

# **Birchs Inlet (EL14/2021) Annual Report on Exploration 2023**

**Sorell Peninsula, Tasmania**

**For the period 26th April 2022 to 25th April 2023**

Compiled by: Robert Reid  
(BSc Hons, MSc Econ Geol, MAIG)  
([robreid@bigpond.com](mailto:robreid@bigpond.com)) &  
25/04/2023.

Stunalara (Operations) Pty Ltd.  
Suite 90, 102 Railway Street  
West Perth, Western Australia, 6005  
email [ah@stunalara.com](mailto:ah@stunalara.com)

Datum used: GDA94, Zone 55

---

## Summary

EL14/2021 Birchs Inlet is located 25km south south-east of Strahan in western Tasmania and covers an area of 31km<sup>2</sup>. The tenement forms part of a base and precious metal prospective package including EL15/2021 collectively under exploration by Stunalara.

During the reporting period to 26/04/2023 Stunalara (Operations) Pty Ltd (**Stunalara**) conducted minor historical review and associated GIS-based data compilation, interpretation, target generation and planning, following on from previous geophysical re-interpretation. No field work has been undertaken since the tenement granting. The company had largely been focused upon the exploration potential of the adjacent EL06/2013, associated with a now terminated JV with Accelerate Resources Ltd.

Proposed work on EL14/2021 for the 2022/23 field season entails regional reconnaissance following up of prioritised targets via relatively low impact exploration activities, comprising access track and possibly helipad cutting, along with gridding, soil sampling, reconnaissance geological mapping, rock chip and stream sediment sampling.

## Contents

Summary.....	1
Contents .....	2
Table of Figures.....	2
Introduction .....	3
Location and Access .....	3
Land Tenure .....	5
Geology and Mineralisation .....	5
Previous Work and Exploration History .....	8
1956–1962 Lyell-EZ Explorations (LEE).....	9
1964–1972 BHP Exploration .....	9
1983-88 Amoco Minerals Australia Company .....	10
1992-1998 Plutonic Operations limited .....	11
1998-2001 - Pacific-Nevada Mining Pty Ltd .....	11
2007 – 2012 MHM Metals .....	12
2013 to 2017 Sherlock .....	13
2017 to 2020 Accelerate Resources Ltd. ....	13
2013 to 2017 Sherlock .....	13
2017 / 2018 Accelerate Resources Ltd. ....	14
2018 / 2019 Accelerate Resources Ltd. ....	16
2020 / 2022 Stunalara (Operations) Ltd. ....	17
Work Conducted .....	19
Proposed Work 2022-23 .....	19
Environment .....	19
Expenditure .....	20
References .....	21
Appendix24	
Appendix 1: List of Appended Digital Files .....	24

## Table of Figures

Figure 1: Location and tenement plan for EL14/2021.....	4
Figure 2: Regional Geology – Sorell Peninsula .....	7
Figure 3: Regional Geology Legend .....	8
Figure 4: Summary Airborne geophysics surveys.....	14
Figure 5: Priority Exploration Targets over Reduced To Pole Aeromagnetcs .....	18
Table 1: EL14/2021 expenditure for 2022/23 .....	20

## Introduction

This report details the exploration activities completed within EL14/2021 during the period 26 April 2022 to 25 April 2023. The lease granted in April 2022 is located 25km south south-east of Strahan in western Tasmania and covers an area of 98km<sup>2</sup> (Figure 1). The tenement area is prospective for base and precious metals mineralisation.

Stunalara Metals Ltd successfully sought seed capital during 2021 to commence field work with the view to undertaking an Initial Public Offering (IPO) on the ASX. This IPO marketed exploration on Stunalara's EL14/2021 and EL15/2021, as well as the adjacent joint ventured EL6/2013. The EL6/2013 JV with Accelerate Resources Ltd was terminated late in 2022 and consequently timing of the planned IPO is now uncertain.

A multidisciplinary approach with significant field work is required to explore in this poorly understood area. The tenement has received little modern exploration, in large part due to difficult access, with scant geological mapping (including by BHP and Mineral Resources Tasmania) having been historically undertaken. Stream sediment sampling is also relatively scant and associated rock chip sampling and geology reporting is sparse. There is obvious potential to upgrade digital data sets, likely resulting in large gains in understanding of the area.

Significant portions of the text are adapted from the primary author's previous work in the region (i.e. Reid 2020).

All location data in this report utilises the GDA 94 (Zone 55) reference datum.

## Location and Access

Access to the project area can be achieved via Macquarie Harbour coastal landing by boat or by helicopter from Strahan (Figure 1). Access within the project areas is achieved on foot via historical exploration tracks (all of which are currently unsuitable for vehicular egress) and cut lines.

The area has a high annual rainfall of approximately 1750 millimetres. The natural vegetation is dominated by rainforest and related scrub, most dominantly Nothofagus rainforest. Additionally there are areas of wet eucalypt forest and woodland flora types, heathland and coastal vegetation complexes. Bauera scrub areas are very thick and generally impenetrable without prior line cutting work. Where tree canopy is high, undergrowth is significantly less and access over the ground can be achieved with some effort.

The project lies within the Tasmania SW (05-11 - 899179) 1:250,000 map sheet and straddles the 1:25,000 map sheets of Sarah (3630), Birchs (3629), Hibbs (3628) and Endeavour West (3627).

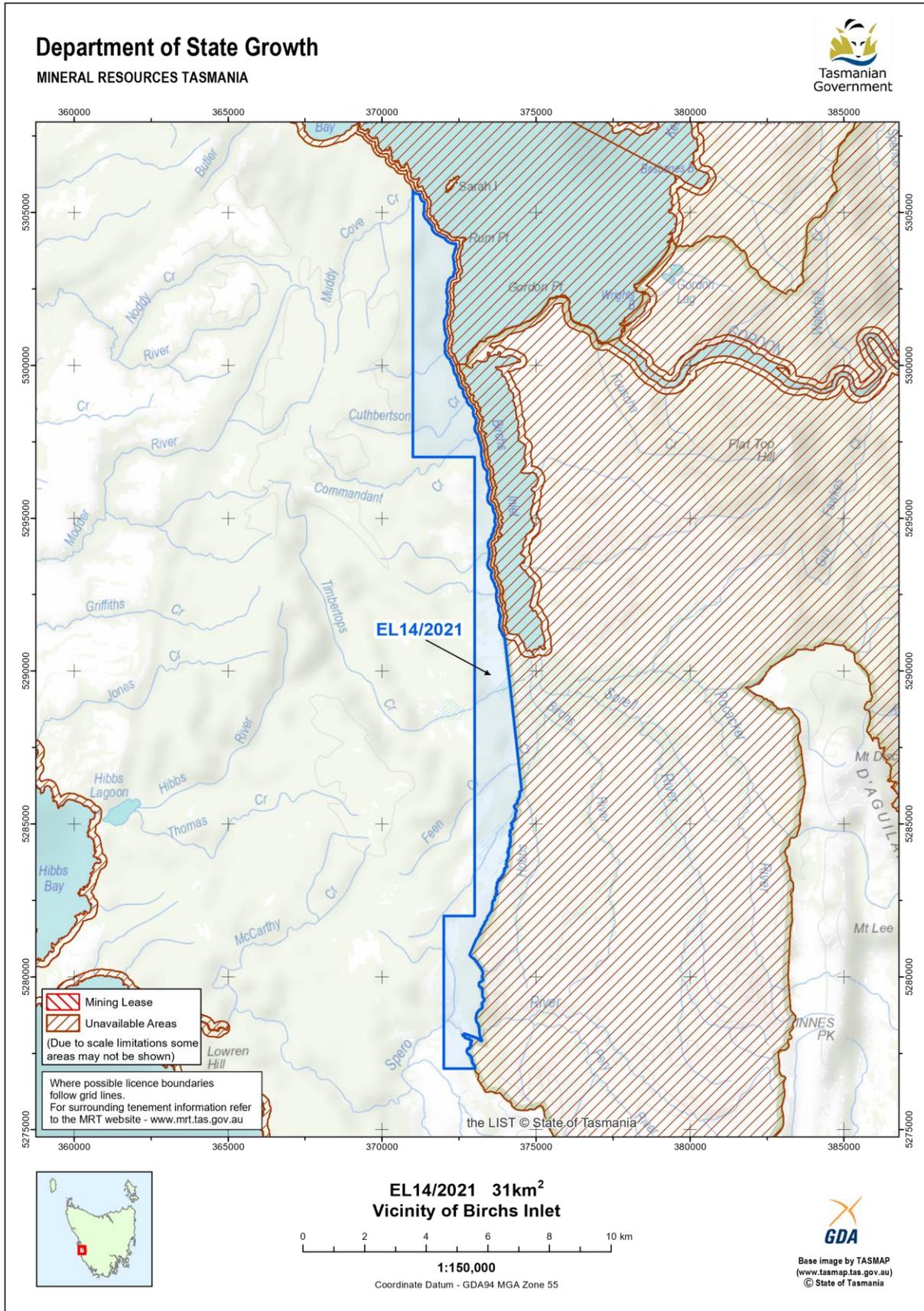


Figure 1: Location and tenement plan for EL14/2021.

## Land Tenure

The tenement lies within the Southwest Conservation Area and is part of the Cape Sorell, Strategic Prospectivity Zone, which is protected by the Mining (strategic Prospectivity Zones) Act 1993 – An Act to ensure continuing access for mining purposes to areas of the State having high potential for mineral exploration.

## Geology and Mineralisation

The geology of the broader Sorell Peninsula area (Figure 2 & 3) encompassing EL14/2021 has been described in unpublished company reports of BHP and Amoco/Cyprus, and in White's (1975) PhD thesis. Mapping in the late 1960's by BHP was largely based on coastal exposures and a few inland traverses, with a large component relying upon aerial photo interpretation. Subsequent explorers have relied heavily upon BHP's initial mapping, with a re-interpretation provided by Close and Reid (1995). Limited description of the regional geology is given in Corbett and Solomon (1989).

South of the Sorell Peninsula is little known. Regional mapping by the Mines Department at 1:50,000 covers the area to the north of Varna Bay ("Macquarie Harbour" map sheet; McClenaghan and Findlay, 1989) and to the south of High Rocky Point ("Montgomery" map sheet; Brown, 1988). In between the Hibbs 1:50,000 sheet, encompassing the Thomas Creek area, has been partially mapped but remains incomplete due to lack of funding. A report by Brown et al. (1991) supplements this mapping and provides the most extensive discussion and interpretation of the Sorrell Peninsula geology thus far. Brown et al. (1991) recognised two Precambrian rock successions and six Eocambrian-Cambrian volcano-sedimentary associations in the region. Four of the volcanic associations are relevant to the tenement area.

These associations are: -

1. Andesite-rhyolite association (Noddy Creek Volcanics);
2. Boninitic association (Timbertops Volcanics);
3. Picritic basalt- basalt association (Birch's Inlet-Mainwaring River Volcanics);
4. Serpentinised ultramafic rock-gabbro association incorporating sheared blocks of 1. and 2. (Point Hibbs Melange Belt).

These multiple-deformed associations are bounded by a series of NE to NNE-trending faults and the distribution of these associations is interpreted by Brown et al (1991) to result from thrust sheet stacking. Their structural model of "thin skinned tectonics" probably incorporates a pre-Ordovician thrusting event, reworked by late (Devonian?) thrusting. Thrusts in the Point Hibbs area are interpreted as eastward dipping and west/north-west directed. Younger transcurrent faulting further disrupted the Point Hibbs Melange Belt.

The Cambrian andesites and rhyolites of the Noddy Creek Volcanics (NCV) crop out in the southern portion of the Sorell Peninsula and are inferred to extend further south past Point Hibbs (Brown et al., 1991; Close and Reid, 1995). The NCV hosts a series of diorite intrusions, and an extensive intrusive complex of diorites occurs within the southern portion of the NCV, south west of the Ordovician –

aged Timbertops Syncline. The Thomas Creek Cu Prospect is believed to be hosted by a roof pendant within this intrusive complex.

The relationship of the NCV to the Mt Read Volcanics (MRV) is somewhat enigmatic. The MRV crops out in a N-S trending belt to the east, and extends from Mount Darwin, disappearing beneath a Tertiary Graben to re-emerge further south in the D'Aguillar Range area. Corbett and Solomon (1989) have correlated the NCV with the MRV based on similar calc-alkaline composition, and suggest the NCV could be a smaller, separate arc or sub-arc west of the main Mt Read Belt. More recent work by Brown et al (1991) has suggested a more direct correlation based on geochemical similarities of the southernmost NCV to volcanics of the Que River-Hellyer area.

Cambrian volcanic are mapped as overlain by Ordovician-aged upper Owen Sandstone forming the Timbertops Syncline, northeast of Thomas Creek. Here, Calver (etal., 2014) report siliceous conglomerate and quartz arenite overlain by grey siltstone, dated as likely oldest within the Gordon Group. The upper heavy mineral banded quartz sandstone of the maybe a Pioneer / Moina correlate (Corbett in Calver etal. 2014 & McClenaghan and Findlay, 1993).

Outside but proximal to the tenement is the Thomas Creek (Cu-Co-Au) Prospect is recognised as a significant occurrence of poorly outcropping low-grade copper, cobalt and gold mineralisation associated with hydrothermal alteration of an andesitic to dioritic intrusive-volcanic complex. Sulphide mineralisation occurs over a large area and is associated with micromonzodiorite intrusions, brecciation, veining and 'porphyry'-style K-feldspar-silica and magnetite-chlorite alteration. The combination of volcanic and intrusive rock stratigraphic association, geochemical signature, alteration assemblages, sulphide assemblages, and geophysical expression has been used by previous explorers to draw analogies between the Thomas Creek Prospect and the Mount Lyell Cu-Au deposit (311Mt @ 1% Cu, 0.3g/t Au) of western Tasmania. IOCG-like affinities are also apparent.

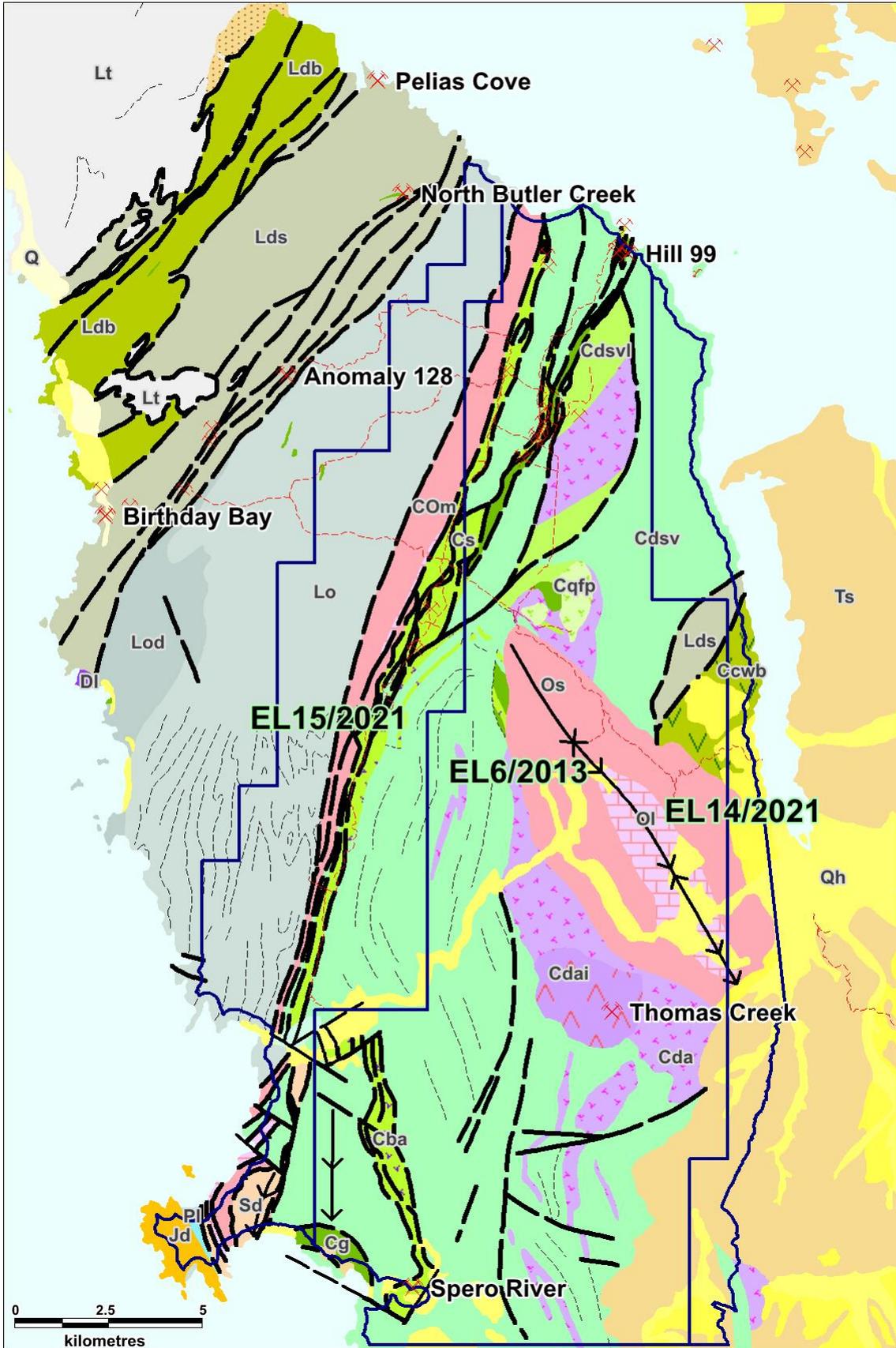


Figure 2: Regional Geology – Sorell Peninsula (See legend below; source MRT 250K digital geology)

<b>Sorell Peninsula - Geology Legend 250K</b>	
	Qh Sand gravel and mud of alluvial, lacustrine and littoral origin.
	Q Undifferentiated Quaternary sediments.
	Ts Dominantly non-marine sequences of gravel, sand, silt, clay and regolith.
	Tc Conglomerate, gravel and grit.
	Jd Dolerite (tholeiitic) with locally developed granophyre.
	Pl Lower glaciomarine sequences of mudstone, pebbly mudstone, pebbly sandstone, minor limestone and tasmanite oil shale.
	DI Lamprophyre dykes and intrusive bodies.
	SD Undifferentiated shallow marine quartz sandstone, siltstone and shale (Eldon and Tiger Range Groups and correlates).
	OI Shallow marine limestone sequence with minor siltstone and sandstone (Gordon Group).
	Os Shallow marine sandstone- mudstone +/- conglomerate +/- limestone sequences, typically grey, trace fossils and tubicular burrows in places. Ordovician fossils in places. Includes Moina Sandstone, Pioneer beds, Butler Island Formation.
	COms Marine sandstone-siltstone-conglomerate sequences, typically turbiditic, siliciclastic to polymict, Late Cambrian fossils in places. Includes Newton Creek Sandstone, Middle Owen Sandstone, much of upper Dundas Group, much of Rosebery Group?
	Cdsvl Felsic lava within Western Volcano-Sedimentary Sequence and correlates.
	Cdai Major andesitic to dacitic intrusives, including "Beulah Granite" and Lobster Creek Intrusives.
	Cg Gabbroic rocks.
	Cs Layered peridotite, serpentinite and associated rocks.
	Cqfp Quartz-feldspar porphyry.
	Cds Dominantly sedimentary sequences; with minor volcanic and volcanoclastic units.
	Cdsv Dominantly marine volcanosedimentary sequences of sandstone, siltstone, conglomerate and breccia with some volcanic rocks, felsic to andesitic. Middle Cambrian fossils in places. Western Volcano-Sedimentary Sequences and correlates
	Ct Tonalite and associated rocks.
	Cba Boninitic lavas
	Cbt Low-Ti Tholeiitic lavas.
	Ccwb Tholeiitic basalt within Cleveland- Waratah Association and correlates. Includes Motton Spillite.
	Cda Dominantly andesitic volcanic, volcanoclastic and intrusive rocks. Includes Que-Hellyer Volcanics, Beulah andesites.
	Lt Undifferentiated pelitic rocks and quartzite sequences, with greenschist facies metamorphism.
	Lo Unmetamorphosed quartzwacke turbidite sequences ( Burnie and Oonah Formations and correlates).
	Ldb Tholeiitic basalt.
	Lds Shallow-water quartz sandstone and siltstone with carbonate and chert beds (Success Creek Group and correlates).
	Lod Dolomitic mudstone, siltstone and sandstone.

Figure 3: Regional Geology Legend

## Previous Work and Exploration History

EL14/2021 covers a narrow eastern portion of the Sorell Peninsula, extending along and south of Birchs Inlet. Much of the exploration history below provides highlights from the general surrounding region. Little direct work has been undertaken within the tenement.

The lack of road access, absence of any permanent settlements, the difficult and scrubby nature of much of the country, have all served to inhibit exploration of the area. Knowledge and understanding of the geology has mostly come in the last four decades from several regional mineral exploration programs by large companies and by regional mapping surveys by Mineral Resources Tasmania through the 1990's.

Sporadic small-scale mining/prospecting was carried out around the beginning of the 20th century for asbestos at Asbestos Point, copper at Birthday Bay (where a few tonnes of chalcopyrite, bornite and copper carbonates were produced from near-shore workings and alluvial osmiridium, gold, and chrome along the Spero River south of Point Hibbs and on creeks along the north coast near Gravelly Beach and parts of Birch's Inlet.

### 1956–1962 Lyell-EZ Explorations (LEE)

A large helicopter-based exploration program was undertaken by Lyell-EZ Explorations (LEE) over an area stretching from Queenstown to Port Davey from 1956 to 1962. This ambitious program greatly expanded knowledge of the geology of South West Tasmania, which was largely unknown country at that time, but did not result in any commercial mineral discoveries. Airborne magnetics (the first over the southwest), EM and scintillometer surveys were flown over much of the area in 1958, and a variety of ground geophysical methods were used. The ultramafic belt between Point Hibbs and Macquarie Harbour was discovered (Hibbs Ultramafic Belt).

### 1964–1972 BHP Exploration

A second major helicopter-based exploration program, covering most of South West Tasmania (9,600 km<sup>2</sup>), followed soon after, and was conducted by BHP between 1964 and 1972. The project resembled a geological survey in many ways, and much regional mapping was undertaken. BHP based their exploration on follow-up of the LEE aeromagnetics and EM surveys, with stream sediment geochemistry as their other main regional technique, however, Au and Sn were not assayed for.

BHP spent considerable resources cutting tracks and costeans along the northern part of the Hibbs Ultramafic Belt, concentrating on the nickel and chrysotile asbestos potential (Langlands, 1971). Rock chip sampling from costeans across this contact returned up to 0.8% Cu and 0.15% Ni. In addition, a zone of disseminated pentlandite about 12 m wide occurring as small blebs up to 6 mm in slightly sheared olive-green serpentinite had been found along with specks of pentlandite in shear planes in a costean. One hole was drilled to 95m, testing a ground EM anomaly. No anomalous nickel was intersected with the anomaly being explained by an intersection of 3.4 meters of graphitic siltstone below the ultramafic contact. BHP recommended that EM traverses be run at 30 m intervals along strike but no further work was done on nickel. Towards the south of the belt an area of anomalous Zn and Ni was determined from stream sediment sampling in creeks between Hibbs Lagoon and Point Hibbs (Hall, et. al., 1969).

Asbestos was discovered in the northern part of the ultramafics and this became a major focus of further exploration by BHP in the area. This work culminated in the outlining of 8.5 million tonnes of 2.3% asbestos. Significant drilling targeting asbestos was undertaken, with 9 holes totalling 1335m, but no geochemical analysis was undertaken and digital drilling data has not been captured.

In 1971/72 BHP followed up an aeromagnetic anomaly southwest of Birch's Inlet with ground magnetics, soil sampling and rock chip sampling (Thomas Creek Prospect). The results are presented unprocessed with no discussion and it appears that there was no follow-up. Several samples from this work yielding up to 1000 ppm Cu, 1000 ppm Pb, 100 ppm Zn and up to 100 ppm Ag. The samples were taken from rocks with visible disseminated sulphides, some of the rocks being boulders. BHP's interest in the Sorell Peninsula was relinquished in 1972.

Hall (et. al., 1969) indicates that regional sampling is scattered within the current tenement area, and recommended systematic expansion of stream sediment sampling in particular. The geology is relatively well constrained from 1 is to 400feet mapping on bull dozer tracks (4.5miles in the South Hibbs area), but is little know extending beyond. A serpentinite unit of 1000 to 2000ft width was recognised with pyritic hornfels inliers. Geological interpretation maps showing little detail were compiled for the Hibbs Lagoon area. Notably geochemical samples were taken from “streams crossing the track”. Stream sediment sampling more consistently covered the northern end of the HUB, with a sampled patch south of Hibbs Lagoon. Soil geochemistry along tracks and some gridding was undertaken, but this and stream sediment data has not been digitally captured.

Worthy of follow up from Hall (et. al., 1969) is pyrite noted in silicified serpentinite (763255yN, 339300yE) at a quartz porphyry contact. Pentlandite is noted at two localities 1000 and 2000feet N of Helipad 3 (northern Hibbs Ultramafic Belt). Four samples of Galena and Sphalerite bearing gabbro averaged ~0.1% Pb and 0.1% Zn were also collected from near Helipad 3. Calcite altered basalt bearing 0.1 to 1% Cu was located 3700ft SE of Helipad 3. Notable also is granodiorite mapped south of Helipad 3.

### **1983-88 Amoco Minerals Australia Company**

(Later Cyprus Gold Australia Corp., in joint venture with Placer Development Ltd and Poseidon Minerals Ltd.)

Work initially comprised a detailed 150m line spaced airborne aeromagnetic and radiometric survey to assist geological mapping as well as target tin replacement (i.e. Renison Style) deposits over the whole Sorell Peninsula (Ferris, 1984). In 1983-84 Amoco conducted reconnaissance mapping and sampling of the Noddy Creek Volcanics around Timbertops, north to Briggs Creek and south to Thomas Creek to assess various aeromagnetic anomalies. The main exploration target was a polymetallic volcanogenic massive sulphide orebody with minimum reserves of 15 million tonnes of 20% lead-zinc with gold plus silver credits, similar to the Rosebery and Que River/Hellyer deposits 70 kilometres to the north.

A DigHEM survey was flown over the northern portion of the Hibbs Belt and Noddy Creek Volcanics in 1986 (Figure 3), which identified seven targets that were never followed up, as coincident DigHEM work to the south over the coeval Lucas Creek Volcanics at Elliot Bay located higher tenor anomalies which became the focus of later work.

Weak base metal veining was reported adjacent to diorite at Timbertops, and more significantly a Cu-Au (Ba) association with diorites and intermediate volcanics was recognised in the Warrens to Thomas Creek area. Here a peak value of 0.2% Cu, 0.1% Ba and 0.97 g/t Au was related to a sub-volcanic diorite intrusion, south west of the anomalous Cu-Pb volcanics reported by BHP.

Follow-up bedrock soil surveys over a grid at Thomas Creek in 1984 followed and this outlined a zone of anomalous copper approximately 300 metres by 400 metres in size which was greater than 250 ppm Cu. Amoco had a polymetallic VMS focus and the absence of significant associated Pb-Zn with the copper or regularly repeatable high Au downgraded the prospect and no further exploration was conducted.

Anomalous Au to 0.26ppm was identified in soils proximal to a gabbro and the Cambrian / Precambrian boundary in the Anomaly 128 area (Kary, 1985).

## 1992-1998 Plutonic Operations limited

Plutonic Operations Ltd were granted two licenses EL4/1992 and EL7/1992 which covered a significant portion of the ground currently held by Stunalara. In 1993-94 Plutonic planned to carry out a 200m line space airborne GEOTEM survey over the Noddy Creek Volcanics (Figure 3) which are thought to be a direct equivalent of the fertile Mt Read Volcanics, but occur in a possible sub-rift immediately west of the main volcanic belt. Contractor delays meant this was not carried out until March 1996. The survey identified approximately 20 targets that warranted follow up. This appears not to have occurred as ground operations had shifted by that time to Thomas Creek Prospect.

During the 1994-95 period a large program of gridding, soil sampling, and petrology over the Thomas Creek Prospect confirmed Amoco's results and indicated a significant zone of alteration with the characteristics of a porphyry Cu-Au system. The copper soil anomaly extended approximately 1000 m x 700 m, with other satellite anomalous zones also appearing. Many exceptional copper soil values were returned over 1000 ppm and includes 2 samples one recording 2.4% Cu and 1.04 g/t Au and another of 7.5 % Cu and 2.96 g/t Au in highly pyritic, chloritic and chalcopyrite bearing interpreted microdiorite. Elsewhere gold values were generally below detection, apart from where very high copper (>2000 ppm) were sampled. Panned concentrate from drainage areas fringing the eastern side of Thomas Creek plateau returned some visible gold with assays returning up to 3 g/t.

In 1995 Zonge Engineering were contracted to conduct two gradient array surveys totalling 7-line km over the grid area and three dipole-dipole lines amounting to 1.25km within the detailed grid. These surveys were designed to outline the extent and relative intensity of disseminated or stockwork vein-controlled sulphide mineralisation in the Thomas Creek prospect area. The IP surveys successfully defined one major and three minor discrete chargeability zones. Zone A is a broad (600m x 400m) multi peaked, moderate to strong (3 times background) chargeability anomaly coincident with disseminated pyrite and copper anomalism in the detailed grid area.

In 1996 a light "Gopher" rig was used to test areas of high Cu soil geochemistry and corresponding IP chargeability. The program comprised 8 BQ sized holes angled 45 degrees to the South and 90 - 127m hole depth. Significant core loss (clays – highly altered/weathered) was encountered however more consolidated core sections showed intense K-feldspar–silicification, pyrite, chlorite, actinolite, magnetite, hematite, pyrite, chalcopyrite with late tourmaline, pyrite, smectite, and epidote alteration. The drilling revealed widespread copper anomalism, such as 58m @ 0.08% Cu from 40 m in TCD2 and 15m @ 0.17% Cu from 32m in TCD5. Plutonic were disappointed that better copper grades were not intersected, given the high tenor of the soil geochemistry however did recognised that this was a large, probable porphyry style mineralised system, that required expanded exploration and deeper drilling. After failing to attract a joint venture partner, and due to other core business pressures occurring in the late 90's Plutonic relinquished the area in 1998.

## 1998-2001 - Pacific-Nevada Mining Pty Ltd

The Hill 99 Prospect, located near the southern shores of Macquarie Harbour (Figure 2) was identified by Pacific-Nevada Mining Pty Ltd in 1999 after a reconnaissance sampling programme located an outcrop of massive pyrite-quartz mineralisation. A subsequent soil sample campaign identified a copper-zinc anomalous (150-511ppm Cu and 150-684ppm Zn) zone extending inland along strike from the coastal pyrite-quartz mineralisation. The zone trends north-east and is broadly coincident with a topographic high. Sampling of gossanous float material along the grid lines returned sporadic

anomalous gold up to 50ppb with 92ppb Au also returned from a chlorite altered lithicwacke sample. A single panned concentrate stream sample returned 5.1 g/t Au.

A subsequent gradient array IP survey carried out over the Hill 99 grid identified a linear, moderate conductivity high coincident with the copper-zinc anomalous soil zone. A bullseye conductivity anomaly was also identified. A fixed loop ground EM survey failed to identify any conductive bodies of probable economic importance, however it did show a strong conductor forming off the western edge of the survey coincident with a prominent magnetic feature. The thick vegetation precluded the survey being extended further west at that time and this target remains untested.

Pacific-Nevada drilled three diamond drill holes totalling 669 m. The first two drill holes H99-01 & 02 targeted the Cu-Zn soil anomalies/alteration and mapped gossanous float and intersected a highly altered chlorite-carbonate-fuchsite volcanic rock of mafic to felsic origin with minor Cu, Zn and Au (best result 0.3m @ 0.59% Cu). H99-03 tested the coincident high phase and resistivity low anomaly modelled at 150m depth. Localised narrow zones of pyrite-chalcopyrite (i.e. 36 cm @ 1.05% Cu) mineralisation and quartz-carbonate-sphalerite-galena veining (i.e. 30 cm @ 0.17% Pb & 0.25% Zn) with intense fuchsite alteration were intersected before drilling was stopped due to hole instability approximately 30m above the IP target.

### 2007 – 2012 MHM Metals

In 2010 MHM commissioned a detailed 100m line spaced helicopter borne VTEM surveys over 4 areas (Figure 4). The survey areas covered the Hibbs Ultramafic belt, an area along the north coast region, covering a portion of the Noddy Creek volcanics and over recognised VMS mineralisation at Hill 99 Prospect and over the Thomas Creek Prospect area. The surveys identified many intermediate to strong conductors, the best associated with the ultramafic in an area immediately north of BHP's asbestos work at Noddy Creek. Some of the conductors associated with the ultramafic rocks were followed up with a limited spot soil sampling campaign at EM target sites and returned highly anomalous Nickel up to 2500 ppm and gold up to 1 g/t. Other EM conductors in remote areas including some identified within the current EL7/2019 and near Thomas Creek were not followed up.

At Hill 99 prospect MHM Metals drilled two further holes totalling 368m to follow up previous encouragement from Pacific Nevada's Drilling. Drill hole H99-04 tested strike persistency of mineralised intercepts from H99-01 and 2 and hole H99-05 tested the bulls eye IP anomaly identified by Pacific Nevada work. Geochemical results from hole H99-04 showed anomalous gold with peak values of 0.105, 0.182 and 0.105ppm Au associated with fuchsite-quartz-sericite alteration of andesites and basalts from 155 to 172m. Copper from a 30cm massive quartz-chalcopyrite vein intersected at 177.6m returned a grade of 10.55% Cu, and 0.244% Zn. Independent geochemical analysis of the core suggested the sequence is comparable to suite 1 of Crawford's (1992) stratigraphic proposal of the Mount Read Volcanics which hosts several major deposits including Mount Lyell (Cu- Au), Henty gold mine, and Rosebery (Pb-Zn-Ag).

At Thomas Creek MHM noted the circular magnetic high edging the intermediate intrusive body and undertook soil sampling around this feature at 50 m spacing. This work extended the copper anomalous areas further south at Thomas Creek, but also identified a new region of high copper anomalism (up to 500 ppm Cu) about 1.5 km northwest of the original prospect. This new site is unconstrained and occurs along the inner magnetic rim.

## 2013 to 2017 Sherlock

Sherlock undertook Dipole-Dipole induced polarization surveys, field reconnaissance and sampling, identifying Co potential. Geophysical modelling and interpretation of the historical drilling indicated the IP targets generated had not been previously drill tested.

In 2014, Sherlock Minerals conducted dipole-dipole induced polarisation (IP) surveys for a total of 7.3-line kilometres at the Thomas Creek Project. The IP surveys revealed the presence of a chargeability anomaly approximately 300 m wide and 500 m long at 100 to 200m depth, that did not appear to have been tested by historical shallow exploration drill holes.

In 2015 at Thomas Creek, high-grade copper and gold mineralisation was redefined at surface, following up historic high-copper values in soils. The mineralisation comprised a massive pyrite zone approximately 5 metres wide containing abundant copper sulphides hosted within highly weathered saprolitic bedrock, beneath peaty soil cover. Geochemical analyses of the mineralised saprock zone returned values ranging between 0.8% to 3.8% copper, 0.7 g/t to 1.3 g/t gold, and 0.1% to 0.78% cobalt. The mineralisation occurs above the chargeability IP anomaly identified in 2014.

## 2017 to 2020 Accelerate Resources Ltd.

Exploration activities were undertaken on EL6/2013, an adjacent tenement to the east. The program included IP and EM geophysical surveys, drilling (5 holes), field reconnaissance, as well as ongoing GIS-based data compilation, planning and interpretation. Grid cutting 10.8line km facilitating IP at Thomas Creek, as well as a further 1.5km for DHEM loops. At Young Henry 3.6km of line cutting was undertaken for FLEM and soil sampling. Reconnaissance geology targeted the Thomas Creek, Young Henry and Henrietta environs. -80# stream sediment sampling, panned concentrate and rock chips were collected during regional exploration with grid base soil sampling also undertaken at Thomas Creek and Young Henry.

Exploration at the Young Henry Prospect on the adjacent EL6/2013 provides encouragement through targeting an Airborne EM conductor, host within the Hibbs Ultramafic Belt. Mineralisation potential was clearly demonstrated with grid based sampling returning Ni, Co, Cu and Zn anomalous soils and gossan located up plunge from a modelled ground FLEM conductor. Drill targeting (YHDD001, 156m EOH) returned two significant intersections of 38.3m @ 0.23% Ni and 17.7m @ 0.19% Ni. Two zones with magmatic Nickel sulphide potential were identified at the base of both serpentinised ultramafics intersected.

## 2013 to 2017 Sherlock

Sherlock undertook field reconnaissance and sampling, identifying Ni-Co potential within the Hibbs Ultramafic Belt. Dipole-Dipole induced polarization surveys were also undertaken in 2014 outside the EL15/2021 bounds at the Thomas Creek Prospect, where copper and gold mineralisation was redefined at surface, following up historic high-copper values in soils. Resampled geochemical analyses of the mineralised saprock zone, located above the chargeability IP anomaly identified in 2014, returned values ranging between 0.8% to 3.8% copper, 0.7 g/t to 1.3 g/t gold, and 0.1% to 0.78% cobalt.

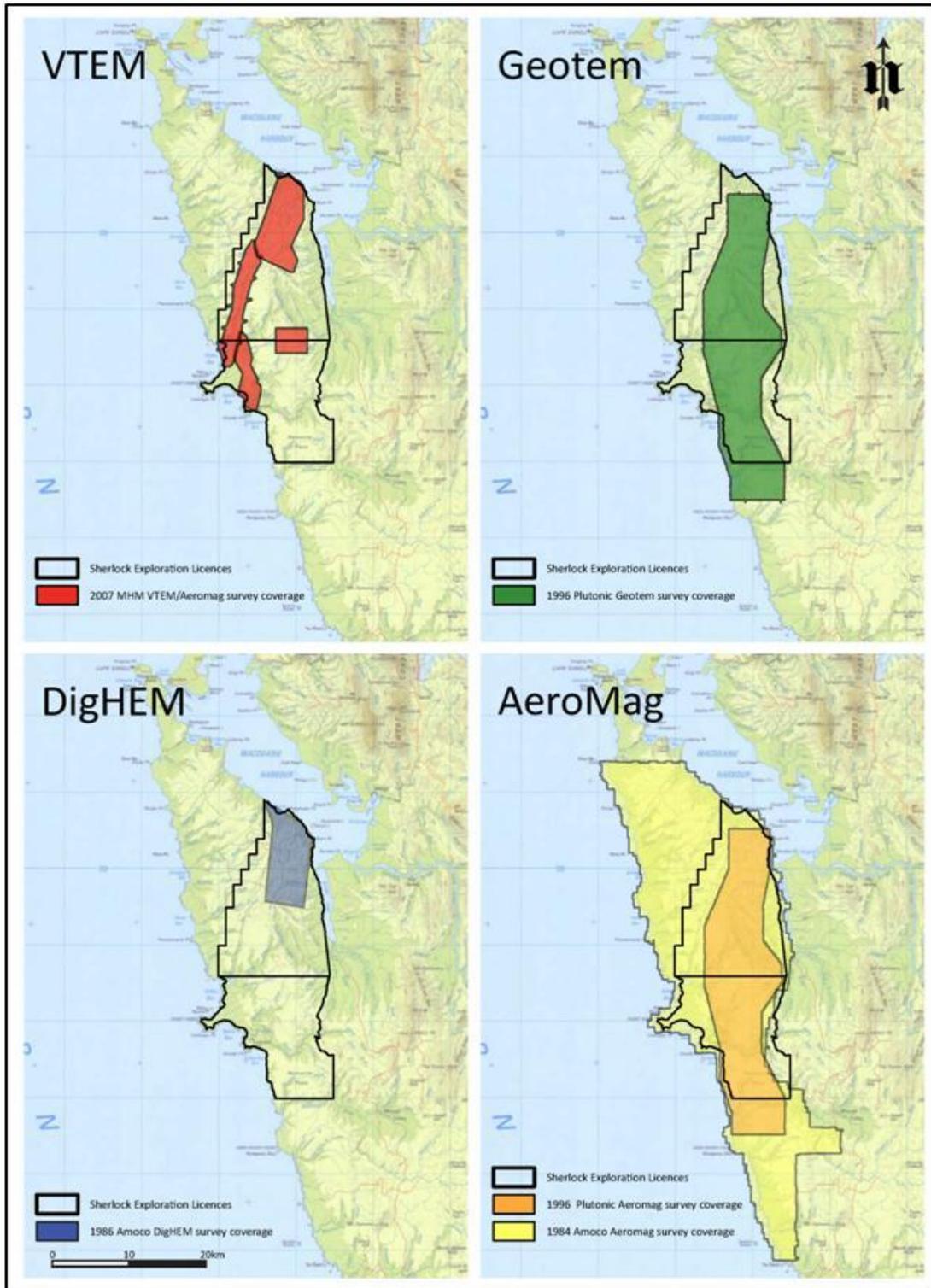


Figure 4: Summary Airborne geophysics surveys; after Reid et.al. 2016.

**2017 / 2018 Accelerate Resources Ltd.**

EL06/2021 was amalgamated with EL7/2013 on 15<sup>th</sup> June 2018, having initially been transferred from Sherlock Minerals to form the foundation for the company’s successful January 2018 IPO and ASX listing.

Accelerate Resources Ltd. undertook extensive exploration efforts on EL06/2013 targeting intrusion and vein related Cu-Co mineralisation at Thomas Creek, as well as Nickel-sulphide and platinum-group element mineralisation at the Young Henry Prospect.

During 2018, 212 field surface samples were collected from the Thomas Creek, Henrietta and Young Henry Prospect areas, comprising a total of 173 soil samples, 22 rock chips and 10 bulk stream sediment samples for -80# analysis. Soil sampling at Young Henry (No. 49) selectively covered the ultramafic rocks and surrounds, centred upon the targeted airborne EM. At Thomas Creek, the soil sampling (No. 124) rationally selectively covered previous un-sampled Sherlock 2014 IP grids and new Accelerate 2018 IP grids.

A ground IP survey at Thomas Creek was undertaken, extending the 2014 Sherlock IP survey. A total of 10.8 line kilometres was surveyed on five 150m spaced north-south and one east west oriented lines. The IP Survey was 2D dipole-dipole design with 75m dipole length using 1-14 separation. 3D IP modelling combining the 2014 Sherlock and 2018 Accelerate IP defined a large ~600 by 400m chargeable anomaly located along the eastern margin of an ovoid aeromagnetic body, below surface copper-cobalt soil anomalism (Figures 4 & 5).

Diamond drilling at Thomas Creek comprised three holes TCDD001 to TCDD003 for 831.7m, targeting strong chargeability highs and resistivity lows within the large 3D inversion modelled IP chargeability anomaly. The drilling intersected a fertile mineralised system bearing abundant disseminated and veined sulphides and several felsic-intermediate (micromonzodiorite) intrusions, with associated anomalous copper-cobalt grades. Best results included: 3m @ 2323ppm Co and 0.09% Cu in TCDD001; 46m @ 0.11% Cu in TCDD002; 22m @ 193ppm Co and 0.01% Cu in TCDD003 (Tables 3). All three holes intersected pervasive silica (+/- sericite) – pyrite alteration with overprinting magnetite-KFeldspar-actinolite-chlorite-pyrite-chalcopyrite veining. Zones of weak to moderate pervasive K-Feldspar-silicate alteration were also seen.

DHEM surveying of the three diamond holes facilitated by a further 1.5km of gridding for loops, indicated a number of in-hole and nearby conductors related to observed semi-massive sulphide mineralisation intersected by the drilling. The DHEM of hole TCDD003 identified a broad, distant and unconstrained off-hole conductor to the southeast and located ~150m east of TCDD001. This conductor occurs within the shallower eastern parts of the IP chargeability anomaly, overlying the magnetic rim of the Thomas Creek intrusive complex.

Exploration at the Young Henry Prospect targeted an Airborne EM conductor, potentially associated with Nickel-sulphide and platinum-group element mineralisation host within middle Cambrian mafic and ultramafic rocks of the Hibbs Ultramafic Belt; proximal to EL15/2021. Mineralisation potential was clearly demonstrated with grid (3.6km) based sampling returning Ni, Co, Cu and Zn anomalous soils and gossan located up plunge from a modelled ground FLEM conductor. Drill targeting (YHDD001, 156m EOH) returned two significant intersections of 38.3m @ 0.23% Ni and 17.7m @ 0.19% Ni. Two zones with magmatic Nickel sulphide potential were identified at the base of both serpentinised ultramafics intersected.

### **2018 / 2019 Accelerate Resources Ltd.**

Exploration work during the year to 01/10/2020 continued to target the Thomas Creek Prospect, completing an ongoing field program. A final drill hole TCDD004 (EOH 657m) was undertaken targeting a magnetic anomaly and soil Cu high as well as chargeability and a resistivity contrast at depth. TCDD004 was partly co-funded by the Tasmanian Government through MRT's Exploration Drilling Grant Initiative (EDGI) program. The hole intersected a sequence of altered andesitic lavas and volcanic breccias, cross-cut by several K feldspar altered monzodiorites, with zones of magnetite – chalcopyrite - pyrite – K feldspar veining intersected in the upper 300m of the hole. A number of zones of anomalous copper and gold were identified, including 4m at 0.19% copper from 292m, 2m at 1.65g/t gold from 424m, 2m at 0.41% copper from 458m and 4.3m at 0.11% copper from 605.7m.

Significant was identification of a potential Cambrian seafloor exhalative volcanic hosted massive sulphide horizon at 519m. This narrow 30cm interval featured chemical precipitate like textures within locally massive to semi-massive pyrite, beneath pervasively silicified and sericitised banding up hole.

A 430line km Mobile Magnetotellurics (MobileMT) airborne survey aiming to map resistivity contrasts to ~1,000m was completed. The survey focused on the Thomas Creek area, but extended north encompassing Timbertops and south to Mt Lowran at the southern end of the Hibbs Ultramafic belt. A conductive anomaly in an unexplored area northeast of the Thomas Creek Copper-Gold-Cobalt prospect was identified, as well as a lower tenor conductive zone spatially correlating with the initial Thomas Creek IP Chargeability and geochemical target area. The survey also revealed the presence of an untested resistive plug extending to depth from the centre of the Thomas Creek Intrusive Complex.

GIS-based data interpretation generated significant insights into the geology and mineralisation at Thomas Creek. Structure elements identified utilising all orientated drill hole data included principal NW and SW dipping chalcopyrite bearing vein orientations, as well as a significant thrust fault. Analysis of geochemical correlation trends in both soil and drill hole data resulted in definition of two key element associations for intrusion related K Feldspar-Silicate alteration (K, Ba, Tl & Rb) and vein (Cu, Co, P, Ni, W, Re) related styles. Comparison to Mt Lyell and other VHMS was undertaken in part

through developing vectoring indices. A number of highly prospective Cu-Co targets were identified, including in the south of the Thomas Creek Grid, as well as open potential in the north and north east.

A new Cu-Au prospective zone near Thomas Creek's northern magnetic rim was defined with elevated (~0.1ppm) Au zone coincident with Cu (400 to 1400ppm) in soils and P > 10000ppm with >15% Fe, 470ppm Cu and 134ppm Zn rock chips.

### **2020 / 2022 Stunalara (Operations) Ltd.**

Stunalara Metals Ltd and Accelerate Resources Ltd. JV requested and were granted an exemption from conditions on EL06/2013 from 25/6/2021 until the annual expiry date of 1/10/2021. The exemption was requested to cover an anticipated shortfall in expenditure in part related to COVID concerns, but principally due to timing constraints resulting from completion of the joint venture agreement towards the end of the tenure year and planning / contractor availability related to proposed ongoing exploration work. Regardless, work conducted assessing exploration potential and planning field work met the expenditure requirements.

Assessment of exploration potential and planning field work was undertaken to follow up priority targets generated by new Vector Geosciences geophysical data and products in conjunction with existing GIS data. Work was undertaken by a team of consultants; Mapitt Geo Solutions, Digimaps and Robert Reid. This work extended to cover the then JV over the adjacent EL06/2013 (held by Accelerate Resources Ltd), as well as Stunalara's EL14/2021. Four priority prospects (Figure 5) were identified within EL15/2021 targeting Ni-Cu-Co sulphides related to the Hibbs Ultramafic Belt.

Stunalara Metals Ltd. planned to follow up these priority targets through grid cutting, soil, rock and stream sediment sampling, as well as geological mapping during the coming field season. Subsequent ground IP and / or EM target generation was planned for two prioritised targets, with 2 drill holes of ~400m likely to assess each prospect.

A reconnaissance assessment of the Asbestos Point to Henrietta camp area was undertaken as an aid to planning ongoing field work. The trip on Monday 19<sup>th</sup> September was via boat down Macquarie Harbour and walking access from Asbestos Point. The landing / coastal area was found to have good base camp potential for planned mapping, with the return walk to the Henrietta Camp taking approximately 5 hours. The route along a 1970's era bulldozer track into Henrietta was re-opened / cut for walking access during 2018/19 and is currently in generally good order. The camp is currently messy but serviceable with the door having blown off allowing access to wildlife, since last left in 2019. The helipad was clear enough to be serviceable.

Desk top interpretation and planning for prospect focused field work was ongoing; Key targets being the Cu-Au potential of the Thomas Creek Prospect and Cu-Ni-Co associated with the Hibbs Ultramafic Belt.

Consultant Russell Mortimer of SGC (Southern Geoscience Consultants) was engaged for geophysical advice and to obtain quotes for fixed loop EM and Pole-Dipole IP over the planned Thomas Creek and Henrietta grids.

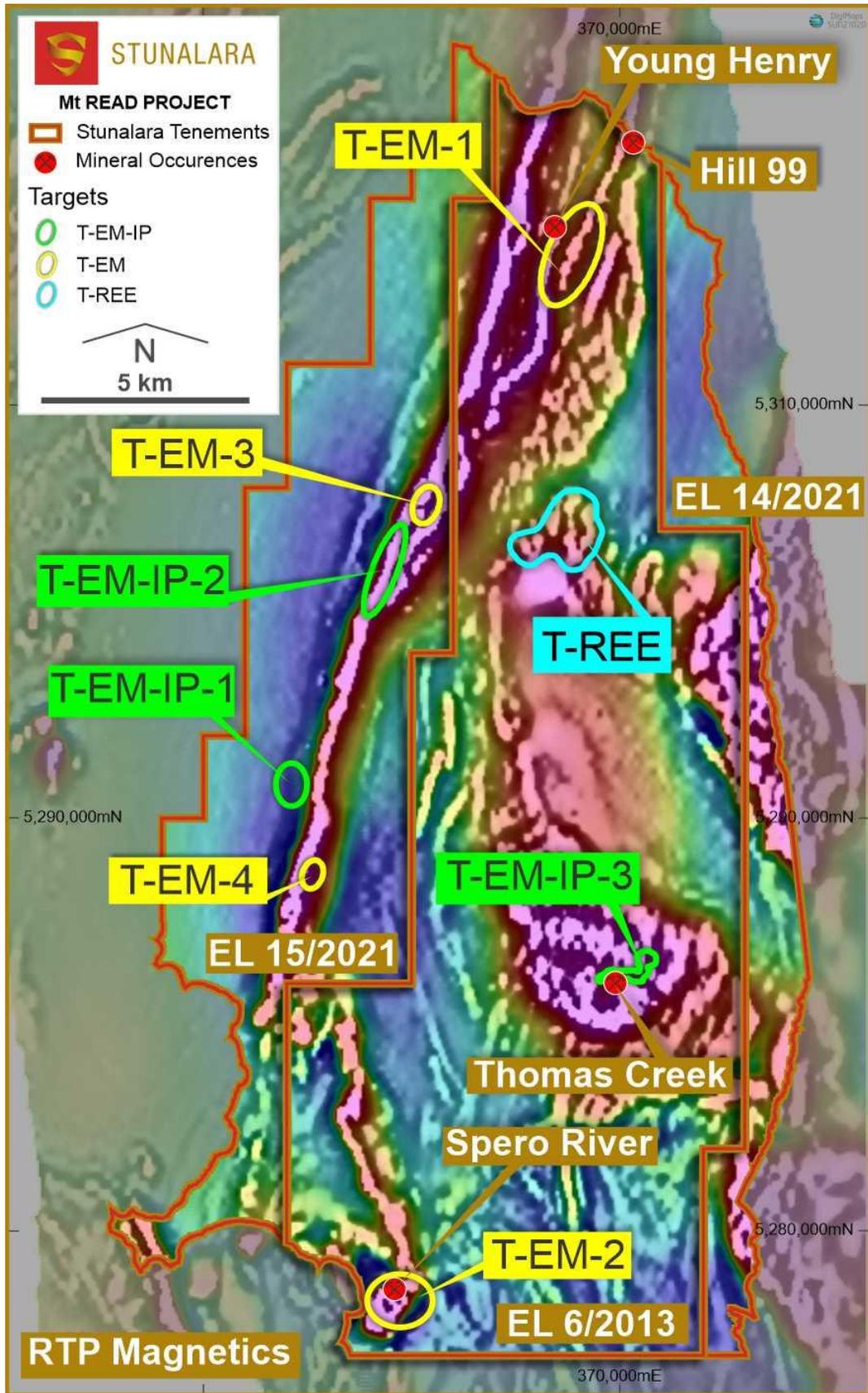


Figure 5: Priority Exploration Targets over Reduced To Pole Aeromagnetics.

## Work Conducted

During the reporting period Stunalara (Operations) Pty Ltd (**Stunalara**) conducted minor historical review and associated GIS-based data compilation, interpretation, target generation and planning. No field work has been undertaken since the tenement granting. The company had largely been focused upon the exploration potential of the adjacent EL06/2013, associated with a now terminated JV with Accelerate Resources Ltd.

Significant regional prospectivity assessment was undertaken immediately prior to the granting of then tenement applications for EL's 14 & 15/2021, when Stunalara had largely been focused upon the exploration potential of the adjacent EL06/2013, associated with a now terminated JV with Accelerate Resources Ltd. Related expenditure undertaken during tenement acquisition has been retrospectively proportionately assigned to this year's tenement costs, relative to area covered by Stunalara tenements.

Regional prospectivity assessment was partly via engagement of consultant Stephen Mudge of Vector Geoscience Pty. Ltd., undertaking assessment and re-interpretation of previous WTRMP 2001 airborne geophysics over the Sorell Peninsula. Assessment of new Vector Geosciences geophysical data and products in conjunction with existing GIS data was completed by a team of consultants; Mapitt Geo Solutions, Digimaps and consultant Robert Reid. Data and details are provided within Reid (2021b).

## Proposed Work 2022-23

Proposed work on EL14/2021 for the 2022/23 field season entails regional reconnaissance following up of prioritised targets, including a number of untested GeoTEM anomalies, via relatively low impact exploration activities comprising access track and possibly helipad cutting, along with gridding, soil sampling, reconnaissance geological mapping, rock chip and stream sediment sampling. Potential windows through the Tertiary and Quaternary cover south of Birches inlet, as indicated by magnetics and radiometrics are worth investigation.

## Environment

No field work requiring rehabilitation has been undertaken.

## Expenditure

Table 1: EL14/2021 expenditure for 2022/23

<b>Expense Type</b>	<b>Cost</b>
1. Geoscience	
Geology	\$2,822
Geochemistry	
Geophysics	\$1,436
Remote Sensing	
2. Drilling & Gridding	
Drilling	
Gridding	
3. Land Access	
4. Rehabilitation	
5. Feasibility Studies	
6. Other	\$2,102
7. Administration	\$945
<b>8. Total Exploration Costs</b>	<b>\$7,305</b>

## References

- Berry, R. F., 2014. Middle Cambrian Tectonics – The Tyennan Orogeny Stage 2. In Corbett, K. D., Quilty, P. G., and Calver, C. R., (eds). 2014. Geological Evolution of Tasmania. Geol Soc Aust. Special Publication 24.
- Bottrill, R. S. and Unwin, L., 2019. Mineralogical Analyses, Thomas Creek Prospect. Mineralogical / Petrological Report LJN2018-143 by Mineral Resources Tasmania.
- Brown, A. V. 1988. Geological Atlas 1:50 000 series. Sheet 78 (7912S). Montgomery. Department of Mines Tasmania.
- Brown, A. V.; Findlay, R. H.; McClenaghan, M. P.; Seymour, D. B. 1991. Synopsis of the regional geology of the Macquarie Harbour, Point Hibbs and Montgomery 1:50 000 map sheets. Report Department of Resources and Energy Tasmania 1991/21.
- Brown, A. V.; Findlay, R. H.; McClenaghan, M. P. 1993. Summary of the regional geology of the Macquarie Harbour, Point Hibbs and Montgomery 1:50 000 map sheets. Report Department of Resources and Energy Tasmania 1991/02.
- Calver, C (etal., 2014). In Corbett, K. D, Quilty, P. G., and Calver, C. R., (eds). 2014. Geological Evolution of Tasmania. Geol Soc Aust. Special Publication 24.
- Close, R.J. and Reid, R.O. 1995 Annual Report on Exploration Activity for the 12 months to August 1995. EL's 4/92 and 7/92. Sorell Peninsula. Unpublished Tasmanian Mines Department Report. Plutonic Operations Ltd.
- Corbett, K. D, 2014. The Mt Lyell Field. In Corbett, K. D, Quilty, P. G., and Calver, C. R., (eds). 2014. Geological Evolution of Tasmania. Geol Soc Aust. Special Publication 24.
- Corbett, K. D, Quilty, P. G., and Calver, C. R., (eds). 2014. Geological Evolution of Tasmania. Geol Soc Aust. Special Publication 24.
- Corbett, K.D. and Solomon, M. 1989 Cambrian Mt Read Volcanics and Associated Mineral Deposits. In C.F. Burrett and E.L. Martin (Editors), Geology and Mineral Resources of Tasmania. Geol. Soc. Aust. Spec. Publ. 15: 84-153
- Crawford. A. J., Everard. J. L., and Bottrill, R. S. 2014. Mafic-Ultramafic Complexes and Associated Mineral Deposits. in Calver et al., eds 2014).
- Forsyth et.al., 2014. Cenozoic Onshore Basins and Landscape Evolution. In Corbett, K. D, Quilty, P. G., and Calver, C. R., (eds). 2014. Geological Evolution of Tasmania. Geol Soc Aust. Special Publication 24.
- Gemmell, B. J., Large, R. R., and Zaw, K., 1998 Palaeozoic volcanic-hosted massive sulphide deposits. AGSO Journal of Australian Geology and Geophysics. 17(4). 129-137.
- Hall, W. D. M., McIntyre, M. I., Corbett, E. B., McGregor, P. W., Fenton, G. R., Arndt, C. D. And Bumstead, E. D. 1969. Report on Field Work in Exploration Licence 13/65, South-west Tasmania during 1967-68 field season. BHP. Unpublished Company Report for MRT.

- Huston and Kamprad (2000), The Western Tharsis deposit, A high sulphidation Cu-Au deposit in the Mt Lyell field, of possible Ordovician age. AGSO Research Newsletter May 2000, no. 32
- Kary, G., 1985. Progress Report Twelve Months to September 1985 Sorell Peninsula Exploration Licences 35/83, 36/83 and 37/83 Tasmania. Amoco Minerals Australia Company. Unpublished Company Report for MRT.
- Langlands, J. G., 1971. E.L. 13/65 Cape Sorell Peninsula, S. W. Tasmania Exploration for Chrysotile Asbestos in the Hibbs Belt Noddy Creek and Pad 2 to Asbestos Point 1970/71. BHP. Unpublished Company Report for MRT.
- Large, R. R., McPhie, J., Gemmell, J. B., Herrmann, W., and Davidson, G. J., 2001, The Spectrum of Ore Deposit Types, Volcanic Environments, Alteration Halos, and Related Exploration Vectors in Submarine Volcanic Successions: Some Examples from Australia. *Economic Geology* v.96, p. 913-938.
- McClenaghan and Findlay, 1989 Macquarie Harbour. Geological Atlas 1:50 000 series. Tasmanian Department of Mines.
- McClenaghan, M. P.; Findlay, R. H. 1993. Geological Atlas 1:50 000 series. Sheet 64 (7913S). Macquarie Harbour. Explanatory Report Geological Survey Tasmania.
- Mudge, S., 2021. Specialised Processing of VTEM data using TargetTM™, Sorell, Tasmania, Australia. Unpublished Company Report for Stunalara Metals Ltd (in this report).
- Reid, P.W, van der Stelt, B.J. and Ascough G.L. 2014. Combined Annual Technical Report– Sorell Project EL06/2013 & EL7/2013, Sorell Peninsula, Tasmania, For the period 22<sup>nd</sup> October 2013 to 21<sup>st</sup> October 2014. Unpublished Company Report, MRT Tasmania.
- Reid, P.W, van der Stelt, B.J. and Ascough G.L. 2015. Combined Annual Technical Report– Sorell Project EL15/2021 & EL7/2013, Sorell Peninsula, Tasmania, For the period 22<sup>nd</sup> October 2014 to 21<sup>st</sup> October 2015. Unpublished Company Report, MRT Tasmania
- Reid, P.W, Van Der Stelt, B.J. and Ascough G.L. 2016. Combined Annual Technical Report– Sorell Project EL06/2013 & EL7/2013, Sorell Peninsula, Tasmania, For the period 22<sup>nd</sup> October 2015 to 21<sup>st</sup> October 2016. Unpublished Company Report, MRT Tasmania
- Reid, R. O., McClenaghan M. P. and Seymour D. B. 2006. New whole-rock geochemical analyses of the Middle Cambrian Thomas Creek intrusive complex and associated lavas of the Noddy Creek Volcanics, western Tasmania. Mineral Resources Tasmania Report UR2005\_06.
- Reid, R. O. 2001. Cambrian Intrusion Related Copper Mineralisation at the Thomas Creek Prospect, Southwestern Tasmania. Masters of Economic Geology Thesis. CODES University of Tasmania.
- Reid, R., 2020. Birchs Inlet (EL9/2018) Surrender Report 2020 - Sorell Peninsula, Tasmania - For the period 4th February 2020 to 30th June 2020. Unpublished Company Report by Accelerate Resources Ltd., for MRT Tasmania.

Reid, R., Rust, A., Vanzino, L. and Burton, J. 2019. Annual Report on Exploration on Birches Inlet EL06/2013 for the period 1<sup>st</sup> October 2018 to 1<sup>st</sup> October 2019. Accelerate Resources Ltd. Unpublished Company Report, MRT Tasmania

Reid, R. O. 2021. Annual Report on Exploration on Birches Inlet EL06/2013 for the period 1<sup>st</sup> October 2021 to 1<sup>st</sup> October 2022. Stunalara (Operations) Ltd. Pty. And Accelerate Resources Ltd JV. Unpublished Company Report, MRT Tasmania

Reid, R. O., 2021b. Annual Report on Exploration on Birches Inlet EL06/2013 for the period 1<sup>st</sup> October 2021 to 1<sup>st</sup> October 2022. Stunalara (Operations) Ltd. Pty. and Accelerate Resources Ltd JV. Unpublished Company Report, MRT Tasmania.

Raymond, O. L. 1996. Pyrite composition and ore genesis in the Prince Lyell copper deposit, Mt Lyell mineral field, western Tasmania, Australia. *Ore Geology Reviews* 10(3):231-250.

White, N.C. 1975 Cambrian Volcanism and mineralisation, south-west Tasmania. PhD Thesis (unpublished), University of Tasmania

## Appendix

### Appendix 1: List of Appended Digital Files

Exploration Work Type	Filename	File format
<i>Report</i>	EL142021_202304_01_Report.pdf	<i>pdf</i>
<b>File Verification Listing</b> ( <i>this file</i> )	EL142021_202304_02_FileListing.xls	<i>xls</i>