturbed areas. IBRA Distribution: COO, JAF, MAL Florabase records: 37	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soils potentially present within the survey area. The majority of records for this taxon are located within the Mallee bioregion (WAH 1998-) The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Elatine macrocalyx</i>	Elatinaceae	P3	-	Habit: Prostrate, glabrous mat-forming annual Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Shallow sand over clay. Margins of playa lakes and clay pans. IBRA Distribution: AVW, COO, GAS, GIB, GVD, MUR Florabase records: 8	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eucalyptus exigua</i>	Myrtaceae	P3	-	Habit: Smooth-barked mallee, 2 – 5 m high, forming a lignotuber Flowers: White-cream Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy loam, white sand; sandplains IBRA Distribution: AVW, COO, MAL, MUR Florabase records: 36	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination potentially present within the survey area. The nearest record of this taxon is located approximately 10 km to both the south-west and east of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eutaxia acanthoclada</i>	Fabaceae	P3	-	Habit: Compact, mat-forming, prostrate shrub, to 0.3 m high Flowers: Yellow/orange/red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Light brown sandy clay, shallow sandy loam, red clay over banded ironstone, gravel. Gently undulating plains IBRA Distribution: COO, ESP, MAL Florabase records: 20	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soils & habitat combination likely to occur within the survey area. The majority of the records of this taxon are located within the Mallee subregion (WAH 1998-). The nearest record of this taxon is located approximately 20 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eutaxia nanophylla</i>	Fabaceae	P3	-	Habit: Straggly, rounded shrub to 0.35 m high Flowers: Yellow, orange and red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Clayey sand, red clay, stony clayey loam. Low lying areas, damp areas, low stony ridges IBRA Distribution: COO, JAF, MAL, MUR Florabase records: 10	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination potentially present in the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eutaxia rubricarina</i>	Fabaceae	P3	-	Habit: Straggly, shrub to 0.5 m high Flowers: Yellow, orange and red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Gravelly sand, grey to pinkish-white sandy clay. Flats, slopes, valley floors, disturbed areas. IBRA Distribution: AVW, COO, MAL, MUR Florabase records: 10	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination potentially present in the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Frankenia drummondii</i>	Frankeniaceae	P3	-	Habit: Prostrate shrub to 0.3 m high Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Lake edges and salt affected drainage tracts IBRA Distribution: AVW, COO, MAL Florabase records: 38	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 45 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Grevillea pilosa</i> subsp. <i>redacta</i>	Proteaceae	P3	-	Habit: Spreading to prostrate shrub to 1.2 m high Flowers: Red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Sand, laterite IBRA Distribution: COO, MAL Florabase records: 17	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil & habitat likely to occur within the survey area. The nearest record of this taxon is located approximately 3 km to the west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Hakea pendens</i>	Proteaceae	P3	-	Habit: Shrub, 2-3 m high, 2.5-3.1 m wide Flowers: Pink-white Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Stony loam, ironstone ridges IBRA Distribution: AVW, COO Florabase records: 23	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil & habitat combination known to occur. This taxon has been recorded within the EGLP development envelope (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Hibbertia pachyphylla</i>	Dilleniaceae	P3	-	Habit: Shrub to 0.5 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: White to yellow sand, brown sandy gravel, gravelly loam, laterite, granite, quartz. Undulating plains, low rises, valley floors. IBRA Distribution: COO, MAL Florabase records: 14	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination likely to occur within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Hydrocotyle eichleri</i>	Araliaceae	P3	-	Habit: Low, spreading, annual herb to 10cm high Flowers: Unknown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Saline clay pans or drainage channels IBRA Distribution: AVW, COO, ESP, MAL Florabase records: 7	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination not expected within the survey area. Available information on this taxon is limited (WAH 1998-).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Isolepis australiensis</i>	Cyperaceae	P3	-	Habit: Annual, grass-like herb to 0.06 m high Flowers: Brown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Silty sand, sandy clay. Lake margins, pools. IBRA Distribution: AVW, COO, ESP, MAL Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Melaleuca macronychia</i> subsp. <i>trygonoides</i>	Myrtaceae	P3	-	Habit: Multi-stemmed, spreading shrub to 4 m high Flowers: Red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Sandy soils. Granite outcrops. IBRA Distribution: COO, MAL Florabase records: 17	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Melaleuca ochroma</i>	Myrtaceae	P3	-	Habit: Erect, multi-stemmed shrub to 1.8 m high (unconfirmed) Flowers: Pale pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Brown clay, whitish sandy-clay, brown clay-loam, sandy loam. Low lying areas IBRA Distribution: COO, MAL Florabase records: 4	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the north-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Microcybe</i> sp. Windy Hill (G.F. Craig 6583)	Rutaceae	P3	-	Habit: Shrub to 0.5 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Stony loam, rocky areas (potentially) IBRA Distribution: COO Florabase records: 29	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination unlikely within the survey area. Available data on this taxon is limited. The nearest record of this taxon is located approximately 25 km to the north of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Mirbelia densiflora</i>	Fabaceae	P3	-	Habit: Shrub to 1 m high Flowers: Yellow-orange Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Stony loam, loamy sand; Small ridges, breakaways, undulating plains IBRA Distribution: COO, MAL Florabase records: 23	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 25 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Notisia intonsa</i>	Asteraceae	P3	-	Habit: Prostrate clumping annual to 0.1 m high Flowers: Brown Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Brown clay, clayey loam. Variable gravel content. Saline areas IBRA Distribution: AVW, COO, ESP, MAL, MUR Florabase records: 25	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. Available information of this taxon is limited. The nearest record of this taxon is located approximately 25 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Oxymyrrhine plicata</i>	Myrtaceae	P3	-	Habit: Shrub to 50 cm (unconfirmed) Flowers: White/green (unconfirmed) Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand, sandy-loam (unconfirmed) IBRA Distribution: COO, ESP, MAL Florabase records: 13	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil type may occur within the survey area. Available information of this taxon is limited. The nearest record of this taxon is located approximately 20 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Persoonia cymbifolia</i>	Proteaceae	P3	-	Habit: Erect, spreading shrub, 0.2-0.6 (-1) m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy soils. On flats or in rock crevices. IBRA Distribution: COO, ESP, MAL Florabase records: 32	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil present in the survey area. The majority of the records of this taxon have a more southern distribution, within the Mallee bioregion. The nearest record of this taxon is located approximately 9 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Pityrodia scabra</i> subsp. <i>dendrotricha</i>	Lamiaceae	P3	-	Habit: Erect, few branched shrub to 1 m (unconfirmed) Flowers: White (unconfirmed) Flowering period (indicated in green): unknown <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow sand. Salt lake edges IBRA Distribution: COO, MAL Florabase records: 27	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination not expected within the survey area. Available information on this taxon is limited (WAH 1998-) The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Pterostylis echinulata</i>	Orchidaceae	P3	-	Habit: Dense, prostrate, domed shrub to 0.7 m high. Flowers: Green Flowering period (indicated in green): unconfirmed <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Clay depressions and damp areas. IBRA Distribution: AVW, COO, GSP, JAF, MAL Florabase records: 13	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination not expected within the survey area. Available information on this taxon is limited (WAH 1998-). The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Pultenaea daena</i>	Fabaceae	P3	-	Habit: Dense, prostrate, domed shrub to 0.07 m high. Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: White to yellow sand or sandy loam, sandy or loamy clay, gravel, limestone, dolomite, laterite. Gently undulating plains, adjacent to salt lakes, disturbed areas. IBRA Distribution: COO, MAL	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
				Florabase records: 19																									
<i>Rinzia torquata</i>	Myrtaceae	P3	-	<div>Habit: Low spreading shrub, 0.3 to 1.2 m high to 0.7 m wide</div> <div>Flowers: White/pink</div> <div>Flowering period (indicated in green):</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Soils: Well drained gravelly sand, yellow loamy sand, laterite. Sandplains, slightly undulating sites, near creeks, on exposed small rises</div> <div>IBRA Distribution: AVW, COO, MAL</div> <div>Florabase records: 18</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		<div>Medium</div> <div>Preferred soils and habitat combination potentially present within the survey area.</div> <div>The nearest record of this taxon is located approximately 25 km to the south of the EGLP development envelope (ALA 2019).</div>
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Seringia adenogyna</i>	Malvaceae	P3	-	<div>Habit: Shrub to 0.5 m (unconfirmed)</div> <div>Flowers: Mauve-purple</div> <div>Flowering period (indicated in green): unconfirmed</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Soils: Sand or loam over laterite-ironstone base (unconfirmed)</div> <div>IBRA Distribution: COO, ESP, MAL</div> <div>Florabase records: 28</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		<div>High</div> <div>Preferred soil & habitat combination potentially present within the survey area.</div> <div>The nearest record of this taxon is located approximately 4 km to the west of the EGLP development envelope (ALA 2019).</div>
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Stylidium sejunctum</i>	Stylidiaceae	P3	-	<div>Habit: Caespitose perennial, herb, 0.25-0.45 m high. Membraneous scale leaves present at base of mature leaves. Scape glandular throughout</div> <div>Flowers: White/pink-purple</div> <div>Flowering period (indicated in green):</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Flowering period: September to November</div> <div>Soils: Clayey sand or loam, laterite. Outcrops, upper slopes, breakaways. Mallee and Allocasuarina shrubland.</div> <div>IBRA Distribution: COO, MAL</div> <div>Florabase records: 34</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and habitat combination present within survey area. The nearest record of this taxon is located approximately 14 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Teucrium</i> sp. dwarf (R. Davis 8813)	Lamiaceae	P3	-	<div>Habit: Compact dwarf shrub to 0.1 m high, 0.1 m wide</div> <div>Flowers: White</div> <div>Flowering period (indicated in green):</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Soils: Hills, disturbed areas</div> <div>IBRA Distribution: COO</div> <div>Florabase records: 14</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred habitat combination known to occur within the survey area. This taxon has previously been recorded by Mattiske Consulting within the EGLP vegetation survey area (Mattiske Consulting 2018a).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Verticordia gracilis</i>	Myrtaceae	P3	-	Habit: Low, slender shrub, 0.15-0.6 m high Flowers: Pink Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sand, gravelly sand, sandy loam IBRA Distribution: AVW, COO, MAL Florabase records: 13	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil and habitat combination known to occur within the survey area Records of this taxon exist within 4km of the survey area (WAH 1998-).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Verticordia stenopetala</i>	Myrtaceae	P3	-	Habit: Shrub, 0.2-0.6(-1.3) m high Flowers: Pink/pink-purple-red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Yellow sand, sometimes with gravel. Undulating plains IBRA Distribution: AVW, COO, MAL Florabase records: 23	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		High Preferred soil and habitat combination known to occur within the survey area. This taxon has been recorded by Mattiske Consulting within the EGLP development envelope (Mattiske Consulting 2018a, 2018c).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Banksia shanklandiorum</i>	Proteaceae	P4	-	Habit: Upright shrub to 2.5 m high and 3 m wide. Flowers: Yellow-orange Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White/yellow sand with lateritic gravel IBRA Distribution: AVW Florabase records: 36	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil potentially present within the survey area. The majority of the records of this taxon are located within the Avon Wheatbelt bioregion. The nearest record of this taxon is located approximately 25 km to the north-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

Refer to Appendix A for BC Act / DBCA Priority List and EPBC Act conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GAS – Gascoyne; GES – Geraldton Sandplains; GIB – Gibson Desert; GVD – Great Victoria Desert; JAF – Jarrah Forest; MAL – Mallee; MUR – Murchison, YAL – Yalgoo.

TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Calamphoreus inflatus</i>	Scrophulariaceae	P4	-	Habit: Erect, spreading shrub to 1.6 m high Flowers: Blue-purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Clay-loam soils with ironstone gravel; flats and disturbed sites IBRA Distribution: COO, MAL Florabase records: 26	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination likely within the survey area. This taxon has been recorded by Mattiske Consulting (2017) approximately 2 km to the north of the EGLP development envelope on disturbed land.
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eremophila biserrata</i>	Scrophulariaceae	P4	-	Habit: Prostrate shrub to 3 m wide Flowers: Purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy or sandy clay soils; alluvial flats, salt flats and lakes IBRA Distribution: COO, MAL Florabase records: 20	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat type not expected within the survey area. The nearest record of this taxon is located approximately 14 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eremophila caerulea</i> subsp. <i>merrallii</i>	Scrophulariaceae	P4	-	Habit: Spreading or sprawling shrub to 0.35 m high and 0.8 m wide Flowers: Blue-purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand, clay, or loam. Undulating plains IBRA Distribution: AVW, COO, MAL Florabase records: 23	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil& habitat combination potentially present within the survey area. The nearest record of this taxon is located approximately 25 km to the north of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

Refer to Appendix A for BC Act / DBCA Priority List and EPBC Act conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GAS – Gascoyne; GES – Geraldton Sandplains; GIB – Gibson Desert; GVD – Great Victoria Desert; JAF – Jarrah Forest; MAL – Mallee; MUR – Murchison, YAL – Yalgoo.

TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eremophila racemosa</i>	Scrophulariaceae	P4	-	Habit: Erect shrub, 0.5 – 1.7 m high Flowers: Purple-pink-red/white Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Sandy or stony loam, clay loam; undulating plains IBRA Distribution: AVW, COO, MAL Florabase records: 34	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat type not expected within the survey area. The nearest record of this taxon is located approximately 15 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eucalyptus cerasiformis</i>	Myrtaceae	P4	-	Habit: Mallee, smooth bark, to 3.5 m high Flowers: Yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Red loamy soils IBRA Distribution: COO Florabase records: 31	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil not expected within the survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eucalyptus deflexa</i>	Myrtaceae	P4	-	Habit: Mallee, smooth bark, to 3 m high Flowers: Pink/cream-white Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Clay loam, sandy loam, white or yellow sand, often with gravel. Flats and small rises IBRA Distribution: COO, MAL Florabase records: 57	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination potentially present within survey area. The nearest record of this taxon is located approximately 27 km to the north-east of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX B: ASSESSMENT OF THREATENED AND PRIORITY FLORA POTENTIALLY PRESENT IN THE EARL GREY LITHIUM PROJECT INFRASTRUCTURE FOOTPRINT

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Eucalyptus georgei</i> subsp. <i>fulgida</i>	Myrtaceae	P4	-	Habit: Smooth-barked tree, 4 – 20 m high Flowers: Cream-white Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sandy loam, clayey sand; slight depressions IBRA Distribution: COO, MAL Florabase records: 20	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat combination potentially present within the survey area. The nearest record of this taxon is located approximately 15 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Eucalyptus rhomboidea</i>	Myrtaceae	P4	-	Habit: Tree to 10 m high Flowers: Pale yellow (unconfirmed) Flowering period (indicated in green): (unconfirmed) <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Gravelly sand, slight rises IBRA Distribution: COO, MAL Florabase records: 38	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil & habitat potentially present within the survey area. The nearest record of this taxon is located approximately 18 km to the east of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Grevillea neodissecta</i>	Proteaceae	P4	-	Habit: Low, rounded, prickly shrub, 0.3-1 m high Flowers: Red-pink Flowering period (indicated in green): (unconfirmed) <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand over laterite, clay loam IBRA Distribution: COO Florabase records: 9	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil potentially present within the survey area. The nearest record of this taxon is located approximately 13 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Grevillea prostrata</i>	Proteaceae	P4	-	Habit: Loose, prostrate shrub to 0.1 m high, 1.2 m wide. Flowers: Cream-white or pink-red Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: White, grey, or yellow sand, gravel. Sandplains IBRA Distribution: COO, ESP, MAL Florabase records: 39	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil & habitat combination potentially present within survey area. The nearest record of this taxon is located approximately 35 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Gyrostemon ditrigynus</i>	Proteaceae	P4	-	Habit: Shrub to 1.5 m high Flowers: Orange (unconfirmed) Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Sand, sandy clay, loam, Plain, low ironstone ridges. IBRA Distribution: COO, MAL Florabase records: 34	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil and habitat combination may occur within the survey area. The nearest record of this taxon is located approximately 18 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Haegiela tatei</i>	Asteraceae	P4	-	Habit: Ascending to erect annual herb, to 0.08 (0.2) m high Flowers: White-yellow Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> Survey (▲) Soils: Clay, sandy loam, gypsum. Salt affected areas IBRA Distribution: COO, ESP, MAL, YAL Florabase records: 22	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The nearest record of this taxon is located approximately 35 km to the south of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Microcorys</i> sp. Forrestania (V. English 2004)	Lamiaceae	P4	-	Habit: Prostrate or erect shrub, 0.35-0.4 m high. Flowers: White/purple Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Yellow sandy clay or red-brown clay. Open woodland or cleared areas IBRA Distribution: COO, MAL Florabase records: 37	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Medium Preferred soil and habitat combination potentially within the survey area. The nearest record of this taxon is located approximately 9 km to the south-west of the EGLP development envelope (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			
<i>Myriophyllum petraeum</i>	Haloragaceae	P4	-	Habit: Aquatic annual, herb, stems 0.15-0.3 m long Flowers: White Flowering period (indicated in green): <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <p style="text-align: right;">Survey (▲)</p> Soils: Strictly confined to ephemeral rock pools on granite outcrops IBRA Distribution: AW, COO, ESP, MAL Florabase records: 53	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		Low Preferred soil and habitat combination not expected within survey area. The nearest record of this taxon is located approximately 26 km to the north of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

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TAXON	FAMILY	CONSERVATION STATUS		DESCRIPTION AND HABITAT	POTENTIAL TO OCCUR IN SURVEY AREA																								
		BC ACT / DBCA PRIORITY LIST	EPBC ACT																										
<i>Stenanthemum bremerense</i>	Rhamnaceae	P4	-	<div>Habit: Erect or low and spreading shrub, (0.2-)0.3-0.6(-1.4) m high</div> <div>Flowers: White</div> <div>Flowering period (indicated in green): (unconfirmed)</div> <table><tr><td>J</td><td>F</td><td>M</td><td>A</td><td>M</td><td>J</td><td>J</td><td>A</td><td>S</td><td>O</td><td>N</td><td>D</td></tr><tr><td></td><td></td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td>▲</td><td></td></tr></table> <div>Survey (▲)</div> <div>Soils: Orange-brown sandy loam, orange-red gravelly loam, skeletal red loam, laterite, ironstone. Top or sides of outcrops and breakaways</div> <div>IBRA Distribution: COO</div> <div>Florabase records: 33</div>	J	F	M	A	M	J	J	A	S	O	N	D			▲	▲	▲	▲	▲	▲	▲	▲	▲		<div>Medium</div> <div>Preferred soil and habitat combination potentially present within the survey area.</div> <div>The nearest record of this taxon is located approximately 2 km to the east of the EGLP development envelope, within the Jilbadji Nature Reserve (ALA 2019).</div>
J	F	M	A	M	J	J	A	S	O	N	D																		
		▲	▲	▲	▲	▲	▲	▲	▲	▲																			

APPENDIX C

LIST OF WESTERN AUSTRALIAN HERBARIUM ACCESSIONS

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/7985/E	16/4/2019	BE1402	25/03/2019	750436	6439287	<i>Eutaxia lasiocalyx</i>	
ACC/7985/E	16/4/2019	BE1404	28/03/2019	760433	6445680	<i>Isopogon scabriusculus</i> subsp. <i>pubifloris</i>	
ACC/7985/E	16/4/2019	BE1408	31/03/2019	760801	6446611	<i>Isopogon scabriusculus</i> subsp. <i>pubifloris</i>	
ACC/7985/E	16/4/2019	DA3948	28/03/2019	759926	6443578	<i>Eutaxia lasiocalyx</i>	
ACC/7985/E	16/4/2019	DA3949	28/03/2019	760253	6445717	<i>Templetonia aculeata</i>	
ACC/7985/E	16/4/2019	DA3950	28/03/2019	760257	6445673	<i>Isopogon scabriusculus</i> subsp. <i>pubifloris</i>	
ACC/7985/E	16/4/2019	DA3951	30/03/2019	762241	6442615	<i>Stylidium sejunctum</i>	
ACC/7985/E	16/4/2019	DA3952	30/03/2019	761772	6442623	<i>Eutaxia lasiocalyx</i>	
ACC/7985/E	16/4/2019	DA3953	30/03/2019	761754	6442649	<i>Grevillea lissopleura</i>	
ACC/7985/E	16/4/2019	DA3954	30/03/2019	761889	6442652	<i>Grevillea lissopleura</i>	
ACC/7985/E	16/4/2019	DA3956	31/03/2019	760265	6446932	<i>Acacia undosa</i>	
ACC/7985/E	16/4/2019	DA3957	31/03/2019	760394	6447076	<i>Leucopogon</i> sp. Coolgardie (M. Hislop & F. Hort MH 3197)	
ACC/7985/E	16/4/2019	LT001	28/03/2019	760151	6445395	<i>Grevillea marriottii</i>	
ACC/7985/E	16/4/2019	LT004	29/03/2019	761665	6442605	<i>Grevillea lissopleura</i>	
ACC/7985/E	16/4/2019	LT007	28/03/2019	759055	6446128	<i>Hakea newbeyana</i>	
ACC/7985/E	16/4/2019	LT008	31/03/2019	760294	6447144	<i>Leucopogon</i> sp. <i>Forrestania</i> (G.F. Craig 2386)	
ACC/7985/E	16/4/2019	ZS010	26/03/2019	750764	6438876	<i>Eutaxia lasiocalyx</i>	
ACC/7985/E	16/4/2019	ZS011	26/03/2019	750786	6438481	<i>Eutaxia lasiocalyx</i>	
ACC/7985/E	16/4/2019	ZS013	28/03/2019	760101	6445478	<i>Astroloma epacridis</i> s. lat.	
ACC/7985/E	16/4/2019	ZS015	30/03/2019	762223	6442625	<i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i>	
ACC/7985/E	16/4/2019	ZS016	30/03/2019	762247	6442709	<i>Grevillea lissopleura</i>	
ACC/7998/E	16/4/2019	ZS02	9/03/2019	760678	6446425	<i>Psammomoya choretroides</i>	

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8004/E	29/8/2019	DA3959	13/04/2019	761133	6444139	<i>Eutaxia lasiocalyx</i>	
ACC/8004/E	29/8/2019	DA3960	13/04/2019	760749	6444178	<i>Teucrium</i> sp. dwarf (R. Davis 8813)	
ACC/8004/E	29/8/2019	DA3963	14/04/2019	758920	6447036	<i>Leucopogon</i> sp. Boorabbin (K.R. Newbey 8374)	
ACC/8004/E	29/8/2019	DA3964	15/04/2019	762621	6443308	<i>Eutaxia lasiocalyx</i>	
ACC/8004/E	29/8/2019	DA3966	16/04/2019	761026	6444545	<i>Labichea rossii</i>	
ACC/8004/E	29/8/2019	LT10	16/04/2019	760115	6444237	<i>Eutaxia lasiocalyx</i>	
ACC/8004/E	29/8/2019	LT9	13/04/2019	759407	6447230	<i>Acacia undosa</i>	
ACC/8004/E	29/8/2019	ZS17	12/04/2019	759873	6445583	<i>Eutaxia lasiocalyx</i>	
ACC/8004/E	29/8/2019	ZS20	15/04/2019	759215	6444510	<i>Acacia undosa</i>	
ACC/8004/E	29/8/2019	ZS23	17/04/2019	761432	6444051	<i>Seringia cacaobrunnea</i>	
ACC/8028/E	3/12/2019	DA4067	10/10/2019	760735	6446404	<i>Melaleuca condylosa</i>	
ACC/8092/E	29/8/2019	DA3976	8/07/2019	760984	6444824	<i>Boronia inornata</i> subsp. <i>leptophylla</i>	
ACC/8092/E	29/8/2019	DA3977	8/07/2019	761848	6442923	<i>Cooperhooikia strophiolata</i>	
ACC/8092/E	29/8/2019	LT448	9/07/2019	759425	6444573	<i>Stylidium limbatum</i>	
ACC/8092/E	29/8/2019	ZS118	7/07/2019	761592	6445423	<i>Boronia ternata</i> subsp. <i>promiscua</i>	
ACC/8092/E	29/8/2019	ZS121	7/07/2019	761277	6444767	<i>Boronia baeckeacea</i> subsp. <i>baeckeacea</i>	
ACC/8092/E	29/8/2019	ZS124	9/07/2019	762070	6443012	<i>Eremophila bisserata</i>	
ACC/8092/E	29/8/2019	ZS125	9/07/2019	761970	6442932	<i>Stylidium sejunctum</i>	

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8092/E	29/8/2019	ZS129	10/07/2019	763149	6439139	<i>Orianthera exilis</i>	
ACC/8115/E	06/9/2019	BE 1413	5/08/2019	760336	6442908	<i>Euryomyrtus maidenii</i>	
ACC/8115/E	06/9/2019	BE 1414	5/08/2019	760231	6443483	<i>Micromyrtus erichsenii</i>	
ACC/8115/E	06/9/2019	BE1411	1/08/2019	757772	6450076	<i>Boronia inornata</i> subsp. <i>leptophylla</i>	
ACC/8115/E	06/9/2019	BE1412	3/08/2019	757752	6451911	<i>Grevillea acuaria</i> s. lat.	This is an extraordinarily variable species as currently recognised. This material appears to match Olde & Marriot's 'shiny-leaf form'.
ACC/8115/E	06/9/2019	DA3979	1/08/2019	758888	6450350	<i>Beaufortia schaueri</i>	
ACC/8115/E	06/9/2019	DA3981	1/08/2019	757757	6451448	<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397)	
ACC/8115/E	06/9/2019	DA3983	2/08/2019	752865	6445507	<i>Daviesia cardiophylla</i>	
ACC/8115/E	06/9/2019	LT549	1/08/2019	757770	6450745	<i>Cyathostemon</i> sp.	Unlikely to be of conservation concern.
ACC/8115/E	06/9/2019	LT550	1/08/2019	762291	6443028	<i>Boronia baeckeacea</i> subsp. <i>baeckeacea</i>	
ACC/8115/E	06/9/2019	ZS 132	1/08/2019	757762	6451207	<i>Dampiera eriocephala</i>	
ACC/8115/E	06/9/2019	ZS133	1/08/2019	757760	6451255	<i>Grevillea eryngioides</i>	
ACC/8115/E	06/9/2019	ZS160	3/08/2019	761104	6443587	<i>Synaphea divaricata</i>	
ACC/8115/E	06/9/2019	ZS161	3/08/2019	760715	6442874	<i>Microcorys</i> sp.	This is potentially another currently unrecognised taxon. I will get back to you soon with more details
ACC/8115/E	06/9/2019	ZS162	5/08/2019	757856	6451502	<i>Chamelaucium ciliatum</i>	An enormously variable species as currently accepted.
ACC/8138/E	17/9/2019	BE1416	24/08/2019	761098	6446557	<i>Micromyrtus erichsenii</i>	
ACC/8138/E	17/9/2019	BE1417	24/08/2019	761105	6446607	<i>Euryomyrtus maidenii</i>	
ACC/8138/E	17/9/2019	BE1419	24/08/2019	761099	6446849	<i>Leucopogon hamulosus</i>	
ACC/8138/E	17/9/2019	BE1422	26/08/2019	759825	6447392	<i>Cyathostemon</i> sp.	Refer comment in regard to LT 549 from ACC 8115.

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8138/E	17/9/2019	BE1423	26/08/2019	759755	6447129	<i>Calytrix leschenaultia</i>	A very variable and widespread species as currently recognised.
ACC/8138/E	17/9/2019	BE1424	26/08/2019	759766	6446766	<i>Chamelaucium ciliatum</i>	
ACC/8138/E	17/9/2019	BE1425	26/08/2019	759647	6446891	<i>Chamelaucium ciliatum</i>	
ACC/8138/E	17/9/2019	BE1426	26/08/2019	759519	6447274	<i>Thryptomene kochii</i>	
ACC/8138/E	17/9/2019	DA3987	24/08/2019	761128	6446892	<i>Acacia undosa</i>	
ACC/8138/E	17/9/2019	DA3990	25/08/2019	759955	6446515	<i>Gyrostemon ditrigynus</i>	
ACC/8138/E	17/9/2019	DA3992	26/08/2019	759849	6446995	<i>Chamelaucium ciliatum</i>	A particularly widespread and variable species as currently accepted. Almost certainly includes segregate taxa.
ACC/8138/E	17/9/2019	DA3994	26/08/2019	759799	6447119	<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	
ACC/8138/E	17/9/2019	LT555	24/08/2019	761385	6443410	<i>Daviesia sarissa</i> subsp. <i>sarissa</i>	Inflorescence bracts atypically short.
ACC/8138/E	17/9/2019	LT558	26/08/2019	759816	6447643	<i>Daviesia argillacea</i>	
ACC/8138/E	17/9/2019	LT561	27/08/2019	760109	6446894	<i>Acacia undosa</i>	
ACC/8139/E	23/08/2019	BE1415	19/09/2019	761398	6442215	<i>Acacia</i> sp. Forrestania (D. Angus DA 3001)	
ACC/8139/E	26/08/2019	LT560	19/09/2019	761680	6442034	<i>Hibbertia</i> aff. <i>oligantha</i>	
ACC/8154/E	08/10/2019	AP06	13/09/2019	756857	6444964	<i>Androcalva aphrix</i>	
ACC/8154/E	08/10/2019	AP07	14/09/2019	761221	6445652	<i>Brachyscome iberidifolia</i> s. lat.	This is a particularly variable species as currently accepted.
ACC/8154/E	08/10/2019	AP08	14/09/2019	761221	6445652	<i>Levenhookia leptantha</i>	
ACC/8154/E	08/10/2019	BE1429	9/09/2019	761480	6443388	<i>Labichea rossii</i>	
ACC/8154/E	08/10/2019	BE1430	9/09/2019	761486	6443391	<i>Hemigenia westringioides</i>	
ACC/8154/E	08/10/2019	BE1437	11/09/2019	761127	6444902	<i>Hibbertia</i> sp.	Collection unable to be placed. Specimen to specialist Kevin Thiele for his opinion.
ACC/8154/E	08/10/2019	BE1438	13/09/2019	758866	6444942	<i>Euryomyrtus maidenii</i>	
ACC/8154/E	08/10/2019	BE1444	13/09/2019	755681	6445357	<i>Chorizema circinale</i>	

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8154/E	08/10/2019	BE1445	13/09/2019	755681	6445357	<i>Orianthera judithiana</i>	
ACC/8154/E	08/10/2019	BE1447	13/09/2019	754732	6445686	<i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105)	This belongs to a difficult species group which is now being assessed by Barbara Rye. As things stand it includes a number of phrase-named taxa (raised by Malcolm T) that occur in the Forrestania area, all of high priority, but it is very likely that most of these will not hold up to further scrutiny.
ACC/8154/E	08/10/2019	BE1448	13/09/2019	754076	6445821	<i>Leucopogon</i> sp. Forrestania (G.F. Craig 2386)	
ACC/8154/E	08/10/2019	BE1449	13/09/2019	753924	6445782	<i>Baeckea</i> sp. Forrestania (K.R. Newbey 1105)	Refer comment at BE1447.
ACC/8154/E	08/10/2019	BE1452	14/09/2019	762632	6442631	<i>Vittadinia australasica</i> var. <i>australasica</i>	
ACC/8154/E	08/10/2019	BE1455	14/09/2019	761221	6445652	<i>Velleia cynopotamica</i>	
ACC/8154/E	08/10/2019	BE1456	14/09/2019	761221	6445652	<i>Stylidium dielsianum</i>	
ACC/8154/E	08/10/2019	BE1457	14/09/2019	761221	6445652	<i>Podotheca angustifolium</i>	
ACC/8154/E	08/10/2019	BE1459	14/09/2019	761221	6445652	<i>Rhodanthe laevis</i>	
ACC/8154/E	08/10/2019	BE1461	15/09/2019	761464	6443402	<i>Hemigenia westringioides</i>	
ACC/8154/E	08/10/2019	BE1462	13/09/2019	758385	6444949	<i>Leucopogon</i> sp. outer wheatbelt (M. Hislop 30)	
ACC/8154/E	08/10/2019	DA3998	9/09/2019	758248	6443469	<i>Daviesia sarissa</i> subsp. <i>Redacta</i>	
ACC/8154/E	08/10/2019	DA4000	9/09/2019	761493	6443407	<i>Microcorys</i> sp. Mt Holland (D. Angus DA 2397) (P1)	
ACC/8154/E	08/10/2019	DA4002	10/09/2019	759270	6444763	<i>Melaleuca sparsiflora</i>	
ACC/8154/E	08/10/2019	DA4003	10/09/2019	759266	6445010	<i>Chamelaucium ciliatum</i> s. lat.	An enormously variable species as currently accepted.
ACC/8154/E	08/10/2019	DA4004	10/09/2019	759264	6445246	<i>Boronia inornata</i> subsp. <i>leptophylla</i>	
ACC/8154/E	08/10/2019	DA4005	10/09/2019	759135	6444715	<i>Rinzia sessilis</i>	

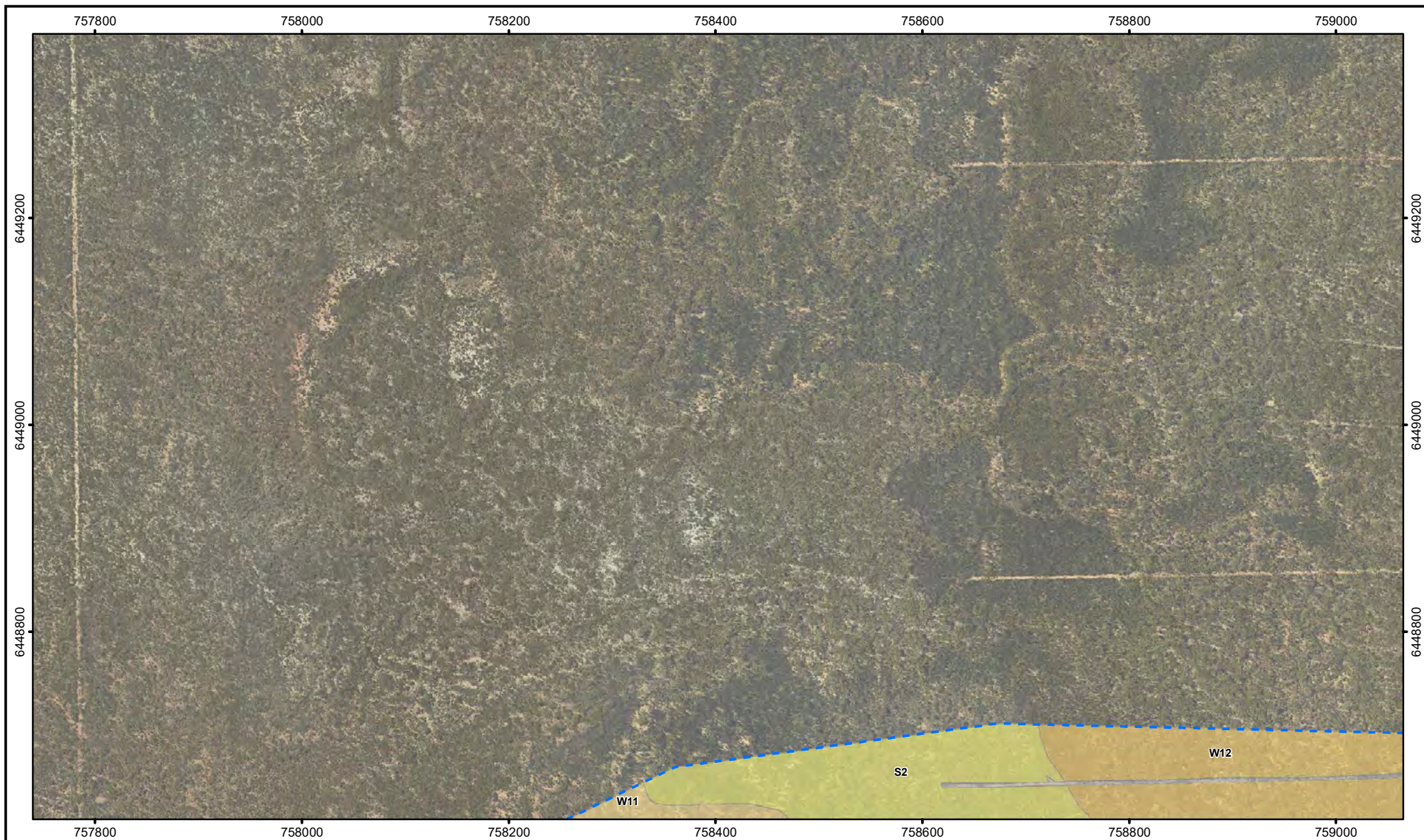
ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8154/E	08/10/2019	DA4006	10/09/2019	759966	6444573	<i>Acacia undosa</i>	
ACC/8154/E	08/10/2019	DA4007	10/09/2019	762127	6444577	<i>Rhodanthe pygmaea</i>	
ACC/8154/E	08/10/2019	DA4009	11/09/2019	760462	6444640	<i>Acacia undosa</i>	
ACC/8154/E	08/10/2019	DA4010	11/09/2019	760602	644961	<i>Gyrostemon ditrigynus</i>	
ACC/8154/E	08/10/2019	DA4011	11/09/2019	760633	6444966	<i>Boronia inornata</i> subsp. <i>leptophylla</i>	
ACC/8154/E	08/10/2019	DA4012	11/09/2019	762146	6443899	<i>Stylidium sejunctum</i>	
ACC/8154/E	08/10/2019	DA4014	11/09/2019	762175	6443809	<i>Grevillea marriottii</i>	
ACC/8154/E	08/10/2019	DA4015	12/09/2019	761412	6443951	<i>Lasioptalum ferraricollinum</i>	
ACC/8154/E	08/10/2019	DA4016	12/09/2019	762074	6442997	<i>Eremophila biserrata</i>	
ACC/8154/E	08/10/2019	DA4019	13/09/2019	756146	6445214	<i>Chamelaucium virgatum</i>	
ACC/8154/E	08/10/2019	DA4020	13/09/2019	755803	6445317	<i>Chorizema circinale</i>	
ACC/8154/E	08/10/2019	DA4022	13/09/2019	753070	6445574	<i>Chamelaucium pauciflorum</i> subsp. <i>pauciflorum</i> ms	
ACC/8154/E	08/10/2019	DA4024	14/09/2019	762837	6442964	<i>Eutaxia lasiocalyx</i>	
ACC/8154/E	08/10/2019	DA4026	14/09/2019	761226	6445652	<i>Brunonia</i> sp. <i>Goldfields</i> (K. Newbey 6044)	This is now considered to almost certainly be conspecific with <i>B. australis</i> .
ACC/8154/E	08/10/2019	DA4028	14/09/2019	761221	6445652	<i>Goodenia krauseana</i>	
ACC/8154/E	08/10/2019	DA4029	14/09/2019	761221	6445652	<i>Ptilotus humilis</i>	
ACC/8154/E	08/10/2019	DA4030	14/09/2019	761221	6445652	<i>Chthonocephalus pseudevax</i>	
ACC/8154/E	08/10/2019	DA4031	14/09/2019	761771	6443570	<i>Grevillea lissopleura</i>	
ACC/8154/E	08/10/2019	LT562	27/08/2019	762759	6443189	<i>Rinzia sessilis</i>	
ACC/8177/E	18/11/2019	AP042	11/10/2019	760414	6444047	<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett PERTH 04104927)	
ACC/8177/E	18/11/2019	BE 1473	10/10/2019	760459	6446206	<i>Hibbertia stowardii</i>	
ACC/8177/E	18/11/2019	BE1462	13/09/2019	759340	6442387	<i>Baeckea</i> sp. Forresteria (K.R. Newbey 1105)	

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				mE	mN		
ACC/8177/E	18/11/2019	BE1476	11/10/2019	759397	6444032	<i>Baeckea</i> sp. <i>Forrestania</i> (K.R. Newbey 1105)	
ACC/8177/E	18/11/2019	DA4033	8/10/2019	759344	6442388	<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett PERTH 04104927)	
ACC/8177/E	18/11/2019	DA4043	9/10/2019	761711	6442047	<i>Rinzia</i> sp. (aff. <i>medifila</i>)	An interesting collection which is close to <i>R. medifila</i> (P1) from the Parker Range. Specimen to be referred to Barbara Rye
ACC/8177/E	18/11/2019	DA4055	9/10/2019	761109	6444624	<i>Baeckea</i> sp. <i>Forrestania</i> (K.R. Newbey 1105)	This belongs to a complex species group that will be described as the genus <i>Tilophloia</i> . Numerous taxa recognized (many from the <i>Forrestania</i> area) with very little apparent basis. Most of these at this stage are P1 but that is likely to change.
ACC/8177/E	18/11/2019	DA4065	10/10/2019	760476	6446242	<i>Melaleuca scalena</i>	
ACC/8177/E	18/11/2019	DA4068	10/10/2019	760735	6446404	<i>Hibbertia pungens</i>	
ACC/8177/E	18/11/2019	DA4075	10/10/2019	760736	6446404	<i>Hibbertia rostellata</i>	
ACC/8177/E	18/11/2019	DA4078	9/10/2019	760293	6452494	<i>Microcorys</i> sp. Mt Holland broad-leaf (G. Barrett PERTH 04104927)	
ACC/8177/E	18/11/2019	DA4079	11/10/2019	759909	6444056	<i>Baeckea</i> sp. <i>Forrestania</i> (K.R. Newbey 1105)	
ACC/8177/E	18/11/2019	DA4086	11/10/2019	761102	6443126	? <i>Verticordia</i> sp.	A collection that I haven't been able to place. Unfortunately, it is completely sterile – be good to see fertile material, could be interesting.
ACC/8207/E	3/12/2019	DA4041	9/10/2019	761711	6442047	<i>Styphelia exserta</i>	
ACC/8207/E	3/12/2019	DA4044	9/10/2019	761794	6443696	<i>Calytrix tetragona</i>	

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8207/E	3/12/2019	DA4047	9/10/2019	761111	6444662	<i>Dampiera aff. Obliqua</i>	This anomalous morphotype was not included by Rajput & Carolin in their concept of <i>D. obliqua</i> . I will try to set aside a bit of time in the next week or two to see how strong the morphological case is for its recognition as a distinct taxon. There are other collections of it at PERTH so I won't need this material straightaway to make that call
ACC/8220/E	10/12/2019	DA 4036	9/10/2019	761675	6442044	<i>Hibbertia tuberculata</i>	has just been published
ACC/8220/E	10/12/2019	DA4087	29/10/2019	757626	6432143	<i>Eremophila biserrata</i>	
ACC/8220/E	10/12/2019	DA4088	29/10/2019	759683	6447244	<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	
ACC/8220/E	10/12/2019	DA4095	30/10/2019	761138	6446647	<i>Verticordia chrysantha</i>	
ACC/8220/E	10/12/2019	DA4096	30/10/2019	761137	6446661	<i>Homalocalyx pulcherrimus</i>	
ACC/8220/E	10/12/2019	DA4097	1/11/2019	762070	6447422	<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	
ACC/8220/E	10/12/2019	DA4099	3/11/2019	766207	6443198	<i>Beaufortia schaueri</i>	
ACC/8220/E	10/12/2019	DA4101	19/11/2019	611017	6488049	<i>Acacia undosa</i>	
ACC/8220/E	10/12/2019	DA4102	20/11/2019	762292	6447362	<i>Eutaxia</i> sp. North Ironcap (P. Armstrong PA 06/898)	
ACC/8220/E	10/12/2019	DA4103	20/11/2019	762321	6446968	<i>Acacia undosa</i>	
ACC/8220/E	10/12/2019	DA4104	20/11/2019	761819	6446776	<i>Verticordia picta</i>	
ACC/8220/E	10/12/2019	DA4106	20/11/2019	761808	6446612	<i>Daviesia pachyloma</i>	
ACC/8220/E	10/12/2019	DA4107	21/11/2019	763008	6444850	<i>Eutaxia lasiocalyx</i>	
ACC/8220/E	10/12/2019	DA4108	21/11/2019	757706	6432200	<i>Grevillea marriottii</i>	

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8220/E	10/12/2019	DA4109	21/11/2019	757634	6432308	Petrophile seminuda	
ACC/8220/E	10/12/2019	DA4110	21/11/2019	758812	6417654	Eutaxia acanthoclada	
ACC/8220/E	10/12/2019	DA4111	22/11/2019	761397	6435678	Grevillea marriottii	
ACC/8220/E	10/12/2019	DA4112	23/11/2019	758648	6453964	Acacia sp. Mt Holland (B.E. Ellery BE 1147)	
ACC/8220/E	10/12/2019	DA4113	24/11/2019	768803	6469670	Microcorys sp. Mt Holland (D. Angus DA 2393)	
ACC/8220/E	10/12/2019	BE1484	3/11/20189	760188	6442911	Goodenia pinifolia	
ACC/8220/E	10/12/2019	BE1485	20/11/2019	761625	6446381	Chamelaucium sp. Parker Range (B.H. Smith 1255)	
ACC/8220/E	10/12/2019	BE1486	20/11/2019	762352	6447379	Eremophila densifolia subsp. pubiflora	
ACC/8220/E	10/12/2019	BE1487	20/11/2019	761847	6446610	Verticordia eriocephala	
ACC/8220/E	10/12/2019	BE1488	20/11/2019	761847	6444610	Verticordia pritzelii	
ACC/8220/E	10/12/2019	BE1489	21/11/2019	757307	6432270	Eutaxia lasiocalyx	
ACC/8220/E	10/12/2019	BE1490	22/11/2019	759842	6440871	Eremophila verticillata	
ACC/8220/E	10/12/2019	BE1491	22/11/2019	759940	6440888	Hibbertia tuberculata	has just been published
ACC/8220/E	10/12/2019	BE1492	22/11/2019	757526	6442501	Dillwynia sp. Mallee (W.R. Archer 1709959)	
ACC/8220/E	10/12/2019	BE1493	24/11/2019	760994	6448480	Eremophila densifolia subsp. pubiflora	
ACC/8220/E	10/12/2019	BE1494	24/11/2019	761179	6448399	Microcorys sp. Mt Holland (D. Angus DA 2393)	
ACC/8220/E	10/12/2019	BE1495	24/11/2019	760662	6448300	Grevillea marriottii	

ACCESSION NUMBER	DATE	MATTISKE CONSULTING COLLECTION NUMBER	DATE COLLECTED	LOCATION (MGA94, Z50)		WAHerb IDENTIFICATION	WAHerb COMMENTS
				mE	mN		
ACC/8220/E	10/12/2019	BE1496	24/11/2019	761315	6448165	Microcorys sp. Mt Holland broad leaf (G. Barrett s.n. PERTH 04104927)	
ACC/8220/E	10/12/2019	LT 651	20/11/2019	761847	6446610	Verticordia stenopetala	
ACC/8220/E	10/12/2019	LT652	21/11/2019	765147	6445086	Euryomyrtus maidenii	
ACC/8220/E	10/12/2019	LT654	21/11/2019	757507	6433124	Verticordia eriocephala	
ACC/8220/E	10/12/2019	LT655				Eutaxia acanthoclada	
ACC/8220/E	10/12/2019	LT656	22/11/2019	761396	6435674	Goodenia helmsii	
ACC/8220/E	10/12/2019	LT657	22/11/2019	761224	6435750	Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)	
ACC/8220/E	10/12/2019	LT658				Verticordia stenopetala	
ACC/8220/E	10/12/2019	LT658	23/11/2019	761770	6448778	Phyllota luehmannii	
ACC/8220/E	10/12/2019	LT660	24/11/2019	768260	6468352	Eucalyptus ?exigua	This identification of this fruiting- only collection is doubtful. The fruit rim is thicker than is usual for the species and the fruit is also on the large size. Could be E. pileata, although the leaves are atypically broad. Need to see buds to be sure.
ACC/8220/E	10/12/2019	AP78	29/10/2019	761485	6445090	Eremophila densifolia subsp. pubiflora	
ACC/8220/E	10/12/2019	AP87	30/10/2019	761153	6446647	Verticordia stenopetala	
ACC/8220/E	10/12/2019	AP91	21/11/2019	762995	6444884	Teucrium sp. dwarf (R. Davis 8813)	



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

 **covalent**
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

 **Mattiske** Consulting Pty Ltd

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

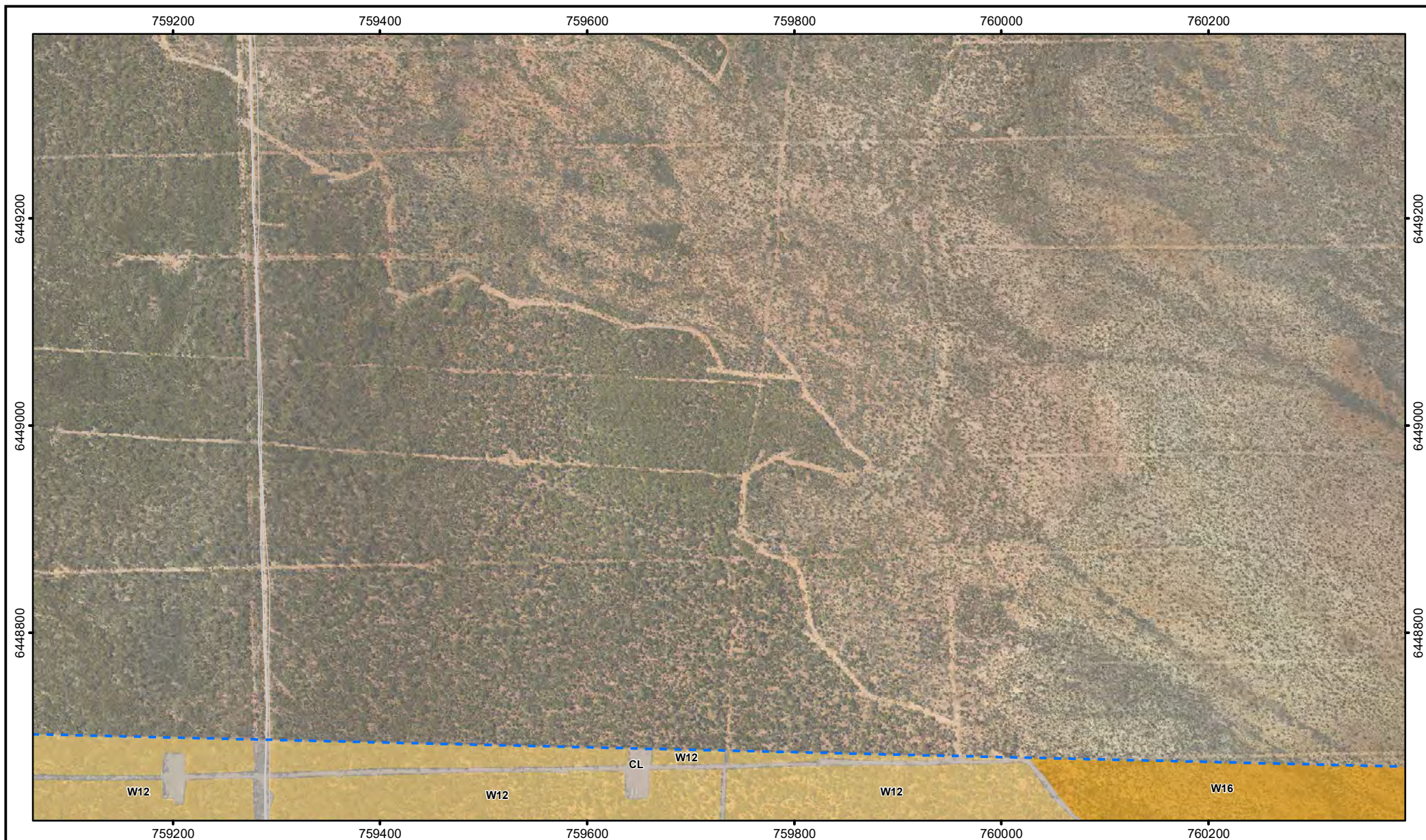
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Vegetation

Sheet 1 of 70

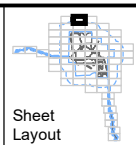
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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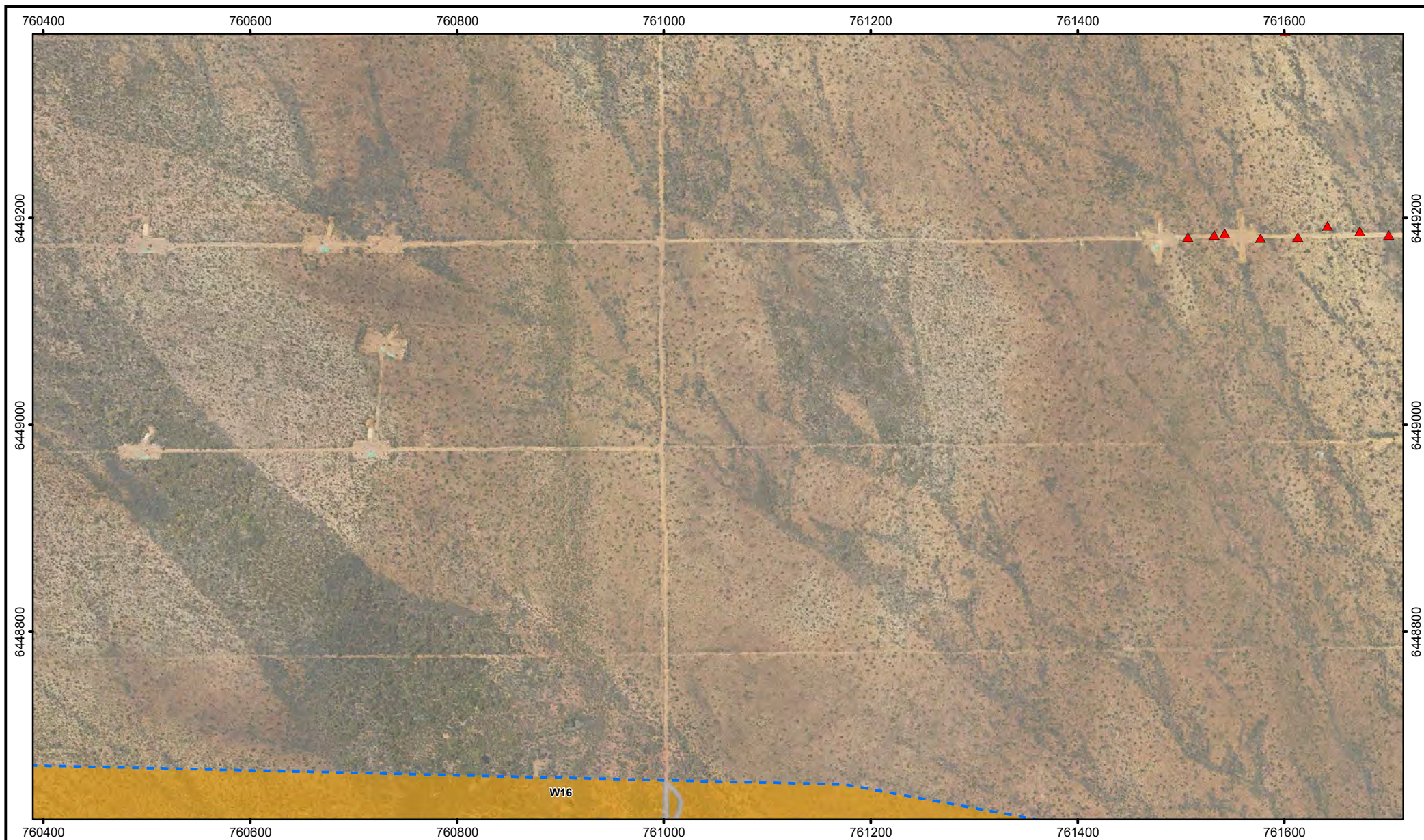
Covalent Lithium Pty Ltd

Vegetation

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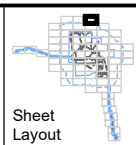
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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Vegetation

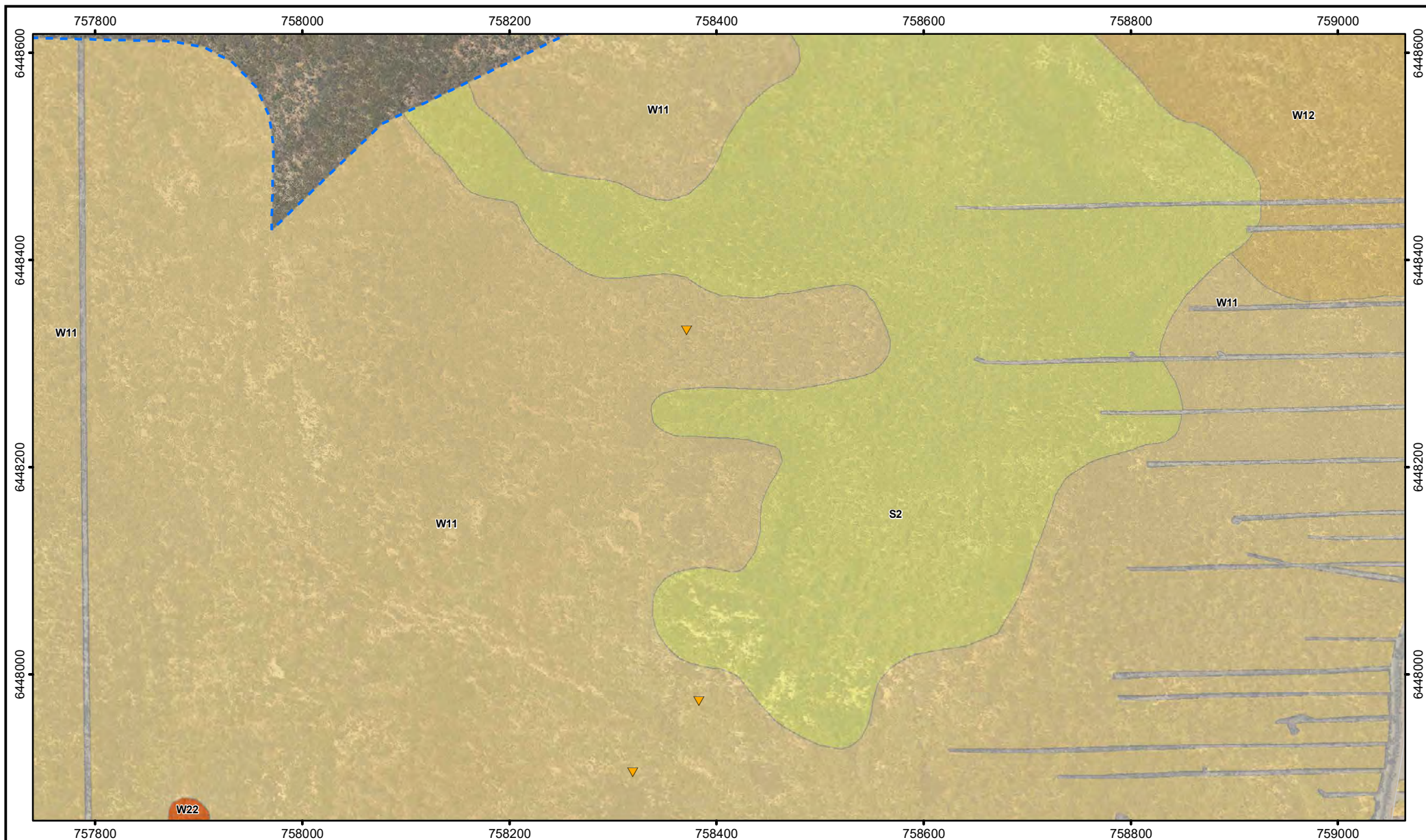
Sheet 3 of 70

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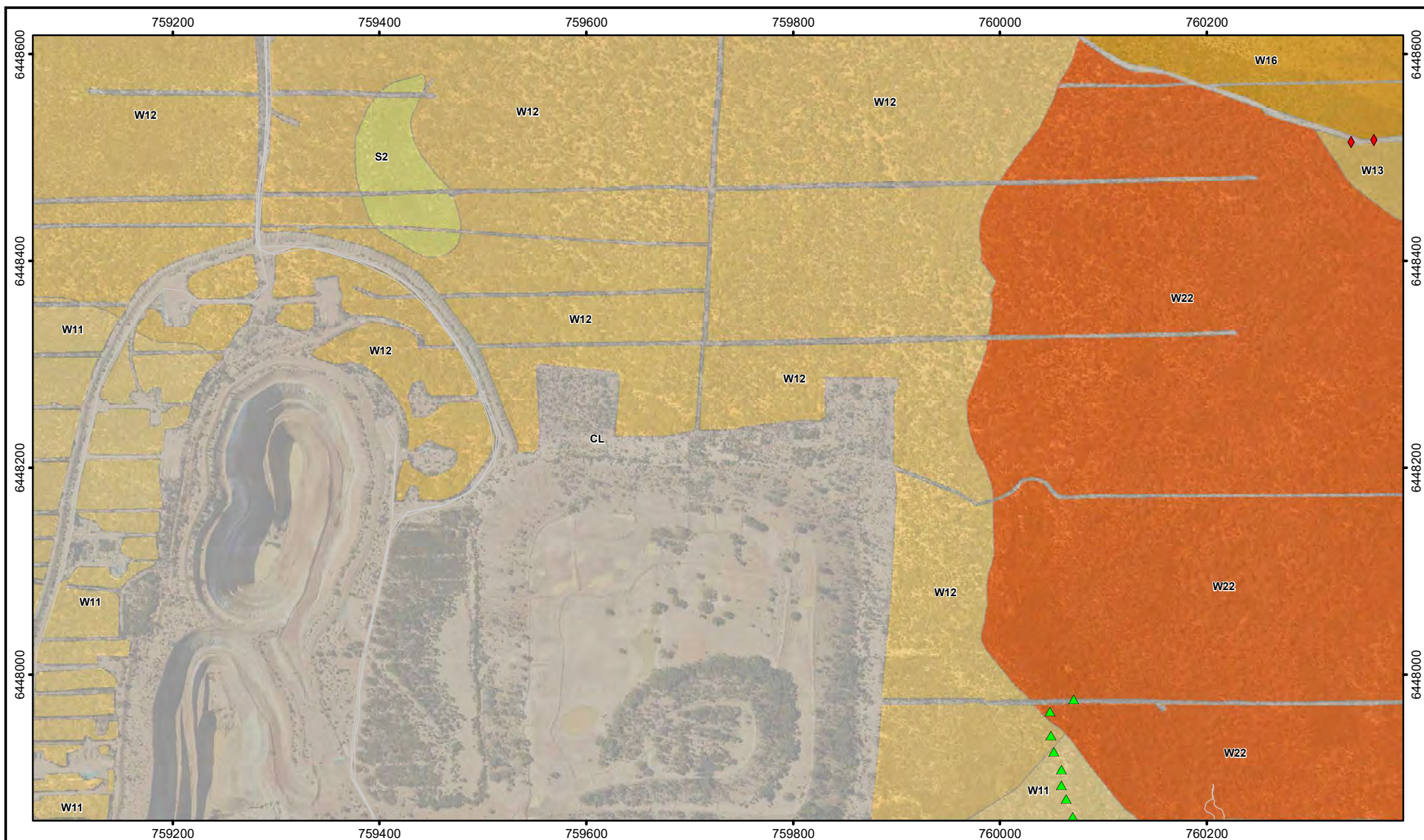
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Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: 		 Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 4 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 Mattiske Consulting Pty Ltd 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 5 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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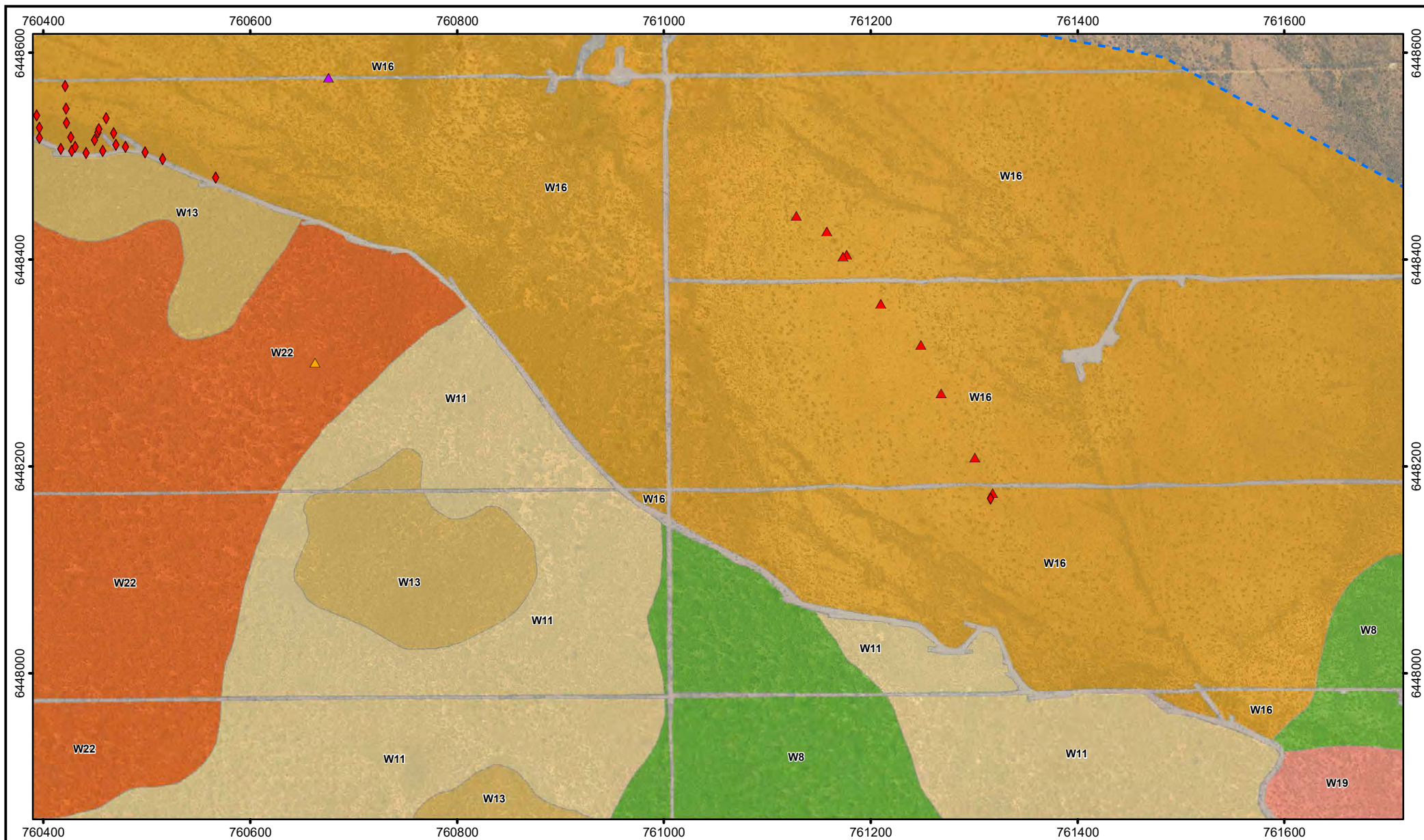
Covalent Lithium Pty Ltd

Vegetation

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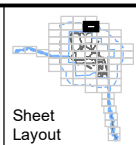
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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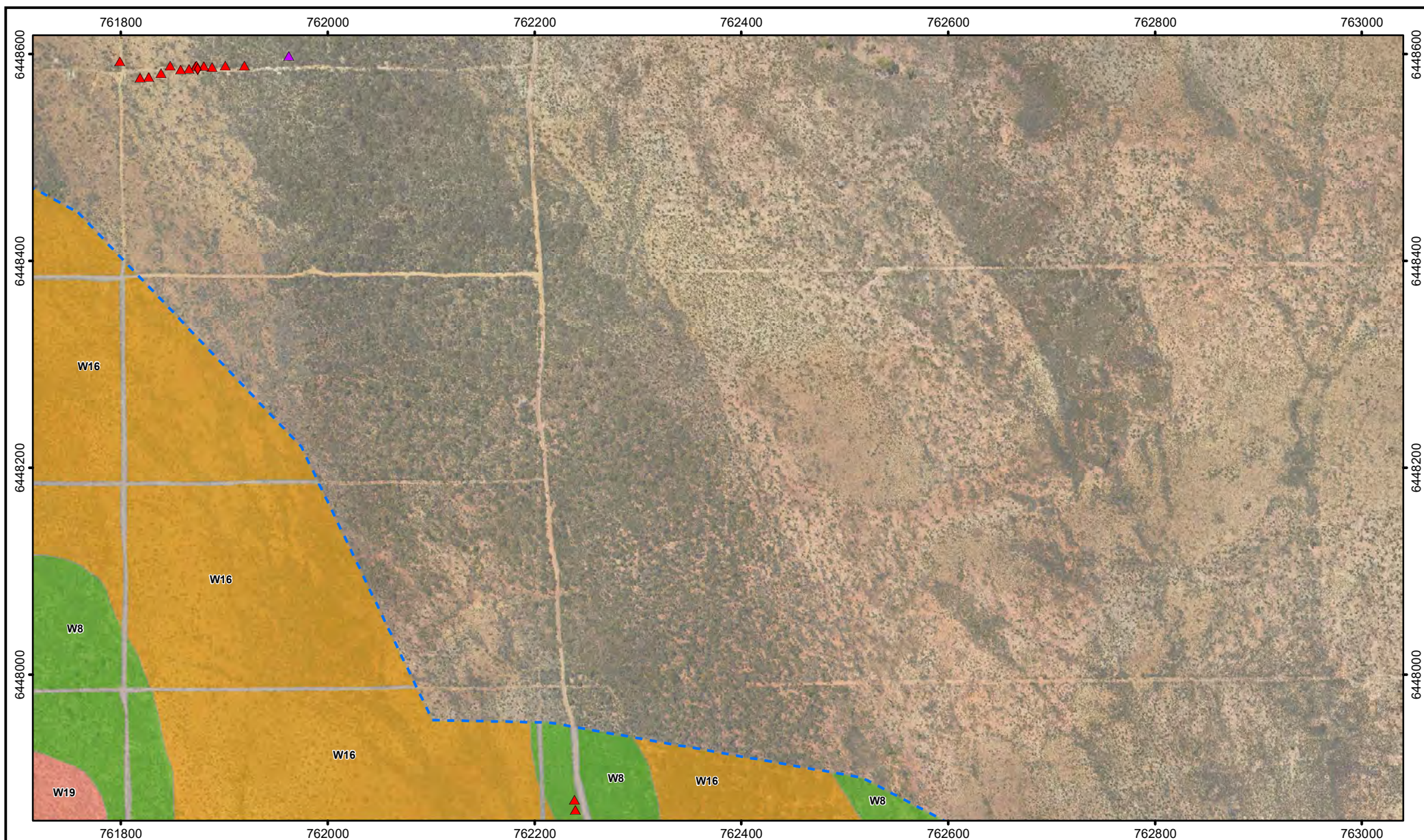
Covalent Lithium Pty Ltd

Vegetation

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Appendix

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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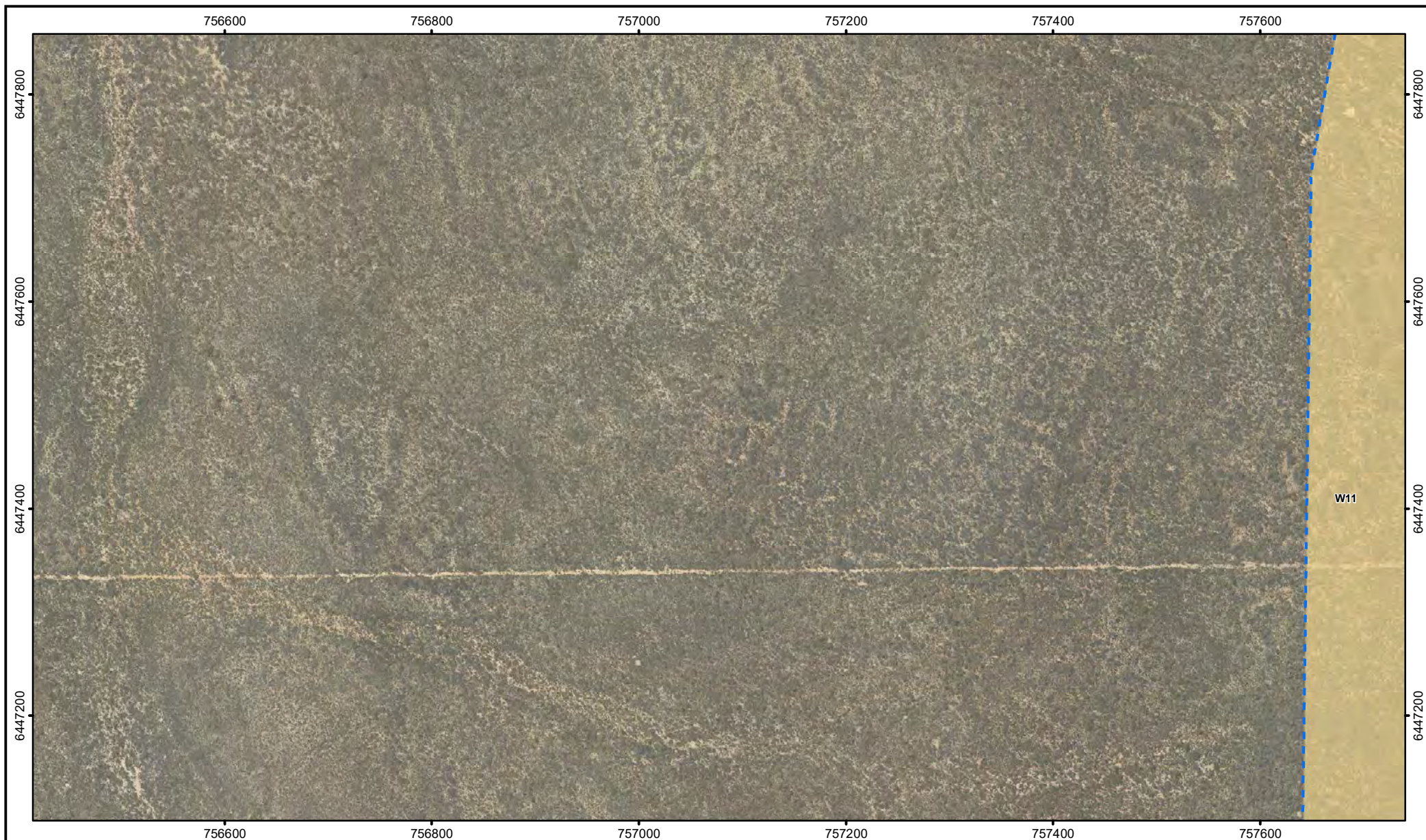
Covalent Lithium Pty Ltd

Vegetation

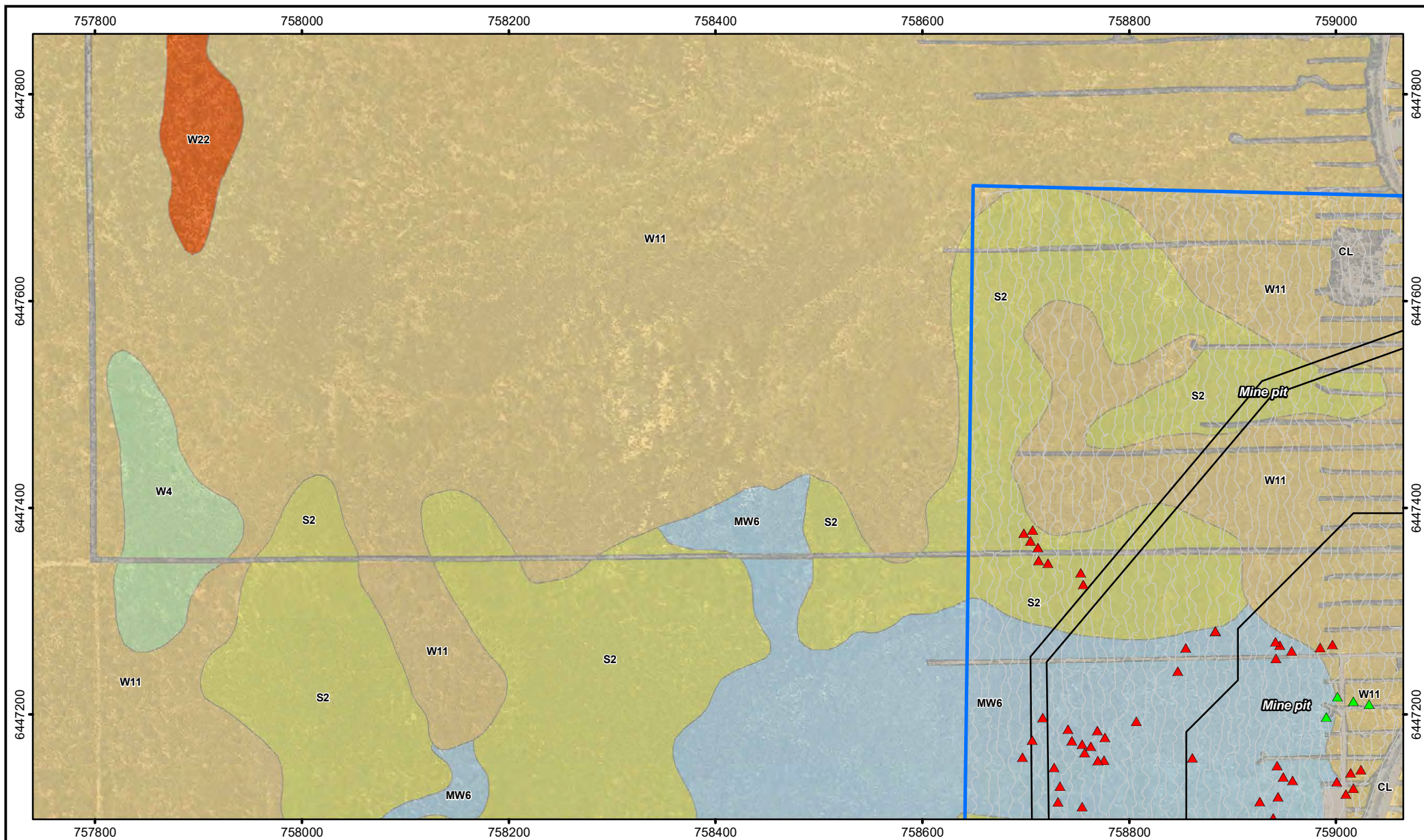
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Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: 		 Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 9 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

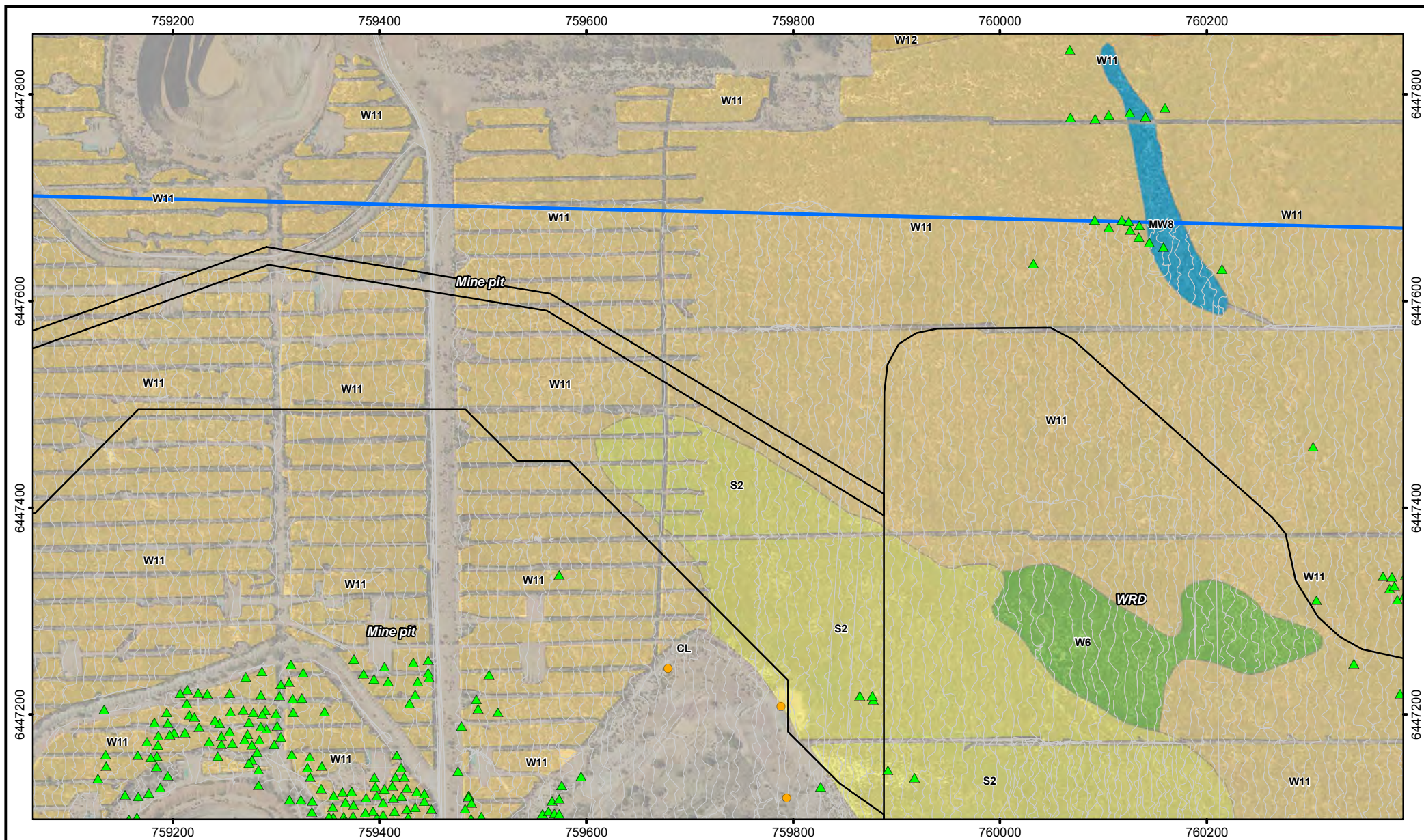
Covalent Lithium Pty Ltd

Vegetation

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Appendix

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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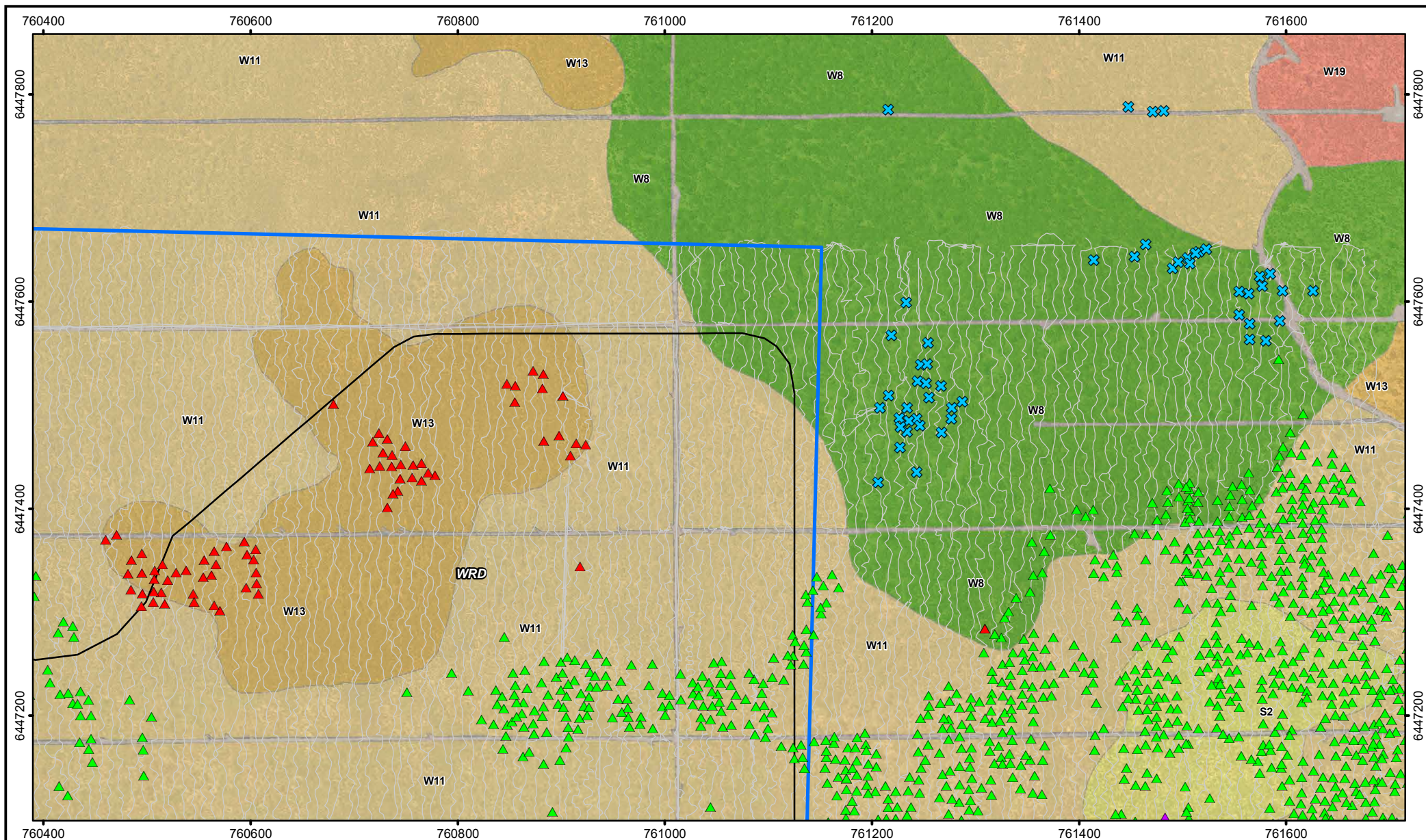
Covalent Lithium Pty Ltd

Vegetation

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Appendix

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

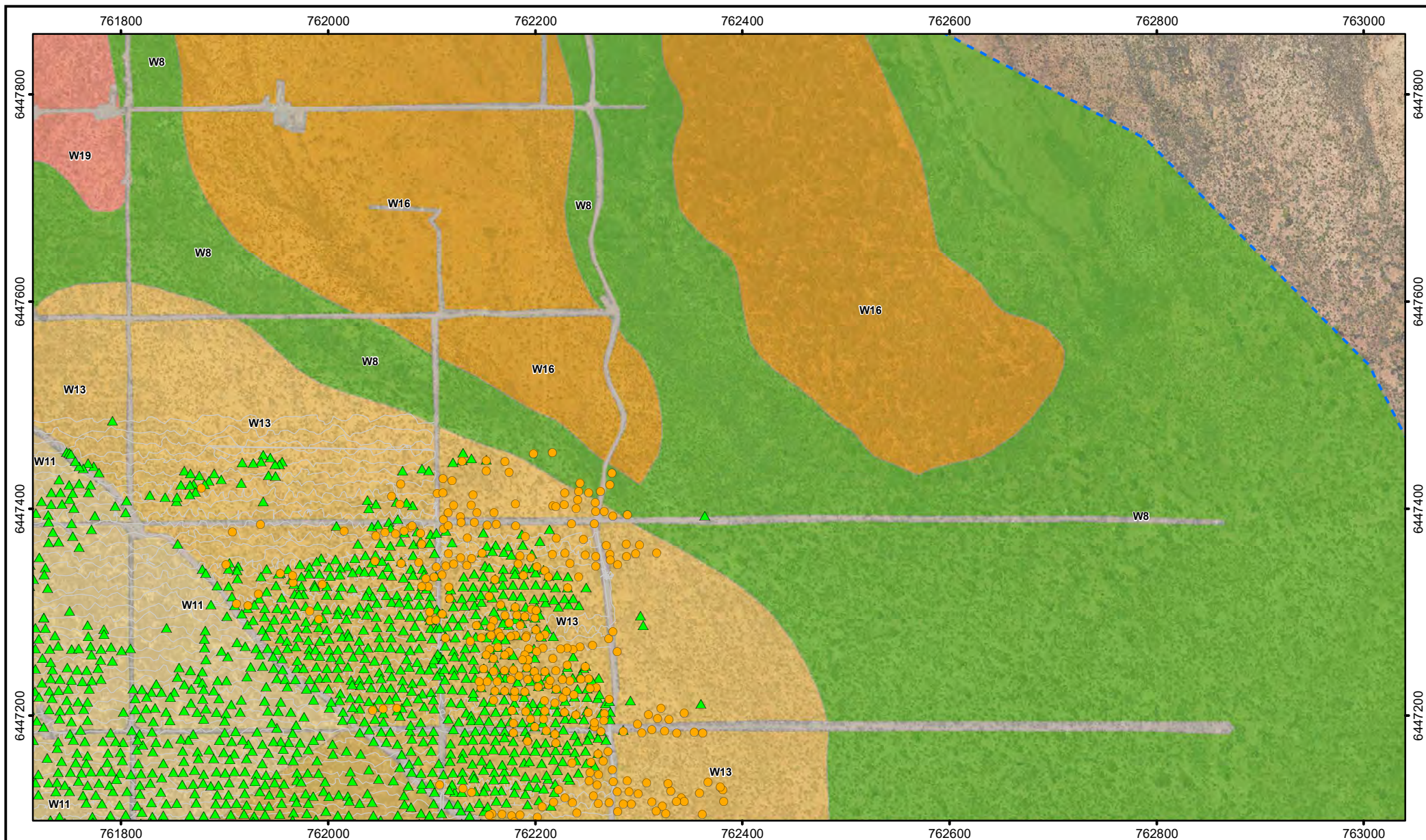
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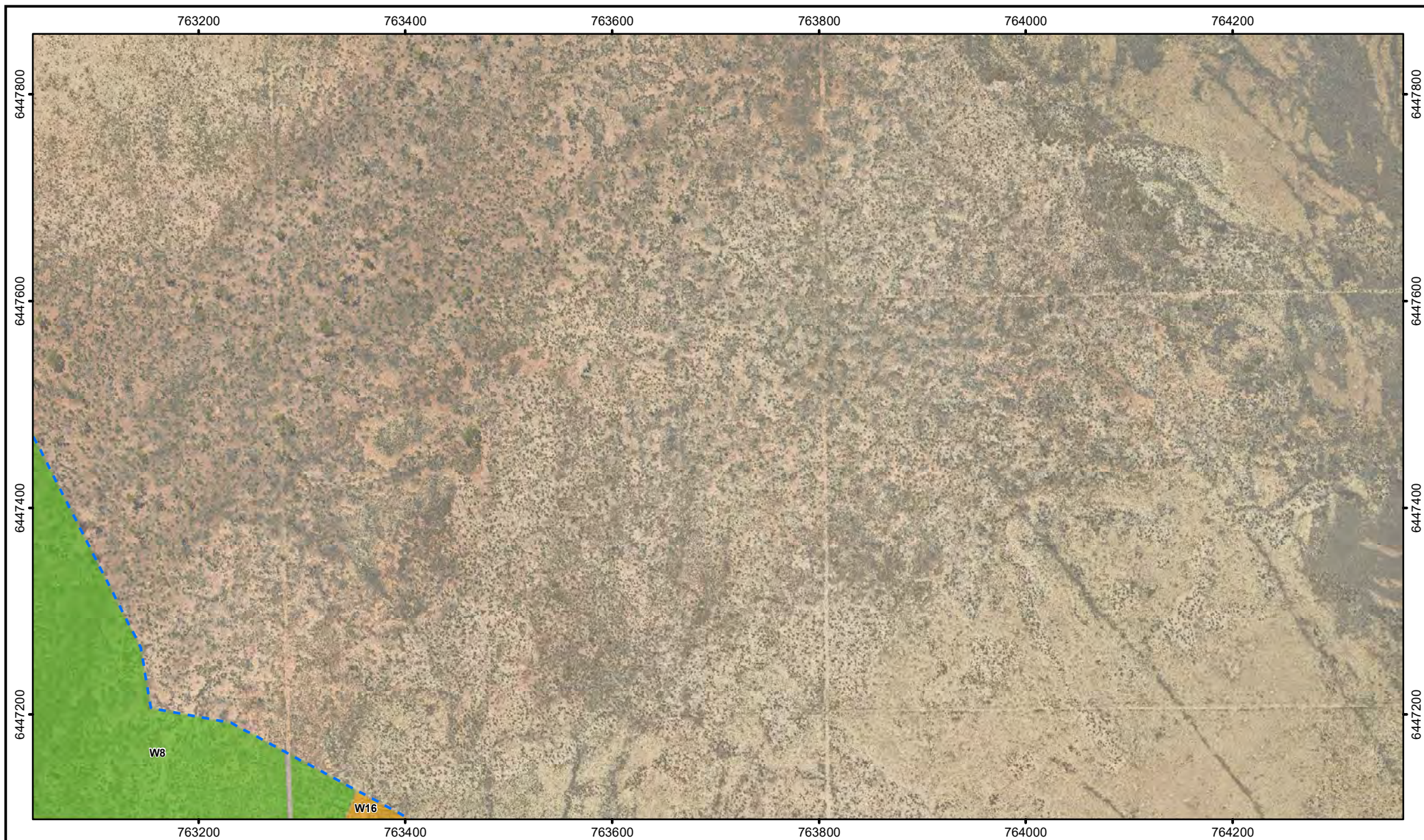
Vegetation

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:




0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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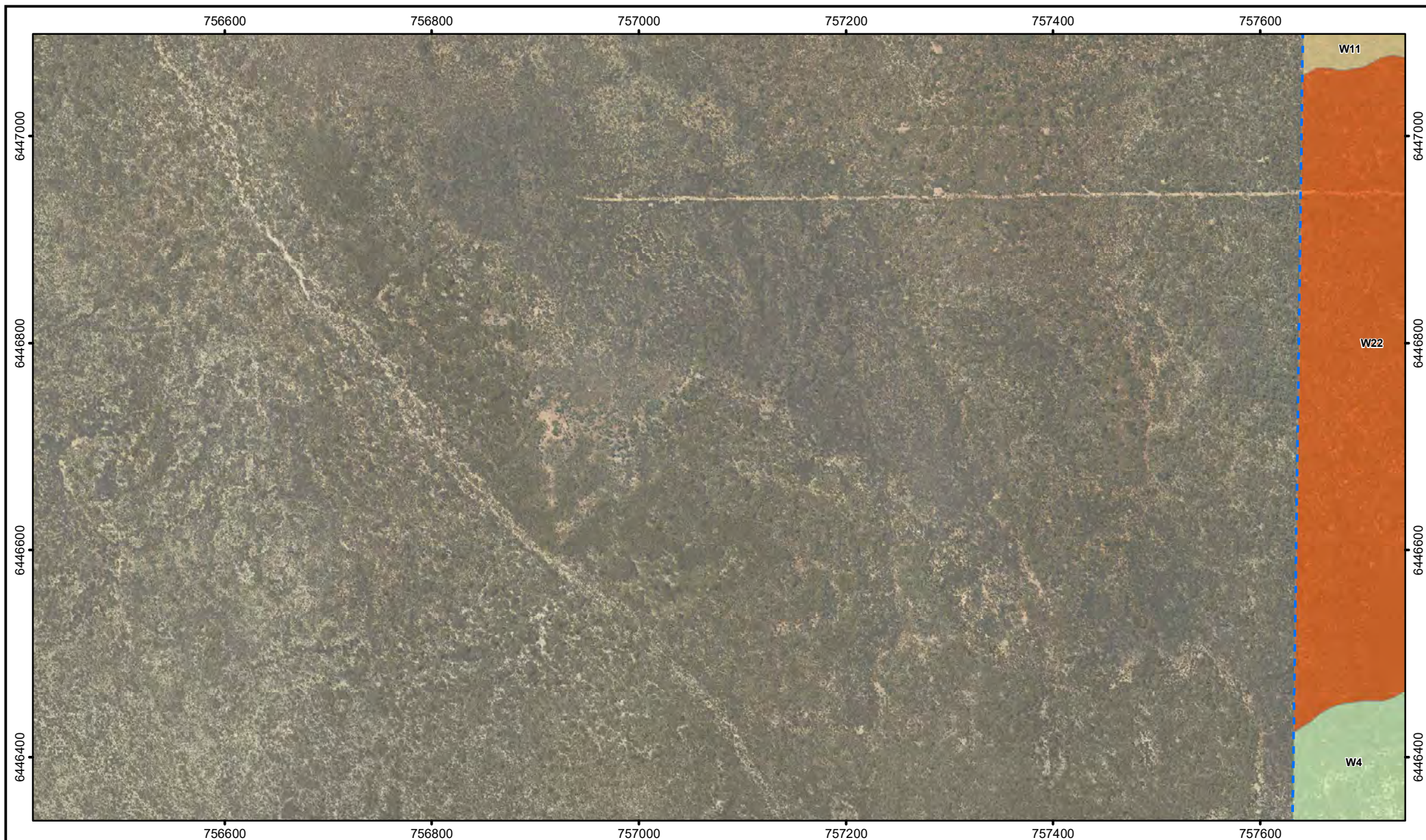
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Vegetation

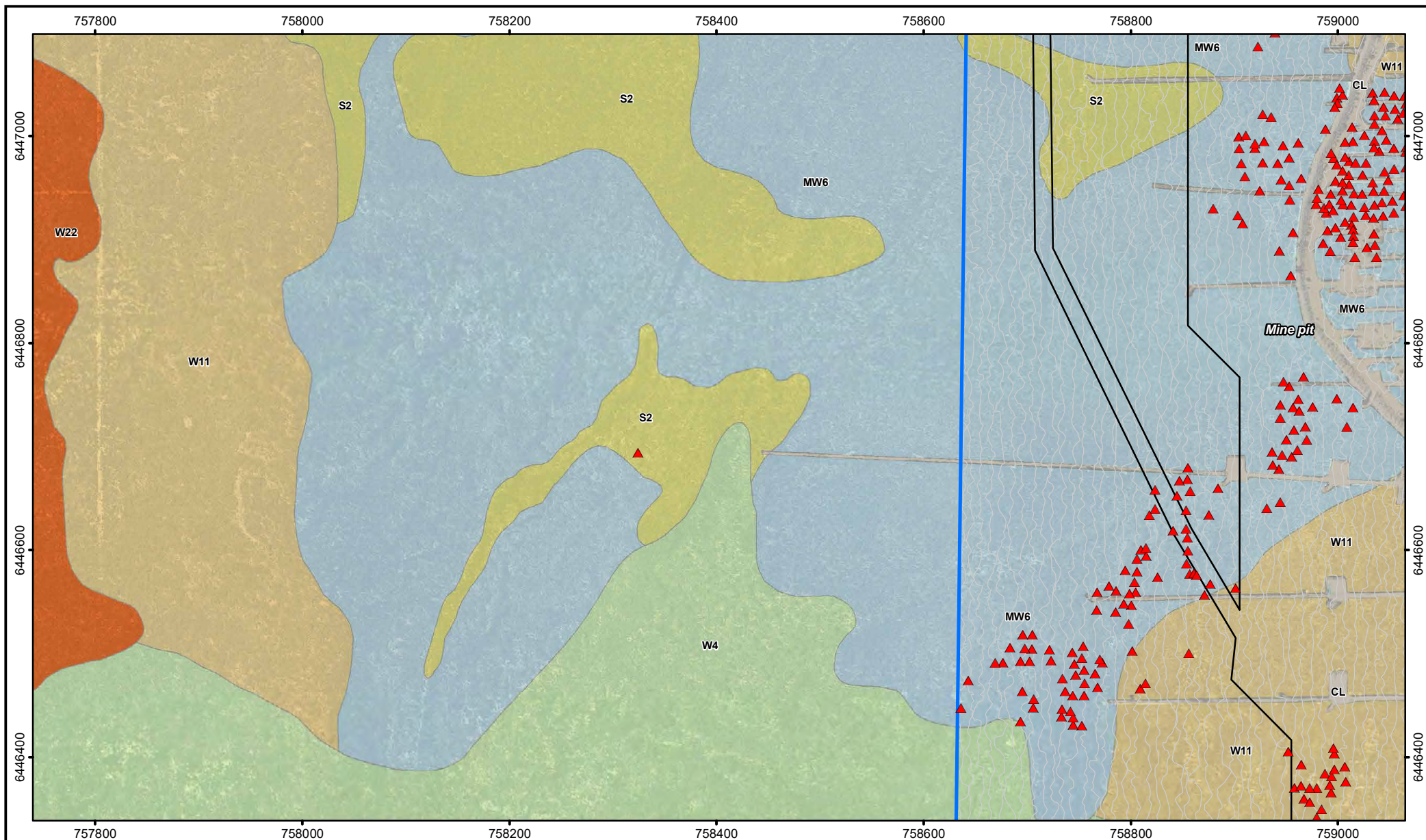
Sheet 14 of 70

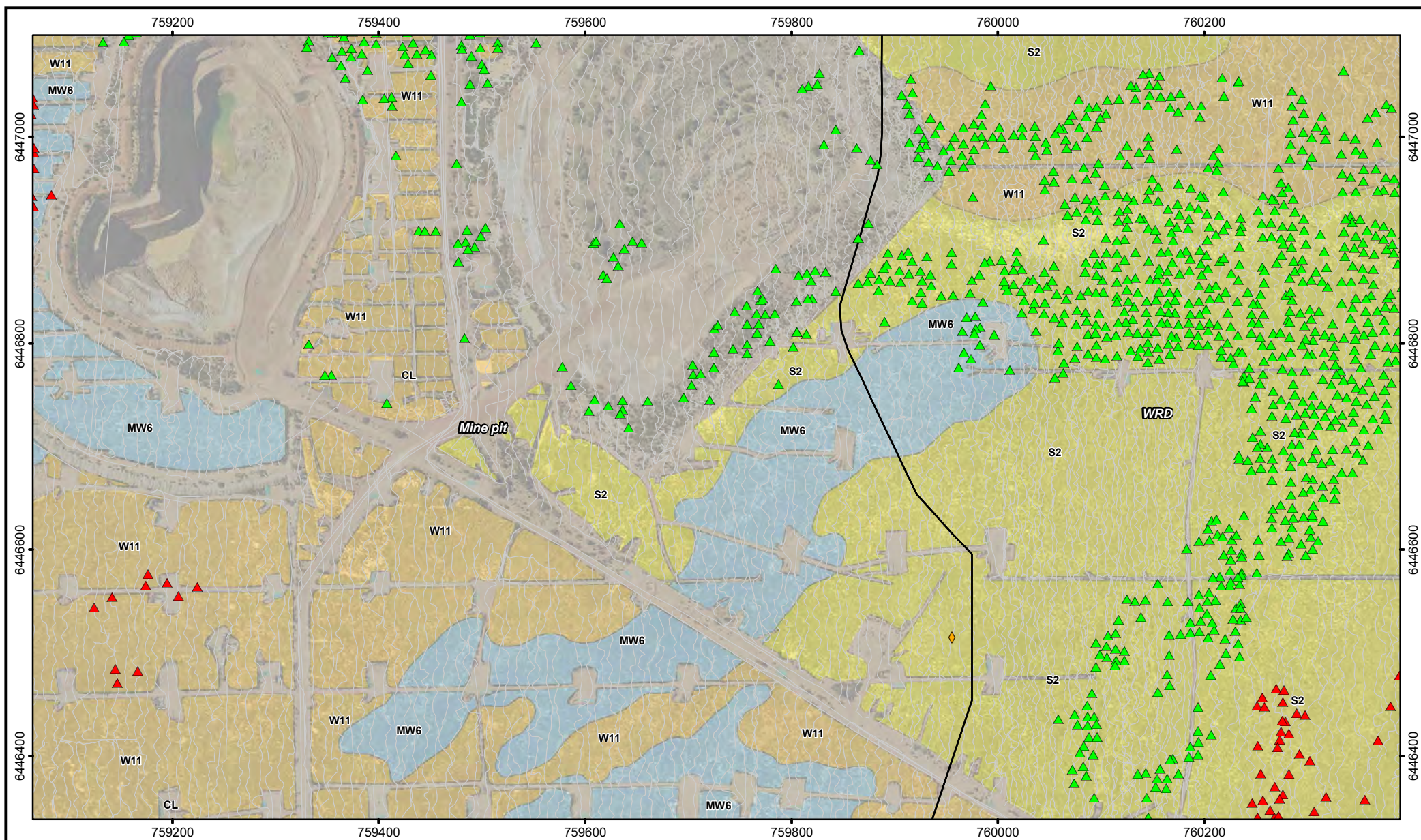
Appendix

D



Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 Mattiske Consulting Pty Ltd 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 15 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

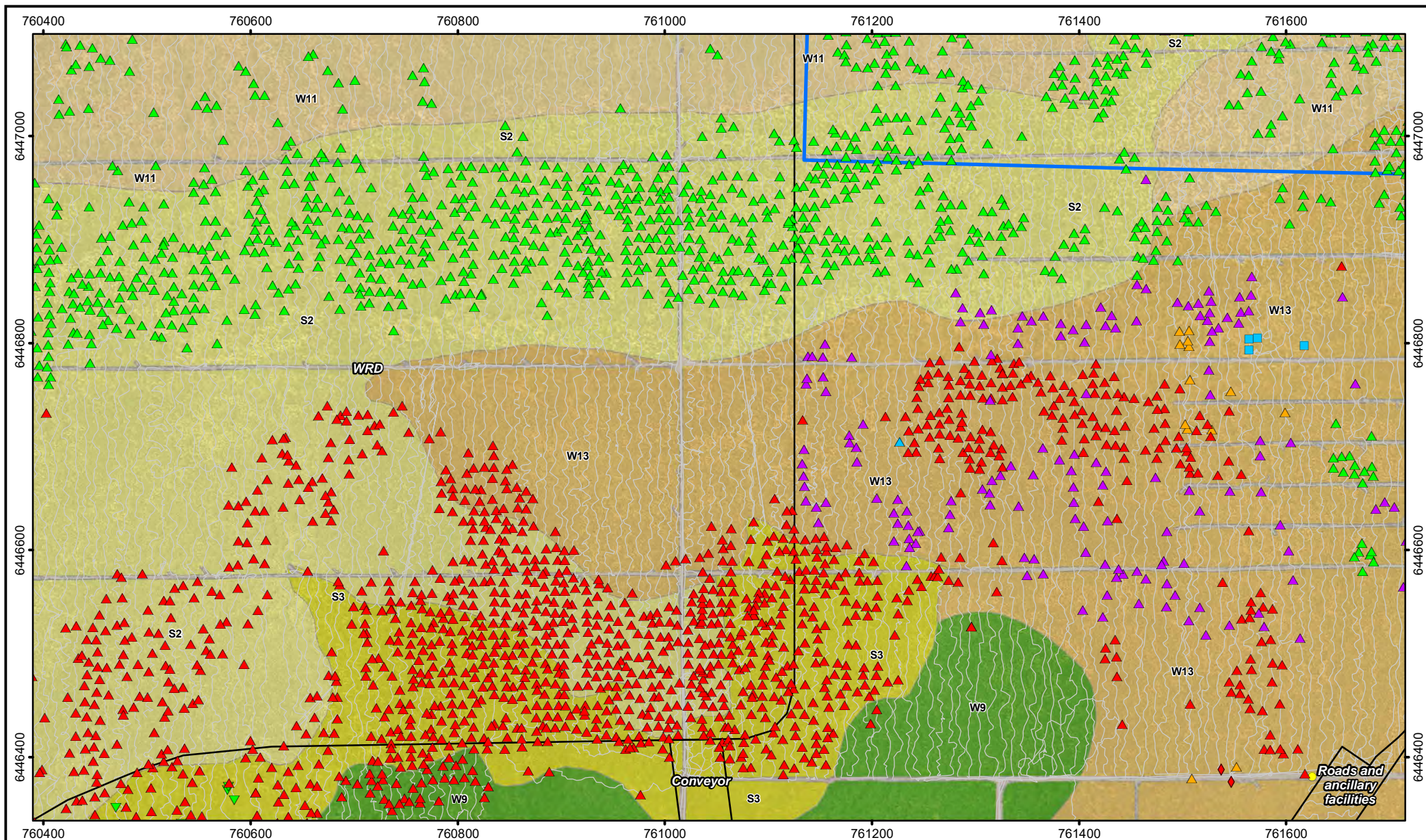
Covalent Lithium Pty Ltd

Vegetation

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Legend

- Vegetation Survey Boundary
- Development Envelope
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- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

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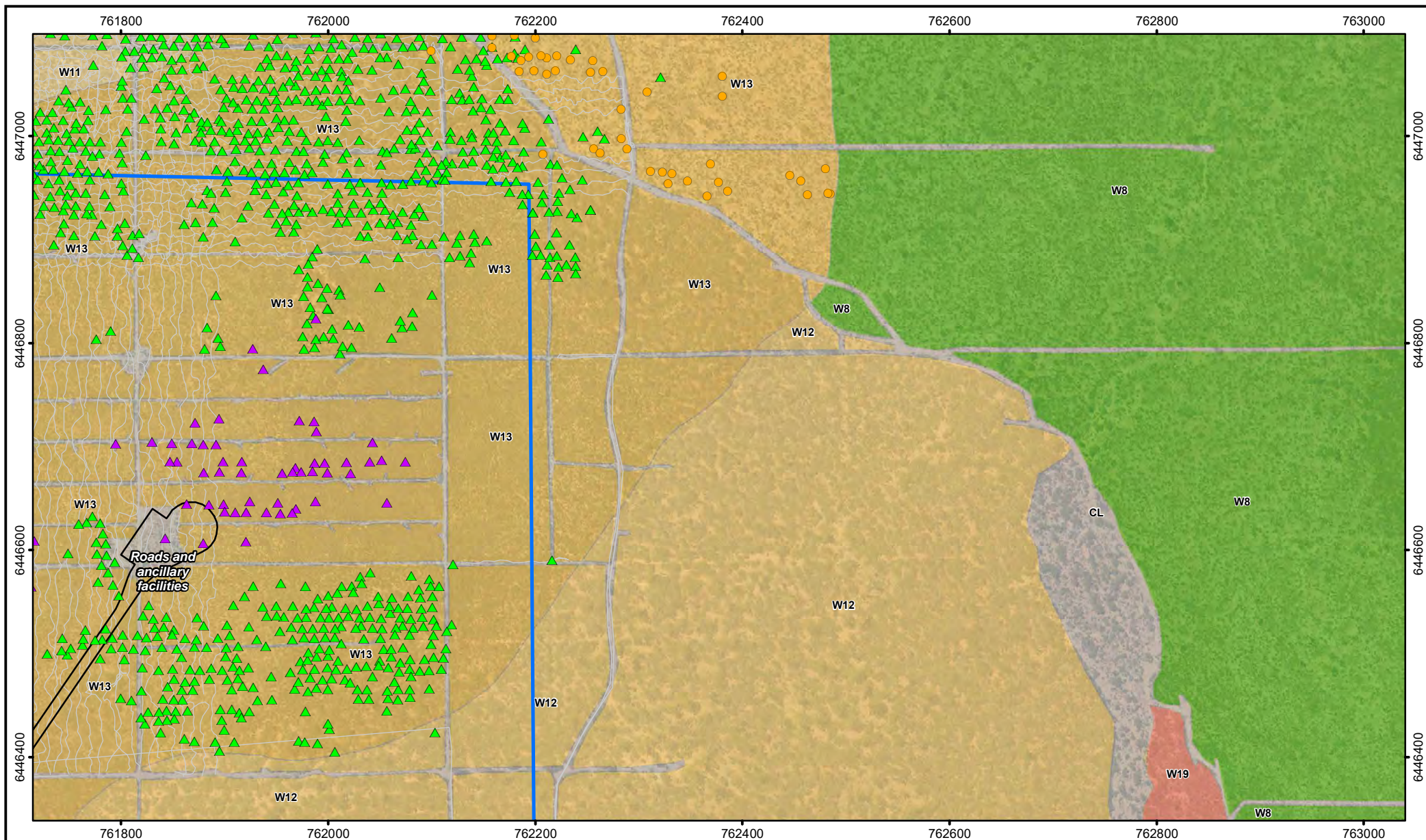
Covalent Lithium Pty Ltd

Vegetation

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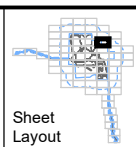
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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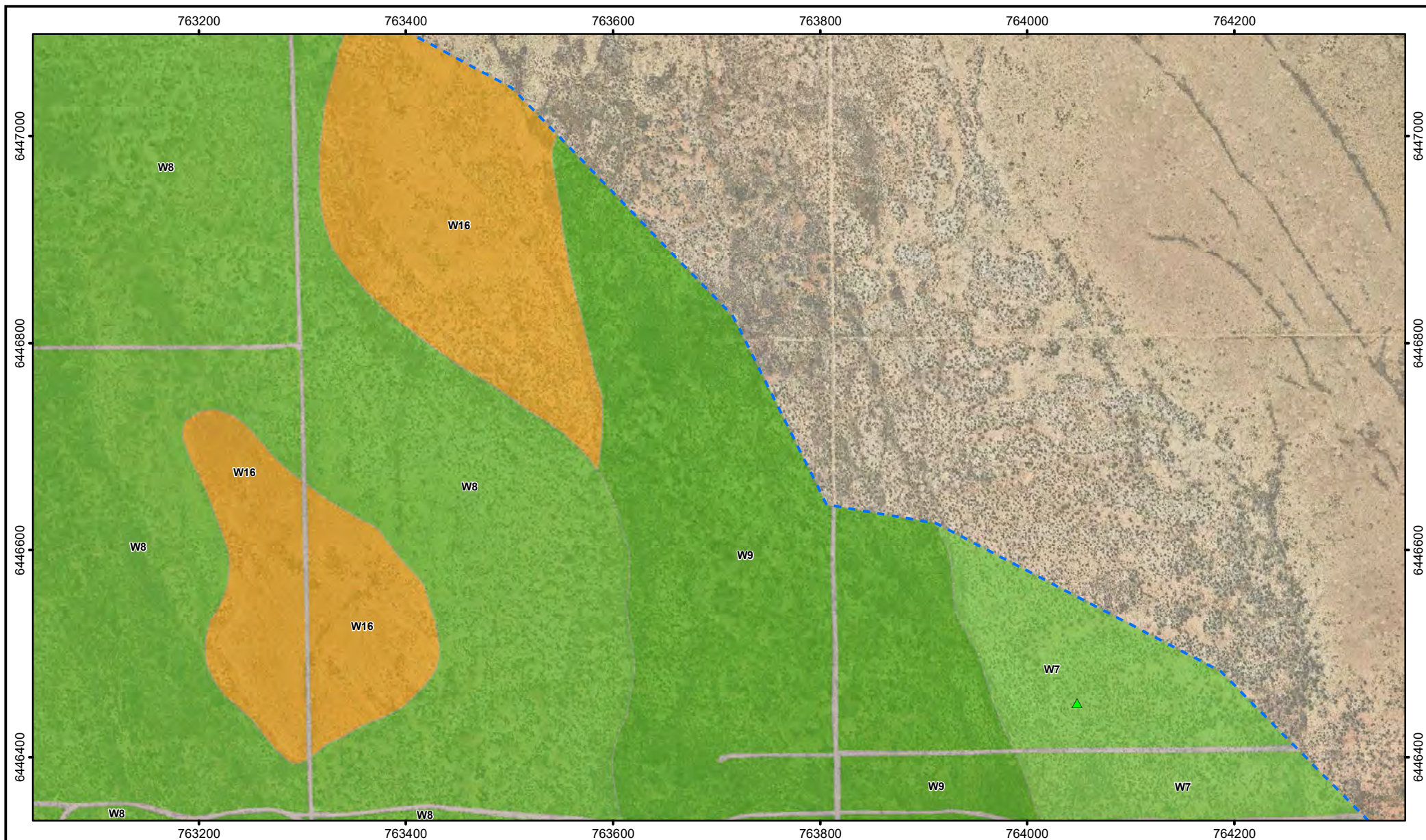
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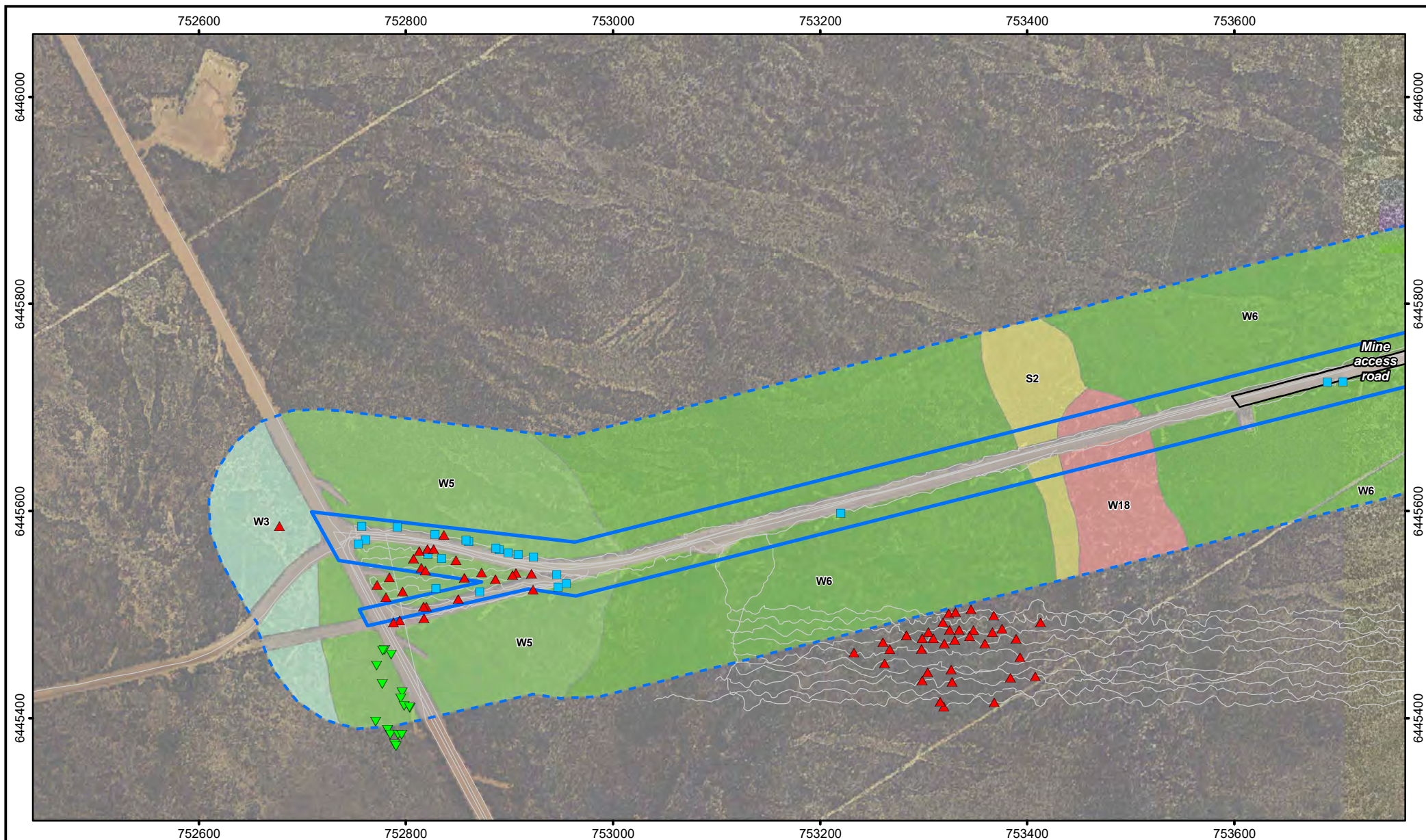
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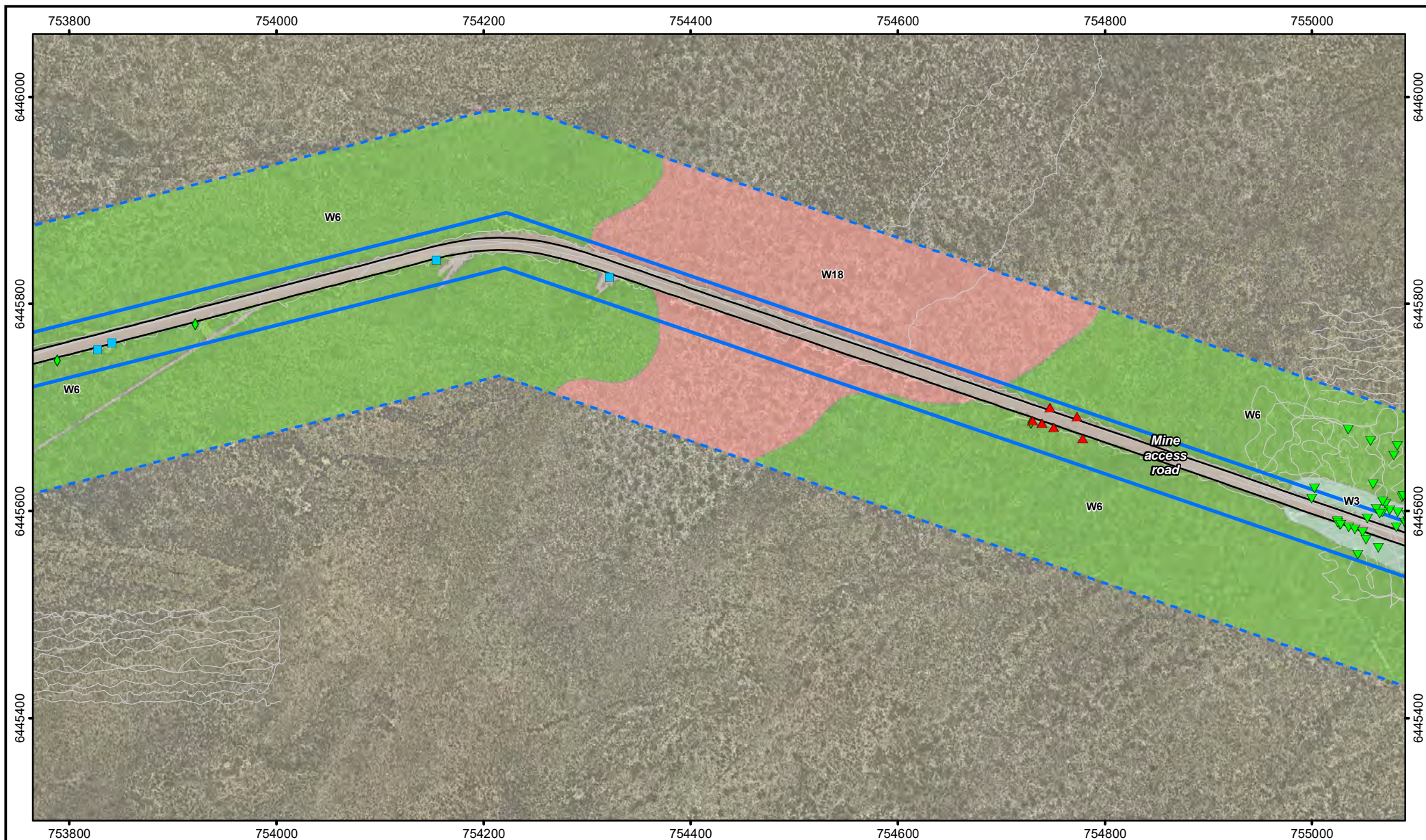
Sheet 19 of 70

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D

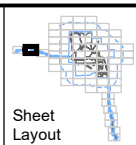






Legend

- Vegetation Survey Boundary
- Development Envelope
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Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

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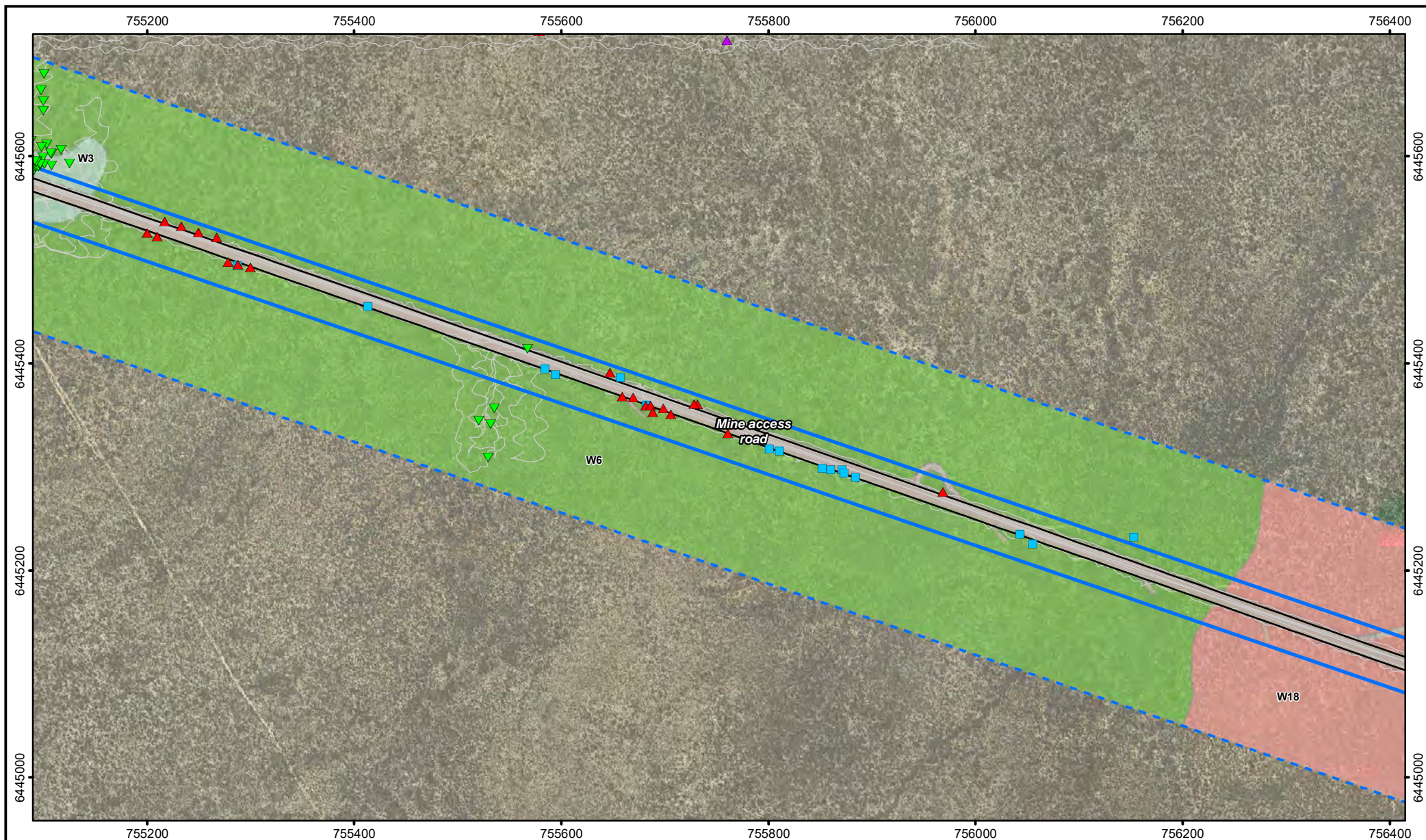
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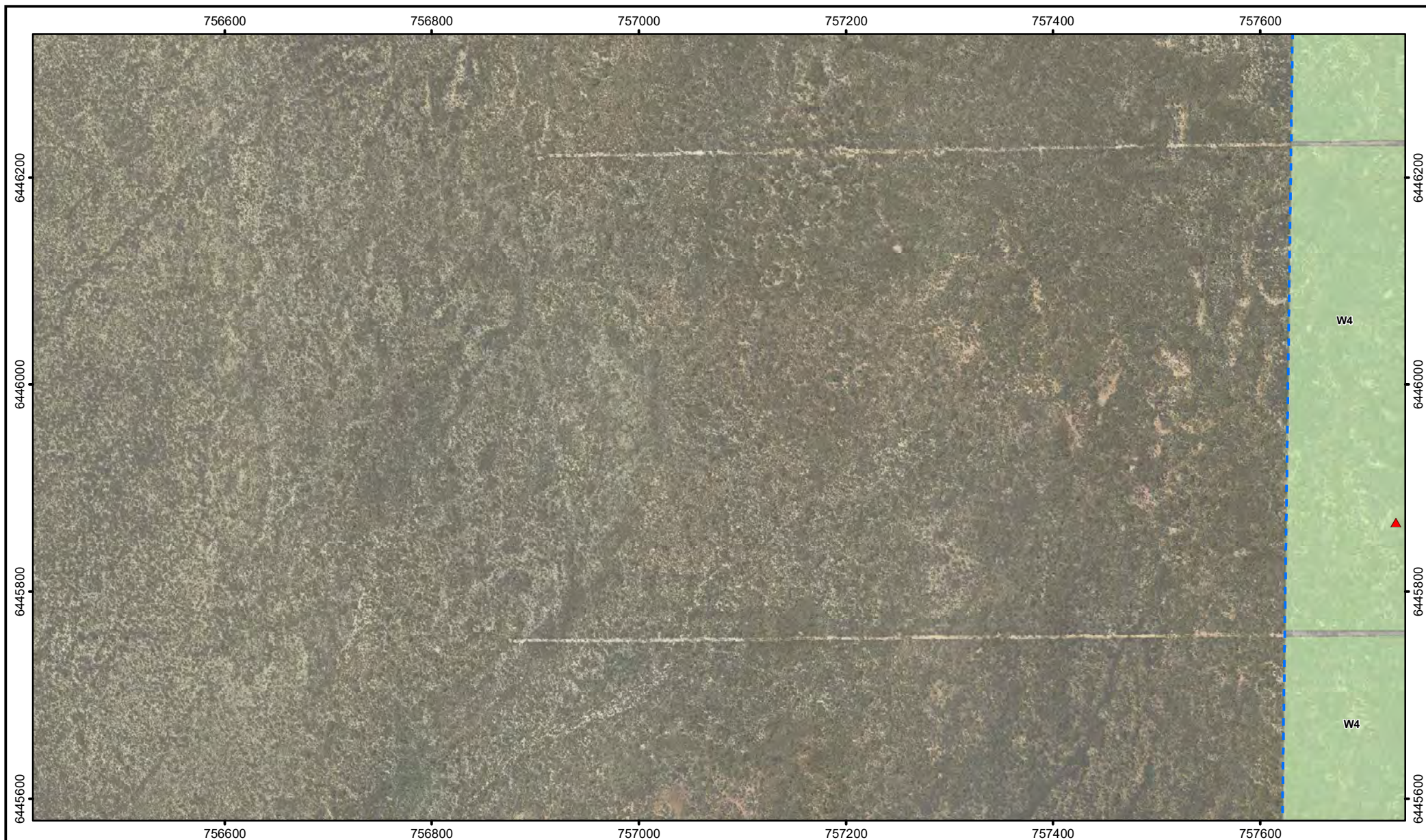
Vegetation

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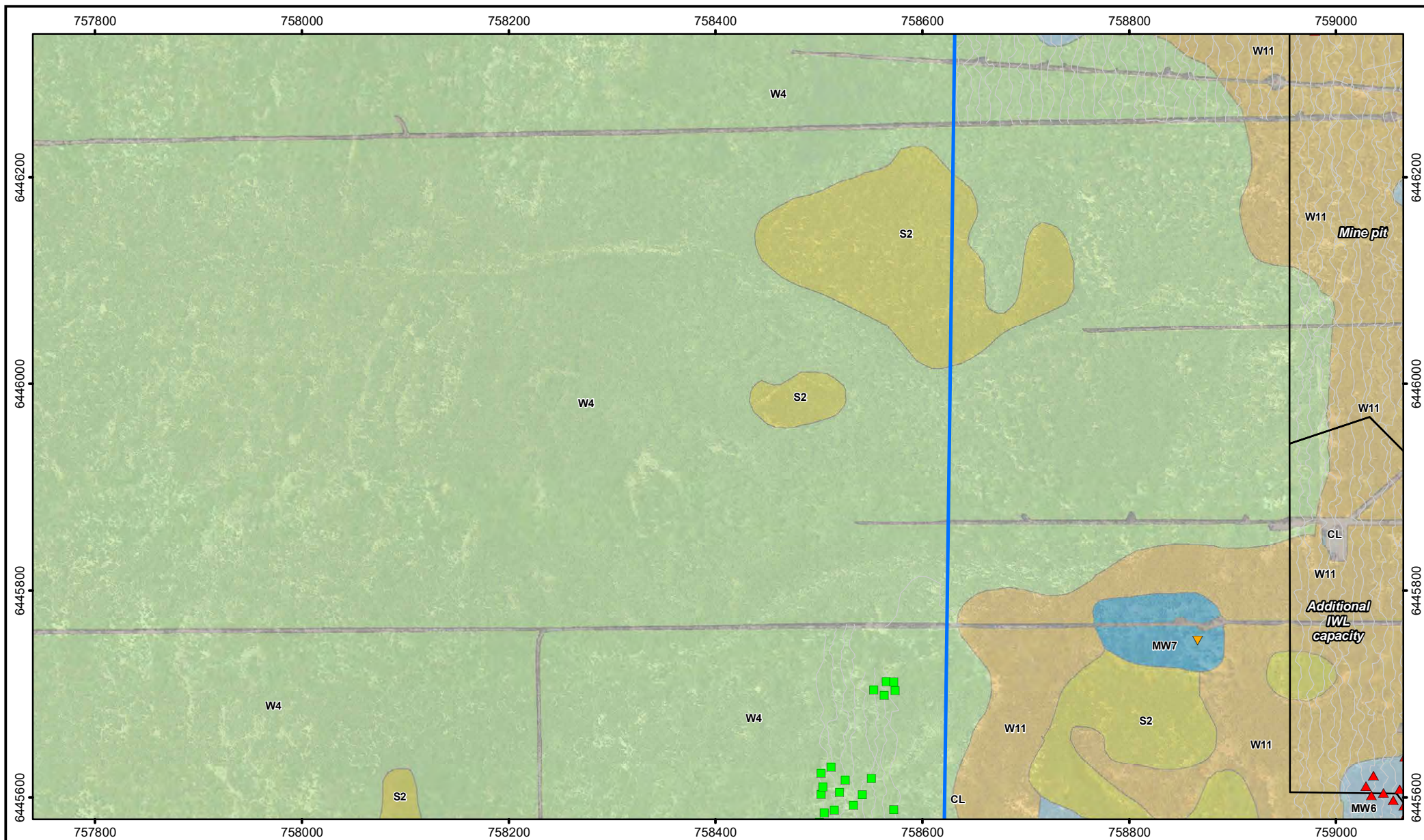
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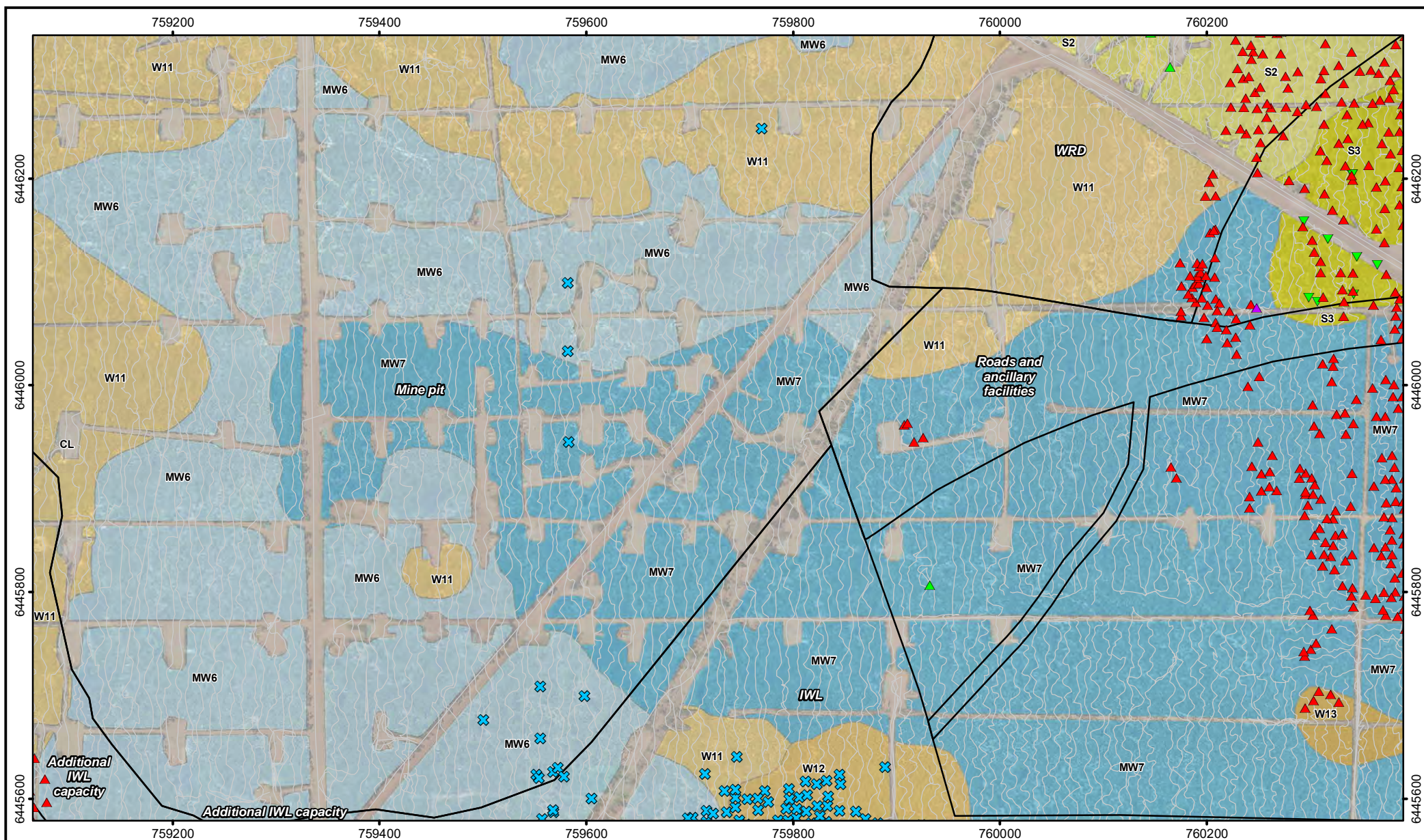
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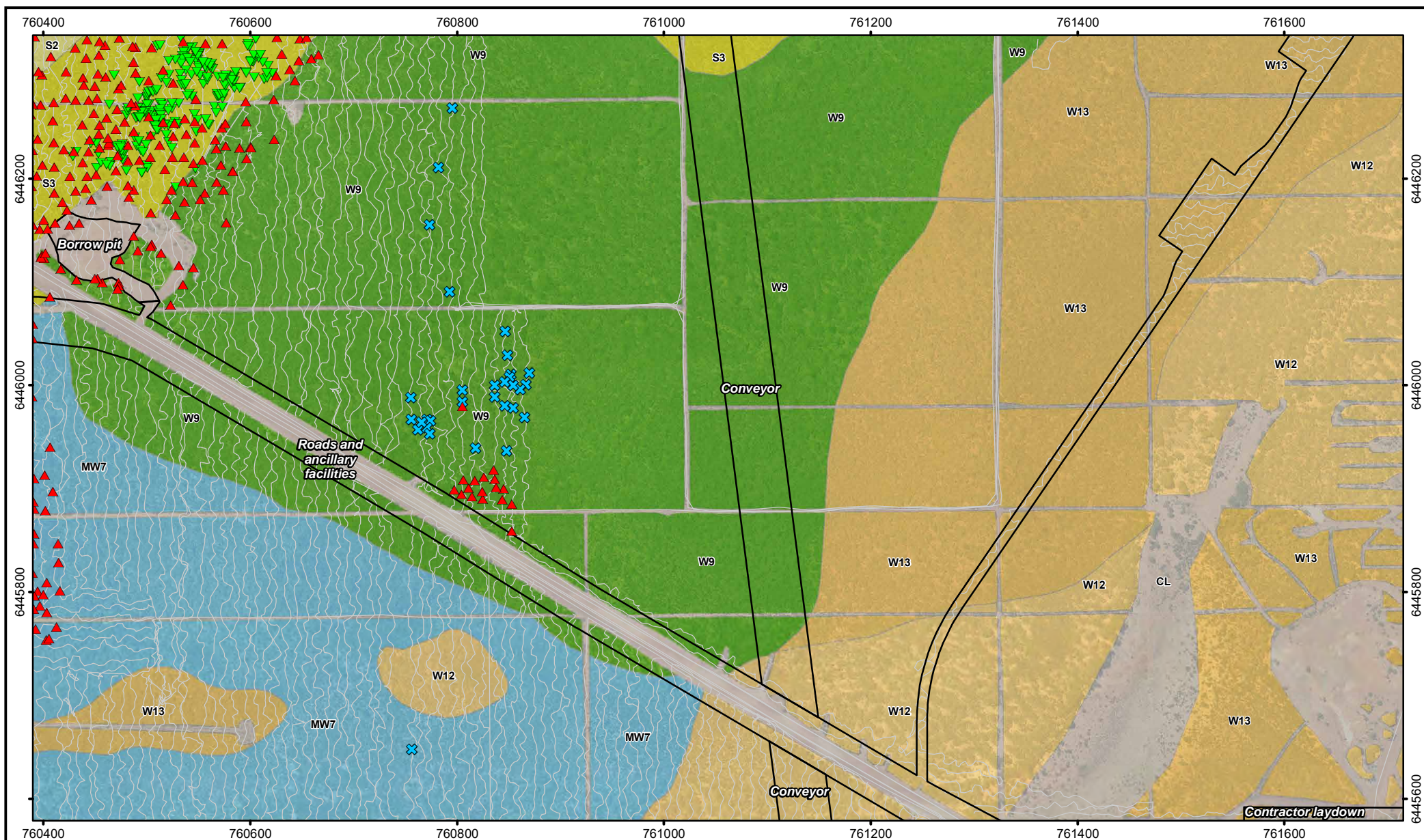




Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: 		0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 24 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses

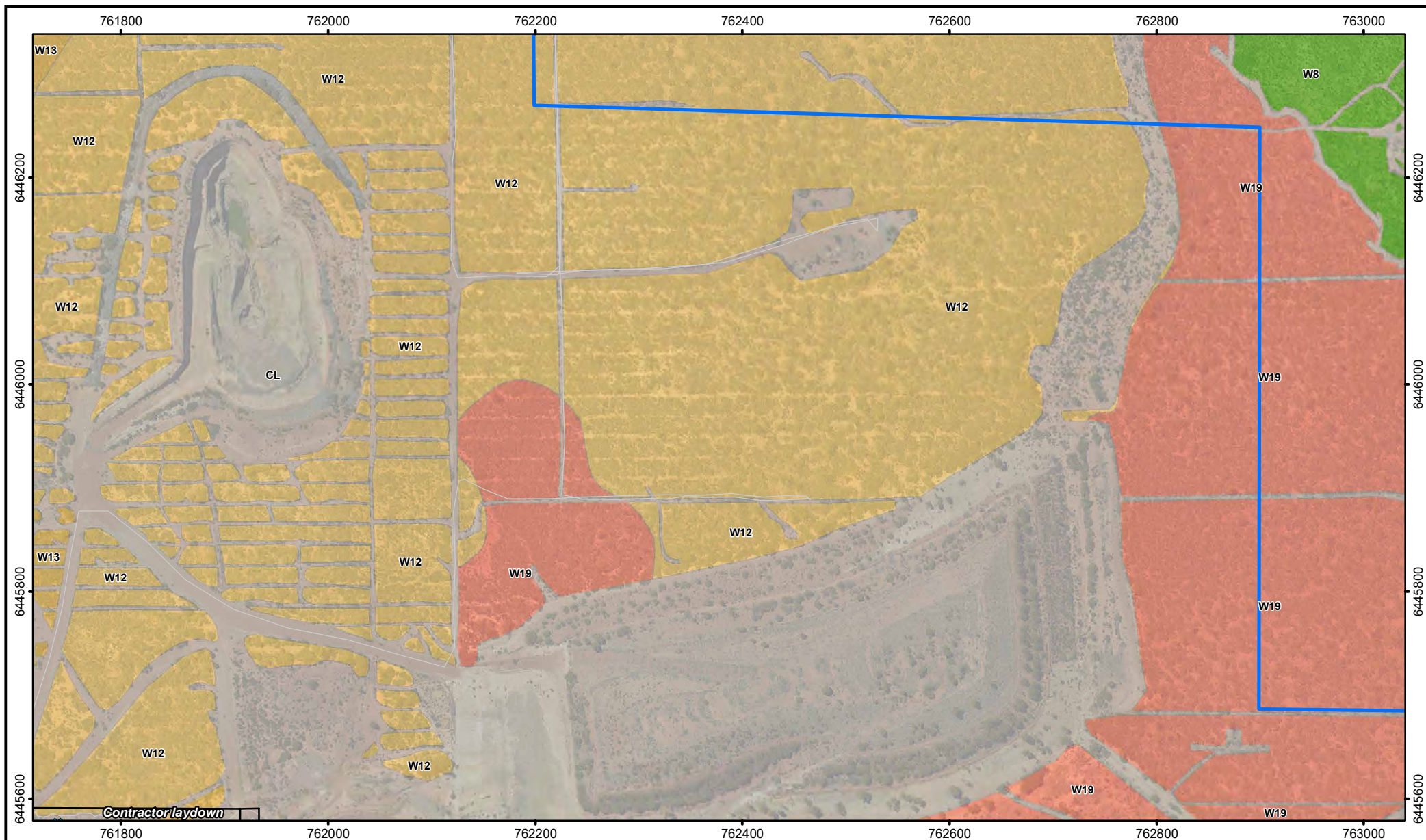


0 100m
Scale: 1:5,000
MGA94 (Zone 50)
CAD Ref: a2445_f22_08
Date: December 2019 Rev: A A4

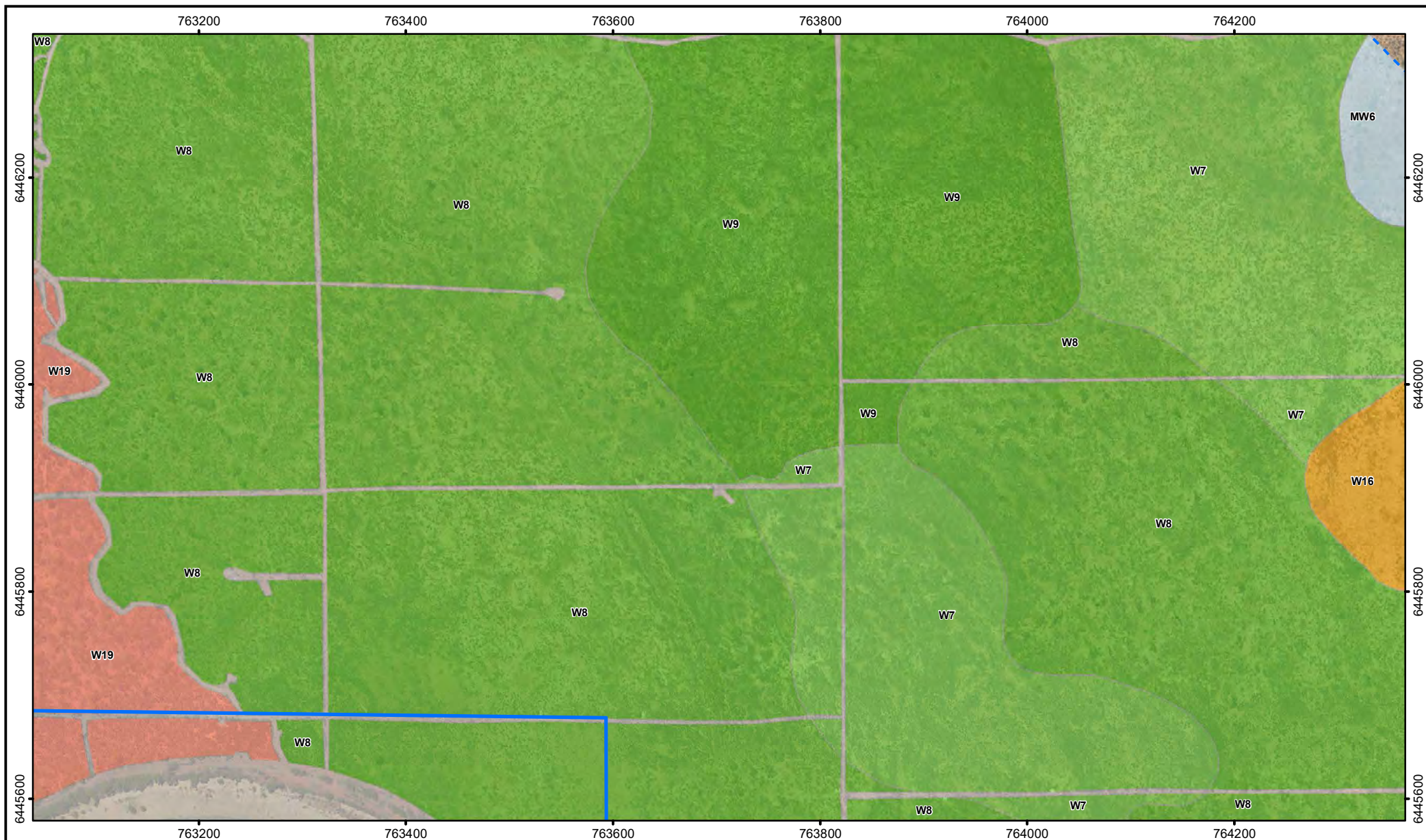
Mattiske Consulting Pty Ltd
28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640
Author: E M Mattiske MCPL Ref: CLL1901/021/19
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

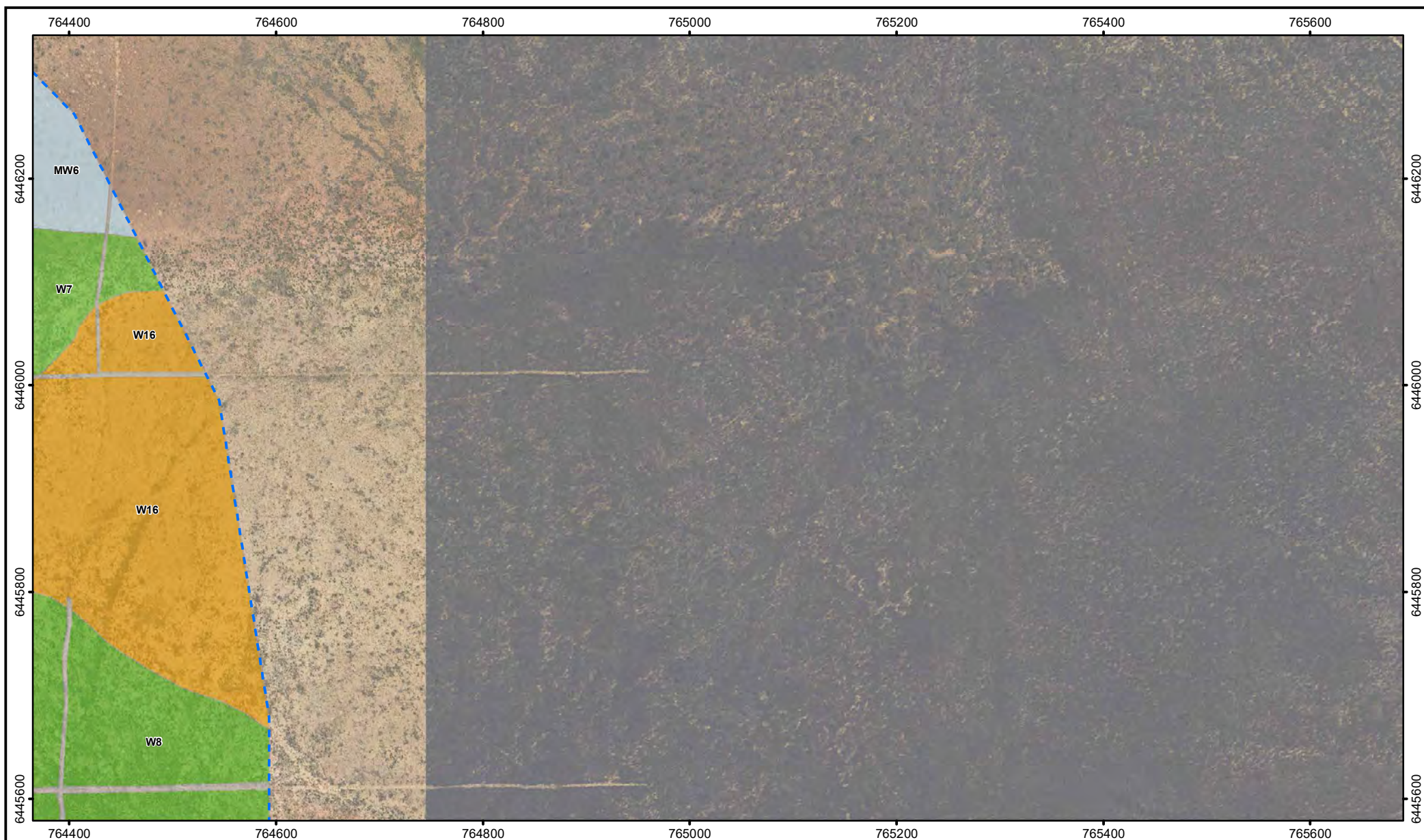
Covalent Lithium Pty Ltd
Vegetation
Sheet 27 of 70

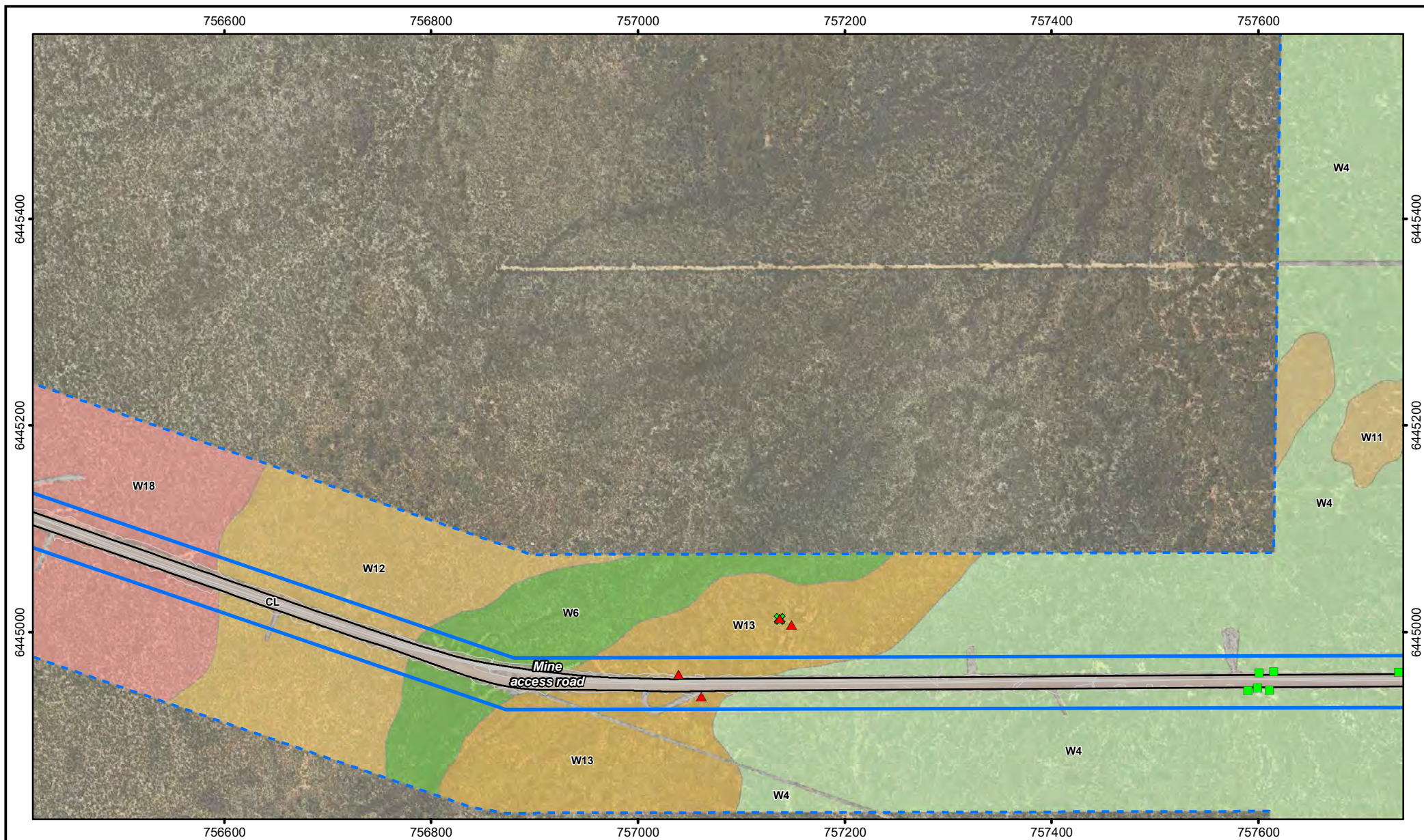
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D

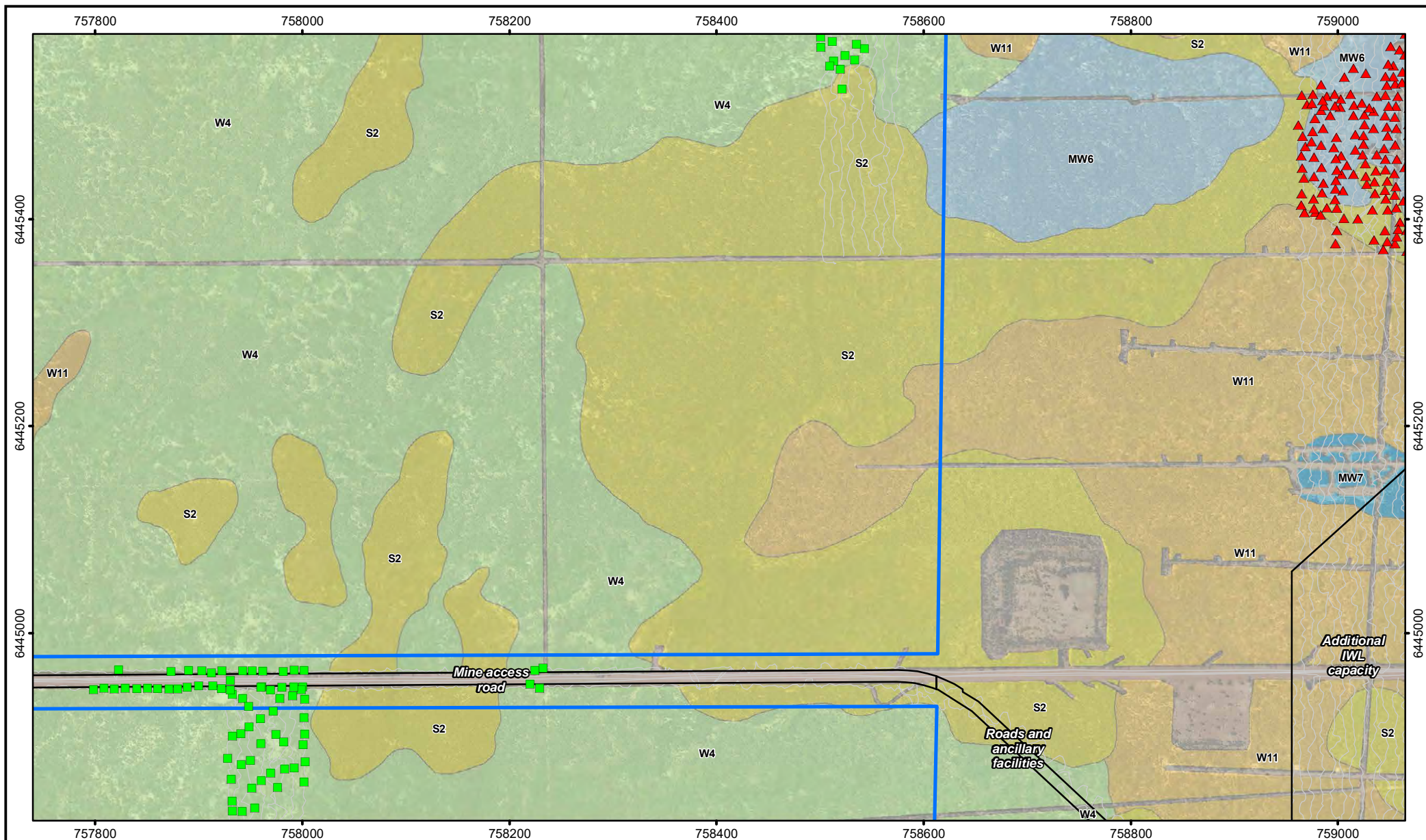


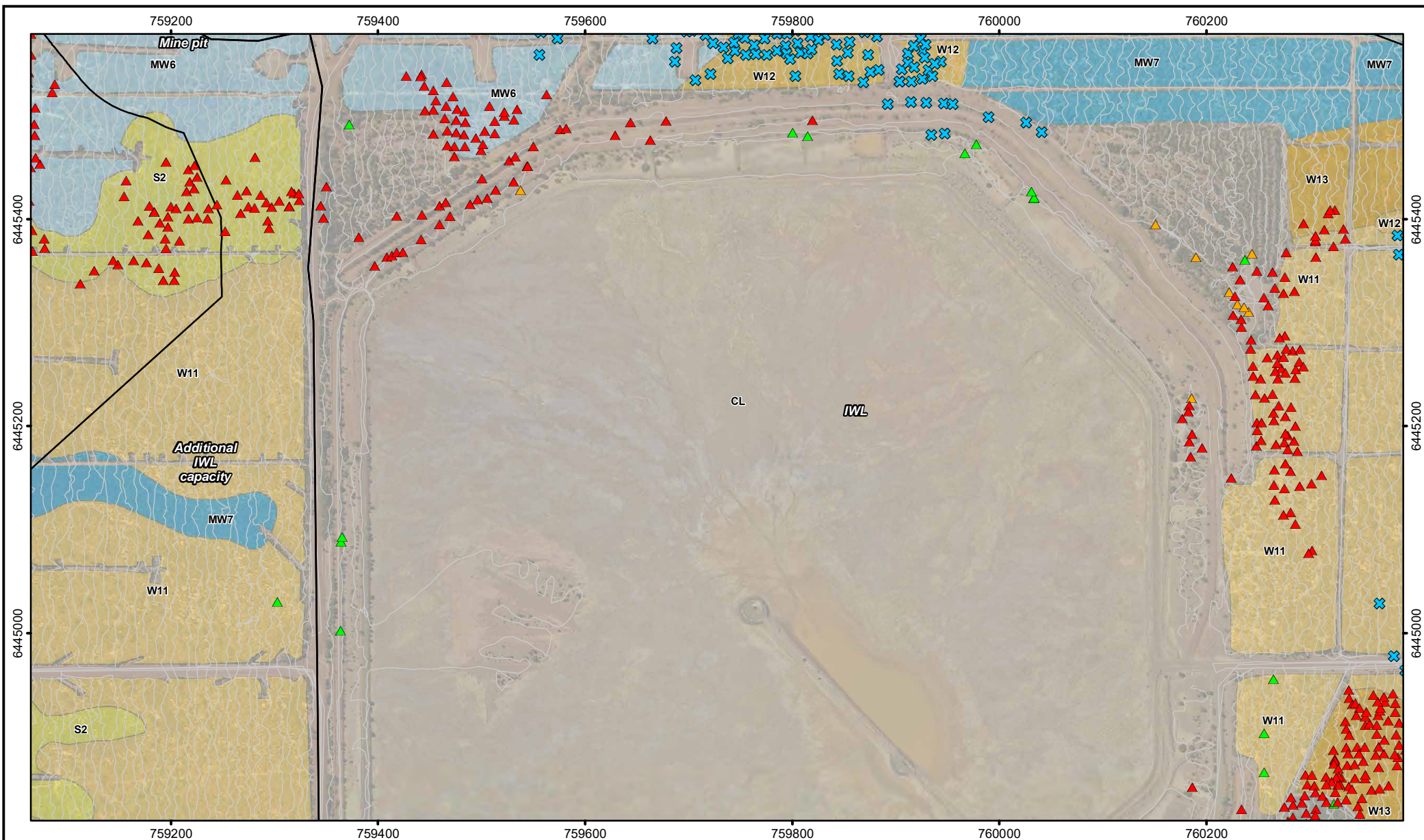
Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	 Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 Mattiske Consulting Pty Ltd 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 28 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

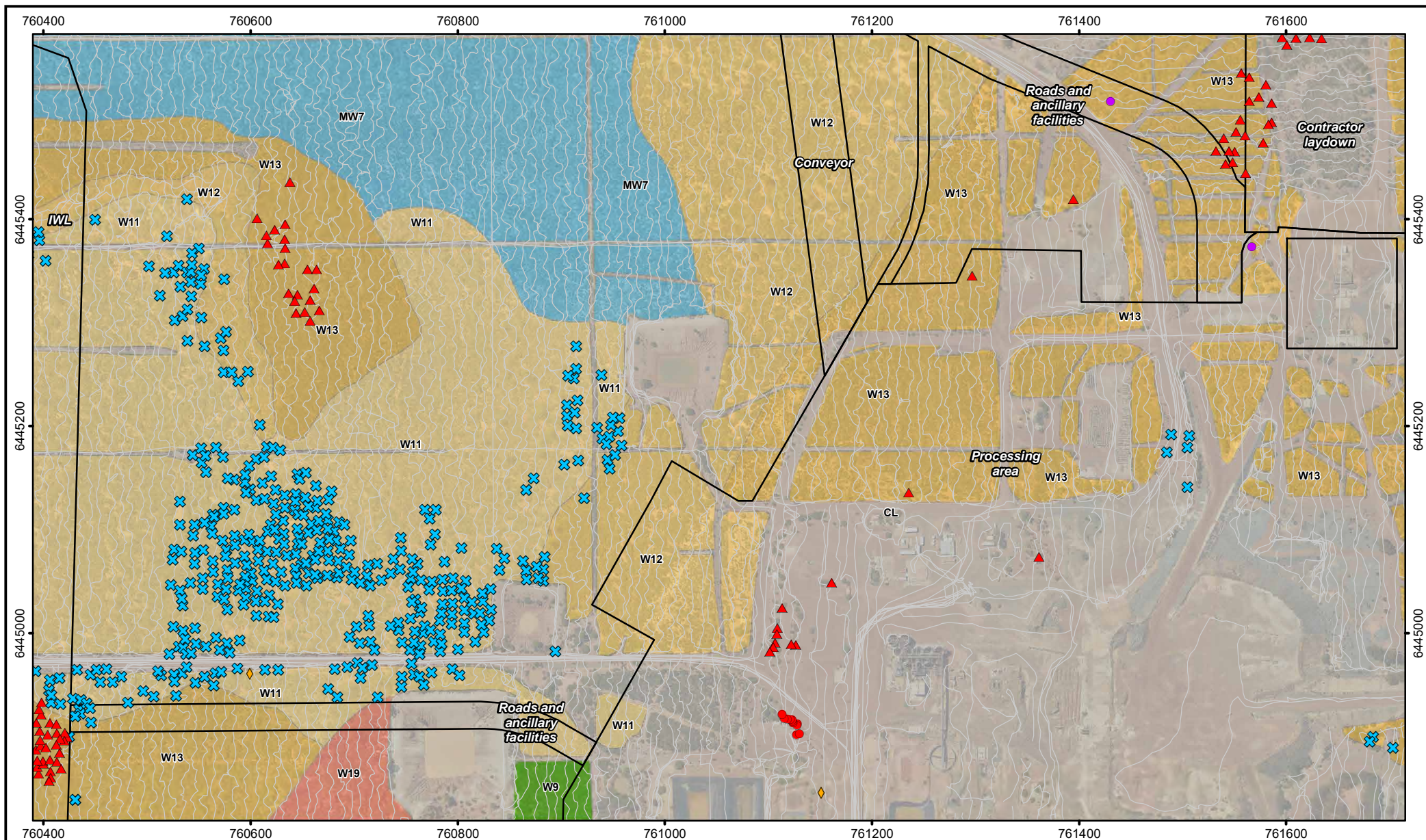
Covalent Lithium Pty Ltd

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

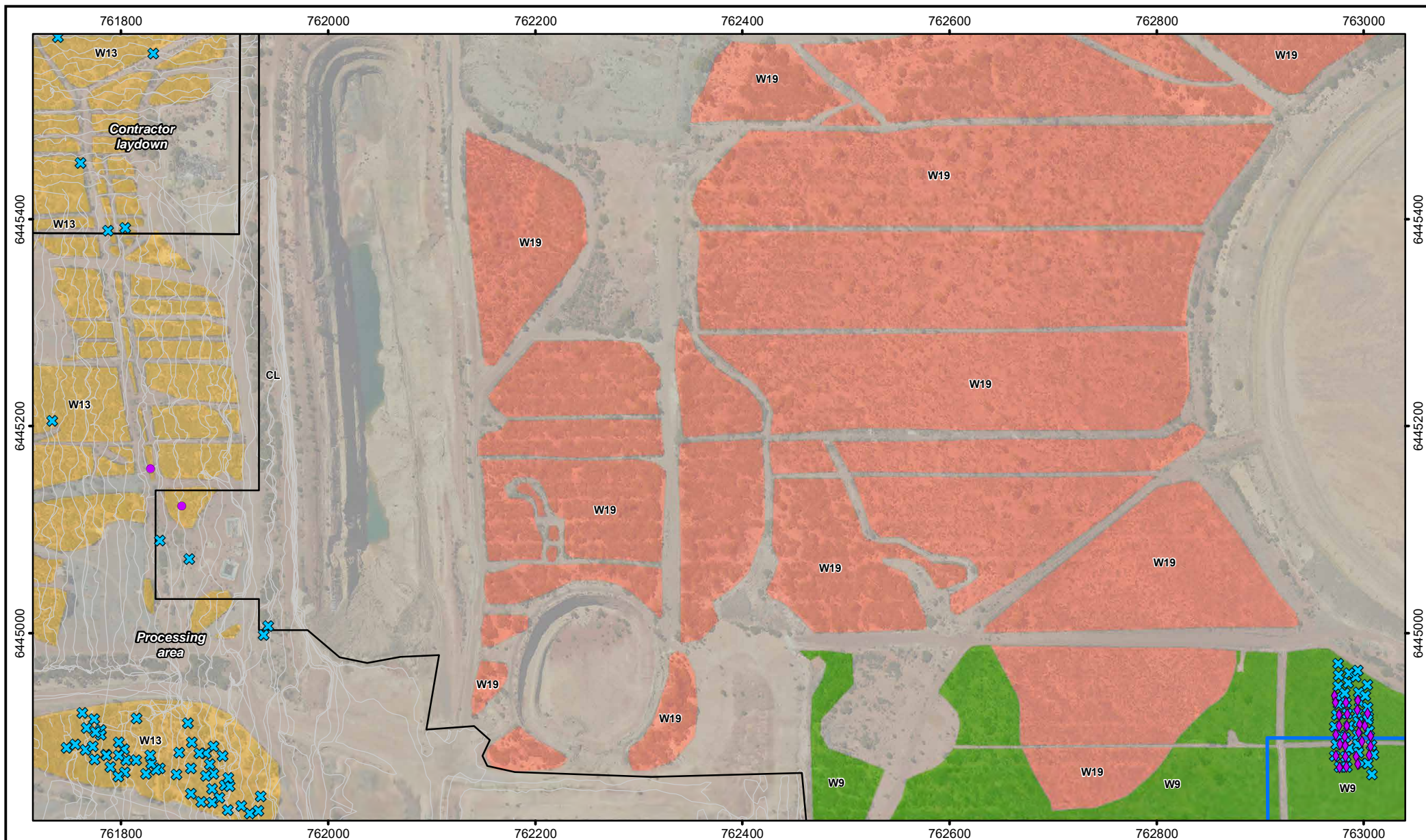
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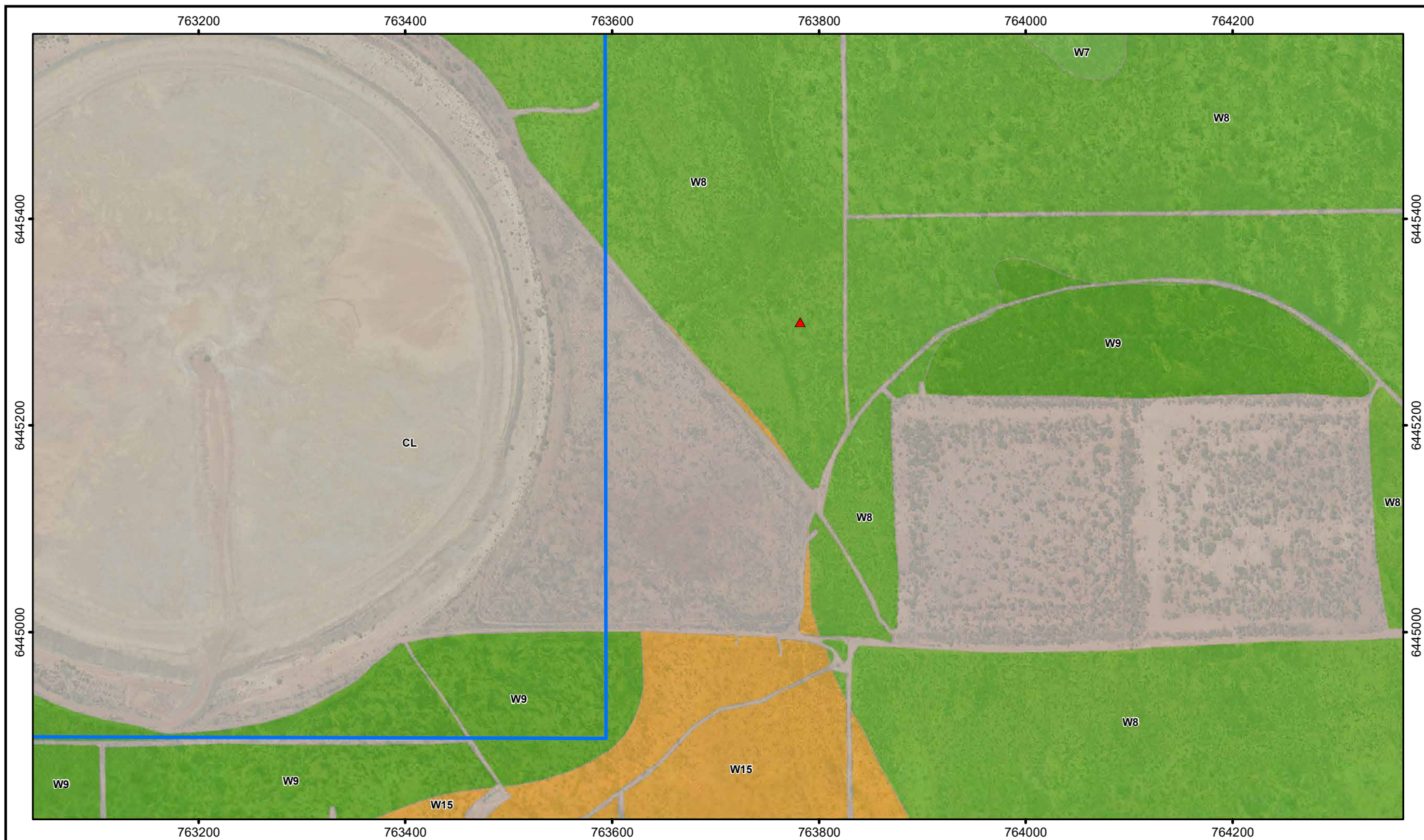
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

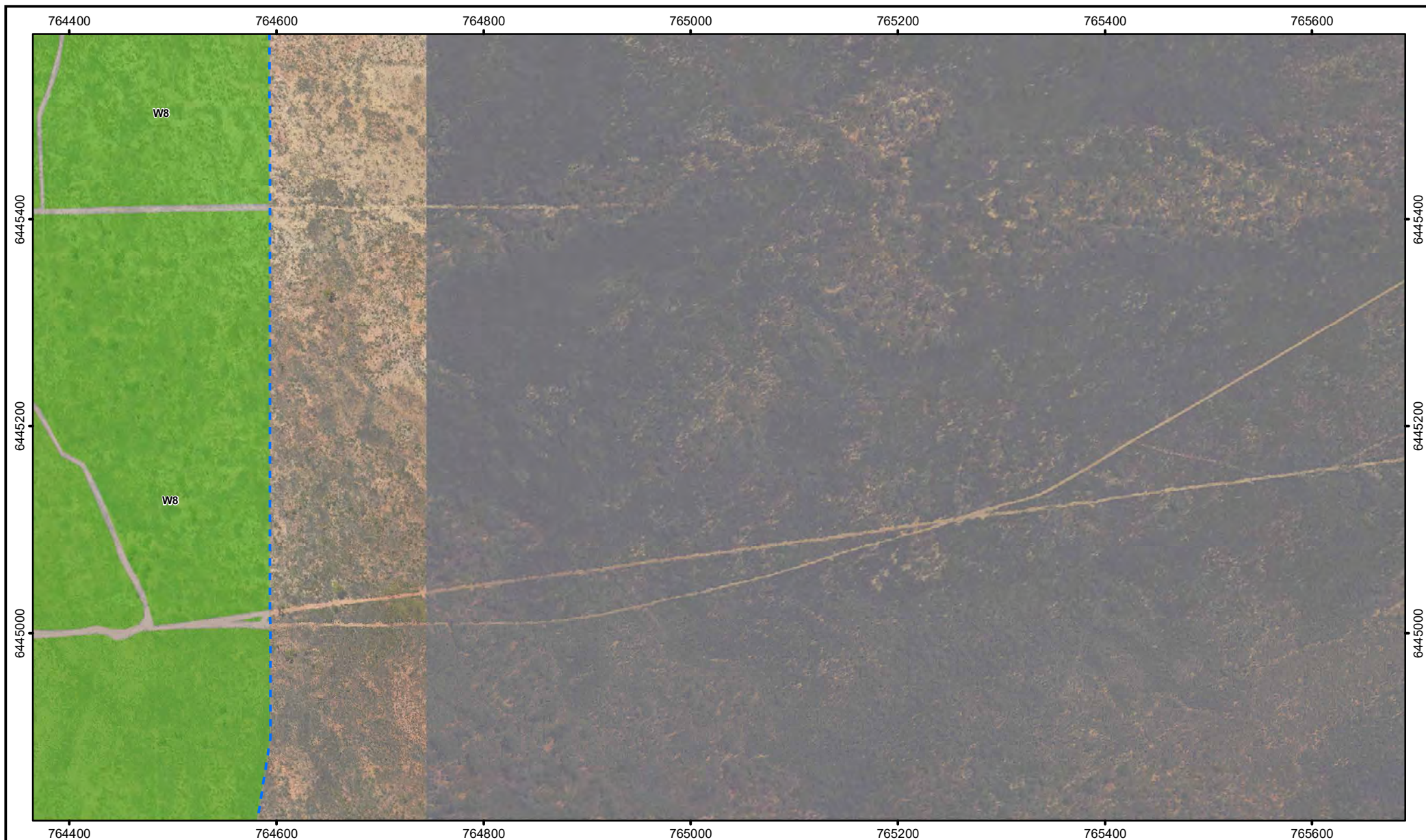
Covalent Lithium Pty Ltd

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Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 Mattiske Consulting Pty Ltd 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 37 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

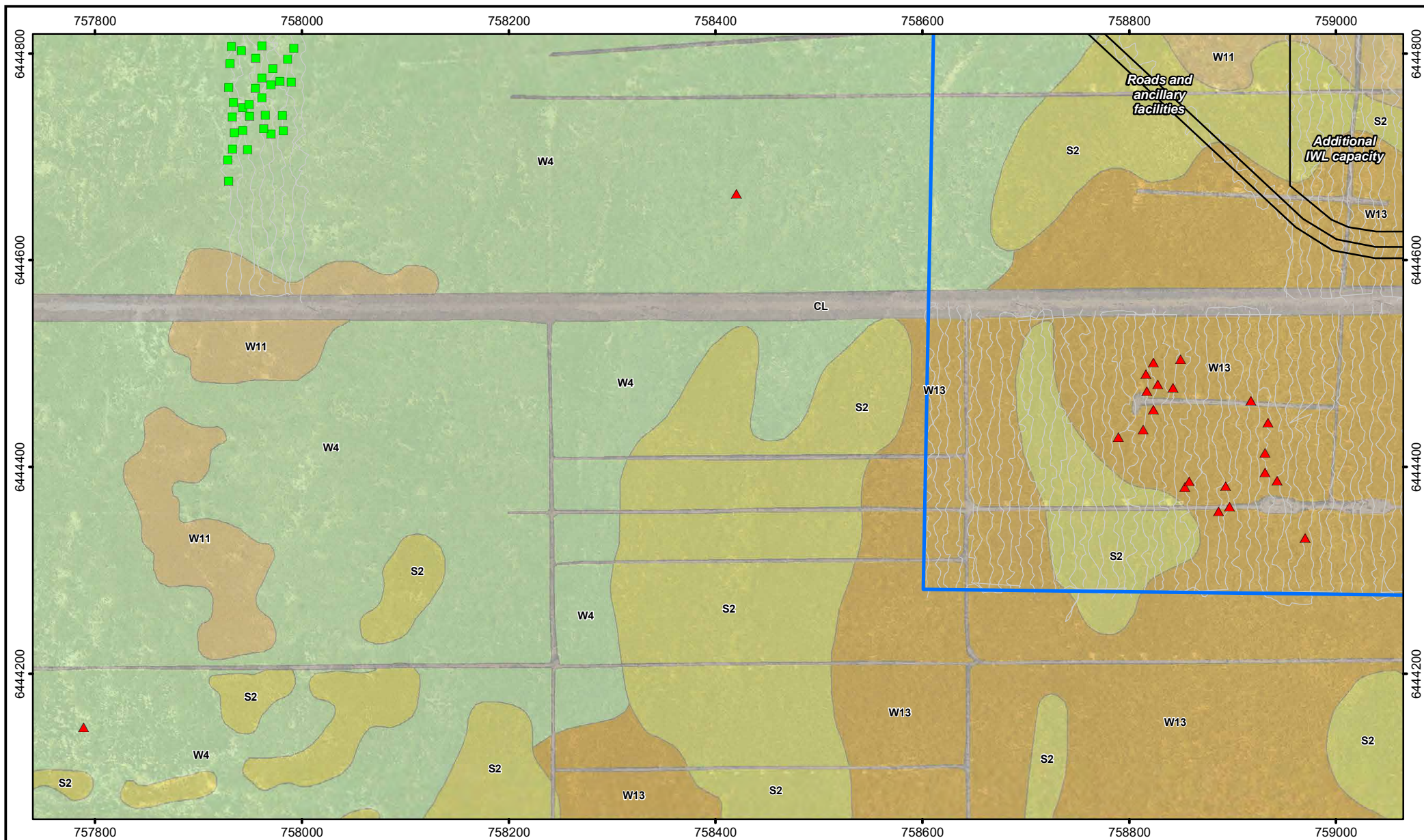
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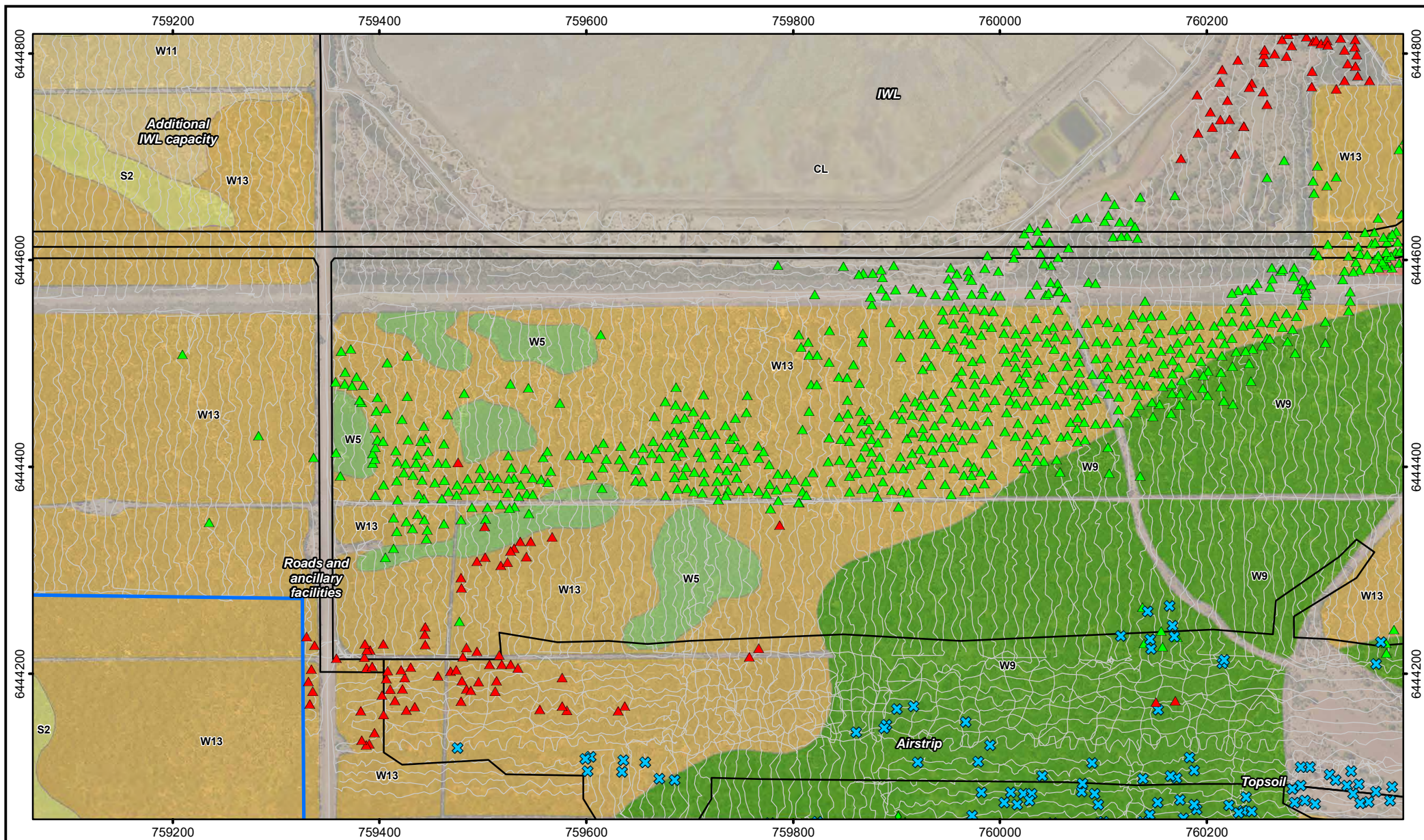
Vegetation

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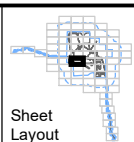
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

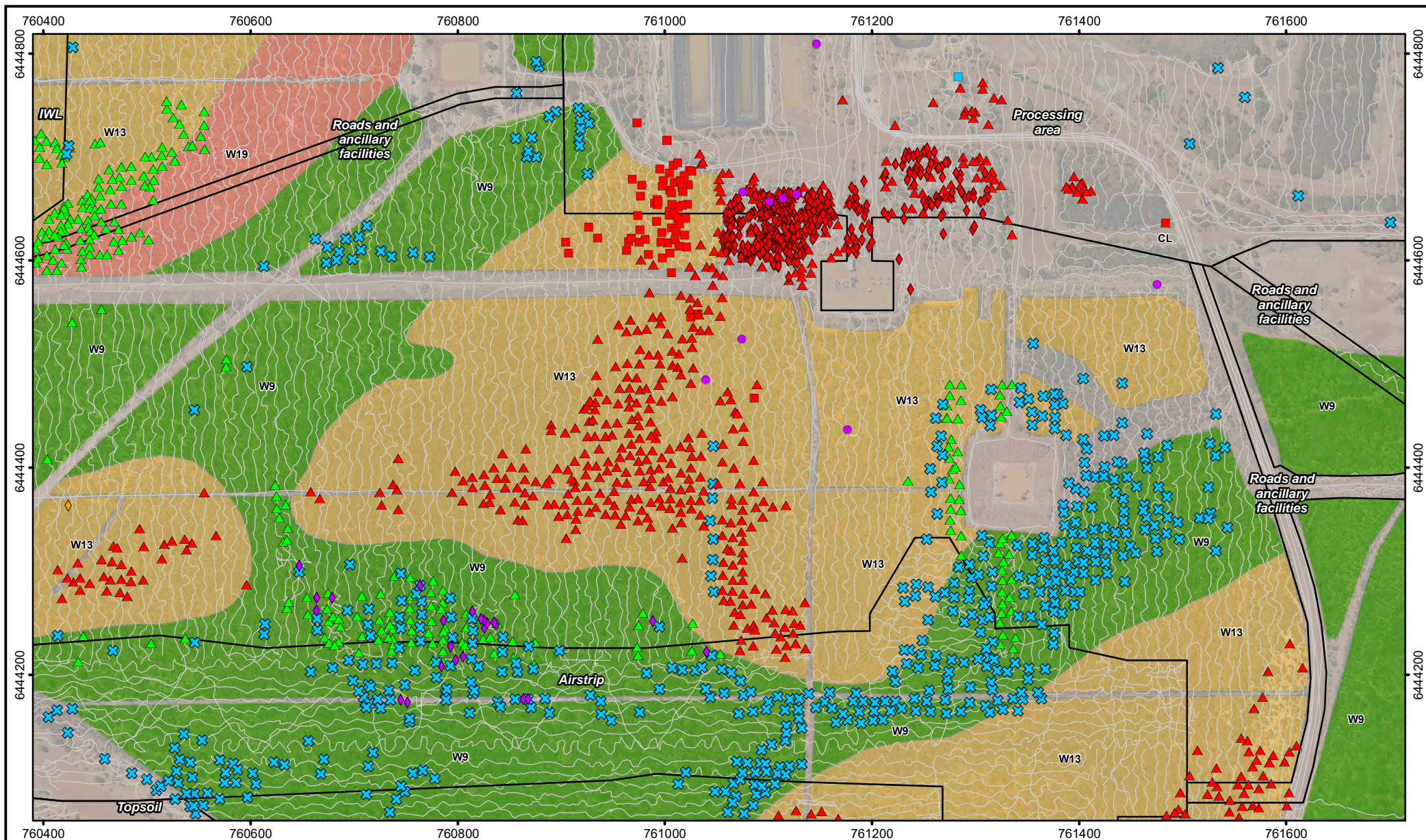
Covalent Lithium Pty Ltd

Vegetation

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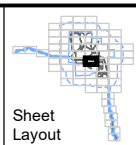
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

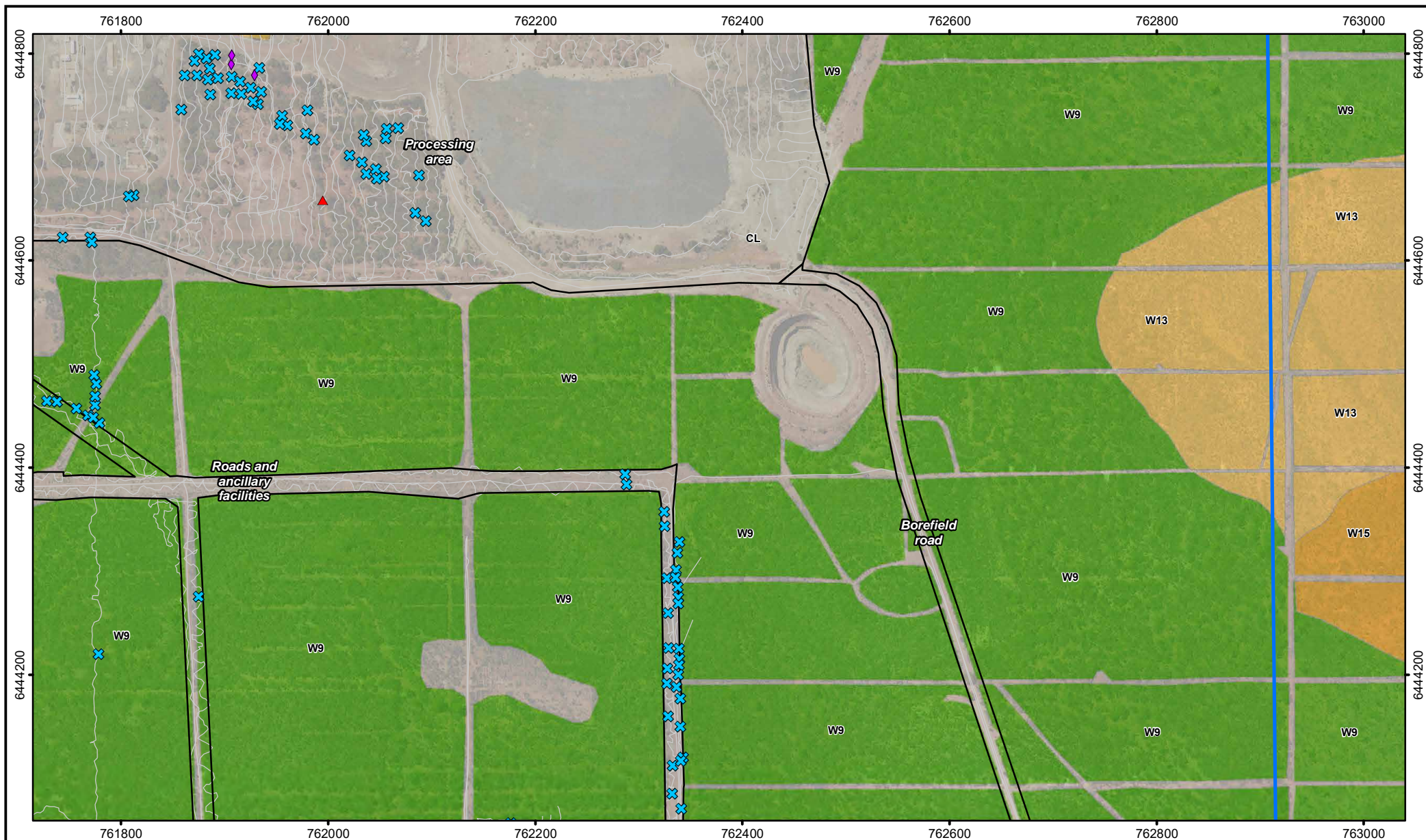
Covalent Lithium Pty Ltd

Vegetation

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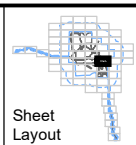
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

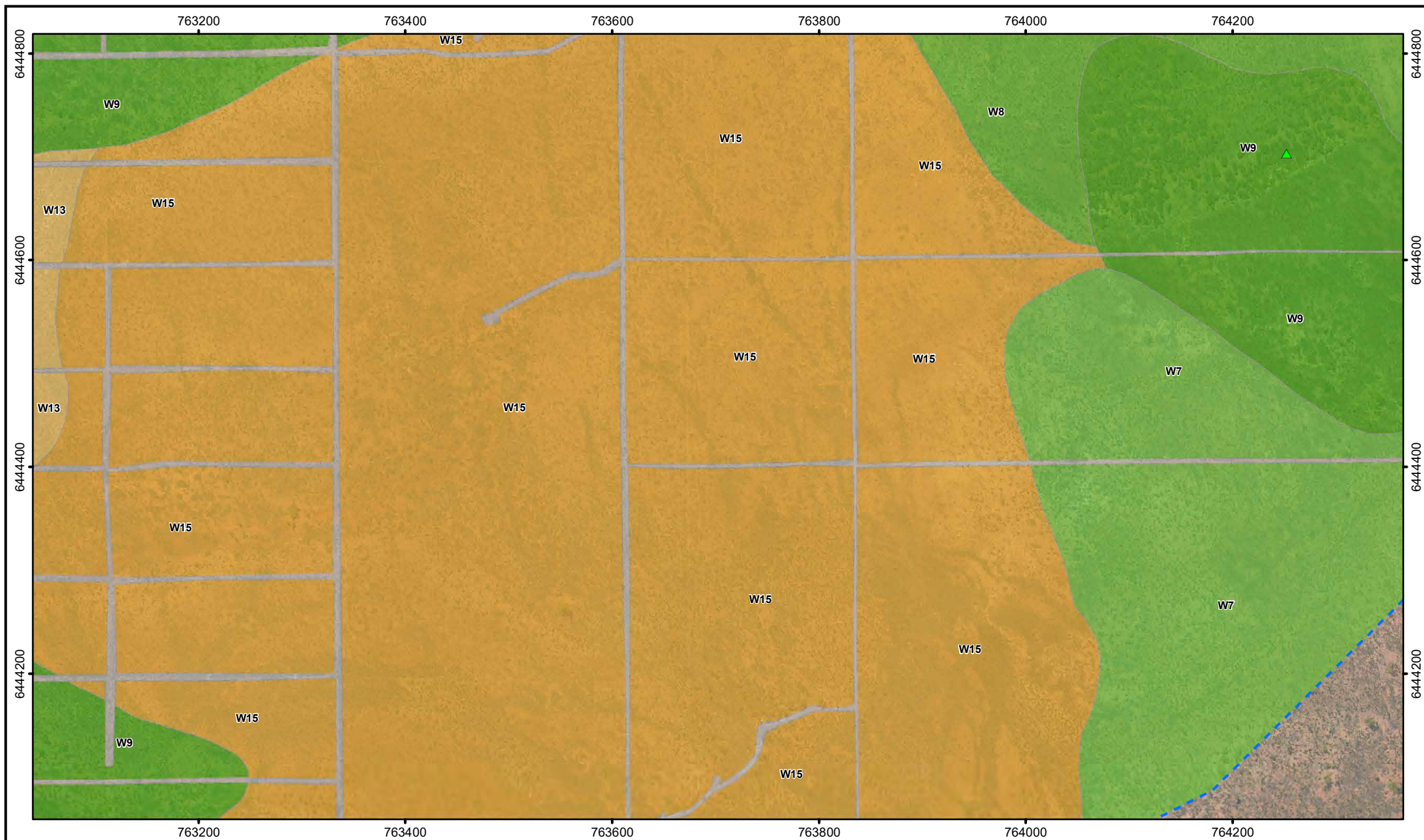
Covalent Lithium Pty Ltd

Vegetation

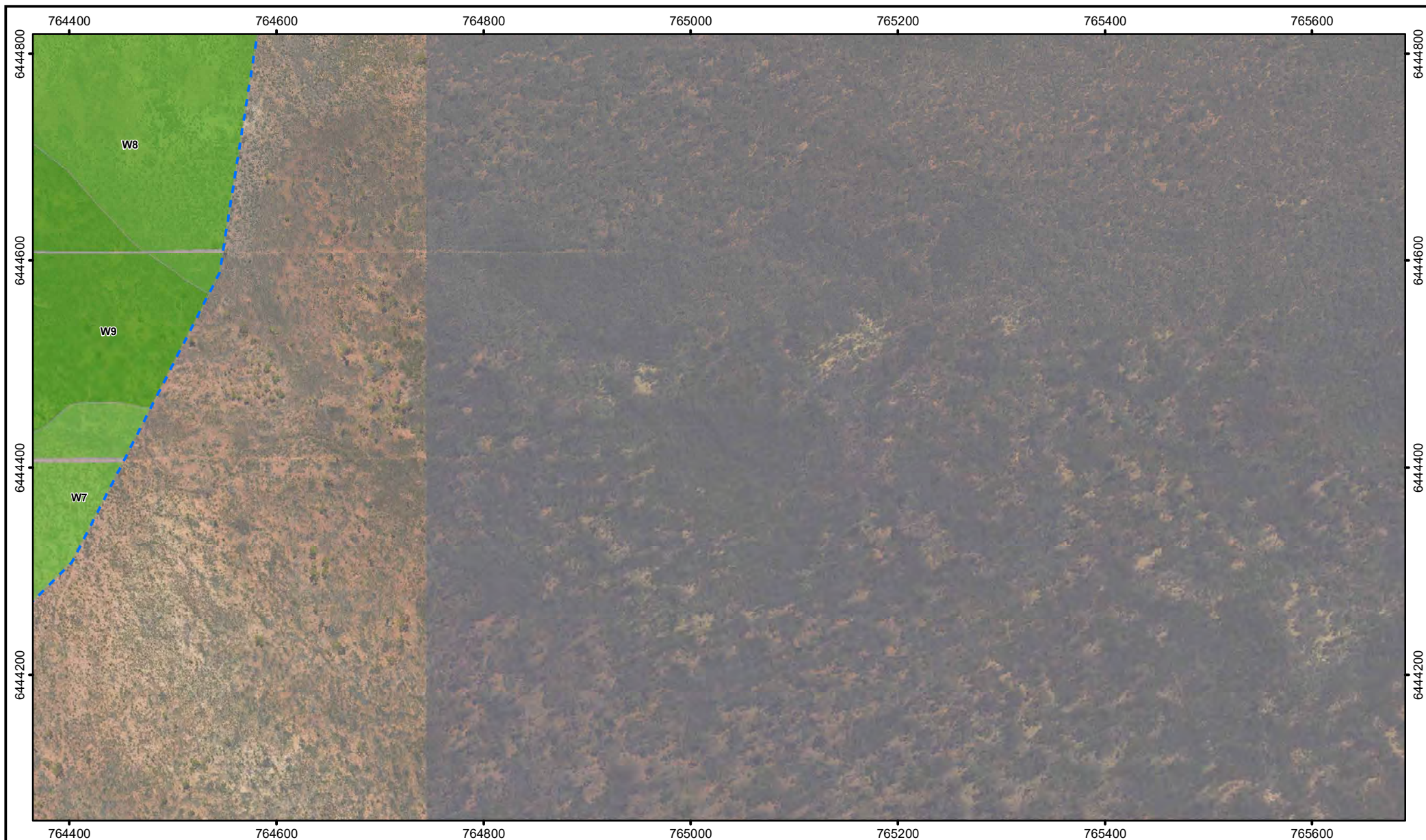
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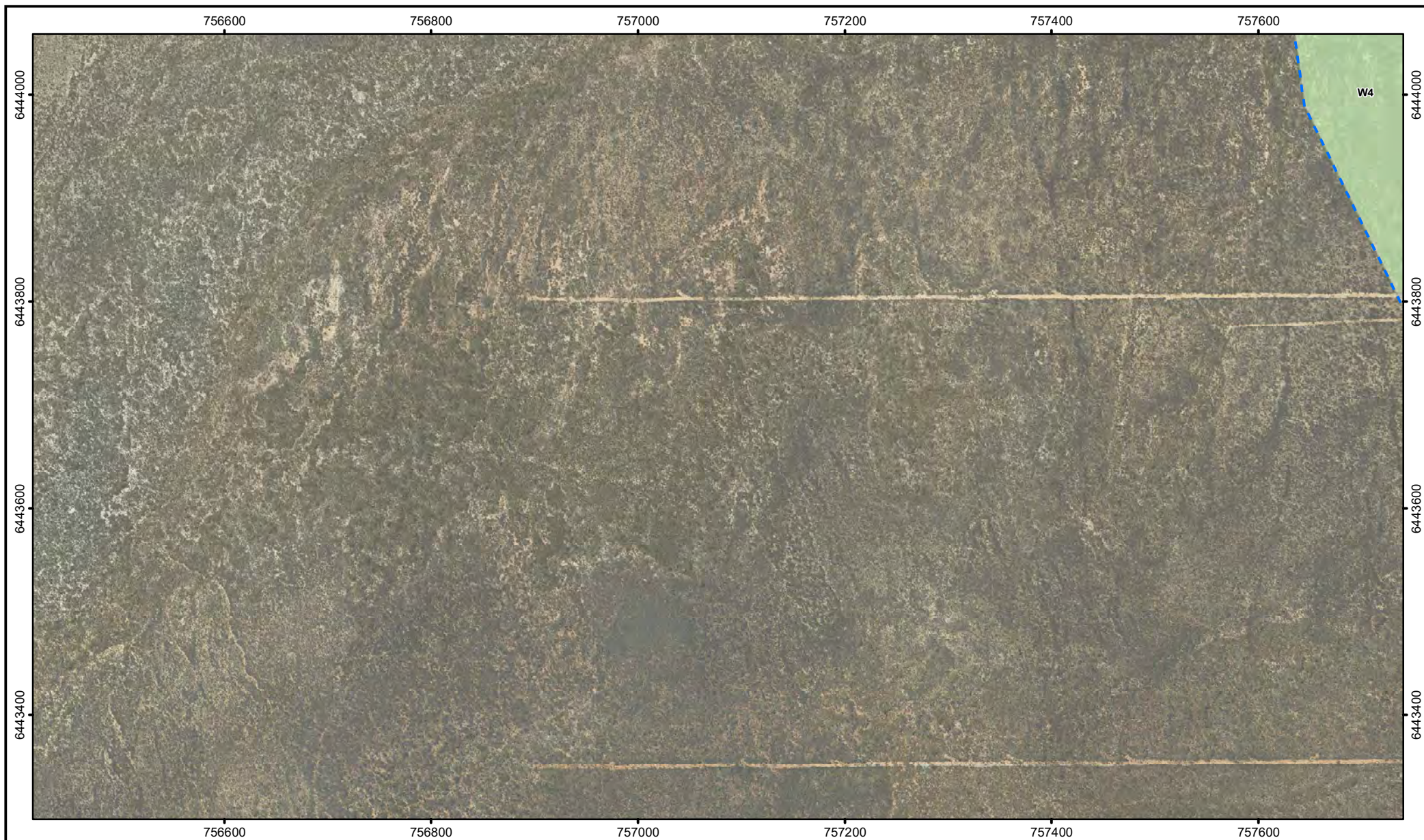
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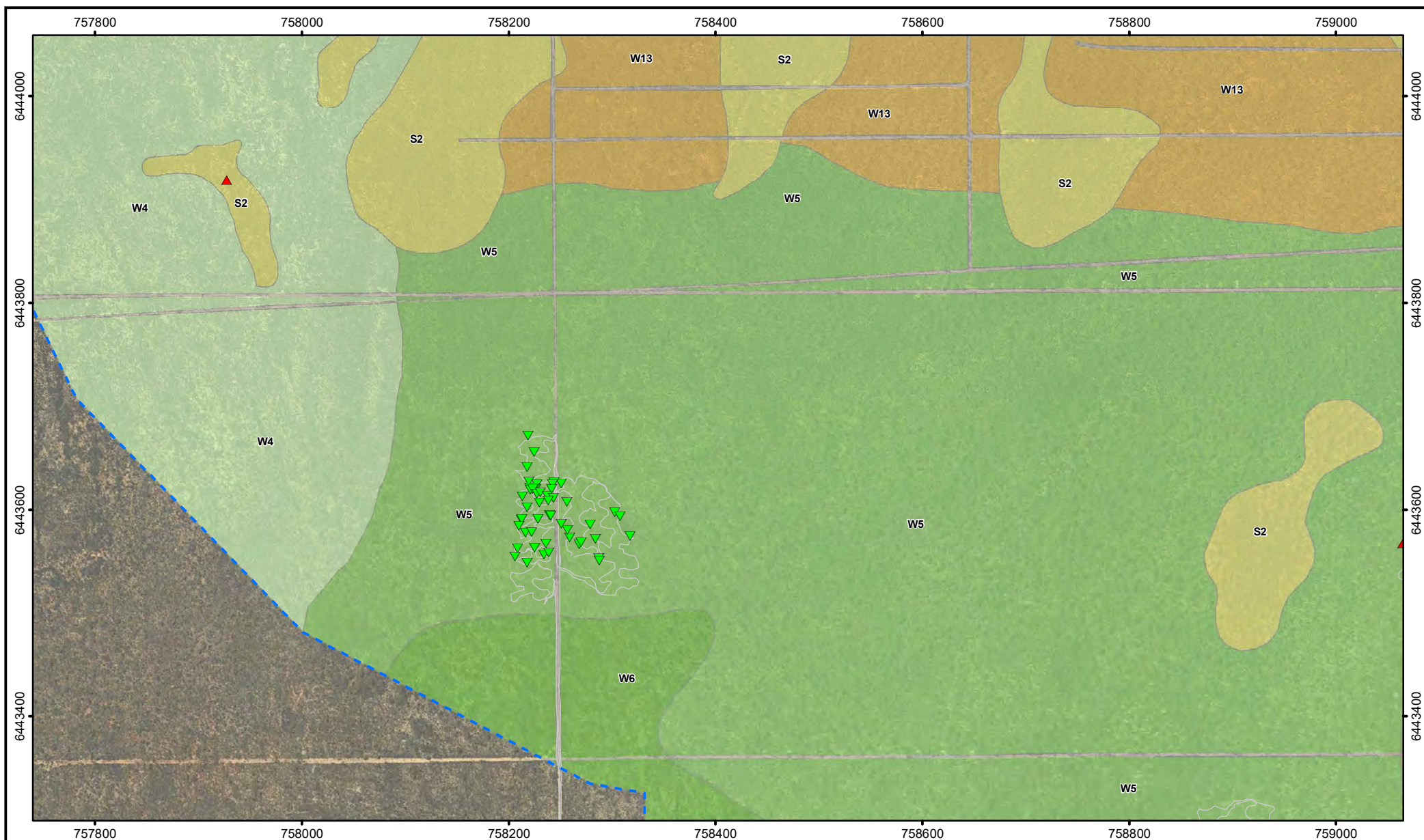
Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 Mattiske Consulting Pty Ltd 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 43 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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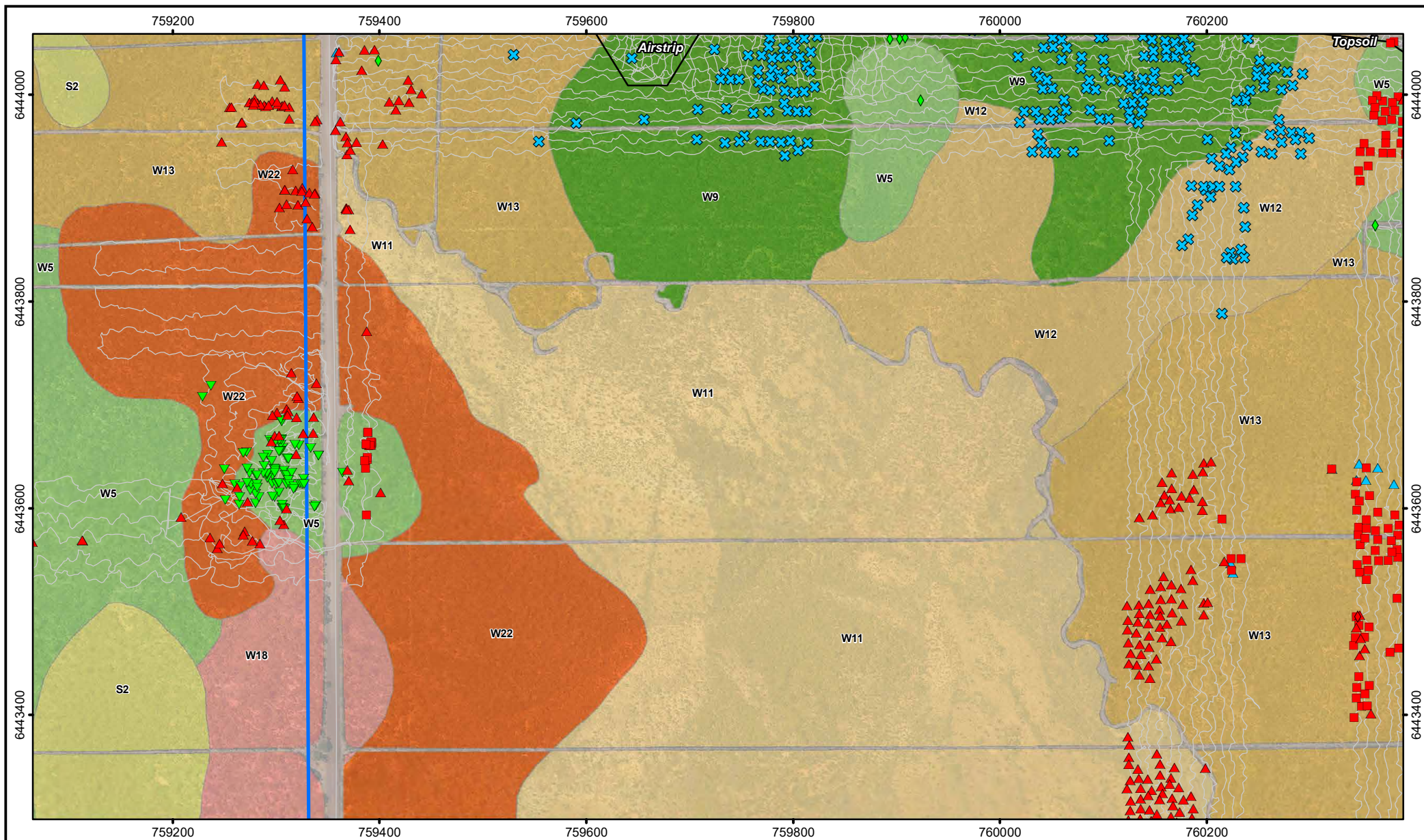


Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: 		Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	<p>Covalent Lithium Pty Ltd</p> <p>Vegetation</p> <p>Sheet 44 of 70</p>	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: 		0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 45 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

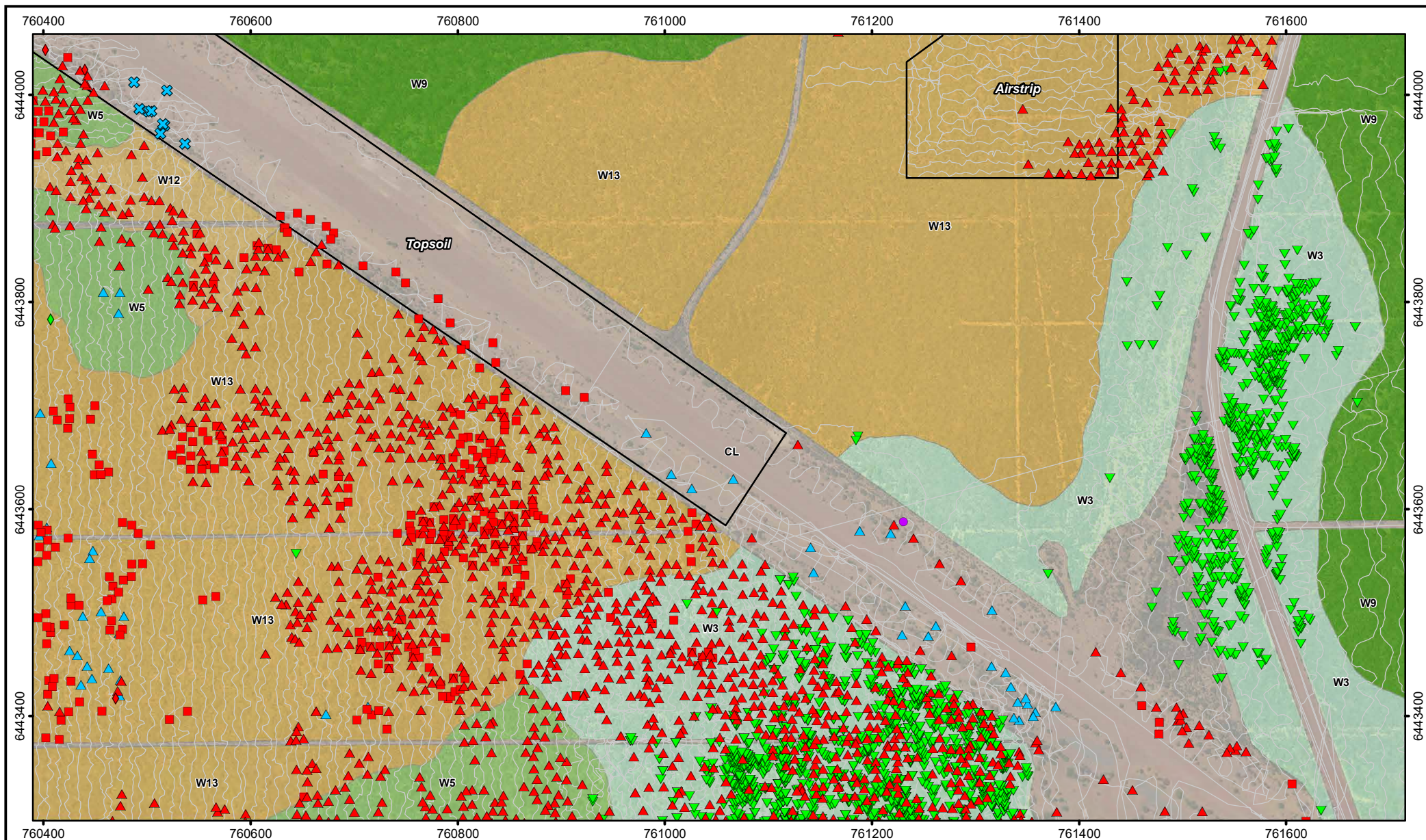
Covalent Lithium Pty Ltd

Vegetation

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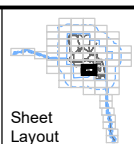
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D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

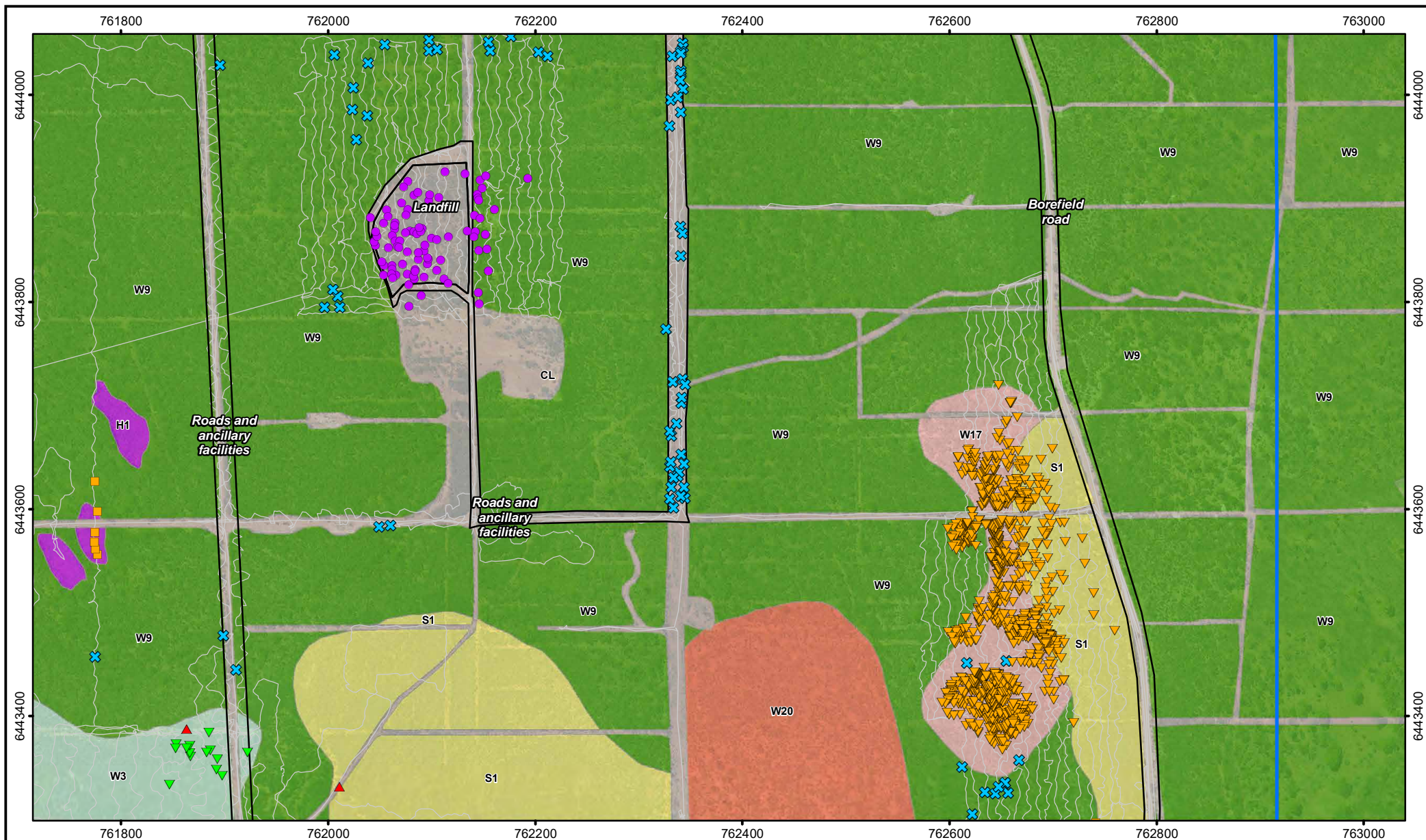
Covalent Lithium Pty Ltd

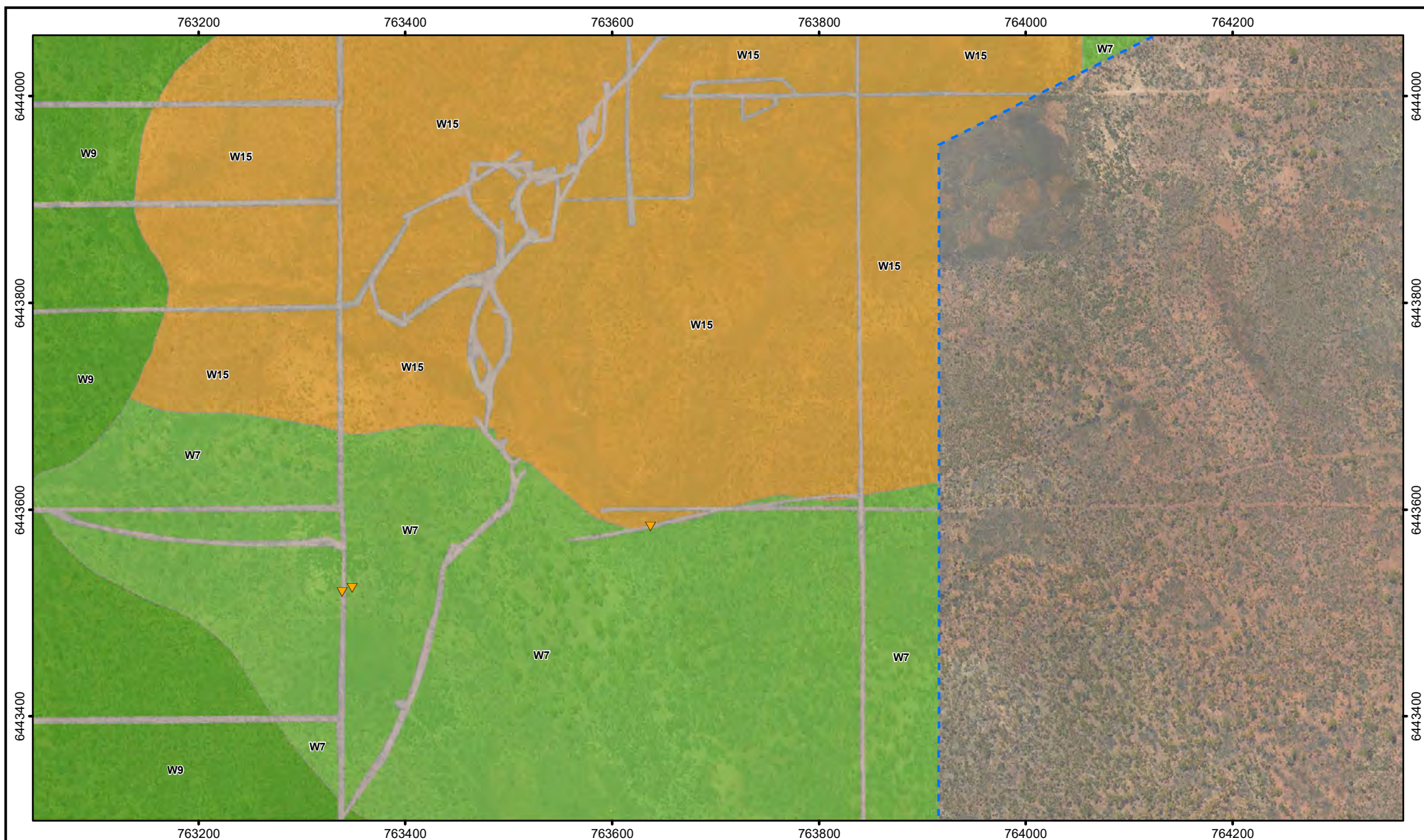
Vegetation

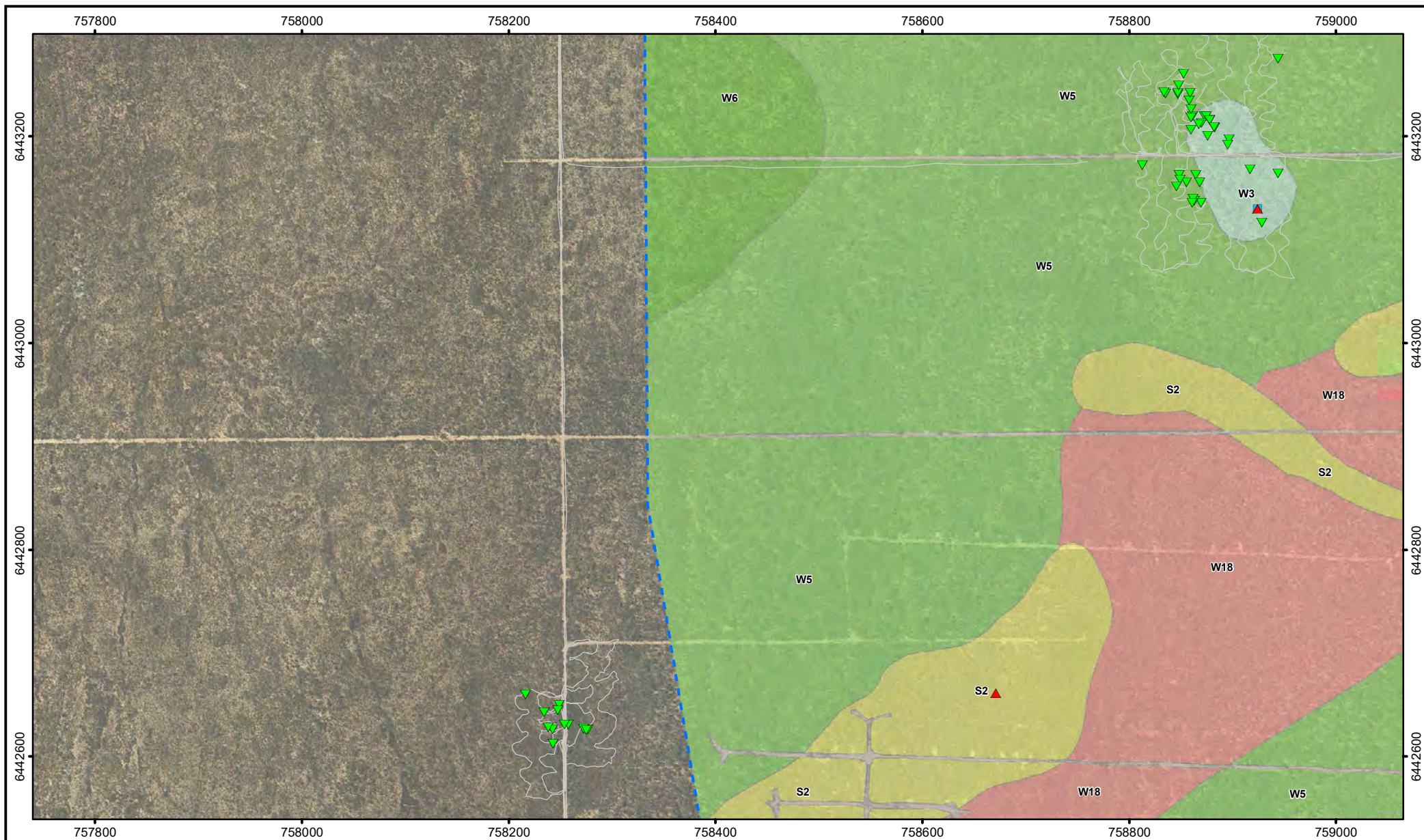
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

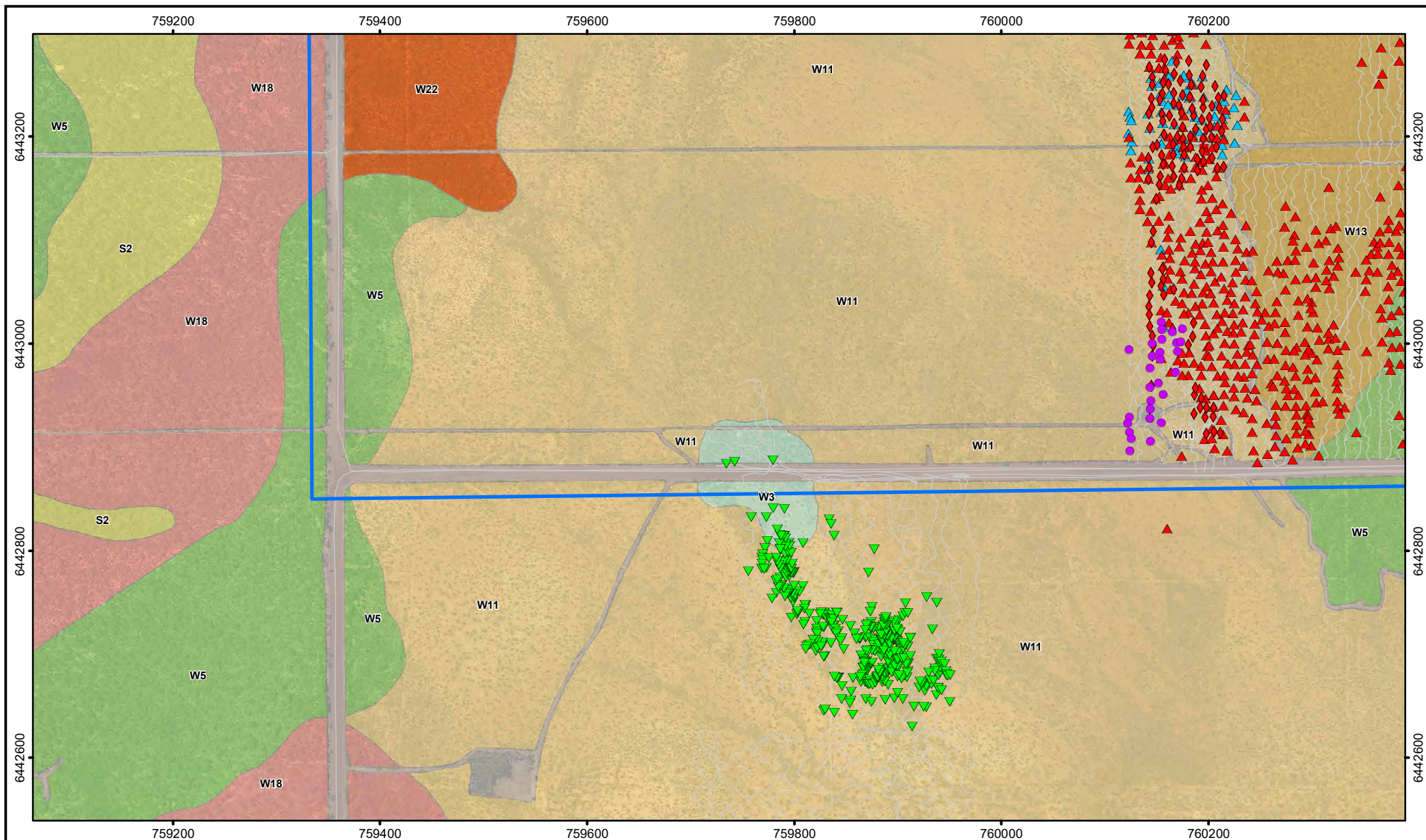
Covalent Lithium Pty Ltd

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

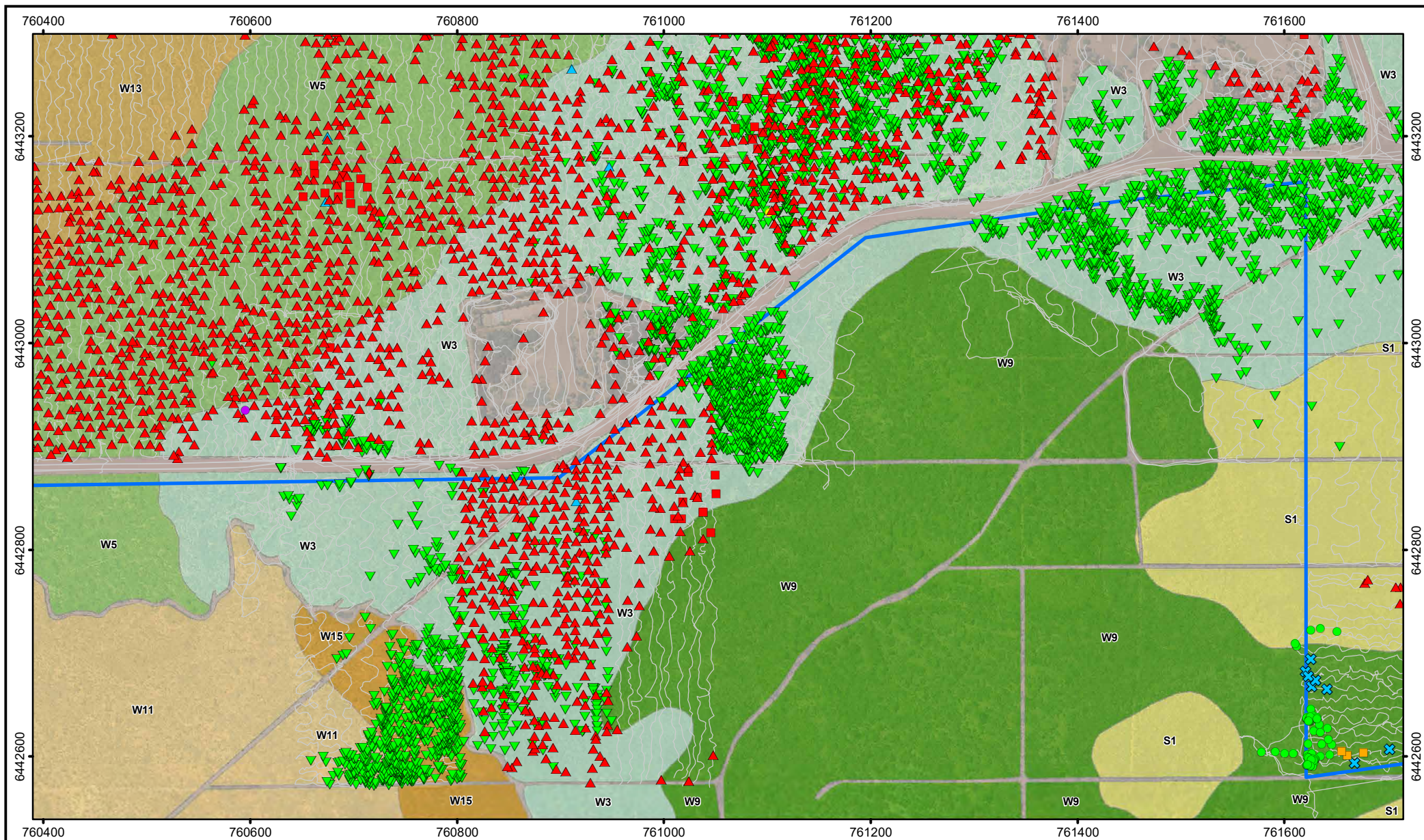
Covalent Lithium Pty Ltd

Vegetation

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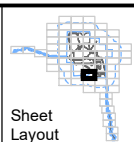
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

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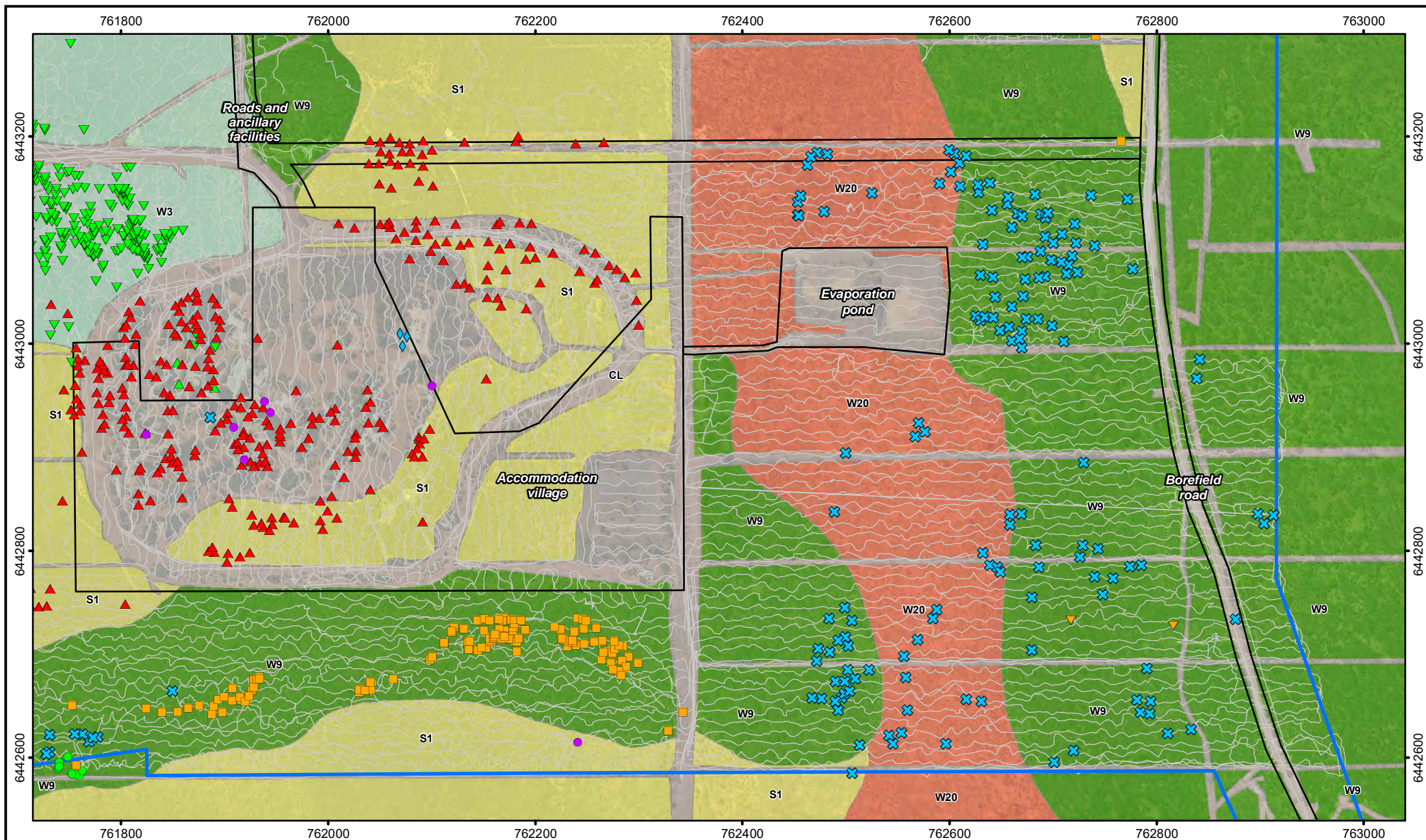
Covalent Lithium Pty Ltd

Vegetation

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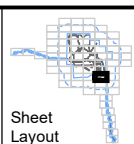
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D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



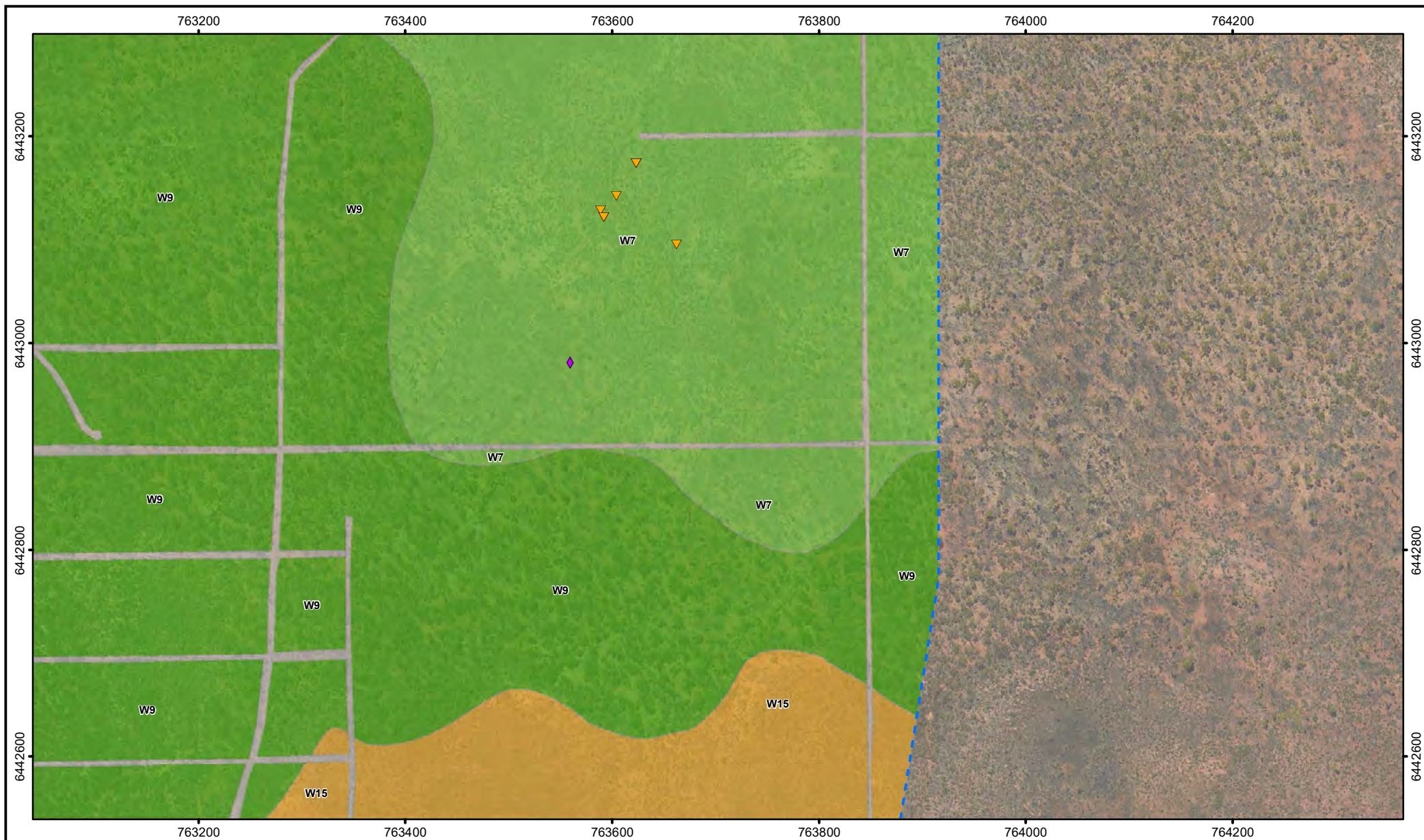
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Scale: 1:5,000
MGA94 (Zone 50)
CAD Ref: a2445_f22_08
Date: December 2019 Rev: A A4

Mattiske Creating Pyl Int
28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640
Author: E M Mattiske MCPL Ref: CLL1901/021/19
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Covalent Lithium Pty Ltd
Vegetation
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Author: E M Mattiske MCPL Ref: CLL1901/021/19

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

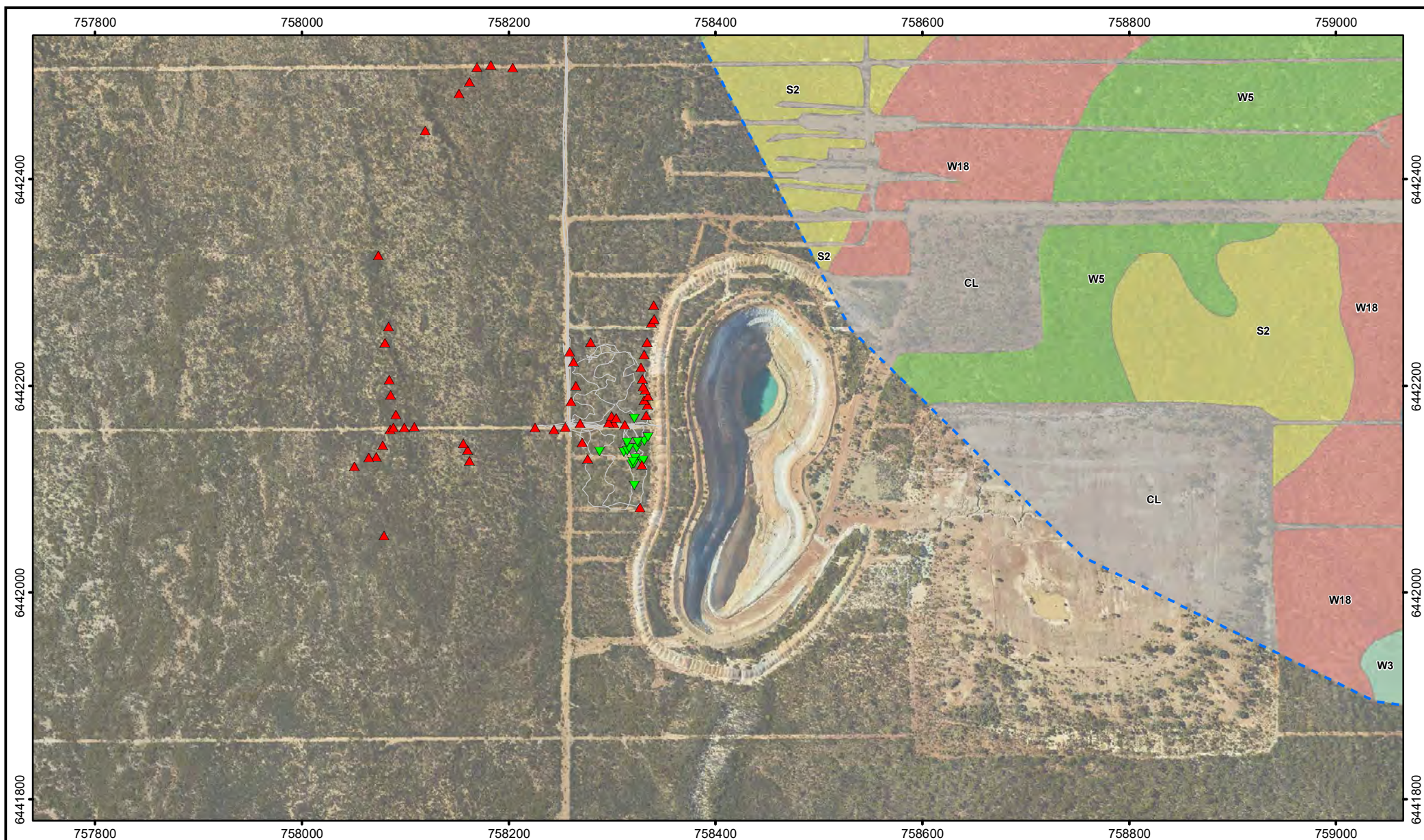
Covalent Lithium Pty Ltd

Vegetation

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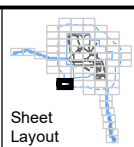
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

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Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

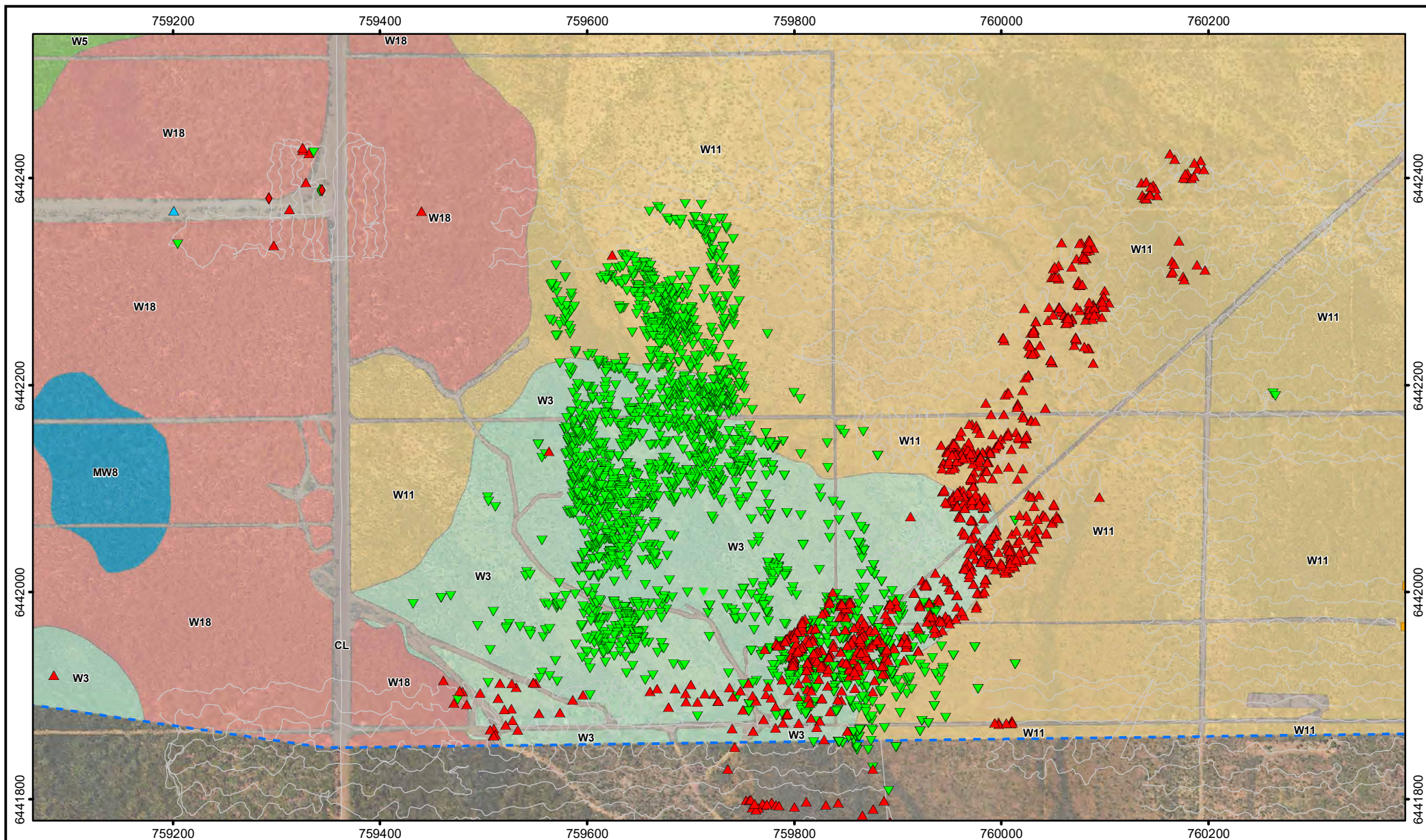
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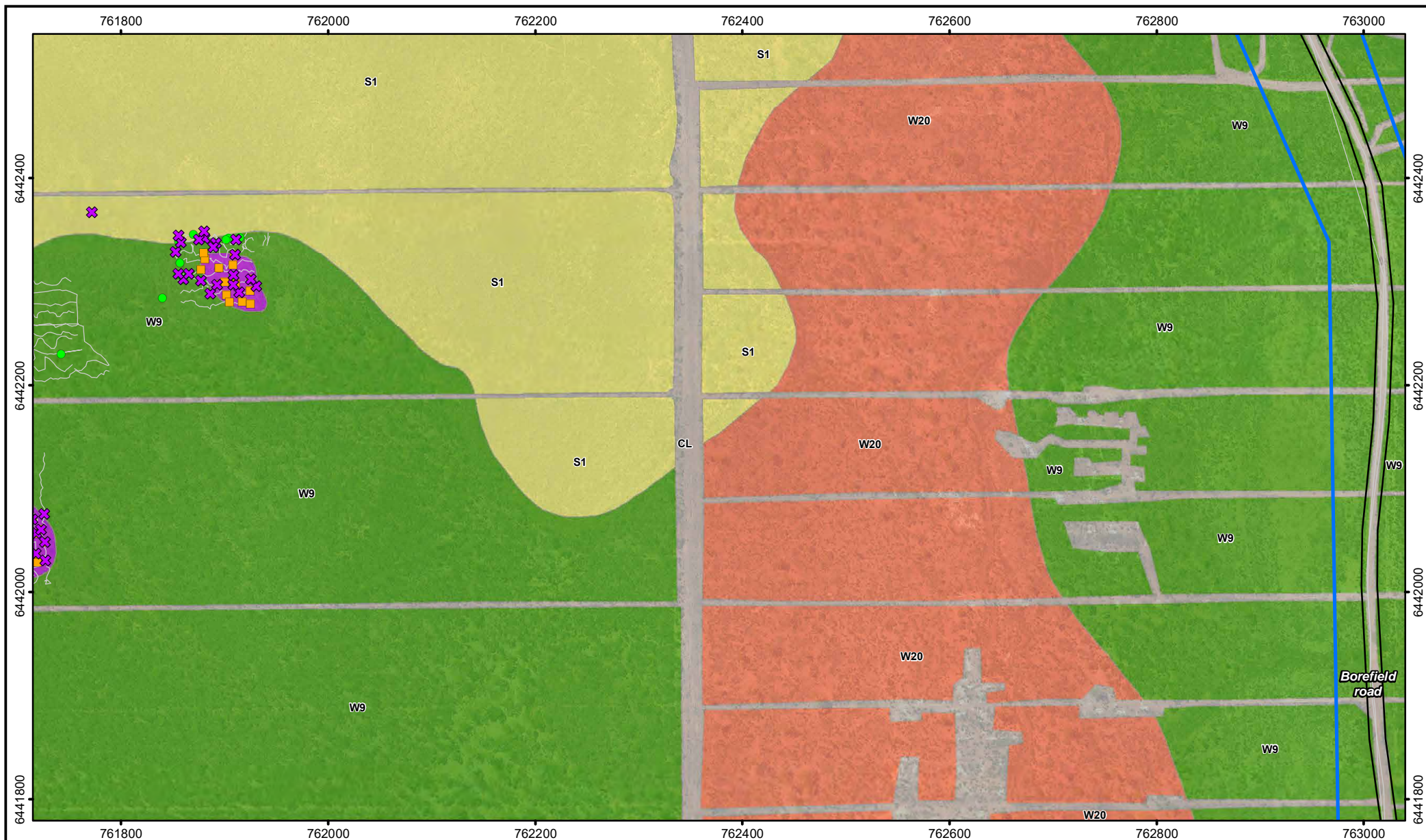
Vegetation

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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

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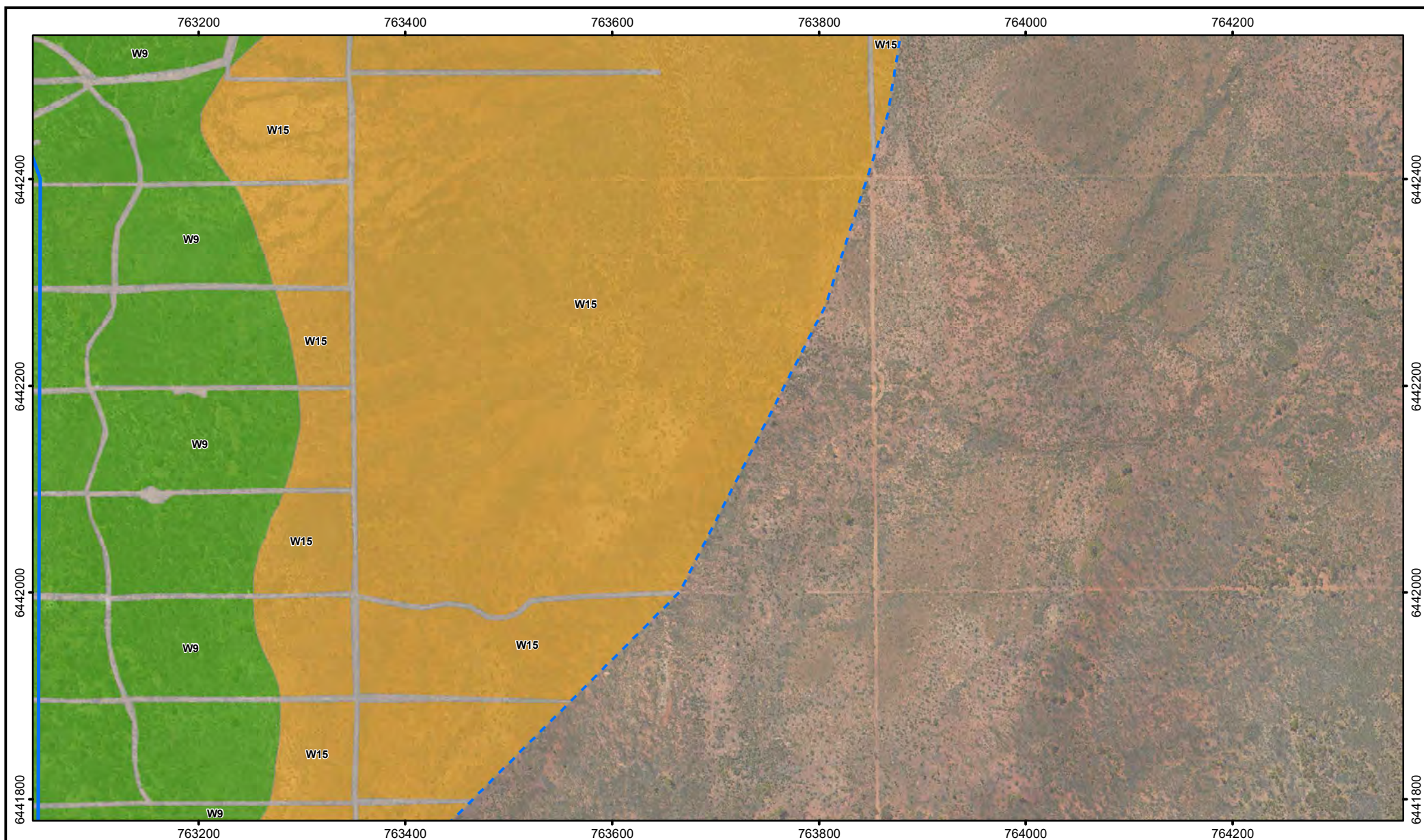
Covalent Lithium Pty Ltd

Vegetation

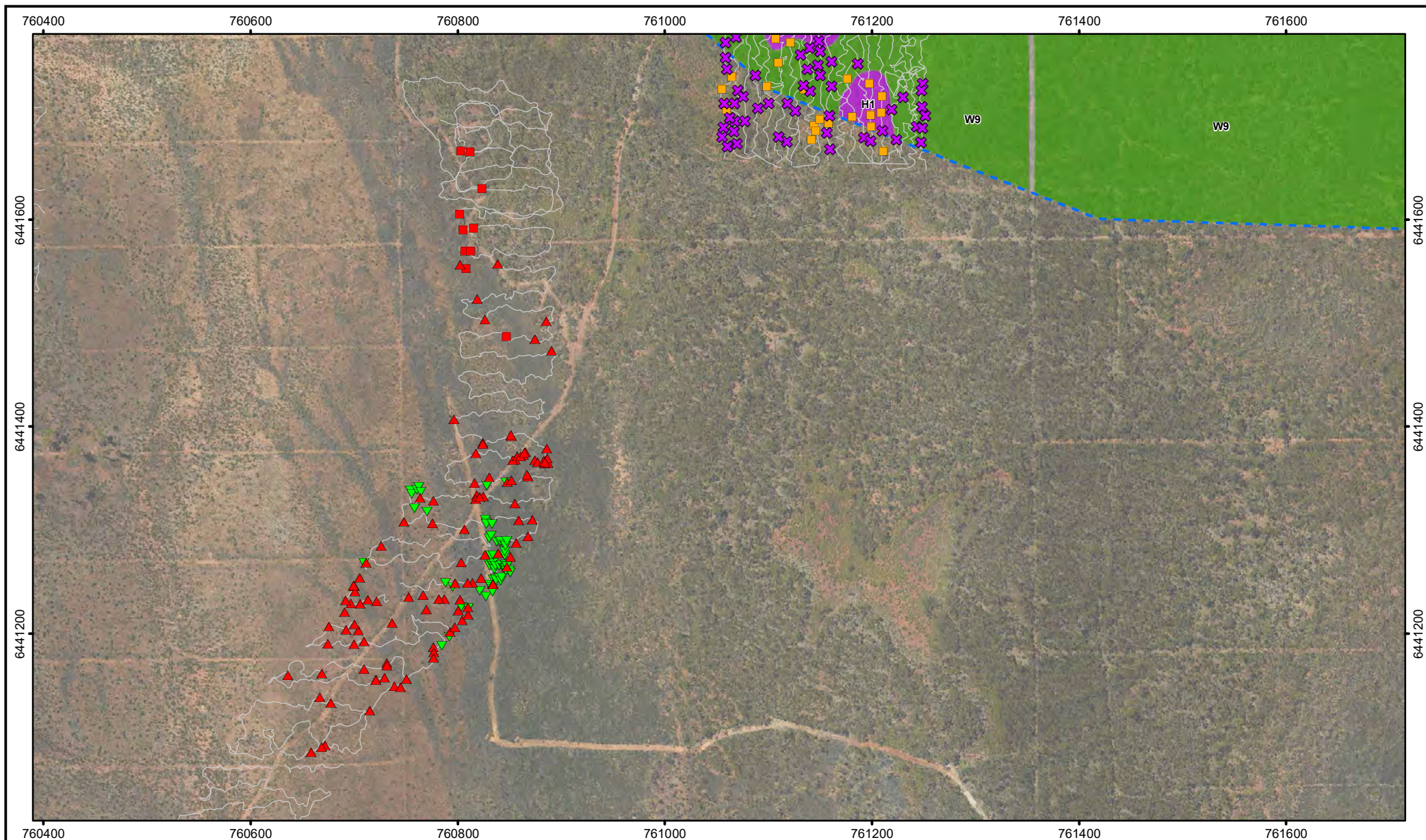
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Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 60 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

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Vegetation

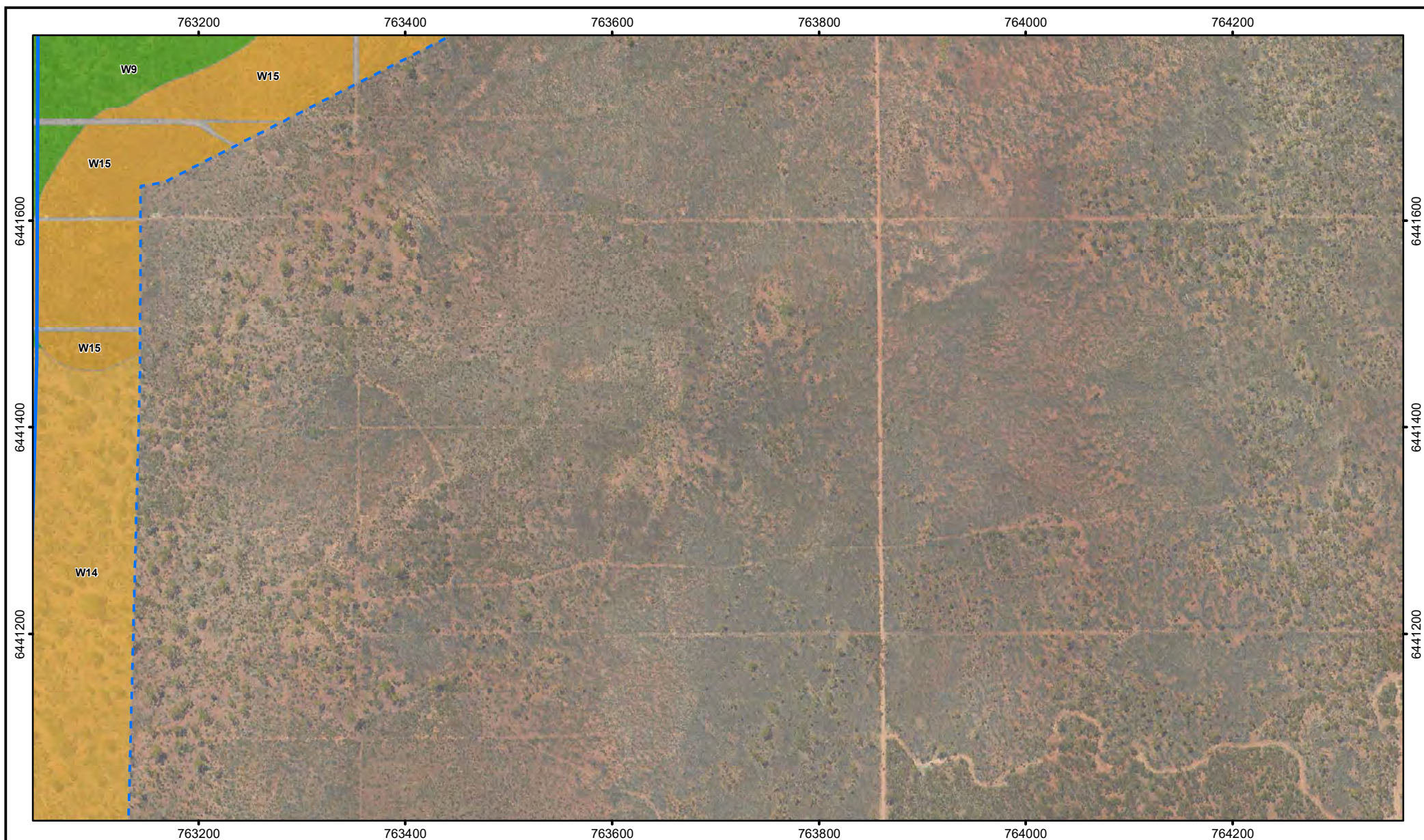
Sheet 61 of 70

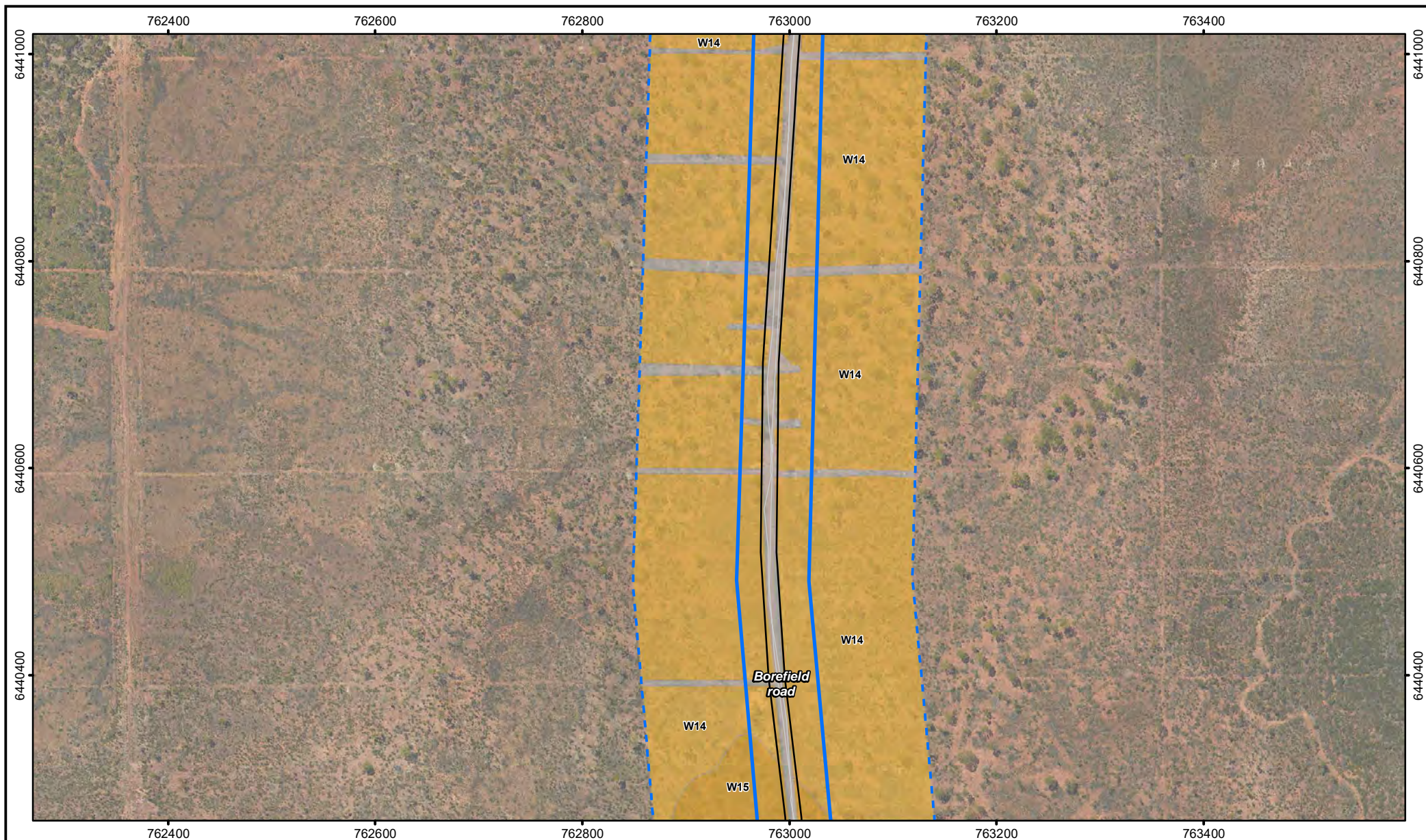
Appendix

D



Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: 		Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 62 of 70	Appendix <div style="font-size: 48pt; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

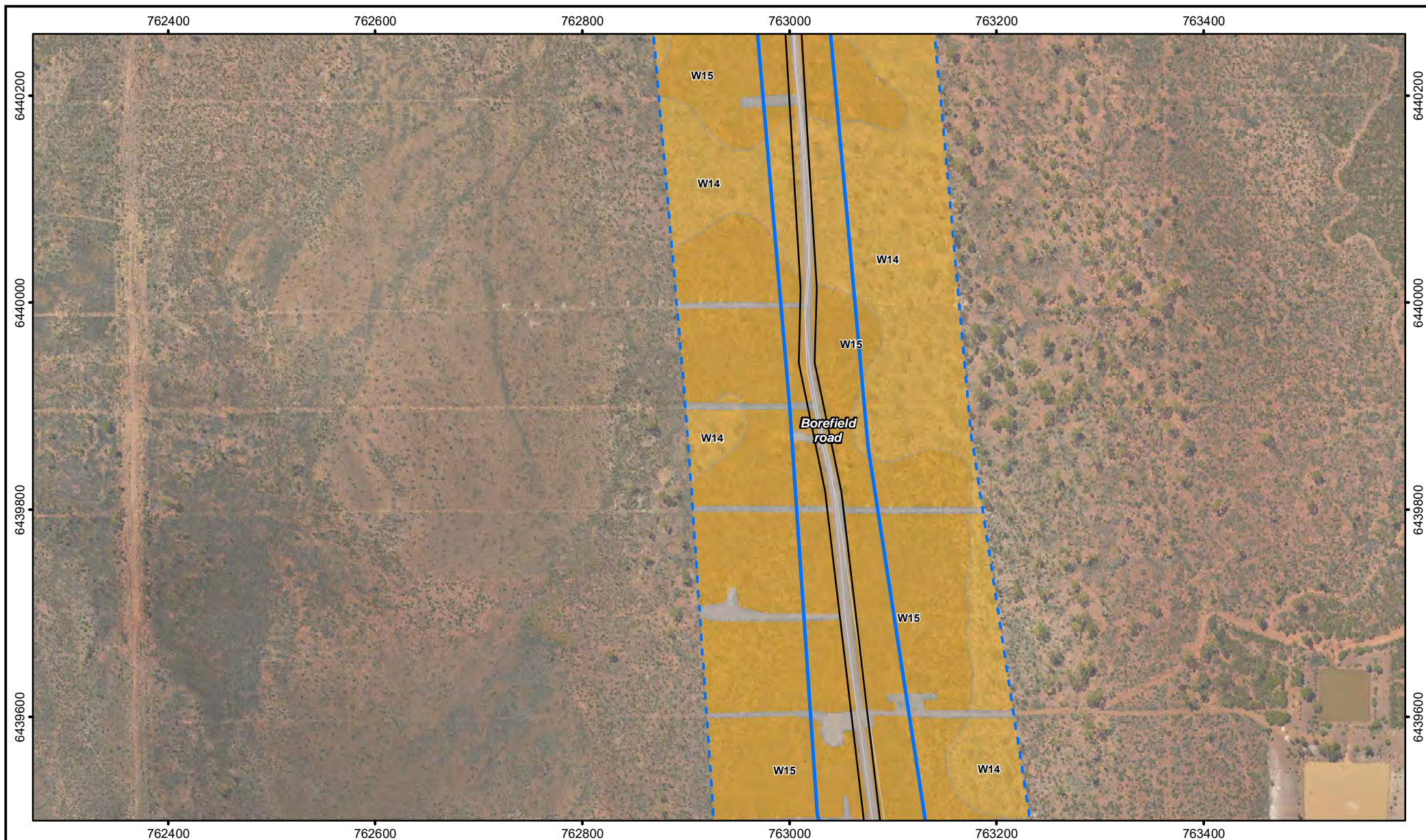
Covalent Lithium Pty Ltd

Vegetation

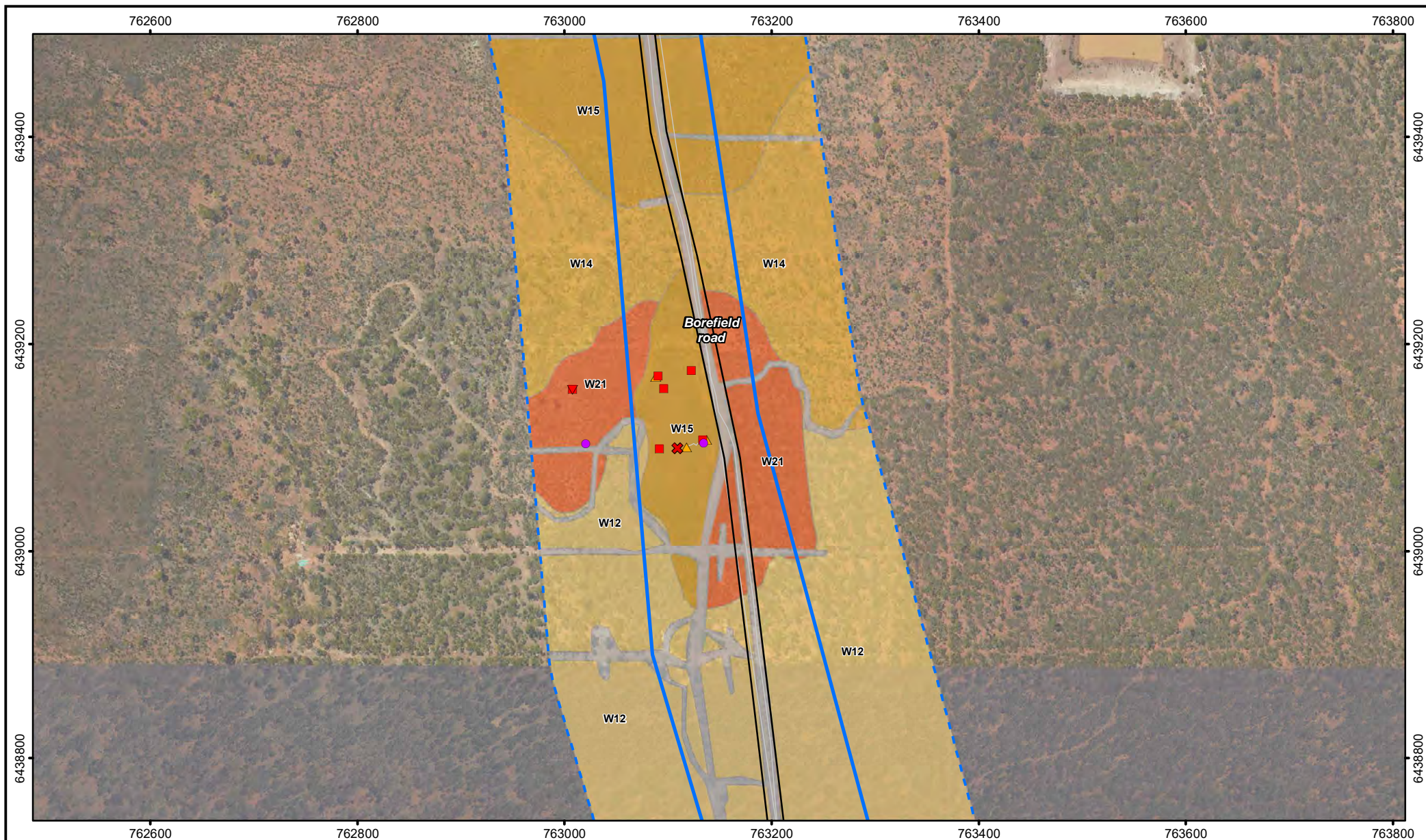
Sheet 64 of 70

Appendix

D

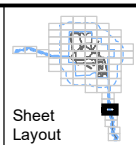


Legend Vegetation Survey Boundary Development Envelope Infrastructure Footprint Track and Foot Traverses	 Sheet Layout	Client: covalent LITHIUM	 N	0 100m Scale: 1:5,000 MGA94 (Zone 50) CAD Ref: a2445_f22_08 Date: December 2019 Rev: A A4	 Mattiske Consulting Pty Ltd 28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640 Author: E M Mattiske MCPL Ref: CLL1901/021/19 Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax (08) 9246 3202	Covalent Lithium Pty Ltd Vegetation Sheet 65 of 70	Appendix <div style="font-size: 2em; font-weight: bold; text-align: center;">D</div>
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Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

Mattiske Consulting Pty Ltd

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

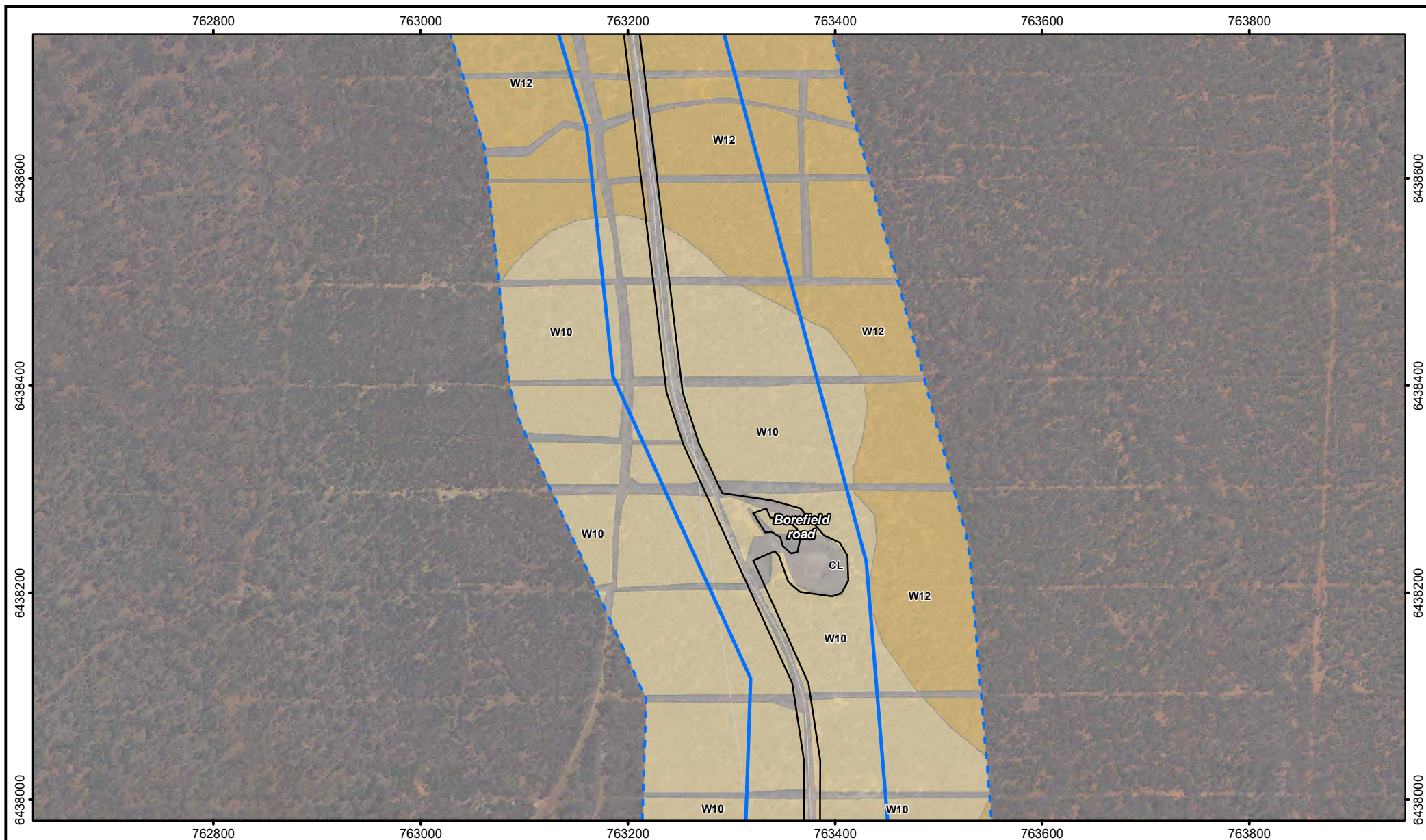
Covalent Lithium Pty Ltd

Vegetation

Sheet 66 of 70

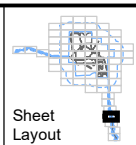
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

Mattiske Consulting Pty Ltd

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

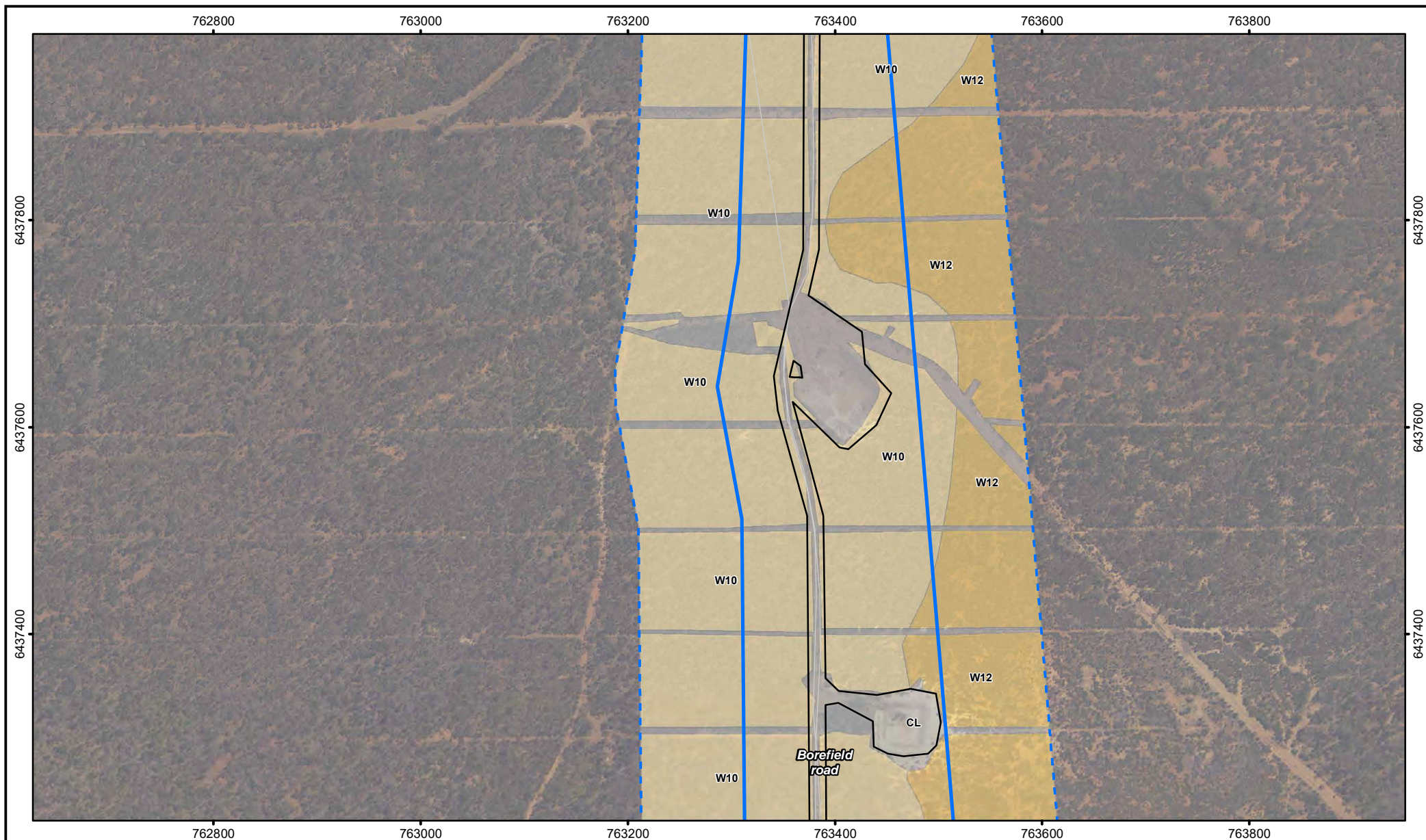
Covalent Lithium Pty Ltd

Vegetation

Sheet 67 of 70

Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

Mattiske Consulting Pty Ltd

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

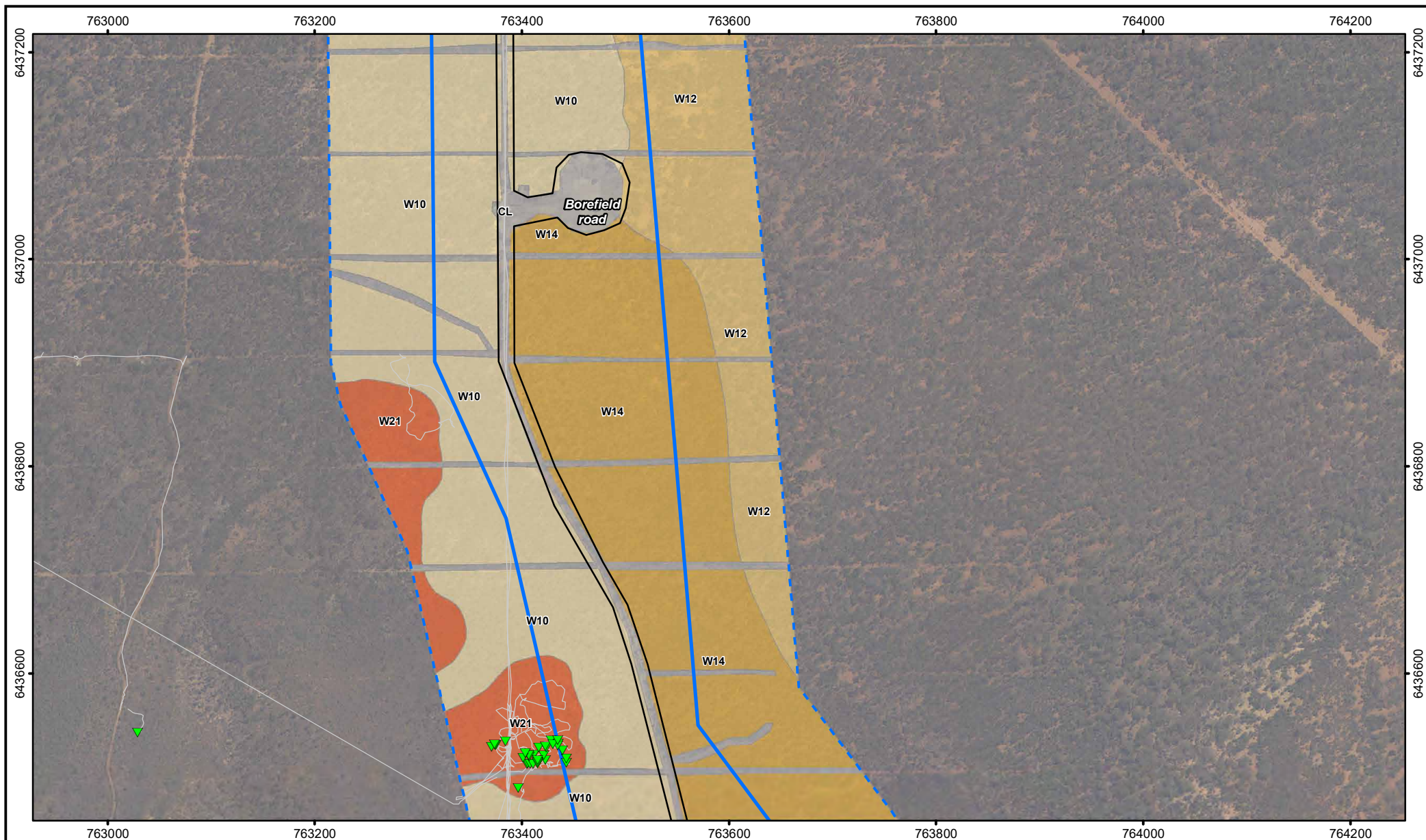
Covalent Lithium Pty Ltd

Vegetation

Sheet 68 of 70

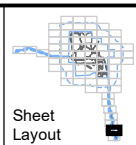
Appendix

D



Legend

- Vegetation Survey Boundary
- Development Envelope
- Infrastructure Footprint
- Track and Foot Traverses



Client:

covalent
LITHIUM



0 100m

Scale: 1:5,000
MGA94 (Zone 50)

CAD Ref: a2445_f22_08

Date: December 2019 Rev: A A4

Mattiske Consulting Pty Ltd

28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640

Author: E M Mattiske MCPL Ref: CLL1901/021/19

Drawn: CAD Resources ~ www.cadresources.com.au

Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

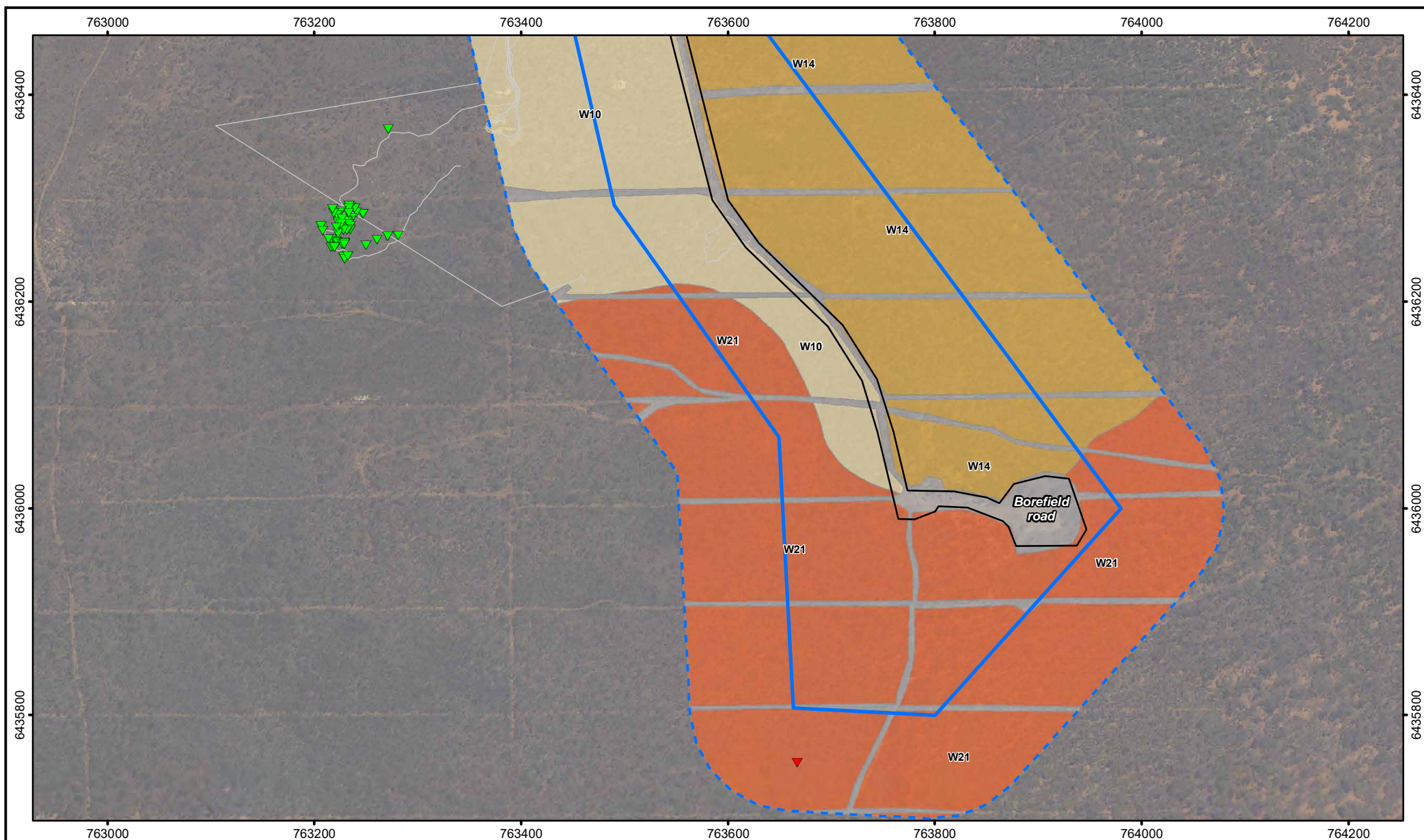
Covalent Lithium Pty Ltd

Vegetation

Sheet 69 of 70

Appendix

D





Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Acacia sp. forrestania (D. Angus DA 3001)</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>9/9/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>	PHONE : <u>92571625</u>	
ROLE: <u>Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____
Land manager present: <input type="checkbox"/>			
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	GPS <input type="checkbox"/>	
WGS84 <input type="checkbox"/>	Long / Easting: _____	Differential GPS <input type="checkbox"/>	
Unknown <input type="checkbox"/>	Zone: _____	Map <input type="checkbox"/>	
No. satellites: _____		Map used: _____	
Boundary polygon captured: <input type="checkbox"/>		Map scale: _____	
LAND TENURE:			
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
SLK/Pole _____ to _____		Other Crown reserve <input type="checkbox"/>	
Specify other: <u>Mine site</u>			

AREA ASSESSMENT: Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT: Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY: Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____			
WHAT COUNTED: Plants <input type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive	6654		
Dead			
Area of pop (m ²): _____			
Note: Pls record count as numbers (not percentages) for database.			
QUADRATS PRESENT: No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive			
REPRODUCTIVE STATE: Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:			

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input checked="" type="checkbox"/>		Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	0-10% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	30-50% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>		50-100% <input type="checkbox"/>			
Drainage line <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Allocasuarina acutivalvis, Allocasuarina spinosissima tall closed shrubland over

2. Hakea subsulcata, Melaleuca cordata, Micromyrtus erichsenii mid sparse heathland

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Comesperma volubile, Hibbertia stowardii, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Acaciasporrestania_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4001 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Acacia sp. Forrestania (D.Angus DA 3001) Attachment: Collections

Date	Collector No.	Species
9/9/2019	DA4001	Acacia sp. Forrestania (D.Angus DA 3001) (P1)
9/9/2019	BE1431	Acacia sp. Forrestania (D.Angus DA 3001) (P1)
12/9/2019	DA4017	Acacia sp. Forrestania (D.Angus DA 3001) (P1)
2/11/2019	BE1483	Acacia sp. Forrestania (D.Angus DA 3001) (P1)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Acacia sp. Mt Holland (B. Ellery BE 1147)</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>23/11/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE: <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u>	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	3089			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☐

Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☐ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input checked="" type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input checked="" type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
 Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus flocktoniae subsp. flocktoniae, Eucalyptus eremophila low open mallee woodland over

2. Melaleuca depauperata, Callitris canescens, Melaleuca phoidophylla mid-tall sparse shrubland over

3. Acacia tetraptera, Grevillea acuaria low isolated heath shrubs

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Exocarpos aphyllus, Melaleuca eleuterostachya, Phebalium megaphyllum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

AcaciaspMtholland_CLL1901_2019.shp

shows additional range

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022					
<small>Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.</small>					
SPECIMEN:	Collectors No: DA4112	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		
<hr/>					
Submitter of record:	Nick Watson		Role:	Botanist	
Signature:			Date submitted:	4/12/2019	

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Acacia undosa</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>24/8/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>58478</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
 Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Allocasuarina acutivalvis, Allocasuarina spinosissima, Eucalyptus burracoppinensis tall open shrubland over

2. Thryptomene kochii, Persoonia helix, Micromyrtus erichsenii mid sparse heathland over

3. Cyathostemon heterantherus, Hibbertia exasperata, Drummondita hassellii low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Melaleuca spicigera, Acacia yorkkrakinensis subsp. acrita, Hakea erecta, Banksia laevigata subsp.

fuscolutea, Callitris canescens, Melaleuca laxiflora, Santalum acuminatum, Lepidosperma

sanguinolentum, Melaleuca hamata, Petrophile stricta, Melaleuca condylosa

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Acaciaundosa_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA3897 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson **Role:** Botanist

Signature: **Date submitted:** 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Acacia undosa Attachment: Collections

Date	Collector No.	Species
24/08/2019	DA3987	Acacia undosa (P3)
27/08/2019	LT561	Acacia undosa (P3)
10/09/2019	DA4006	Acacia undosa (P3)
11/09/2019	DA4009	Acacia undosa (P3)
19/11/2019	DA4101	Acacia undosa (P3)
20/11/2019	DA4103	Acacia undosa (P3)

Flora Collection Permit Numbers:

DA: FB62000022

LT: FB62000021



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Baeckea sp. Forrestania (K.R. Newbey 1105)</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>13/9/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Brian Ellery</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____
Land manager present: <input type="checkbox"/>			
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____	Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>	Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____		
LAND TENURE:			
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____
			Shire road reserve <input type="checkbox"/>
			Other Crown reserve <input type="checkbox"/>
			Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT: Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY: Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____			
WHAT COUNTED: Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive	<u>19</u>		
Dead			
Area of pop (m ²): _____			
Note: Pls record count as numbers (not percentages) for database.			
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>
Total area of quadrats (m ²): _____			
Summary Quad. Totals: Alive			
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Percentage in flower: _____%			

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:			

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>		Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	0-10% <input checked="" type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	30-50% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>		50-100% <input type="checkbox"/>			
Drainage line <input type="checkbox"/>	Specify other:		Specify other:	Specify other: Orange	Specify other:
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus rigidula, Eucalyptus burracoppinensis low open mallee woodland over

2. Micromyrtus erichsenii, Persoonia helix, Hakea erecta mid sparse heathland over

3. Hibbertia rostellata, Hibbertia stowardii low isolated shrubs

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Acacia yorkkrakinensis subsp. acrita, Allocasuarina acutivalvis, Banksia purdieana, Drummondita

hassellii, Melaleuca calyptroides, Melaleuca cordata, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Baeckeasporrestania_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000024

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: BE1447 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Baeckea sp. Forrestania (K.R. Newbey 1105) Attachment: Collections

Date	Collector No.	Species
13/09/2019	BE1449	Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)
13/09/2019	BE1447	Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)
11/10/2019	BE1476	Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)
9/10/2019	DA4055	Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)
11/10/2019	DA4079	Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)
8/10/2019	BE1462	Baeckea sp. Forrestania (K.R. Newbey 1105) (P1)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON:	Banksia sphaerocarpa var. dolichostyla		TPFL Pop. No:	
OBSERVATION DATE:	8/11/2016	CONSERVATION STATUS:	T	New population <input checked="" type="checkbox"/>
OBSERVER/S:	Sacha Ruoss	PHONE :	92571625	
ROLE:	Botanist	ORGANISATION:	Mattiske Consulting Pty Ltd	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):									
Mount Holland, 100km SSE of Southern Cross, Western Australia									
Reserve No:									
DISTRICT:		Wheatbelt		LGA:		Shire of Yilgarn		Land manager present: <input type="checkbox"/>	
DATUM:		COORDINATES: (If UTM coords provided, Zone is also required)				METHOD USED:			
GDA94 / MGA94 <input type="checkbox"/>		DecDegrees <input type="checkbox"/>		DegMinSec <input type="checkbox"/>		UTMs <input type="checkbox"/>		GPS <input type="checkbox"/>	
AGD84 / AMG84 <input type="checkbox"/>		Lat / Northing: See attachment				No. satellites:		Differential GPS <input type="checkbox"/>	
WGS84 <input type="checkbox"/>		Long / Easting:				Map used:		Map <input type="checkbox"/>	
Unknown <input type="checkbox"/>		Zone:				Boundary polygon captured: <input type="checkbox"/>		Map scale:	
LAND TENURE:									
Nature reserve <input type="checkbox"/>		Timber reserve <input type="checkbox"/>		Private property <input type="checkbox"/>		Rail reserve <input type="checkbox"/>		Shire road reserve <input type="checkbox"/>	
National park <input type="checkbox"/>		State forest <input type="checkbox"/>		Pastoral lease <input type="checkbox"/>		MRWA road reserve <input type="checkbox"/>		Other Crown reserve <input type="checkbox"/>	
Conservation park <input type="checkbox"/>		Water reserve <input type="checkbox"/>		UCL <input type="checkbox"/>		SLK/Pole _____ to _____		Specify other: <u>Mine site</u>	

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	18207			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive				
------------------------------------	--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☐
 Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☐ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW**.

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input checked="" type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
 Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Allocasuarina acutivalvis, Eucalyptus burracoppinensis tall sparse shrubland over

2. Banksia purdieana, Hakea subsulcata, Melaleuca cordata mid sparse shrubland over

3. Micromyrtus erichsenii, Persoonia helix low isolated shrubs

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Acacia assimilis, Acacia yorkkrakinensis subsp. acrita, Banksia sphaerocarpa var. dolichostyla (T),

Beaufortia orbifolia, Callitris canescens, Drummondia hassellii, Eucalyptus burracoppinensis,

Isopogon gardneri, Melaleuca phoidophylla, Microcorys sp. Mt. Holland (D.A. Angus DA 2397),

Micromyrtus erichsenii, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐
COMMENT:
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐
FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Banksiasphaerocarpavardolichostyla_CLL1901_2019.shp

Shows additional range

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: TFL-17-1819					
<small>Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.</small>					
SPECIMEN:	Collectors No: SBR039	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		
Submitter of record:	Nick Watson		Role:	Botanist	
Signature:			Date submitted:	4/12/2019	

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Chamelaucium sp. Parker Range (B.H. Smith 1255)</u>		TPFL Pop. No.: _____
OBSERVATION DATE: <u>20/11/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Brian Ellery</u>	PHONE : _____	<u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>
--

Reserve No.: _____

DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u>	Land manager present: <input type="checkbox"/>
DATUM: GDA94 / MGA94 <input type="checkbox"/> AGD84 / AMG84 <input type="checkbox"/> WGS84 <input type="checkbox"/> Unknown <input type="checkbox"/>	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/> Lat / Northing: <u>See attachment</u> Long / Easting: _____ Zone: _____	METHOD USED: GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/> No. satellites: _____ Map used: _____ Boundary polygon captured: <input type="checkbox"/> Map scale: _____

LAND TENURE: Nature reserve <input type="checkbox"/> Timber reserve <input type="checkbox"/> Private property <input type="checkbox"/> Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/> National park <input type="checkbox"/> State forest <input type="checkbox"/> Pastoral lease <input type="checkbox"/> MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/> Conservation park <input type="checkbox"/> Water reserve <input type="checkbox"/> UCL <input type="checkbox"/> SLK/Pole _____ to _____ Specify other: <u>Mine site</u>
--

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____															
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>															
Count method: (Refer to field manual for list) _____															
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>TOTAL POP'N STRUCTURE:</td> <td>Mature:</td> <td>Juveniles:</td> <td>Seedlings:</td> <td>Totals:</td> </tr> <tr> <td>Alive</td> <td><u>2</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:	Alive	<u>2</u>				Dead				
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:											
Alive	<u>2</u>														
Dead															
Area of pop (m ²): _____ Note: Pls record count as numbers (not percentages) for database.															
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>REPRODUCTIVE STATE:</td> <td>Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input type="checkbox"/> Percentage in flower: _____%</td> </tr> </table>	REPRODUCTIVE STATE:	Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/>		Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input type="checkbox"/> Percentage in flower: _____%											
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/>														
	Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehisced fruit <input type="checkbox"/> Percentage in flower: _____%														

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Poor <input type="checkbox"/> Senescent <input type="checkbox"/>
COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority Flora Report Form

Version 1.2 August 2013

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)								
LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: <small>(on soil surface; e.g. gravel, quartz fields)</small> 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input checked="" type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	DRAINAGE: Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:			
Specific Landform Element: (Refer to field manual for additional values)								
CONDITION OF SOIL:								
Dry <input checked="" type="checkbox"/> Moist <input type="checkbox"/> Waterlogged <input type="checkbox"/> Inundated <input type="checkbox"/> Cracked <input type="checkbox"/> Saline <input type="checkbox"/> Other:								
VEGETATION CLASSIFICATION:* <small>E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland (Hibbertia sp., Acacia spp.) 3. Isolated clumps of sedges (Mesomelaena tetragona)</small>	1. Allocasuarina acutivalvis, Eucalyptus burracoppinensis tall sparse shrubland over 2. Banksia purdieana, Hakea subsulcata, Melaleuca cordata mid sparse shrubland over 3. Micromyrtus erichsenii, Persoonia helix low isolated shrubs 4.							
ASSOCIATED SPECIES: <small>Other (non-dominant) spp</small>	Acacia assimilis, Acacia yorkkrakinensis subsp. acrita, Banksia sphaerocarpa var. dolichostyla (T), Beaufortia orbifolia, Callitris canescens, Drummondita hassellii, Eucalyptus burracoppinensis, I sopogon gardneri, Melaleuca phoidophylla, Microcorys sp. Mt. Holland (D.A. Angus DA 2397), Micromyrtus erichsenii, Thryptomene kochii							
<small>* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.</small>								
CONDITION OF HABITAT: Pristine <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Degraded <input type="checkbox"/> Completely degraded <input type="checkbox"/>								
COMMENT:								
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> No signs of fire <input type="checkbox"/>								
FENCING: Not required <input type="checkbox"/> Present <input type="checkbox"/> Replace / repair <input type="checkbox"/> Required <input type="checkbox"/> Length req'd: _____								
ROADSIDE MARKERS: Not required <input type="checkbox"/> Present <input type="checkbox"/> Replace / reposition <input type="checkbox"/> Required <input type="checkbox"/> Quantity req'd: _____								
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)								
Shape file attached								
ChamelauciumspParkerRange_CLL1901_2019.shp								

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority Flora Report Form

Version 1.2 August 2013

DRF PERMIT/ LICENCE No: FB62000024 <small>Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.</small>					
SPECIMEN:	Collectors No: BE1485	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>		District Office <input type="checkbox"/>		Other:
Submitter of record: Nick Watson			Role: Botanist		
Signature:			Date submitted: 12/12/2019		

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Chorizema circinale</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>13/9/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Brian Ellery</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____
Land manager present: <input type="checkbox"/>			
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	GPS <input type="checkbox"/>	
WGS84 <input type="checkbox"/>	Long / Easting: _____	Differential GPS <input type="checkbox"/>	
Unknown <input type="checkbox"/>	Zone: _____	Map <input type="checkbox"/>	
No. satellites: _____		Map used: _____	
Boundary polygon captured: <input type="checkbox"/>		Map scale: _____	
LAND TENURE:			
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____
Shire road reserve <input type="checkbox"/>		Other Crown reserve <input type="checkbox"/>	
Specify other: <u>Mine site</u>			

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>119</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>		Loam <input type="checkbox"/>	Yellow <input checked="" type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	0-10% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	30-50% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>		50-100% <input type="checkbox"/>			
Drainage line <input type="checkbox"/>	Specify other:		Specify other:	Specify other: Orange	Specify other:
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Callitris canescens, Eucalyptus rigidula low open mallee woodland over

2. Micromyrtus erichsenii, Persoonia helix, Allocasuarina spinosissima mid tall sparse shrubland over

3. Beyeria sulcata var. gracilis, Drummondita hassellii low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Gastrolobium spinosum, Hakea erecta, Hakea minyma, Hakea subsulcata, Hibbertia ancistrophylla,

Leptospermum fastigiatum, Melaleuca calyptroides, Melaleuca cordata, Melaleuca hamata,

Melaleuca phoidophylla, Santalum acuminatum, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Chorizemacircinale_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000024

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: BE1444 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Chorizema circinale Attachment: Collections

Date	Collector No.	Species
13/09/2019	BE1444	Chorizema circinale (P3)
13/09/2019	DA4020	Chorizema circinale (P3)
1/11/2019	LT650	Chorizema circinale (P3)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024

LT: FB62000021



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Daviesia sarissa subsp. redacta</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>3/8/2019</u>	CONSERVATION STATUS: <u>P2</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Zac Simms</u>	PHONE : <u>92571625</u>	
ROLE: <u>Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____
Land manager present: <input type="checkbox"/>			
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____	Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>	Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____		
LAND TENURE:			
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____
			Shire road reserve <input type="checkbox"/>
			Other Crown reserve <input type="checkbox"/>
			Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>488</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
	Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)					
LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input type="checkbox"/> Flat <input type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: <small>(on soil surface; e.g. gravel, quartz fields)</small> 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	DRAINAGE: Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:
Specific Landform Element: (Refer to field manual for additional values)					
CONDITION OF SOIL: Dry <input checked="" type="checkbox"/> Moist <input type="checkbox"/> Waterlogged <input type="checkbox"/> Inundated <input type="checkbox"/> Cracked <input type="checkbox"/> Saline <input type="checkbox"/> Other:					
VEGETATION CLASSIFICATION:* <small>E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland (Hibbertia sp., Acacia spp.) 3. Isolated clumps of sedges (Mesomelaena tetragona)</small>	1. Eucalyptus eremophila, Eucalyptus rigidula, Eucalyptus flocktoniae subsp. flocktoniae low mallee woodland over 2. Melaleuca lateriflora, Melaleuca eleuterostachya, Melaleuca acuminata subsp. acuminata mid sparse shrubland over 3. Grevillea acuaria, Acacia hystrix subsp. hystrix, Microcybe ambigua low sparse shrubland 4.				
ASSOCIATED SPECIES: <small>Other (non-dominant) spp</small>	Acacia tetraptera, Daviesia aphylla, Daviesia argillacea, Daviesia scoparia, Dodonaea stenozyga, Exocarpos aphyllus, Melaleuca halmaturorum, Melaleuca hamata, Melaleuca johnsonii, Melaleuca laxiflora, Melaleuca pauperiflora, Melaleuca spicigera, Olearia muelleri, Santalum acuminatum				
<small>* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.</small>					
CONDITION OF HABITAT: Pristine <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Degraded <input type="checkbox"/> Completely degraded <input type="checkbox"/>					
COMMENT:					
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> No signs of fire <input type="checkbox"/>					
FENCING: Not required <input type="checkbox"/> Present <input type="checkbox"/> Replace / repair <input type="checkbox"/> Required <input type="checkbox"/> Length req'd: _____					
ROADSIDE MARKERS: Not required <input type="checkbox"/> Present <input type="checkbox"/> Replace / reposition <input type="checkbox"/> Required <input type="checkbox"/> Quantity req'd: _____					
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) Shape file attached Daviesiasarissasubspredacta_CLL1901_2019.shp					

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000025

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: ZS137 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Daviesia sarissa subsp. redacta Attachment: Collections

Date	Collector No.	Species
-	LT552	Daviesia sarissa subsp. redacta (P2)
-	LT553	Daviesia sarissa subsp. redacta (P2)
-	ZS137	Daviesia sarissa subsp. redacta (P2)
24/08/2019	LT555	Daviesia sarissa subsp. redacta (P2)
9/09/2019	DA3998	Daviesia sarissa subsp. redacta (P2)
5/08/2019	LT552	Daviesia sarissa subsp. redacta (P2)
4/08/2019	DA3985	Daviesia sarissa subsp. redacta (P2)
5/08/2019	LT553	Daviesia sarissa subsp. redacta (P2)
3/08/2019	ZS137	Daviesia sarissa subsp. redacta (P2)

Flora Collection Permit Numbers:

DA: FB62000022

LT: FB62000021

ZS: FB62000025



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Eremophila biserrata</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>12/9/2019</u>	CONSERVATION STATUS: <u>P4</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	352			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☐ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Found on cleared and degraded land

2.

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☐ Very good ☐ Good ☐ Degraded ☒ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Eremophilabiserrata_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4016 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Eremophila biserrata Attachment: Collections

Date	Collector No.	Species
9/07/2019	ZS124	Eremophila biserrata (P4)
12/09/2019	DA4016	Eremophila biserrata (P4)
29/10/2019	DA4087	Eremophila biserrata (P4)

Flora Collection Permit Numbers:

DA: FB62000022

ZS: FB62000025



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Eremophila verticillata</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>12/9/2019</u>	CONSERVATION STATUS: <u>T</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE: <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: Wheatbelt **LGA:** Shire of Yilgarn Land manager present: ☐

DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM's <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	3217			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: _____ %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant.			
Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme			
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: (on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	DRAINAGE: Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:
--	--	---	--	---	--

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus urna, Eucalyptus ravida, Eucalyptus prolixa low mallee woodland over

2. Melaleuca pauperiflora, Dodonaea stenozyga, Daviesia argillacea mid sparse shrubland over

3. Acacia merrallii, Grevillea acuaria, Microcybe multiflora subsp. multiflora low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Exocarpos aphyllus, Melaleuca cucullata, Santalum acuminatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Eremophilaverticillata_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: TFL 25-1920					
<small>Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.</small>					
SPECIMEN:	Collectors No: DA	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		
Submitter of record:	Nick Watson		Role:	Botanist	
Signature:			Date submitted:	3/12/2019	

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Eremophila verticillata Attachment: Collections

Date	Collector No.	Species
12/09/2019	DA	Eremophila verticillata (T)
22/11/2019	BE1490	Eremophila verticillata (T)

Flora Collection Permit Numbers:

DA: TFL 25-1920

BE: TFL 18-1819



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Eutaxia acanthoclada</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>21/11/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE: <u>92571625</u>
ROLE: <u>Senior Botanist</u>		ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u>	Land manager present: <input type="checkbox"/>
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DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	167			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: (on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other:	DRAINAGE: Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:
--	--	---	--	---	---

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1.

2.

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐
COMMENT:
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐
FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shapefile attached

Eutaxiaacanthoclada_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022					
Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.					
SPECIMEN:	Collectors No: DA4110	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		
Submitter of record: Nick Watson					
Role: Botanist					
Signature:					
Date submitted: 19/12/2019					

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Eutaxia acanthoclada Attachment: Collections

Date	Collector No.	Species
21/11/2019	DA4110	Eutaxia acanthoclada (P3)
21/11/2019	LT655	Eutaxia acanthoclada (P3)

Flora Collection Permit Numbers:

DA: FB62000022

LT: FB62000021



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Eutaxia lasiocalyx</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>14/9/2019</u>	CONSERVATION STATUS: <u>P2</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>		ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>42675</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input checked="" type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>				Orange	
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus urna, Eucalyptus ravida, Eucalyptus prolixa low mallee woodland over

2. Melaleuca pauperiflora, Dodonaea stenozyga, Daviesia argillacea mid sparse shrubland over

3. Acacia merrallii, Grevillea acuaria, Microcybe multiflora subsp. multiflora low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Exocarpos aphyllus, Melaleuca cucullata, Santalum acuminatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Eutaxialasiocalyx_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4024 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Eutaxia lasiocalyx Attachment: Collections

Date	Collector No.	Species
14/09/2019	DA4024	Eutaxia lasiocalyx (P2)
8/10/2019	BE1463	Eutaxia lasiocalyx (P2)
21/11/2019	BE1489	Eutaxia lasiocalyx (P2)
21/11/2019	DA4107	Eutaxia lasiocalyx (P2)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)		TPFL Pop. No:
OBSERVATION DATE: 29/10/2019	CONSERVATION STATUS: P1	New population <input checked="" type="checkbox"/>
OBSERVER/S: David Angus		PHONE: 92571625
ROLE: Senior Botanist		ORGANISATION: Mattiske Consulting Pty Ltd

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No:

DISTRICT: Wheatbelt	LGA: Shire of Yilgarn	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM's <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: See attachment	No. satellites: Map used:
WGS84 <input type="checkbox"/>	Long / Easting:	Boundary polygon captured: <input type="checkbox"/> Map scale:
Unknown <input type="checkbox"/>	Zone:	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	2338			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant.			
Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme			
Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: (on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input checked="" type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	DRAINAGE: Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:
--	--	---	--	---	---

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Callitris canescens, Eucalyptus rigidula low open mallee woodland over

2. Micromyrtus erichsenii, Persoonia helix, Allocasuarina spinosissima mid tall sparse shrubland over

3. Beyeria sulcata var. gracilis, Drummondita hassellii low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Acacia assimilis, Acacia sphacelata subsp. sphacelata, Allocasuarina acutivalvis, Beaufortia orbifolia,

Cyathostemon heterantherus, Eucalyptus burracoppinensis, Euryomyrtus maidenii, Grevillea

huegelii, Hibbertia exasperata, Microcorys sp. Mt. Holland (D.A. Angus DA 2397), Petrophile stricta,

Phebalium obovatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐
COMMENT:
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐
FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Eutaxiasplroncap_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022					
Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.					
SPECIMEN:	Collectors No: DA4088	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		
Submitter of record: Nick Watson					
Role: Botanist					
Signature:					
Date submitted: 19/12/2019					

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Eutaxia sp. North Ironcap (P. Armstrong PA 06/898) Attachment: Collections

Date	Collector No.	Species
-	DA3994	Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)
20/11/2019	DA4102	Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)
22/11/2019	LT657	Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)
29/10/2019	DA4088	Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)
1/11/2019	DA4097	Eutaxia sp. North Ironcap (P. Armstrong PA 06/898)

Flora Collection Permit Numbers:

DA: FB62000022

LT: FB62000021



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Grevillea lissopleura</u>	TPFL Pop. No: _____
OBSERVATION DATE: <u>14/9/2019</u>	CONSERVATION STATUS: <u>P1</u> New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>	PHONE : <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

Reserve No: _____	
DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u> Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
WGS84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u> No. satellites: _____ Map used: _____
Unknown <input type="checkbox"/>	Long / Easting: _____ Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Zone: _____	
LAND TENURE:	
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/> Private property <input type="checkbox"/> Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/> Pastoral lease <input type="checkbox"/> MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/> UCL <input type="checkbox"/> SLK/Pole _____ to _____ Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____															
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>															
Count method: (Refer to field manual for list) _____															
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>															
TOTAL POP'N STRUCTURE:															
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td><u>1815</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive	<u>1815</u>				Dead				
	Mature:	Juveniles:	Seedlings:	Totals:											
Alive	<u>1815</u>														
Dead															
Area of pop (m ²): _____															
Note: Pls record count as numbers (not percentages) for database.															
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>															
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/>															
Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehiscent fruit <input type="checkbox"/> Percentage in flower: _____%															

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Poor <input type="checkbox"/> Senescent <input type="checkbox"/>
COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW**,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input checked="" type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Melaleuca cliffortioides, Allocasuarina campestris, Dodonaea adenophora mid open heathland over

2. Trymalium myrtillus subsp. myrtillus low sparse shrubland

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Comesperma voluble, Lepidosperma diurnum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Grevillealissopleura_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4031 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Grevillea lissopleura Attachment: Collections

Date	Collector No.	Species
14/09/2019	DA4031	Grevillea lissopleura (P1)
9/10/2019	DA4037	Grevillea lissopleura (P1)

Flora Collection Permit Numbers:

DA: FB62000022



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Grevillea marriottii</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>11/9/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>		ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>724</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW**,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)					
LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: <small>(on soil surface; e.g. gravel, quartz fields)</small> 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input checked="" type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	DRAINAGE: Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:
Specific Landform Element: (Refer to field manual for additional values)					
CONDITION OF SOIL: Dry <input checked="" type="checkbox"/> Moist <input type="checkbox"/> Waterlogged <input type="checkbox"/> Inundated <input type="checkbox"/> Cracked <input type="checkbox"/> Saline <input type="checkbox"/> Other:					
VEGETATION CLASSIFICATION:* E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia); 2. Open shrubland (Hibbertia sp., Acacia spp.) 3. Isolated clumps of sedges (Mesomelaena tetragona)	1. Callitris canescens, Eucalyptus rigidula low open mallee woodland over 2. Micromyrtus erichsenii, Persoonia helix, Allocasuarina spinosissima mid tall sparse shrubland over 3. Beyeria sulcata var. gracilis, Drummondita hassellii low sparse shrubland 4.				
ASSOCIATED SPECIES: Other (non-dominant) spp	Gastrolobium spinosum, Hakea erecta, Hakea minyma, Hakea subsulcata, Hibbertia ancistrophylla, Leptospermum fastigiatum, Melaleuca calyptroides, Melaleuca cordata, Melaleuca hamata, Melaleuca phoidophylla, Santalum acuminatum, Thryptomene kochii				
<small>* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.</small>					
CONDITION OF HABITAT: Pristine <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Degraded <input type="checkbox"/> Completely degraded <input type="checkbox"/>					
COMMENT:					
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ Fire Intensity: High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> No signs of fire <input type="checkbox"/>					
FENCING: Not required <input type="checkbox"/> Present <input type="checkbox"/> Replace / repair <input type="checkbox"/> Required <input type="checkbox"/> Length req'd: _____					
ROADSIDE MARKERS: Not required <input type="checkbox"/> Present <input type="checkbox"/> Replace / reposition <input type="checkbox"/> Required <input type="checkbox"/> Quantity req'd: _____					
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) Shape file attached Grevilleamarriottii_CLL1901_2019.shp					

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4014 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Grevillea marriottii Attachment: Collections

Date	Collector No.	Species
8/07/2019	ZS123	Grevillea marriottii (P1)
11/09/2019	DA4014	Grevillea marriottii (P1)
21/11/2019	DA4108	Grevillea marriottii (P1)
24/11/2019	BE1495	Grevillea marriottii (P1)
22/11/2019	DA4111	Grevillea marriottii (P1)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024

ZS: FB62000025



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Gyrostemon ditrigynus</u>	TPFL Pop. No: _____
OBSERVATION DATE: <u>25/8/2019</u>	CONSERVATION STATUS: <u>P4</u> New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>	PHONE : <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

Reserve No: _____	
DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u> Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>
WGS84 <input type="checkbox"/>	Long / Easting: _____
Unknown <input type="checkbox"/>	Zone: _____
METHOD USED:	
GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
No. satellites: _____ Map used: _____	
Boundary polygon captured: <input type="checkbox"/> Map scale: _____	
LAND TENURE:	
Nature reserve <input type="checkbox"/> Timber reserve <input type="checkbox"/> Private property <input type="checkbox"/> Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/> National park <input type="checkbox"/> State forest <input type="checkbox"/> Pastoral lease <input type="checkbox"/> MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/> Conservation park <input type="checkbox"/> Water reserve <input type="checkbox"/> UCL <input type="checkbox"/> SLK/Pole _____ to _____ Specify other: <u>Mine site</u>	

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____															
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>															
Count method: (Refer to field manual for list) _____															
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>															
TOTAL POP'N STRUCTURE:															
<table border="1" style="width:100%"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td><u>27</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive	<u>27</u>				Dead				
	Mature:	Juveniles:	Seedlings:	Totals:											
Alive	<u>27</u>														
Dead															
Area of pop (m ²): _____															
Note: Pls record count as numbers (not percentages) for database.															
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive															
<table border="1" style="width:100%"> <tr> <td>No.</td> <td>Size</td> <td>Data attached</td> <td>Total area of quadrats (m²)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	No.	Size	Data attached	Total area of quadrats (m ²)											
No.	Size	Data attached	Total area of quadrats (m ²)												
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/>															
Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehiscent fruit <input type="checkbox"/> Percentage in flower: _____%															

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Poor <input type="checkbox"/> Senescent <input type="checkbox"/>
COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW**,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other: Orange	Specify other:
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Allocasuarina acutivalvis, Allocasuarina spinosissima, Eucalyptus burracoppinensis tall open shrubland over

2. Thryptomene kochii, Persoonia helix, Micromyrtus erichsenii mid sparse heathland over

3. Cyathostemon heterantherus, Hibbertia exasperata, Drummondita hassellii low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Melaleuca spicigera, Acacia yorkrakinensis subsp. acrita, Hakea erecta, Banksia laevigata subsp.

fuscolutea, Callitris canescens, Melaleuca laxiflora, Santalum acuminatum, Lepidosperma

sanguinolentum, Melaleuca hamata, Petrophile stricta, Melaleuca condylosa

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Gyrostemoniditrigynus_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA3990 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Gyrostemon ditrigynus Attachment: Collections

Date	Collector No.	Species
25/08/2019	DA3990	Gyrostemon ditrigynus (P4)
11/09/2019	DA4010	Gyrostemon ditrigynus (P4)

Flora Collection Permit Numbers:

DA: FB62000022



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Hakea pendens</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>11/9/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>1149</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input checked="" type="checkbox"/>	Laterite <input checked="" type="checkbox"/>		Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	0-10% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input type="checkbox"/>	Quartz <input type="checkbox"/>	30-50% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>		50-100% <input type="checkbox"/>			
Drainage line <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus capillosa subsp. polyclada low open mallee woodland over

2. Hakea pendens (P3), Beyeria sulcata, Santalum acuminatum mid sparse shrubland over

3. Rinzia sessilis, Westringia cephalantha subsp. cephalantha, Hibbertia ancistrophylla low sparse shrubland shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Hakeapendens_CLL1902_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4013 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Hibbertia turberculata</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>9/10/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE: <u>92571625</u>
ROLE: <u>Senior Botanist</u>		ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u>	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	4732			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input checked="" type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
 Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Melaleuca cliffortioides, Allocasuarina campestris, Dodonaea adenophora mid open heathland over

2. Grevillea lissopleura (P1), Trymalium myrtillus subsp. myrtillus low sparse shrubland

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Comesperma voluble, Lepidosperma diurnum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shapefile attached

Hibbertiaturberculata_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4036 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:**ATTACHED:** Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:**COPY SENT TO:** Regional Office ☐ District Office ☐ Other:**Submitter of record:** Nick Watson**Role:** Botanist**Signature:****Date submitted:** 12/19/2019

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Hibbertia turberculata Attachment: Collections

Date	Collector No.	Species
9/10/2019	DA4036	Hibbertia turberculata (P1)
22/11/2019	BE1491	Hibbertia turberculata (P1)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Labichea rossii</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>9/9/2019</u>	CONSERVATION STATUS: <u>P1</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Brian Ellery</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>		ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>3985</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input checked="" type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
 Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Callitris canescens, Eucalyptus rigidula low open mallee woodland over

2. Micromyrtus erichsenii, Persoonia helix, Allocasuarina spinosissima mid tall sparse shrubland over

3. Beyeria sulcata var. gracilis, Drummondita hassellii low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Gastrolobium spinosum, Hakea erecta, Hakea minyma, Hakea subsulcata, Hibbertia ancistrophylla,

Leptospermum fastigiatum, Melaleuca calyptroides, Melaleuca cordata, Melaleuca hamata,

Melaleuca phoidophylla, Santalum acuminatum, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐
COMMENT:
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐
FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Labichearossii_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000024

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: BE1429 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: Microcorys sp. Mt Holland (D. Angus DA 2397)		TPFL Pop. No: _____
OBSERVATION DATE: 13/9/2019	CONSERVATION STATUS: P1	New population <input checked="" type="checkbox"/>
OBSERVER/S: Brian Ellery	PHONE: 92571625	
ROLE: Senior Botanist	ORGANISATION: Mattiske Consulting Pty Ltd	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia
Reserve No: _____

DISTRICT: Wheatbelt	LGA: Shire of Yilgarn	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: See attachment	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	
LAND TENURE:		
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>
		Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/>
		MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/>
		SLK/Pole _____ to _____ Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____															
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>															
Count method: (Refer to field manual for list) _____															
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>															
TOTAL POP'N STRUCTURE:															
<table border="1" style="width:100%"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td>59183</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive	59183				Dead				
	Mature:	Juveniles:	Seedlings:	Totals:											
Alive	59183														
Dead															
Area of pop (m ²): _____															
Note: Pls record count as numbers (not percentages) for database.															
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive															
<table border="1" style="width:100%"> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>															
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/>															
Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehiscent fruit <input type="checkbox"/> Percentage in flower: _____%															

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Poor <input type="checkbox"/> Senescent <input type="checkbox"/>
COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	N	H	M
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input checked="" type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
 Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Allocasuarina acutivalvis, Eucalyptus burracoppinensis tall sparse shrubland over

2. Banksia purdieana, Hakea subsulcata, Melaleuca cordata mid sparse shrubland over

3. Micromyrtus erichsenii, Persoonia helix low isolated shrubs

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Acacia assimilis, Acacia yorkkrakinensis subsp. acrita, Banksia sphaerocarpa var. dolichostyla (T),

Beaufortia orbifolia, Callitris canescens, Drummondita hassellii, Eucalyptus burracoppinensis,

Isopogon gardneri, Melaleuca phoidophylla,

Micromyrtus erichsenii, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐
COMMENT:
FIRE HISTORY: Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐
FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

MicrocorysspMtHolland_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000024

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: BE1451 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Microcorys sp. Mt Holland (D. Angus DA 2397) Attachment: Collections

Date	Collector No.	Species
1/08/2019	DA3981	Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)
9/09/2019	DA4000	Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)
13/09/2019	BE1451	Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)
24/11/2019	DA4113	Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)
24/11/2019	BE1494	Microcorys sp. Mt Holland (D. Angus DA 2397) (P1)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927)		TPFL Pop. No: _____
OBSERVATION DATE: 9/9/2019	CONSERVATION STATUS: P1	New population <input checked="" type="checkbox"/>
OBSERVER/S: David Angus	PHONE: 92571625	
ROLE: Senior Botanist	ORGANISATION: Mattiske Consulting Pty Ltd	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):	
Mount Holland, 100km SSE of Southern Cross, Western Australia	
Reserve No: _____	

DISTRICT: Wheatbelt	LGA: Shire of Yilgarn	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: See attachment	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	
LAND TENURE:		
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>
		Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/>
		MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/>
		SLK/Pole _____ to _____ Specify other: _____

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____															
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>															
Count method: (Refer to field manual for list) _____															
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>															
TOTAL POP'N STRUCTURE:															
<table border="1" style="width:100%"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td>1982</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive	1982				Dead				
	Mature:	Juveniles:	Seedlings:	Totals:											
Alive	1982														
Dead															
Area of pop (m ²): _____															
Note: Pls record count as numbers (not percentages) for database.															
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive															
<table border="1" style="width:100%"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>															
REPRODUCTIVE STATE: Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input checked="" type="checkbox"/>															
Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehiscent fruit <input type="checkbox"/> Percentage in flower: _____%															

CONDITION OF PLANTS: Healthy <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Poor <input type="checkbox"/> Senescent <input type="checkbox"/>
COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	N	H	M
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>				Orange	
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus eremophila, Eucalyptus rigidula, Eucalyptus flocktoniae subsp. flocktoniae low mallee woodland over

2. Melaleuca lateriflora, Melaleuca eleuterostachya, Melaleuca acuminata subsp. acuminata mid sparse shrubland over

3. Grevillea acuaria, Acacia hystrix subsp. hystrix, Microcybe ambigua low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Acacia tetraptera, Daviesia aphylla, Daviesia argillacea, Daviesia scoparia, Dodonaea stenozyga,

Exocarpos aphyllus, Melaleuca halmaturorum, Melaleuca hamata, Melaleuca johnsonii, Melaleuca

laxiflora, Melaleuca pauperiflora, Melaleuca spicigera, Olearia muelleri, Santalum acuminatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shapefile attached

MicrocorysspMtHollandbroadleaf_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA3999 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) Attachment: Collections

Date	Collector No.	Species
3/08/2019	ZS161	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
13/09/2019	BE1450	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
9/09/2019	DA3999	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
9/09/2019	BE1428	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
9/10/2019	DA4078	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
11/10/2019	AP042	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
24/11/2019	BE1496	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
24/11/2019	LT661	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)

Flora Collection Permit Numbers:

DA: FB62000022

BE: FB62000024

AP: FB62000145

ZS: FB62000025

LT: FB62000021



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Orianthera exilis</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>10/7/2019</u>	CONSERVATION STATUS: <u>P2</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Zac Sims</u>	PHONE <u>92571625</u>	
ROLE: <u>Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

Reserve No: _____	
DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u> Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>
WGS84 <input type="checkbox"/>	Long / Easting: _____
Unknown <input type="checkbox"/>	Zone: _____
METHOD USED:	
GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>	
No. satellites: _____ Map used: _____	
Boundary polygon captured: <input type="checkbox"/> Map scale: _____	
LAND TENURE:	
Nature reserve <input type="checkbox"/> Timber reserve <input type="checkbox"/> Private property <input type="checkbox"/> Rail reserve <input type="checkbox"/> Shire road reserve <input type="checkbox"/> National park <input type="checkbox"/> State forest <input type="checkbox"/> Pastoral lease <input type="checkbox"/> MRWA road reserve <input type="checkbox"/> Other Crown reserve <input type="checkbox"/> Conservation park <input type="checkbox"/> Water reserve <input type="checkbox"/> UCL <input type="checkbox"/> SLK/Pole _____ to _____ Specify other: <u>Mine site</u>	

AREA ASSESSMENT: Edge survey <input type="checkbox"/> Partial survey <input type="checkbox"/> Full survey <input type="checkbox"/> Area observed (m ²): _____															
EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY: Actual <input type="checkbox"/> Extrapolation <input type="checkbox"/> Estimate <input type="checkbox"/>															
Count method: (Refer to field manual for list) _____															
WHAT COUNTED: Plants <input checked="" type="checkbox"/> Clumps <input type="checkbox"/> Clonal stems <input type="checkbox"/>															
TOTAL POP'N STRUCTURE:															
<table border="1" style="width:100%"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td><u>1</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive	<u>1</u>				Dead				
	Mature:	Juveniles:	Seedlings:	Totals:											
Alive	<u>1</u>														
Dead															
Area of pop (m ²): _____															
Note: Pls record count as numbers (not percentages) for database.															
QUADRATS PRESENT: No. _____ Size _____ Data attached <input type="checkbox"/> Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive															
<table border="1" style="width:100%"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>															
REPRODUCTIVE STATE:															
Clonal <input type="checkbox"/> Vegetative <input type="checkbox"/> Flowerbud <input type="checkbox"/> Flower <input type="checkbox"/> Immature fruit <input type="checkbox"/> Fruit <input type="checkbox"/> Dehiscent fruit <input type="checkbox"/> Percentage in flower: _____%															

CONDITION OF PLANTS: Healthy <input type="checkbox"/> Moderate <input type="checkbox"/> Poor <input type="checkbox"/> Senescent <input type="checkbox"/>
COMMENT:

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>				Orange	
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Burnt Allocasuarina acutivalvis, Eucalyptus sp. (E. cylindriflora, E. eremophila, E. gracilis, E. rigidula, E. burracoppinensis) low open mallee woodland over

2. Hakea minyma, Melaleuca cordata, Melaleuca hamata mid sparse shrubland over

3. Dampiera sacculata, Pimelea sulfurea, Hybanthus floribundus subsp. floribundus low sparse forbland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Banksia purdieana, Beaufortia orbifolia, Boronia ternata var. foliosa, Goodenia pinifolia, Gyrostemon

racemiger, Hakea subsulcata, Hemigenia westringioides, Isopogon gardneri, Melaleuca spicigera,

Platysace maxwellii, Santalum acuminatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Oriantheraexilis_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000025

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: ZS129 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Rinzia medifila</u>	TPFL Pop. No: _____
OBSERVATION DATE: <u>9/10/2019</u>	CONSERVATION STATUS: <u>P1</u> New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>	PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: Wheatbelt **LGA:** Shire of Yilgarn Land manager present: ☐

DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve ☐ Timber reserve ☐ Private property ☐ Rail reserve ☐ Shire road reserve ☐
 National park ☐ State forest ☐ Pastoral lease ☐ MRWA road reserve ☐ Other Crown reserve ☐
 Conservation park ☐ Water reserve ☐ UCL ☐ SLK/Pole _____ to _____ Specify other: Mine site

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>1</u>			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive				
-----------------------------	--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
 Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information:

E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant.

Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme

Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input checked="" type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>					
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Melaleuca cliffortioides, Allocasuarina campestris, Dodonaea adenophora mid open heathland over

2. Grevillea lissopleura (P1), Trymalium myrtillus subsp. myrtillus low sparse shrubland

3.

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Comesperma voluble, Lepidosperma diurnum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Rinziamedifila_CLL1902_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4043 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson **Role:** Botanist

Signature: **Date submitted:** 3/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Stylidium sejunctum</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>11/9/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>David Angus</u>		PHONE <u>92571625</u>
ROLE: <u>Senior Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place): <u>Mount Holland, 100km SSE of Southern Cross, Western Australia</u>

DISTRICT: <u>Wheatbelt</u>		LGA: <u>Shire of Yilgarn</u>	Reserve No: _____	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/>	DegMinSec <input type="checkbox"/>	UTMs <input type="checkbox"/>	GPS <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____		Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/>		Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____			
LAND TENURE:				
Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT:	Edge survey <input type="checkbox"/>	Partial survey <input type="checkbox"/>	Full survey <input type="checkbox"/>	Area observed (m ²): _____
EFFORT:	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY:	Actual <input type="checkbox"/>	Extrapolation <input type="checkbox"/>	Estimate <input type="checkbox"/>	
Count method: (Refer to field manual for list) _____				
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps <input type="checkbox"/>	Clonal stems <input type="checkbox"/>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	<u>673</u>			
Dead				
Area of pop (m ²): _____				
Note: Pls record count as numbers (not percentages) for database.				
QUADRATS PRESENT:	No. _____	Size _____	Data attached <input type="checkbox"/>	Total area of quadrats (m ²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	Clonal <input type="checkbox"/>	Vegetative <input type="checkbox"/>	Flowerbud <input type="checkbox"/>	Flower <input checked="" type="checkbox"/>
Immature fruit <input type="checkbox"/>	Fruit <input type="checkbox"/>	Dehiscent fruit <input type="checkbox"/>	Percentage in flower: _____%	

CONDITION OF PLANTS:	Healthy <input checked="" type="checkbox"/>	Moderate <input type="checkbox"/>	Poor <input type="checkbox"/>	Senescent <input type="checkbox"/>
COMMENT:				

THREATS - type, agent and supporting information:	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)			
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•			
•			

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/>	Granite <input type="checkbox"/>	(on soil surface; e.g. gravel, quartz fields)	Sand <input checked="" type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained <input type="checkbox"/>
Hill <input type="checkbox"/>	Dolerite <input type="checkbox"/>		Sandy loam <input type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally inundated <input type="checkbox"/>
Ridge <input type="checkbox"/>	Laterite <input type="checkbox"/>	0-10% <input checked="" type="checkbox"/>	Loam <input type="checkbox"/>	Yellow <input type="checkbox"/>	Permanently inundated <input type="checkbox"/>
Outcrop <input type="checkbox"/>	Ironstone <input type="checkbox"/>	10-30% <input type="checkbox"/>	Clay loam <input type="checkbox"/>	White <input type="checkbox"/>	Tidal <input type="checkbox"/>
Slope <input checked="" type="checkbox"/>	Limestone <input type="checkbox"/>	30-50% <input type="checkbox"/>	Light clay <input checked="" type="checkbox"/>	Grey <input type="checkbox"/>	
Flat <input checked="" type="checkbox"/>	Quartz <input type="checkbox"/>	50-100% <input type="checkbox"/>	Peat <input type="checkbox"/>	Black <input type="checkbox"/>	
Open depression <input type="checkbox"/>	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line <input type="checkbox"/>				Orange	
Closed depression <input type="checkbox"/>					
Wetland <input type="checkbox"/>					

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:**VEGETATION CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus urna, Eucalyptus ravida, Eucalyptus prolixa low mallee woodland over

2. Melaleuca pauperiflora, Dodonaea stenozyga, Daviesia argillacea mid sparse shrubland over

3. Acacia merrallii, Grevillea acuaria, Microcybe multiflora subsp. multiflora low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Exocarpos aphyllus, Melaleuca cucullata, Santalum acuminatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shape file attached

Stylidiumsejunctum_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000022

Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: DA4012 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 4/12/2019

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Teucrium sp. dwarf (R. Davis 8813)</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>21/11/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Ashley Pereira</u>		PHONE: <u>92571625</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u>	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	20696			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

--	--	--	--

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

Please return completed form to **Species And Communities Branch DPaW,**

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Threatened and Priority
Flora Report Form**HABITAT INFORMATION:** (Check more than one box for combinations or where necessary)

LANDFORM: Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	ROCK TYPE: Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	LOOSE ROCK: (on soil surface; e.g. gravel, quartz fields) 0-10% <input checked="" type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	SOIL TYPE: Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input checked="" type="checkbox"/> Peat <input type="checkbox"/> Specify other:	SOIL COLOUR: Red <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other: Orange	DRAINAGE: Well drained <input checked="" type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:
--	--	--	--	---	---

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**
Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:
VEGETATION CLASSIFICATION:*

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Eucalyptus urna, Eucalyptus ravidia, Eucalyptus prolixa low mallee woodland over

2. Melaleuca pauperiflora, Dodonaea stenozyga, Daviesia argillacea mid sparse shrubland over

3. Acacia merrallii, Grevillea acuaria, Microcybe multiflora subsp. multiflora low sparse shrubland

4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

Exocarpos aphyllus, Melaleuca cucullata, Santalum acuminatum

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:** Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐**COMMENT:****FIRE HISTORY:** Last Fire: Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐**FENCING:** Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____**ROADSIDE MARKERS:** Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____**OTHER COMMENTS:** (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shapefile attached

Teucriumdp.Dwarf_CLL1901_2019.shp

Please return completed form to **Species And Communities Branch** DPaW,

Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐



Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000145					
<small>Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licensing requirements see the Threatened Flora and Wildlife Licensing pages on DPaW's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.</small>					
SPECIMEN:	Collectors No: AP091	WA Herb. <input type="checkbox"/>	Regional Herb. <input type="checkbox"/>	District Herb. <input type="checkbox"/>	Other:
ATTACHED:	Map <input type="checkbox"/>	Mudmap <input type="checkbox"/>	Photo <input type="checkbox"/>	GIS data <input type="checkbox"/>	Field notes <input type="checkbox"/> Other:
COPY SENT TO:	Regional Office <input type="checkbox"/>	District Office <input type="checkbox"/>	Other:		
Submitter of record:	Nick Watson		Role:	Botanist	
Signature:			Date submitted:	19/12/2019	

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

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Threatened and Priority Flora Report Form

Version 1.2 August 2013

Please complete as much of the form as possible.

For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DPaW website at <http://www.dpaw.wa.gov.au/>

TAXON: <u>Verticordia stenopetala</u>		TPFL Pop. No: _____
OBSERVATION DATE: <u>30/10/2019</u>	CONSERVATION STATUS: <u>P3</u>	New population <input checked="" type="checkbox"/>
OBSERVER/S: <u>Ashley Pereira</u>		PHONE: <u>92571625</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>Mattiske Consulting Pty Ltd</u>	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):
Mount Holland, 100km SSE of Southern Cross, Western Australia

Reserve No: _____

DISTRICT: <u>Wheatbelt</u>	LGA: <u>Shire of Yilgarn</u>	Land manager present: <input type="checkbox"/>
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: <u>See attachment</u>	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input type="checkbox"/> Map scale: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: <u>Mine site</u>

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐

Count method: (Refer to field manual for list) _____

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
Alive	1587			
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. _____ Size _____ Data attached ☐ Total area of quadrats (m²): _____

Summary Quad. Totals: Alive

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REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehiscent fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: E.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Clearing	<u>N</u>	<u>H</u>	<u>M</u>
•	_____	_____	_____
•	_____	_____	_____

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Threatened and Priority Flora Report Form

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)**LANDFORM:**

- Crest ☐
 Hill ☐
 Ridge ☐
 Outcrop ☐
 Slope ☒
 Flat ☒
 Open depression ☐
 Drainage line ☐
 Closed depression ☐
 Wetland ☐

ROCK TYPE:

- Granite ☐
 Dolerite ☐
 Laterite ☐
 Ironstone ☐
 Limestone ☐
 Quartz ☐

Specify other:

LOOSE ROCK:

(on soil surface; e.g. gravel, quartz fields)

- 0-10% ☐
 10-30% ☐
 30-50% ☐
 50-100% ☐

SOIL TYPE:

- Sand ☒
 Sandy loam ☐
 Loam ☐
 Clay loam ☐
 Light clay ☒
 Peat ☐

Specify other:

SOIL COLOUR:

- Red ☐
 Brown ☒
 Yellow ☒
 White ☐
 Grey ☐
 Black ☐

Specify other:
Orange**DRAINAGE:**

- Well drained ☒
 Seasonally inundated ☐
 Permanently inundated ☐
 Tidal ☐

Specify other:

Specific Landform Element: (Refer to field manual for additional values)**CONDITION OF SOIL:**

- Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:

**VEGETATION
CLASSIFICATION:***

E.g. 1. Banksia woodland (B. attenuata, B. ilicifolia);

2. Open shrubland (Hibbertia sp., Acacia spp.)

3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Callitris canescens, Eucalyptus rigidula low open mallee woodland over

2. Micromyrtus erichsenii, Persoonia helix, Allocasuarina spinosissima mid tall sparse shrubland over

3. Beyeria sulcata var. gracilis, Drummondita hassellii low sparse shrubland

4.

**ASSOCIATED
SPECIES:**

Other (non-dominant) spp

Gastrolobium spinosum, Hakea erecta, Hakea minyma, Hakea subsulcata, Hibbertia ancistrophylla,

Leptospermum fastigiatum, Melaleuca calyptroides, Melaleuca cordata, Melaleuca hamata,

Melaleuca phoidophylla, Santalum acuminatum, Thryptomene kochii

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.**CONDITION OF HABITAT:**

- Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

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- Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS:

- Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Shapefile attached

Verticordiasstenopetala_CLL1901_2019.shp

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Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

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Threatened and Priority Flora Report Form

DRF PERMIT/ LICENCE No: FB62000145

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SPECIMEN: Collectors No: AP087 WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other:

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other:

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Nick Watson

Role: Botanist

Signature:

Date submitted: 19/12/2019

Please return completed form to **Species And Communities Branch** DPaW,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

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Record entered by: _____ Sheet No.: _____ Record Accepted in Database ☐

Verticordia stenopetala Attachment: Collections

Date	Collector No.	Species
30/10/2019	AP087	Verticordia stenopetala (P3)
20/11/2019	LT651	Verticordia stenopetala (P3)
23/11/2019	LT638a	Verticordia stenopetala (P3)

Flora Collection Permit Numbers:

AP: FB62000145

LT: FB62000021