

Cresswells Transport Pty Ltd

EL 9/2020 – Donalds Road

Year 3 Annual Report



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Summary

A bulk sample pit was drilled, blasted and excavated in the central part of the high grade dolomitic limestone deposit defined by a previous exploration drilling campaign. The broken rock was crushed on site to produce a stockpile of approximately 400 tonnes of -40mm fragments. Systematic sampling of the stockpile produced a set of representative composite samples which were assayed at ALS by fusion whole rock XRF.

The results indicate a uniform 96-97% CaCO₃+MgCO₃ grade of agricultural dolomite with 2% contaminant clay, quartz and iron oxide and minor interstitial water. The insitu rock is fractured with three regular joint orientations which result in consistent blast fragmentation and crushing properties. Further crushing trials on the -40mm product will determine the particle grading for agricultural application.

A hydrogeological and ground water management study was completed by William C Cromer Pty Ltd in 2023. The study concluded that from a hydrogeological perspective there is no evidence of issues that should prevent the quarry development proceeding. The only water in the bulk sample pit at the time of the study was from surface runoff rain water and samples of that water returned elevated levels of nitrogen, which may be derived from residue of the ammonium nitrate explosives used in the drill and blast process. When repeat samples were taken several months later the nitrogen levels were substantially reduced.

An agricultural water bore was drilled in November 2023, approximately 300 metres north-east of the bulk sample pit and within the EL boundary. The bore reached a total depth of 126 metres and intersected a minor flow of groundwater at 15 metres and a heavy flow at 120 metres. The 15 metre depth to first groundwater is consistent with the bulk sample pit being dry down to 5 metres. No analytical data from water bore samples are available, however it is expected that this bore and others to be drilled will provide important data on ground water levels and quality during life of the quarry operation.

Year 4 exploration in the EL will be within the area expected to be granted as a mine lease in 2024 and will focus on quarry development and environmental monitoring, mainly related to ground water quality and hydrology.

Year 3 expenditure was \$57,862.

Introduction and Tenement Information

EL 9/2020 is a 13 km² Category 3 (Construction Materials) EL located in the Donalds Road area southwest of Roger River (Figure 1). An all-weather 2WD vehicle access via the sealed Roger River Road heading south from Smithton and Donalds Road, and a good quality gravel road heading west from Roger River Road, connect to the eastern boundary of the EL (Figure 1).

The EL was granted to Cresswells Transport Pty Ltd for a 5 year term ending on December 3rd 2025. Cresswells own 100 per cent of the title and are the sole operators of exploration activities.

Land tenure (Figure 2) comprises freehold pasture in the east, Montague Regional Reserve land to the west and smaller blocks of State Forest preserved for potential timber production in the north-east and north-west. The most prospective portion of the EL, in terms of known geology, environmental and logistical considerations, is the private farmland in the east, in particular the largest paddock area extending furthest to the west (Figure 3).

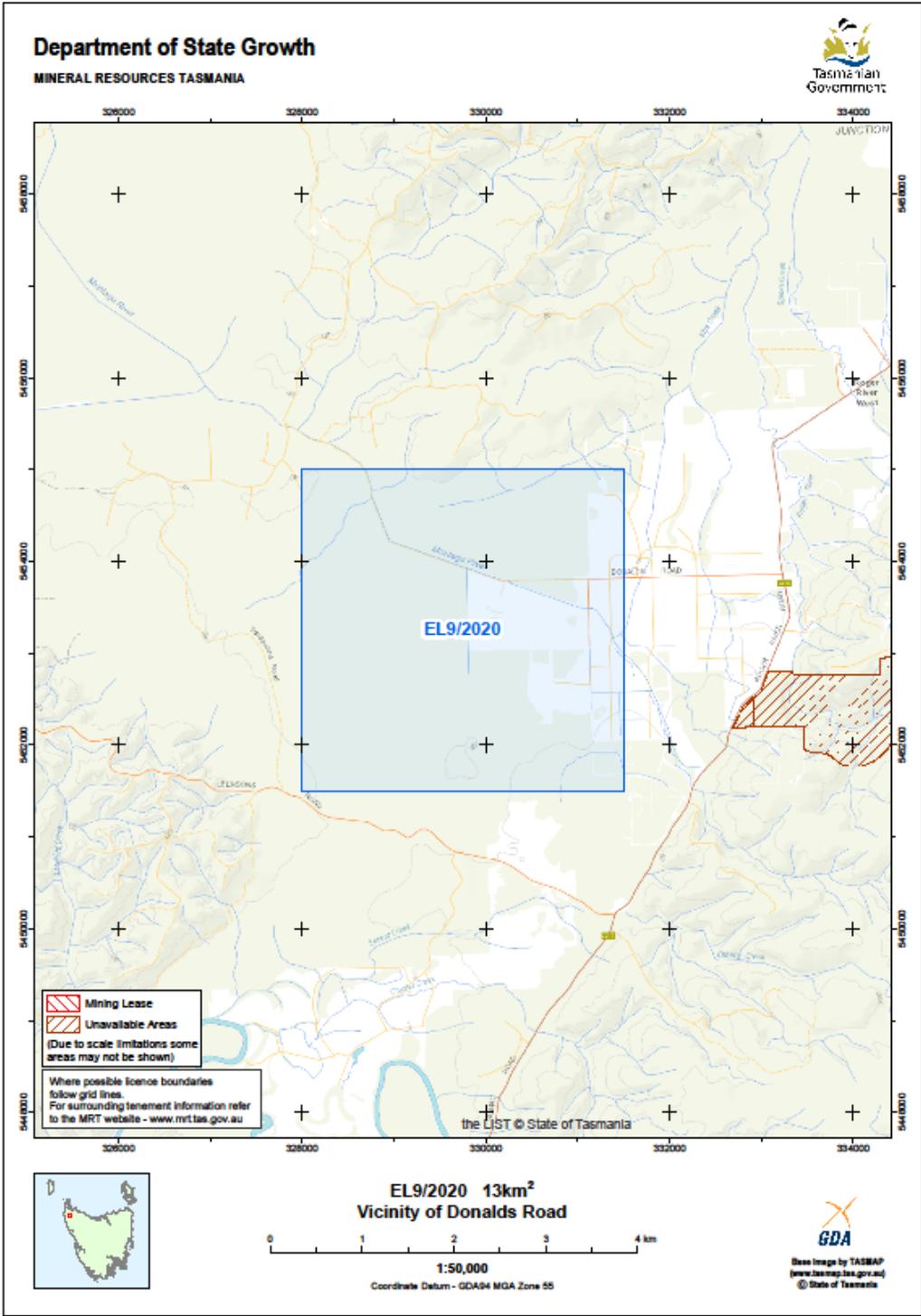


Figure 1. EL 9/2020 Location Map.

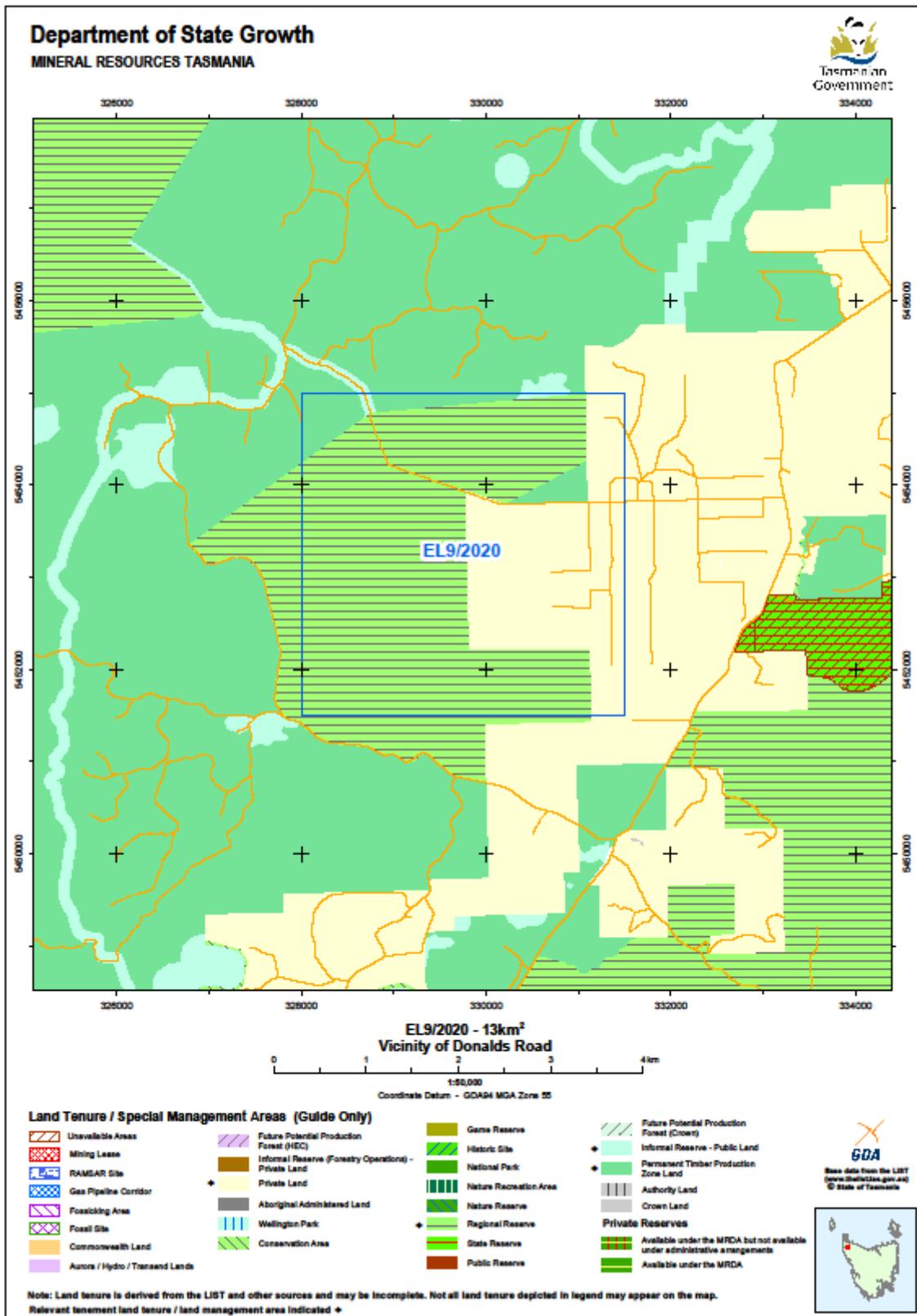


Figure 2. EL 9/2020 Land Tenure Map.

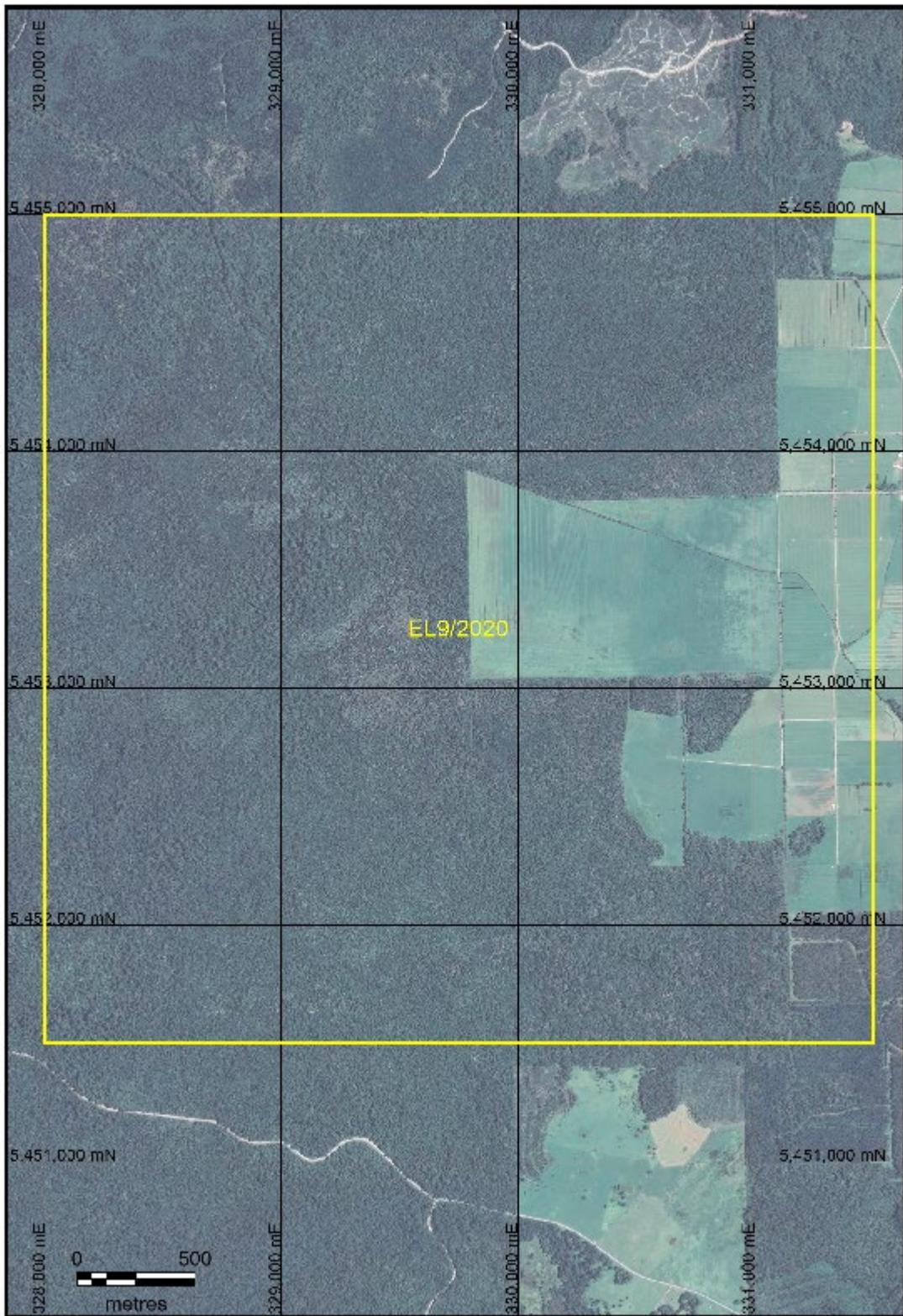


Figure 3. EL 9/2020 Airphoto.

List of Digital Files

	Filename	File format
Report	EL92020_2024_02_02_Annual Report_3	pdf
Report	EL92020_2023_12_20_Appendix_1	pdf
Geochemistry data template	EL92020_2024_02_02_SG_1	xls
Additional assay data files	AD23181198 A4QC_AD23181198_92578-95786975 A4QOA_AD23181198_92578-95786971	xls pdf pdf
File Verification Listing	EL92020_2024_02_02_Filelisting	xls

Map Coordinates Datum

GDA94 MGA Zone 55.

All point coordinates in this report were taken by hand held GPS

Geology and Exploration Rationale

The MRT Digital Geological Atlas 1:25,000 Roger Sheet (McClenaghan, et al, 2015) indicates that at the regional scale the EL is entirely covered by a thin layer of Quaternary regolith overlying Smithton Dolomite, a widespread unit in the Smithton Synclinorium, stratigraphically near the top of the Neoproterozoic Togari Group. At the prospect scale numerous small outcrop exposures of apparently high grade dolomitic limestone are exposed in the flat paddock country comprising the eastern portion of the EL.

Cresswells aim to compete in and contribute to an expansion of the agricultural dolomite market in Tasmania. The exploration aim is simply to define a resource of high grade stone in an environmentally benign location with access and quarrying factors favourable to support an economic project. The exploration involves scout prospecting, close spaced drilling and bulk sampling, to determine the bulk rock chemistry and crushing and handling characteristics of run of mine product.

To achieve permitting for operating an environmentally acceptable quarry, studies of hydrological, ground water and karst geology will also be conducted.

Review of Previous Exploration

No records of mineral exploration and none specifically for dolomite, dolostone or limestone in the area covered by EL 9/2020 have been found. Given that the prospective part of the EL is flat pasture country entirely underlain by dolostone outcrop and subcrop it is unlikely that documented company exploration for metallic commodities has occurred.

In February 2021 Cresswells drilled a portion of the Donalds Road prospect on flat pasture in a paddock with scattered outcropping dolostone which visually and from acid testing appeared to be of uniformly good quality. Twenty vertical rotary

percussion holes were drilled in a box-style close spaced pattern (Figure 4) using an Atlas Copco Powerroc blast hole percussion rig which drilled 90mm diameter open holes using 3.6m rods.

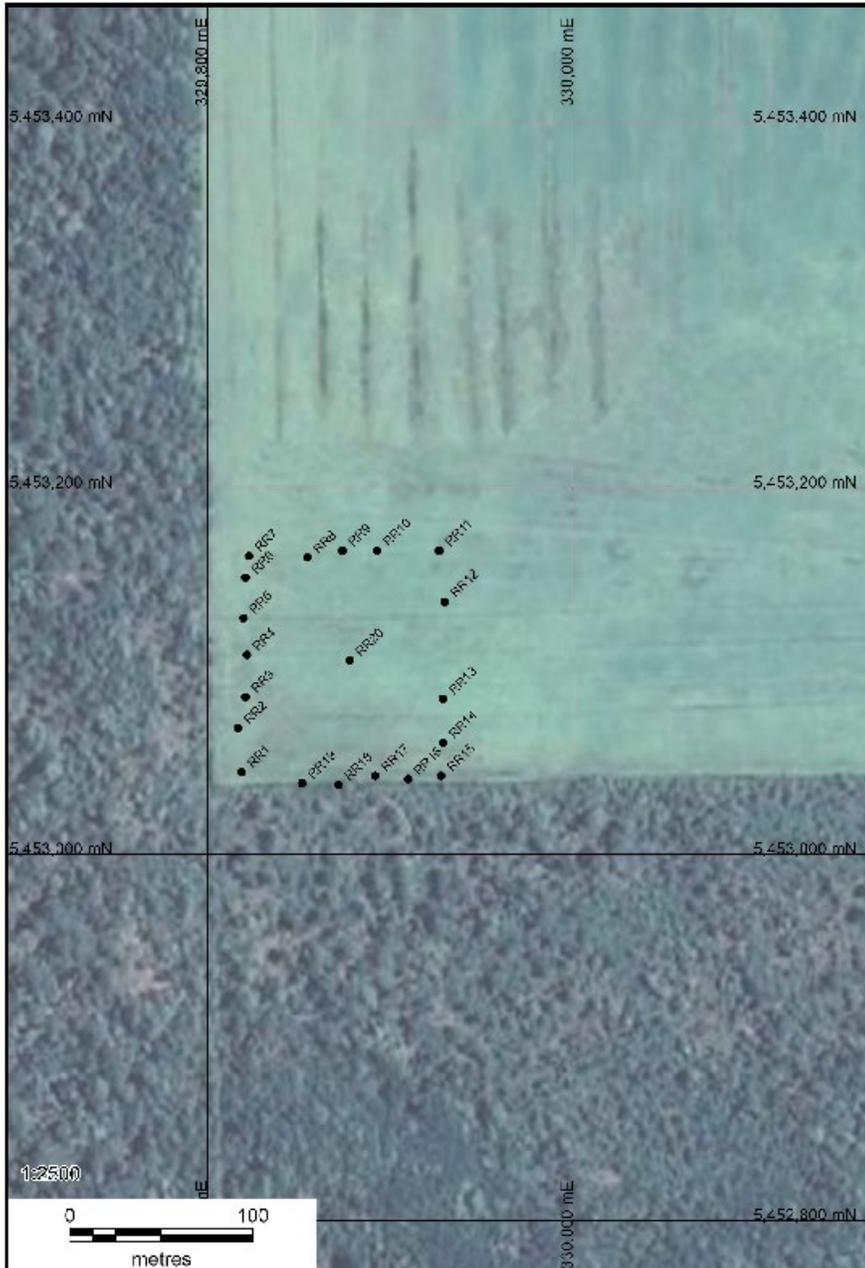


Figure 4. Drill hole locations in the SW corner of the main paddock.

Composite samples of combined chips and dust were collected into bins at the collar during each rod change and assayed at ALS by Whole Rock Fusion XRF.

For the 82 composite samples CaO results range from 28.7-31.5%, MgO from 19.9-21.3% and LOI from 44.9-47.8%. Very little clay and almost no iron hydroxide group minerals were observed and the interpretation is supported by the low Al, K, Na and Fe concentrations. A subjective value of 2% has been assigned to cover water LOI. On that basis total carbonates range from 94.6-98.6% with only one sample scoring <95% (Morrison, 2022).

EL 9/2020 Year 3 Exploration

Bulk Sampling

MRT approved a 1,000 tonne bulk sample pit to be excavated in the central part of the previous drill pattern area (Figure 4), for the dual purpose of -

1. testing the blast fragmentation and crushing properties of the rock, and
2. testing ground water behavior and chemistry down to 5 metres depth and enabling any evidence karst to be observed in the pit walls.

The pit (Figure 5) was excavated and found to be dry down to the design depth of 5 metres, however subsequent wet weather flooded the pit and allowed important ground water observations and interpretations to be made (Cromer, 2023).



Figure 5. Removing rain water from the bulk sample pit.

An initial batch of approximately 500 tonnes of drill and blast product was extracted and crushed on site by Cresswells portable crusher, producing an estimated 400 tonnes stockpile of -40mm material. The stockpile (Figure 6) is centred at 329977E, 5453077N.



Figure 6. -40mm Stockpile, looking SW with rain water lying on the ground surface (backpack and spear scale).

The stockpile was sampled by 20 half PVC tube spear samples spaced uniformly around the stockpile surface. The samples were combined and manually mixed on a plastic sheet, then divided into 6 equal sized calico bag samples (DRR001-006) estimated to weigh about 3-4 kg each.

The 6 samples were delivered to the ALS laboratory Burnie for drying, crushing and pulverising to -75 microns. Splits of the pulp went to Townsville for assaying by the ALS ME 26 Whole Rock Fusion XRF method, which assays 14 major element oxides and common metal oxides plus Loss on Ignition (largely CO₂ in bone dry high grade carbonate rock).

The results (Appendix 2) provide important resource quality and variability information to expand on the results from the previous drilling program. There is very little variation between the samples and given the systematic sampling method it is reasonable to expect that the results are representative of the entire stockpile. CaO ranges from 30.4-30.7% (Mean 30.6%) and MgO from 20.7-20.9% (Mean 20.8%). This corresponds to an average combined calcium+magnesium oxide grade of 51.4%, with a CaO:MgO ratio of 3:2. Potential contaminant oxides, mainly Al₂O₃ (Mean 0.37%), SiO₂ (Mean 1.22%)

and Fe₂O₃ (Mean 0.19%) total about 2% and as the average LOI is 46.9%, it suggests a water content of <2% and a dolomite grade of 96-97%.

Three joint-controlled fracture directions are prominent in the western wall of the pit (see cover page photo); two sub vertical and one sub horizontal. Several compass readings on each gave the following average orientations (converted to true north bearings):

1. Strike 320 Dip 80 to NE
2. Strike 230 Dip 75 to SE
3. Strike 340 Dip 05 to NE

The residual water level in the pit was about 4 metres below surface at the time and there was no evidence of ground water transmitting through the open fractures at that depth. However, surface rain water was trickling down some of the open sub vertical fractures and slowly recharging the pit water. Not all fractures are open. Particularly in the sub horizontal set annealed insipient joints are more common than open fractures. It is not possible to tell if the open fracture have been enhanced by blasting, or even by stress release from the wall bounding the excavated void.

In the southern wall of the pit there is a sub vertical crush zone of brecciated dolomite fragments, quite tightly packed and not making water. This structure is interpreted as an annealed fault zone about 50 cm wide. Individual rock fragments look very fine grained and tightly packed, with no evidence of textural porosity or permeability. Any ground water below the depth of the pit will be transmitted through fractures.

There is no evidence of karst features in the pit, which is consistent with the drilling results. The dolomite (strictly it should be called dolostone or dolomitic limestone but dolomite is the established tradeable agricultural commodity name for the crushed rock and is the term used for this project.) is very consistent in texture, colour, fragment shape and softness. No cherty or shaley bands were noted in pit outcrop or on the stockpile, in contrast to some of the other Proterozoic dolomites quarried in Tasmania.

Hydrogeology and Groundwater

Groundwater is an important resource in the region, particularly for the dairy industry, and the potential impact of quarrying on water quality and hydrology is one of the main environmental considerations requiring base line data and modeling in advance.

A hydrogeological and ground water management study was completed by Bill Cromer, William C Cromer Pty Ltd in 2023 (Appendix 1). The study concluded that from a hydrogeological perspective there is no evidence of issues which should prevent the quarry development proceeding. As discussed above the only

water in the bulk sample pit was from surface runoff of rain water and samples of that returned elevated levels of nitrogen, which may be derived from residue of the ammonium nitrate explosives used in the drill and blast process. When repeat samples were taken several months later nitrogen levels had substantially reduced.

Independent of exploration activities, an agricultural water bore was drilled in November 2023, approximately 300 metres Northeast of the bulk sample pit and within the EL boundary. The bore reached a total depth of 126 metres and intersected a minor flow of groundwater at 15 metres and a heavy flow at 120 metres. The 15 metre depth to first groundwater is consistent with the bulk sample pit being dry down to 5 metres and it is expected that this water bore will provide useful data on ground water levels and quality during life of the quarry operation.

There may also need to be changes to the type of explosives, or the blast hole charge size, used in the future if water quality monitoring confirms a link between nitrogen levels and blasting events.

Environmental Issues

No environmental damage occurred during the bulk sampling campaign and the landowner is satisfied with impact the pit and stockpile make on a small section of land in the corner of the paddock. The wet conditions encountered and the impact of traffic on the access route within the paddock indicate the need for a built up well make gravel road to the site once a mining lease and permit of proceed with quarry development are granted.

Monitoring the ground water quality will be an on-going requirement in both the pit and surrounding bores. The existing farm water bore will be useful in the short term however additional bores will be needed to track the hydrology once the quarry is operating. Any evidence of karst features exposed in the advancing quarry walls will also be documented and reported, and appropriate changes in pit design implemented if required.

Expenditure

Expenditure in the 12 month period ending December 3rd, 2023 was \$57,862, in the following categories:

Exploration geology	\$4,400
Groundwater and hydrogeology study	\$25,467
Natural values assessment	\$3,630
Drilling & blasting	\$13,800
Excavation and crushing	\$9,200
Assays-ALS	\$525
Tenement and office costs	\$840
TOTAL	\$57,862

Future Exploration

It is expected that permitting will be completed and quarry production will commence in 2024 on a mining lease within EL 9/2020. Some additional exploration and water bore drilling will be required in the residual EL area in the future but for the 2024 almost all on-ground work will be related to quarry development.

References

Cromer, W. C. (2023). *Hydrogeological Report and Groundwater Management Plan, proposed dolomite quarry, Donalds Road, Roger River West. Revision 2.* Unpublished report for Cresswell's Transport Pty Ltd by William C. Cromer Pty Ltd, 20 December 2023. (included as Appendix 1 in this Annual Report).

McClenaghan, M. P., Seymour, D. B., Green, D. C. and Brown, A. V. (compilers) 2015. Digital Geological Atlas 1:25000 Scale Series. Sheet 3245 Roger. Mineral Resources Tasmania.

Morrison, K. C. 2022. Cresswells Transport Pty Ltd, EL 9/2020 Donalds Road Year 1 Annual Report.

APPENDIX 1
Hydrogeological Report & Ground Water Management Plan

APPENDIX 2
Assay Results, Lab Certificates and Geochemistry Template
(Digital Files)-