



# Mole Creek EL4/2015

## Annual Report

11 March 2018 to 10 March 2019

**Sibelco Mining Services**  
49-55 Woodlands Drive  
Braeside, Victoria  
AUSTRALIA

Holder: Sibelco Lime (Tasmania) Pty Ltd  
Authority: EL4/2015  
Grant Date: 11/03/2016  
Expiry Date: 10/03/2021  
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Distribution: Mineral Resources Tasmania  
Sibelco Australia Limited

## **ABSTRACT**

This report details work completed by Sibelco Lime (Tasmania) Pty Ltd (**Sibelco**) on EL4/2015 during the period 11 March 2018 to 10 March 2019.

Sibelco extracts limestone from Mining Lease 96M/1971 located on Crown Land near Mole Creek. Exploration on EL4/2015 is initially targeted at locating an extension of this deposit.

In the previous reporting period a total of 71 holes were drilled with good quality  $\text{CaCO}_3 > 95\%$  limestone delineated in the northern part of the lease at the Knoll whereas only poor quality  $\text{CaCO}_3 < 90\%$  limestone was found south of the Knoll. The Knoll is a small hill which lies to the west of Cave Hill Road, which is an along strike continuation of the SW deposit.

Mapping was undertaken in this reporting period, as per the Year 3 work program, which has clarified the structure of the deposit and refined exploratory targets. No additional sampling was undertaken as proposed in the Year 3 program because it was determined that drilling must be undertaken irrespective of sampling. A drilling program is proposed in Year 4 to the east of Cave Hill Road to better define the SW Deposit on EL4/2015.

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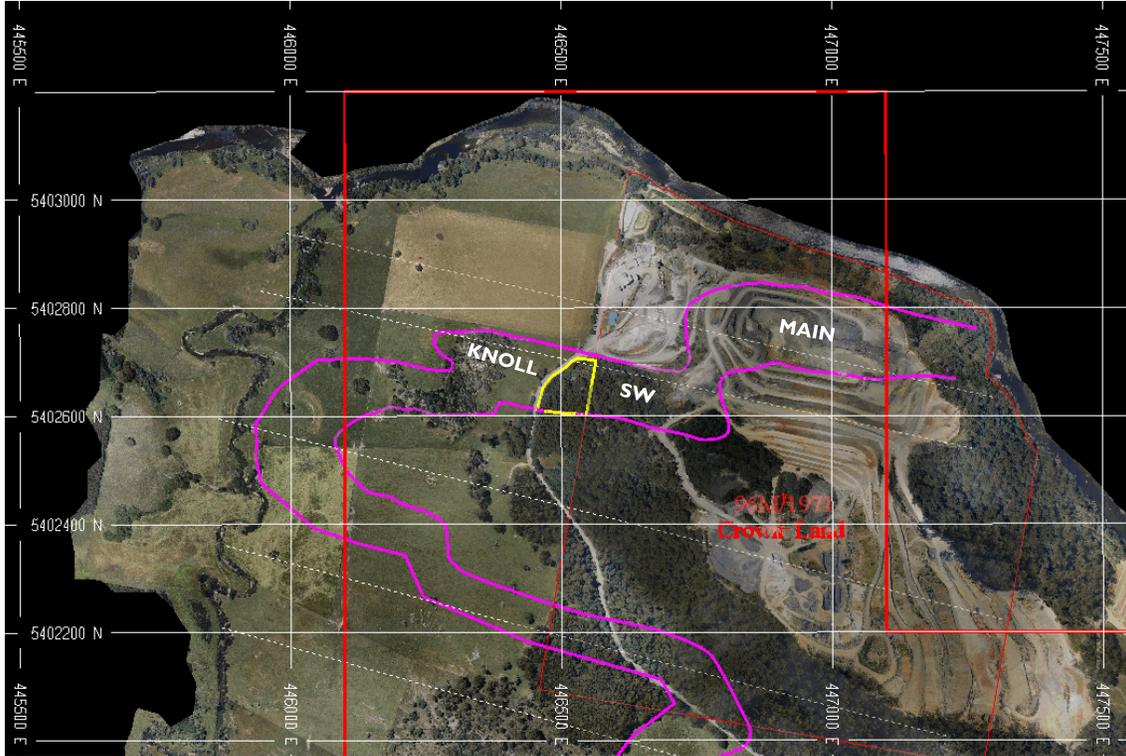
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# I. SUMMARY ACTIVITY MAP

Mapping was undertaken of the SW deposit on EL4/2015 in the reporting period (Year 3) which when coupled with previously collected geological data (Year 2) has led to a refined structural model of the limestone deposit.



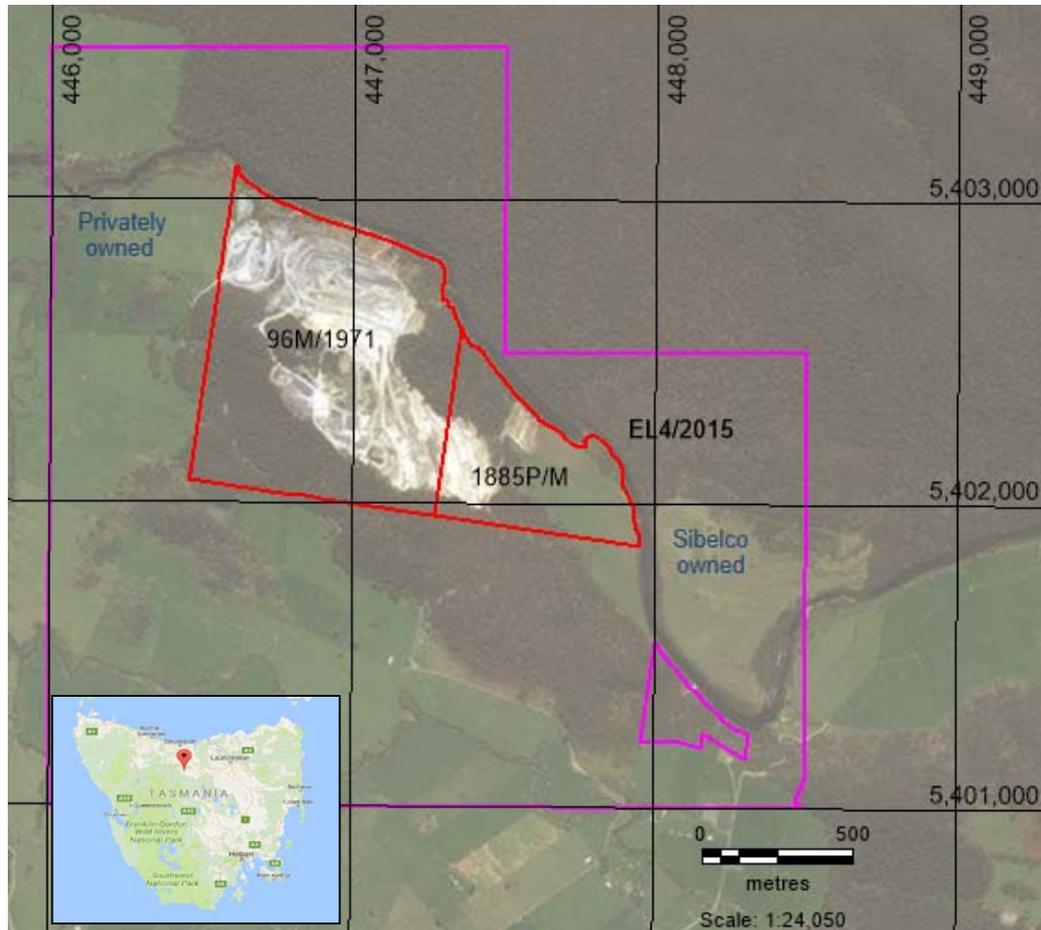
**Figure 1 – Structural model of the limestone deposit with Year 3 mapped area (yellow polygon)**

Drilling was planned to be undertaken of the mapped area but was postponed to Year 4.

## 2. INTRODUCTION

### 2.1 Location and Access

Mole Creek is located in Northern Tasmania. The Mole Creek Limestone Operation is located to the west of Mole Creek, Tasmania within 96M/1971 located on Crown Land.



**Figure 2 – Location Plan**

Exploration Licence EL4/2015 surrounds the operational mining lease.

### 2.2 Tenure

EL4/2015, was granted to Sibelco Lime (Tasmania) Pty Ltd on 11 March 2016 for a period of 5 years. EL4/2015 is on Crown Land, Sibelco owned land and privately owned land.

### 2.3 Geology

Limestones in Tasmania are predominantly Ordovician age in the west, Permian to the east with Tertiary deposits in low lying coastal areas. The Mole Creek area has extensive Ordovician Limestones being the Gordon Limestone of the Junee Group. The Gordon Limestone is typically fine grained, crystalline, medium to dark grey but locally light-grey, pink and cream coloured. The rock is impervious but transmits water through cavities.

The limestone deposit at the mine can be sub-divided based on lithology and grade. The Upper Limestone unit has the highest grade calcium carbonate and is therefore capable of producing by calcining the highest calcium oxide lime product.

## **2.4 Exploration rational and objectives**

EL4/2015 is located surrounding Sibelco's limestone operation in an area where historical mapping has shown the presence of limestone occurrences. This limestone is being investigated to determine its size and quality and suitability for mining.

## **3. REVIEW OF PREVIOUS WORK**

The Mole Creek Limestone has been extensively studied for economic, academic and environmental reasons. In 1957 the Geological Survey reported on the nature and distribution of limestones in Tasmania and outlined deposits which are accessible and suitable for development. The Geological Survey considered the Ordovician limestones to be the most important actual and potential sources of lime in Tasmania.

Detailed geological investigations have been undertaken such as a study by Rao in 1989 who assessed the geochemistry of the Gordon Limestone at Mole Creek. Rao considered the Gordon limestone to be characterized by low Manganese, moderate Sodium and high Strontium concentrations and concluded that the formation is mainly marine. In 1996 the Karst National Park was declared to provide protection for some cave systems which has also generated an ongoing environmental based interest in the geology and geomorphology of limestone in the area.

Drilling was undertaken to assess the broader prospectivity of EL4/2015 and to assess a small hill, known as the Knoll, which is an along strike continuation of the SW deposit (shown in Figure 2). In May 2017, Sibelco undertook a drilling program of 71 holes for 428 metres. Of these holes, 53 were 2 metre length holes drilled into rock to obtain high quality rock chip samples while 19 deeper holes were drilled. Carbonate suite analysis was undertaken of all drill-holes and a technical assessment of the results was conducted.



**Figure 3 – May 2017 Drilling (white dots collared in rock, tan dots collared in clay)**

A photograph of the Knoll is shown in Figure 4.



**Figure 4 – The Knoll**

Good quality  $\text{CaCO}_3 > 95\%$  limestone was encountered with drilling in the northern part of the lease at the Knoll whereas only poor quality  $\text{CaCO}_3 < 90\%$  limestone was encountered in drilling south of the Knoll. The May 2017 drilling results for limestone expressed as  $\text{CaCO}_3$  are shown in Figure 5.



**Figure 5 – May 2017 Drilling  $\text{CaCO}_3$  results**

## **4. EXPLORATION CONDUCTED DURING THE REPORTING PERIOD**

Exploration undertaken during the reporting period includes:

- Field mapping; and
- Analysis of all data.

A refined structural model of the limestone deposit was developed based on data collected during this reporting period and previous years exploration on EL4/2015.

## **5. DISCUSSION OF RESULTS**

A structural model of the limestone deposit was developed (Figure 1) which depicts an easterly plunging synform with parasitic folds rather than faulted offsets. Drilling is planned to test the continuity of the contact between the Main and SW deposit and whether it is faulted, parasitically folded or a combination of folding and faulting. Further investigations are planned to test targets on generated from the structural model.

## **6. CONCLUSIONS**

Good quality limestone has been found at the quarry (Main deposit), SW deposit and the Knoll. Further drilling of the SW deposit is required on EL4/2015. There is potential for further good quality limestone along strike and/or across synform-axis.

## **7. FUTURE EXPLORATION**

The proposed work program for the 12 months to 10 March 2020 includes:

- Conduct a percussion drilling program on the SW deposit; and
- Assay analysis.

## **8. ENVIRONMENTAL MANAGEMENT**

No rehabilitation activities required following the field mapping.

## **9. EXPENDITURE**

Expenditure is presented in Table 1.

Exploration Category	Description of Activity	Quality	Expenditure
<b>Office Administration</b>	Tenement Administration	2 Days	\$1,000
<b>Authority Management</b>			
<b>Office Activities</b>	Planning, and reporting	5 days	\$5,000
	Data Assessment	2 days	\$10,000
<b>Field Activities</b>	<b>Geological Mapping</b>		
	Mapping	Total (with accomodation)	\$2,000
	Sampling	Number of samples	
	Equipment Hire	Type and period	
	Accomodation/Field Camp	days	
	Travel	days	
	Land Holder Liaison	1 day	
	Survey mapping		
	<b>Geophysics</b>		
	<i>Airborne</i>		
	Type	Line Kms	
	<i>Ground</i>		
	Type	Line Kms	
	<b>Drilling</b> (program cost)		
	RAB/AC	71 Holes/ 428 total metres	
	RC	Holes/total metres	
	Diamond	Holes/total metres	
	Other	Holes/total metres	
<b>Laboratory</b>			
<b>Salaries / Wages</b>	Employees	No. and period	
	Contractors	No. and period	
		<b>Grand Total</b>	<b>\$18,000</b>

**Table I - Expenditure**

## **10. REFERENCES**

Geological Survey (1957) Limestones in Tasmania. Mineral Resources No. 10.

Rao, C.P (1989) Geochemistry of the Gordon Limestone (Ordovician), Mole Creek, Tasmania. Australian Journal of Earth Sciences. Vol 36, 1989-Issue 1

## **11. APPENDICES**

See appended digital data.

## **12. BIBLIOGRAPHIC DATA SHEET**

<b>REPORT NUMBER</b>	IO201901
<b>TITLE</b>	ANNUAL REPORT FOR PERIOD 11 MARCH 2018 TO 10 MARCH 2019 EL4/2015 MOLE CREEK LIMESTONE TASMANIA
<b>AUTHOR</b>	I. OPPY
<b>DATE</b>	FEBRUARY 2019
<b>PROSPECT NAME</b>	MOLE CREEK LIMESTONE
<b>OWNER/OPERATOR</b>	SIBELCO LIME (TASMANIA) PTY LTD
<b>KEY WORDS</b>	LIMESTONE INDUSTRIAL MINERALS
<b>COMMODITY</b>	LIMESTONE
<b>TECTONIC UNITS</b>	LACHLAN FOLD BELT TASMANIA BASIN
<b>1: 250 000 MAP SHEET</b>	GEOLOGY OF NORTHWEST TASMANIA
<b>1: 63 360 MAP SHEET</b>	MIDDLESEX 8114N
<b>1: 25 000 MAP SHEET</b>	MOLE CREEK 4439