Exploration Licence 1/2019
Salmons Creek

Annual Report for the period 04/12/2021 to 03/12/2022

A. Martin
12 December 2022
Venture Minerals Ltd
Level 3, 24 Outram Street
West Perth WA 6005
PO BOX 1175
West Perth WA 6872

Contents

Figures

Appendix 1 : Rock sampling and geolocs

Appendix 2 : Logging codes

1 Summary

Exploration Licence 1/2019 includes prospective areas along strike of the Renison Bell tin deposit and the Mt Lindsay tin+tungsten+magnetite deposits. The tenement was granted to Venture Minerals Ltd (VMS) in late 2020. EL01/2019 first anniversary year activities included historical data search, compilation and review, geological and structural mapping, prospecting, soil and rock sampling. This anniversary year activities comprised data review, geological interpretation, targeting and planning of summer 2022 field activities. EL1/2019 is prospective for Sn and W and VMS intends to undertake further exploration in subsequent tenement years.

2 Introduction

Exploration Licence EL1/2019 is located in the tin-tungsten province of western Tasmania and extends from the south western contact metamorphic aureole of the Meredith Granite to the north-eastern contact metamorphic aureole of the Pine Hill Granite. The Pine Hill and Meredith Granites are part of a suite of Devonian granites which are very important to tin and tungsten mineralization in Tasmania. Deposits associated with this suite include the world class Renison Bell tin mine (26 Mt at 1.46% Sn), Mount Bischoff (10.54 Mt at 1.1% Sn), Cleveland (12.4 Mt at 0.62% Sn, 0.25% Cu) and King Island (17 Mt at 0.85% WO_3). Cleveland and Mount Bischoff are situated around the northern margin of the Meredith Granite, and Renison Bell is associated with the Pine Hill Granite c. 15 km to the southeast of the Meredith Granite.

Previous exploration activities mainly for tin within the area now covered by EL1/2019 also indicated the presence of potentially economic magnetite skarns. There are currently two producing magnetite mines in Tasmania, the Kara magnetite-scheelite mine located near Hampshire c. 60 km to the northeast of EL1/2019, and the Savage River magnetite mine (371 Mt at 31.9% Fe in magnetite) situated c. 40 km to the northwest.

3 Location and Access

Exploration Licence EL1/2019 currently covers 11 km^2 and is located within the Meredith Ranges Regional Reserve, approximately 130 km by road southwest of the port of Burnie, and c. 35 km by road west of the nearest township, Tullah. The extents of the tenement are loosely bounded by the Pieman road to the north, lake Pieman to the south, and gridlines 361000E and 366000E in the west and east respectively. The tenement is contiguous to VMS' EL21/2005 southeast boundary. The focal area of current exploration activities is around Salmon's track, which bisects the tenement in a northwest-southeast direction and runs parallel c.1.5 km to the Wilson River. The location of EL1/2019 is shown in Figure 1.

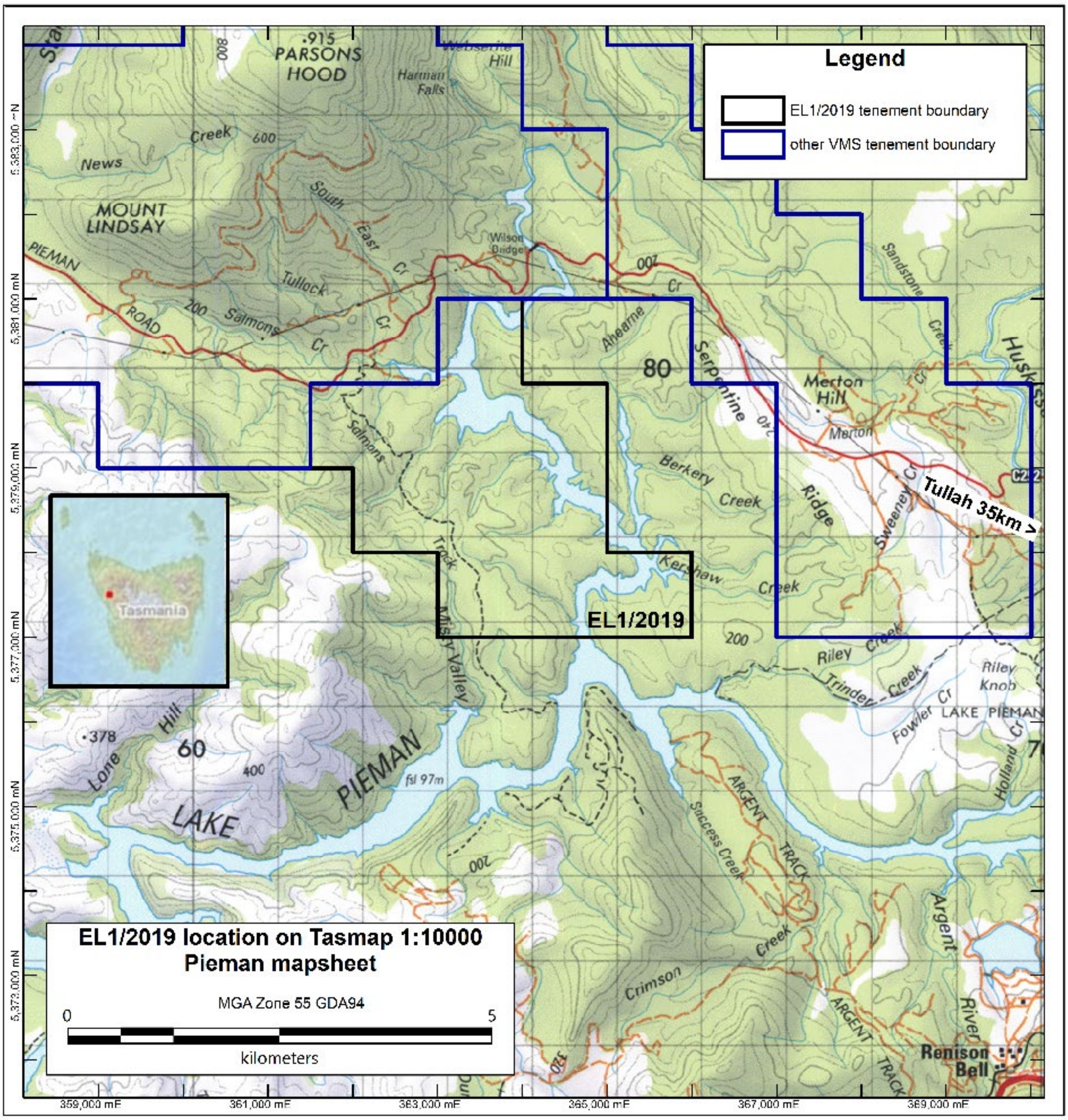

Figure 1: EL1/2019 location plan.

Access to the tenement is via the sealed (bitumen) Pieman Road which branches off the Murchison Highway c. 5 km north of Tullah. Various historic 4WD tracks and survey lines cut by previous tenement holders provide foot access to most of the tenement. The southern and eastern extents of the tenement can be accessed by watercraft from Lake Pieman.

Elevation ranges from 100 m above mean sea level to almost 400m in the southwest corner. The tenement is relatively low relief compared to surrounding areas with Mt Lindsay culminating at 579 m. Average rainfall for the region is approximately 2000 mm per annum and vegetation is dominated by short rainforest and related scrub in the southwest, and by *Nothofagus - Atherosperma* rainforest in the northeast. Numerous forest clearing and fires have occurred throughout EL1/2019 in the early to mid-20th century. Pockets of wet Eucalyptus obliqua and Eucalyptus nitida forest remain throughout the tenement.

4 Exploration and Mining History

Alluvial tin was discovered in the Stanley River area, approximately 6km to the northwest of the tenement sometime around 1893 and subsequently developed into the Stanley River Tin Fields. The main alluvial tin field was located on the extensive river flats around the juncture of Livingstone Creek with Stanley River, with abundant quartz-tourmaline wash noted on the banks of the river close to the granite contact. Additional alluvial deposits were located a further 6-8 km upstream of the main Stanley River field, and in Castle, News and Minors creeks draining the flanks of Mt Livingstone and Parsons Hood. Early prospecting for the source of the alluvial tin then led to the location of several tin-bearing quartz-tourmaline veins within the granite on the flanks of Mt Livingstone and Parsons Hood. Cassiterite-bearing gossans were then discovered at Stanley Reward, Livingstone Creek and Mt Lindsay in the early 1900s with minor small-scale open-cut and underground tin mining occurring to about 1932. Shafts at the Stanley Reward deposit reputedly reached 150 ft, and the Mt Lindsay orebody was one of the most extensive known in Tasmania at the time. Production records are incomplete but included at least 59.8 tons of lode tin from Mt Lindsay, and at least 79.6 tons of alluvial tin.

Descriptions of mining activities and the deposit indicate the mineralisation at Mt Lindsay was mostly of the bedding-parallel sulphide and magnetite replacement type (after slate, tuff and carbonate) with some high-grade cross-cutting cassiterite veins. The stratigraphy-parallel sulphide and magnetite replacement mineralisation was evidently generally of low tin grade and most of the tin production came from the high-grade cassiterite-rich fissures. The Mt Lindsay Mining Company NL recorded small amounts of ore grading up to 25 % Sn, and sampling of the abandoned workings in the 1950s (Pearson, 1952) returned up to 3 feet at 27.6 % Sn. Mining activities at Mt Lindsay had largely ceased by 1923 by which stage the oxide ore had been worked over a zone 600 m long and averaging 30 m thick. Periodic tributing of the oxide ore continued until 1932. A potentially large body of lower grade replacement tin ore remained in which the primary mineral assemblage was noted to comprise mainly magnetite and/or pyrrhotite with variable amounts of cassiterite, pyrite, chalcopyrite, arsenopyrite, scheelite and a wide range of silicates.

In his bulletin on the Stanley River Tin Field of 1914 government geologist LL Waterhouse noted the occurrence of iron ores of possible economic value, describing a magnetite and hematite body approximately 40 m across protruding through the alluvial flats beneath Mt Livingstone (the Livingstone Creek gossan). At that time two adits had been driven into the Livingstone Creek gossan in search of tin. Waterhouse (1914) also described c. 10-20 m thickness of cassiterite-bearing banded magnetite mineralisation within the hangingwall (southern) side of the Mt Lindsay tin lode (the Main Tin Zone), and a parallel zone of magnetite c. 200 m north of the Main Tin Zone which is now called the No 2 Zone.

In the 1950s Rio Tinto and Electrolytic Zinc covered the Mt Lindsay – Stanley River area as part of a regional inch to the mile photogeological and aeromagnetic survey covering most of western Tasmania. The anomalously magnetic zone around the south-eastern edge of the Meredith Granite was identified by this survey. Some more detailed geophysical surveys were then conducted but the recommended drilling was never carried out.

The adjacent Stanley Reward and Livingstone Creek area (c. 5 km northwest of EL01/2019) was subject to an extensive exploration programme over the 1973-1986 period by Pacminex Pty Ltd (subsidiary of CSR Ltd) and Union Corporation Pty Ltd which became Gencor (Australia) Pty Ltd. Exploration activities included geological mapping, ground magnetic traverses, induced polarisation surveying, a trial gravity traverse, airborne EM surveying, stream sediment, soil, auger and rock chip sampling, and 19 diamond core drill holes for 3459 m. Geological mapping, geochemical sampling and geophysics indicated the presence of at least 3 km strike extent of magnetic stanniferous "Renison marker sequence" striking northwest from Stanley River along Livingstone Creek beneath a partial cover of alluvial gravels up to 10 m thick. Interpretation of the magnetic imagery and CSR drilling suggests the "Renison marker sequence" is offset 300 m before continuing off around the flank of Mt Lindsay towards Renison Bell 14 km to the southeast. The exposed Livingstone Creek and Stanley Reward gossans reach 280 m long by 40 m wide, and are the surface expression of pyrrhotite-magnetite skarns replacing dolomite and shale horizons within the "Renison marker sequence". A small fault appears to cut the Livingstone Creek gossan into two roughly equal and slightly dextrally offset portions. Rock chip samples from the gossans returned up to 2.37% Sn (TCR84-2290). Chip sampling in an adit at the northern end of the Livingstone Creek gossan returned 20 m at 0.5% Sn and 0.3% Cu and diamond drill hole LCD002 returned 10 m at 0.4% Sn and 0.1% Cu. Gold in soils over the dolomitic horizons in the Stanley River area commonly report in the range 50-200 ppb.

The CSR and Gencor drilling was focussed on geophysical and geochemical targets within the "Renison marker sequence" and returned up to 41 m at 0.4% Sn in GSR10 along with anomalous Cu and W. Spacing between drill holes ranges from 100 to 350 m over 2 km of strike. Most drill holes encountered granite at less than 100-200 m beneath surface, suggesting that the mineralised "Renison marker sequence" in the area is restricted to a wedge above the Meredith Granite. The north end of the Livingstone Creek gossan is underlain by granite at 15-30 m beneath surface, deepening to 140 m beneath surface around GSR10 approximately 170 m along strike to the southeast. Union interpretation suggests that the Stanley Reward gossan is a xenolith within the marginal zone of the Meredith Granite. The drilling also indicated numerous granite dykes, apophyses and/or fault slices beyond the main body of the Meredith Granite.

In 2007 tenement EL15/2007, which wholly includes the now EL1/2019, was granted to ASF Resources Ltd. In 2011 ASF Resources Ltd entered into a joint venture with China Coal Geology Engineering Corporation to explore for polymetallic mineralisation over the tenement under the joint venture company China Coal Resources Pty Ltd (CCR). From 2011 – 2013 the joint venture explored for epigenetic base metal mineralisation associated with Devonian granite emplacement, with Renison Bell type mineralisation and skarn mineralisation being the primary exploration models (Yap, 2013). EL15/2007 was relinquished in 2015 (Derriman, 2015).

In 2019 VMS conducted a heliborne VTEM (Versatile Time Domain Electromagnetic) Max conductivity survey over its entire Mt Lindsay Project (MLP), with surveys lines extending over the north-west part of EL1/2019 for logistics purposes (Figure 2). VMS intends to conduct interpretation of these data to define VTEM targets within EL1/2019 in future tenement years.

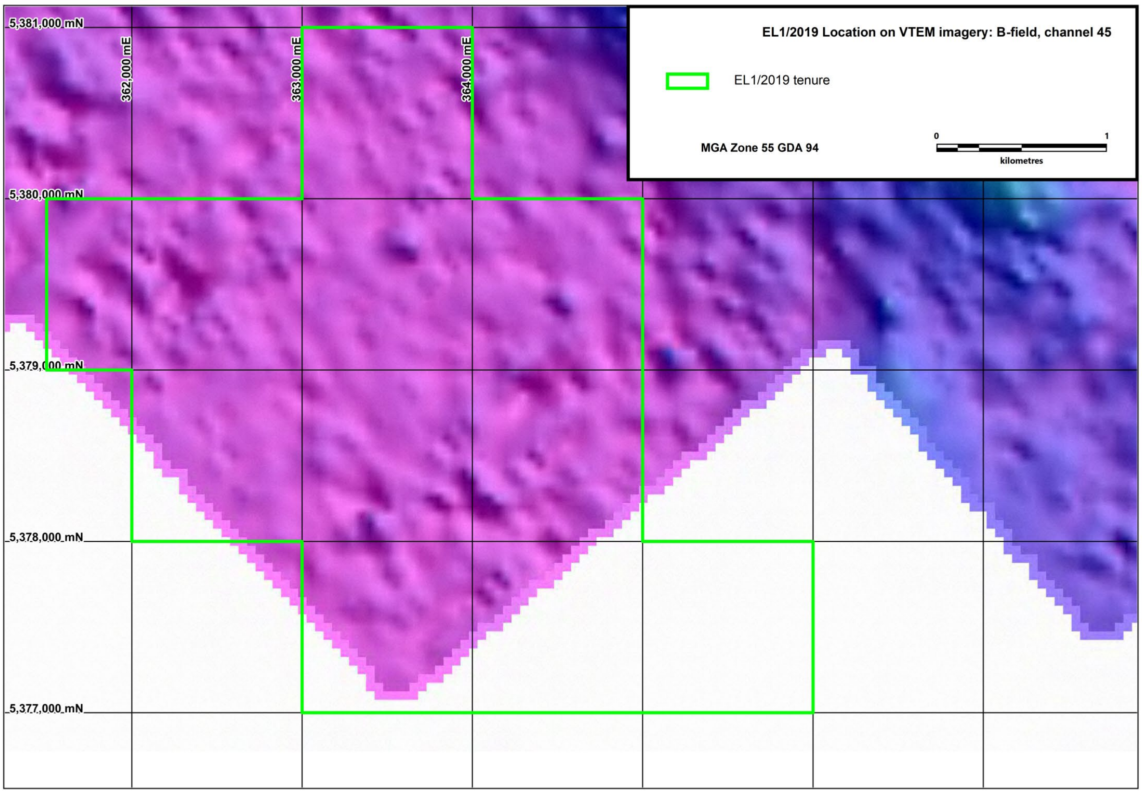

Figure 2: EL1/2019 location with the 2019 VTEM survey.

During 2021, in the first anniversary year of the tenement, Venture conducted historical data search, compilation and review, geological and structural mapping, prospecting, soil and rock sampling.

5 Geological Setting

The geology of the Mt Lindsay area is dominated by the steeply dipping, northwest southeast striking sedimentary and volcanic rocks of the Neoproterozoic – Early Cambrian Crimson Creek Formation, Success Creek Group and Oonah Formation, and is intruded by the Devonian Meredith Granite (Figure 3).

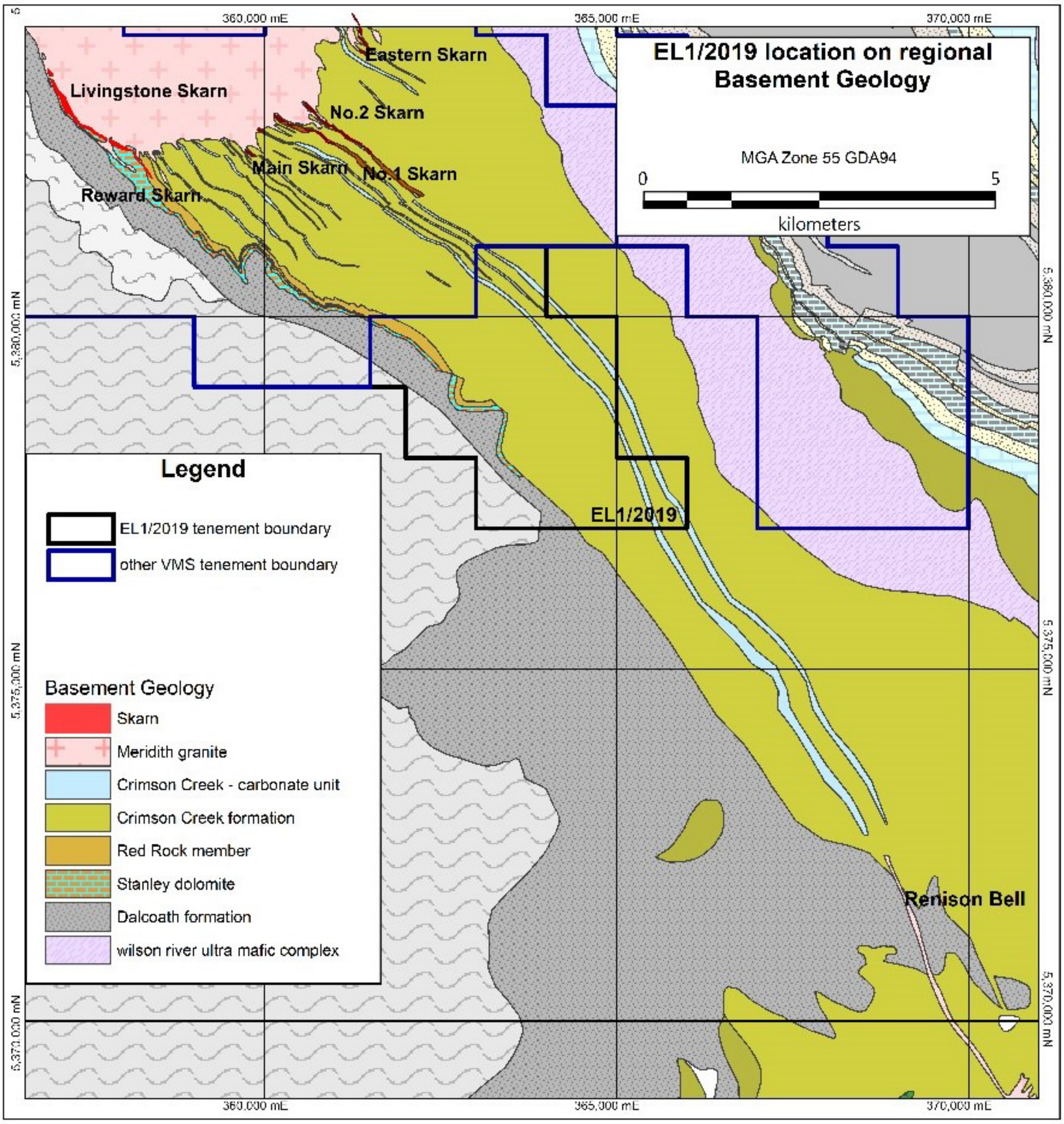

Figure 3 : Location of EL1/2019 with regional basement geology

The late Neoproterozoic - early Cambrian Crimson Creek Formation comprises mainly of thin to thick bedded greenish grey lithic sandstones, siltstones and mudstones with scattered horizons of laminated to thinly bedded light grey, green and pink felsic to mafic tuffites and thin to thick bedded calcareous sandstones, along with rare tholeiitic basalt flows. Total thickness in the nearby Mt Lindsay area is estimated at c. 5000 m (Owen, 2008). The early Cambrian Success Creek Formation comprises a sequence of sandstones, siltstones, volcaniclastics with minor carbonate beds and tholeiitic basalts. A significant marker is the Red Rock member of the Success Creek Formation, which outcrops in the vicinity of Salmons track, along most of the tenement. Although mostly recessive at surface, some outcrop of the conformable, directly underlying Stanley dolomite is also present. The Success creek group is underlain by the Neo-Proterozoic (1000-750Ma) Oonah Formation, a sequence of greywacke, pelites, siltstones and quartz sandstones. This unit was probably the precursor to the Dundas Trough (Zhang, 2011).

A broad contact metamorphic aureole is developed around the Meredith Granite, characterised by the development of fine-grained amphibole, cordierite, biotite and pyroxene hornfels (Owen, 2008). Carbonate units are locally present within all of the enclosing sedimentary units and locally form the protolith to a variety of proximal contact skarns, greisenized skarns and more distal carbonate replacement bodies.

EL1/2019 covers the Crimson Creek Formation, the Success Creek Group with its Red Rock Member and Stanley dolomite and the Oonah Formation. The large Federal – Bassett fault zone runs northwest – southeast through the tenement, although its true location is inferred. Up to 2km^2 in the north of the tenement are covered by quaternary stream alluvium, swamp and marsh deposits, beneath Lake Pieman.

Although there are no known mineral occurrences within the tenement, the large replacement tin deposit of Renison Bell is located approximately 5km to the southeast of the tenement's southern boundary. Further to the southwest of the tenement, tin mineralisation is developed within the aureole of the Devonian Heemskirk Granite both as veins associated with tourmaline and as alluvial deposits (Laffers, St. Dizier and Tasman River). Similar tin mineralisations occur to the immediate north of the tenement associated with the large Livingstone Creek Devonian granite batholith.

The principal exploration targets for Venture within EL1/2019 are carbonate replacement, greisenized skarn, and vein and greisen style tin and tungsten mineralisation.

6 Summary of Previous Work

The following table summarizes the previous work done on EL1/2019 by former tenement holders:

Company	Period	Licence	Target	Exploration Activities
Adamus Resources Ltd	2002 - 2011	EL18/2002	Ni, Platinoids & Au	Review of previous exploration & aeromagnetic results with follow-up stream sediment sampling and analysis
China Coal Resources Pty Ltd	2011 - 2015	EL 15/2007	Epigenetic base metals	Geological traversing, stream sediment sampling, trenching, track cutting, rock chip sampling, soil sampling
Venture Minerals Ltd	2020 - 2021	EL1/2019	Sn, W	Data search, geological and structural mapping, prospecting & surface sampling

7 2021-2022 Anniversary Year Exploration Activities

7.1 Data review and geological interpretation

During the 2022 anniversary year, rock samples collected during the previous anniversary year were retrieved from storage and relogged, refer to Appendix 1 and Appendix 2 for lithological determination and logging codes.

2021 soil sampling results were also reviewed, and a revised geological interpretation based on a combination of rock chips lithological determination and soil geochemistry has been proposed. It appears the Success Creek Group is more widespread over EL1/2019 than previously interpreted, notably due to local faulting and folding.

Magnetic imagery was also studied in the light of this year's findings and a new structural interpretation has been proposed, which notably sees a slight change in the Federal Bassett fault inferred location.

Refer to Figure 4.

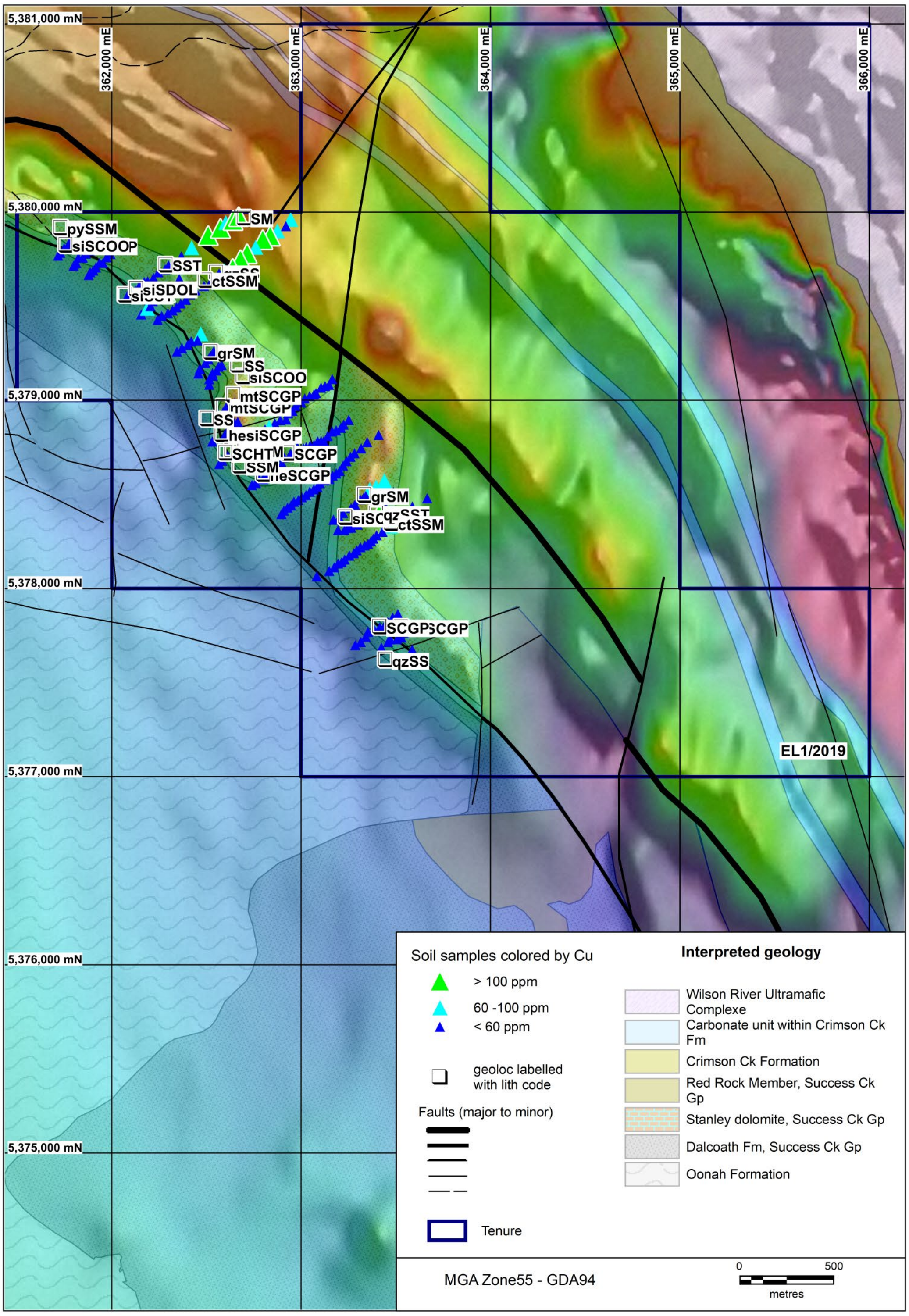

Figure 4 : Revised geoloc, surface geochemistry and magnetic imagery (TMI rtp) on interpreted basement geology

7.2 Targeting and fieldwork planning

During the 2022 anniversary year targeting activities highlighted:

- a strongly magnetic pimple sitting within the Crimson Ck Fm on a slightly magnetic ridge running parallel to the known stratigraphy: this spotty magnetic anomaly is only slightly offset of the interpreted Federal - Bassett fault zone (which hosts the Renison Bell Tin Mine) and constitutes a prime target for Sn-W-magnetite mineralization. Two previous soil sampling lines crossed this magnetic trend approx. 500 m north along strike and returned a coherent + 100 ppm Cu soil anomaly, in line with what is known of the Crimson Ck Fm geochemical surface expression.
- two magnetic anomalies potentially sitting on the Main skarn carbonate unit within the Crimson Ck Fm
- two magnetic anomalies hosted by the Red Rock Member coinciding with +100 ppm Cu soil anomalism which could indicate magnetite-mineralized horizons
- a third magnetic anomaly hosted by the Red Rock Member, no obvious soil geochemical anomalism associated, potentially indicating a magnetite-mineralized horizon

None of the Crimson Ck Fm targets have been sampled or geologically mapped in the past. And while no obvious conductors were noticed during review of 2019 VTEM survey over E1/2019 back in 2021, a distal carbonate replacement body hosting disseminated sulphide mineralisation wouldn't return a strong EM anomaly.

It is recommended that next year's activities include surface sampling and/or mapping of the above-mentioned Crimson Ck Fm & Red Rock Member targets. Soil sampling lines parallel to the known stratigraphy and across the tenement should also be conducted to help with lithological interpretation.

Finally, it is to be noted that Crimson Ck Fm siltstones are magnetic in the Mt Lindsay area: a special care should be taken during geological mapping and any pyroxene-pyrrhotite hornfelds and / or flakestones (carbonate facies indicator) should be dutifully recorded.

Refer to Figure 5.

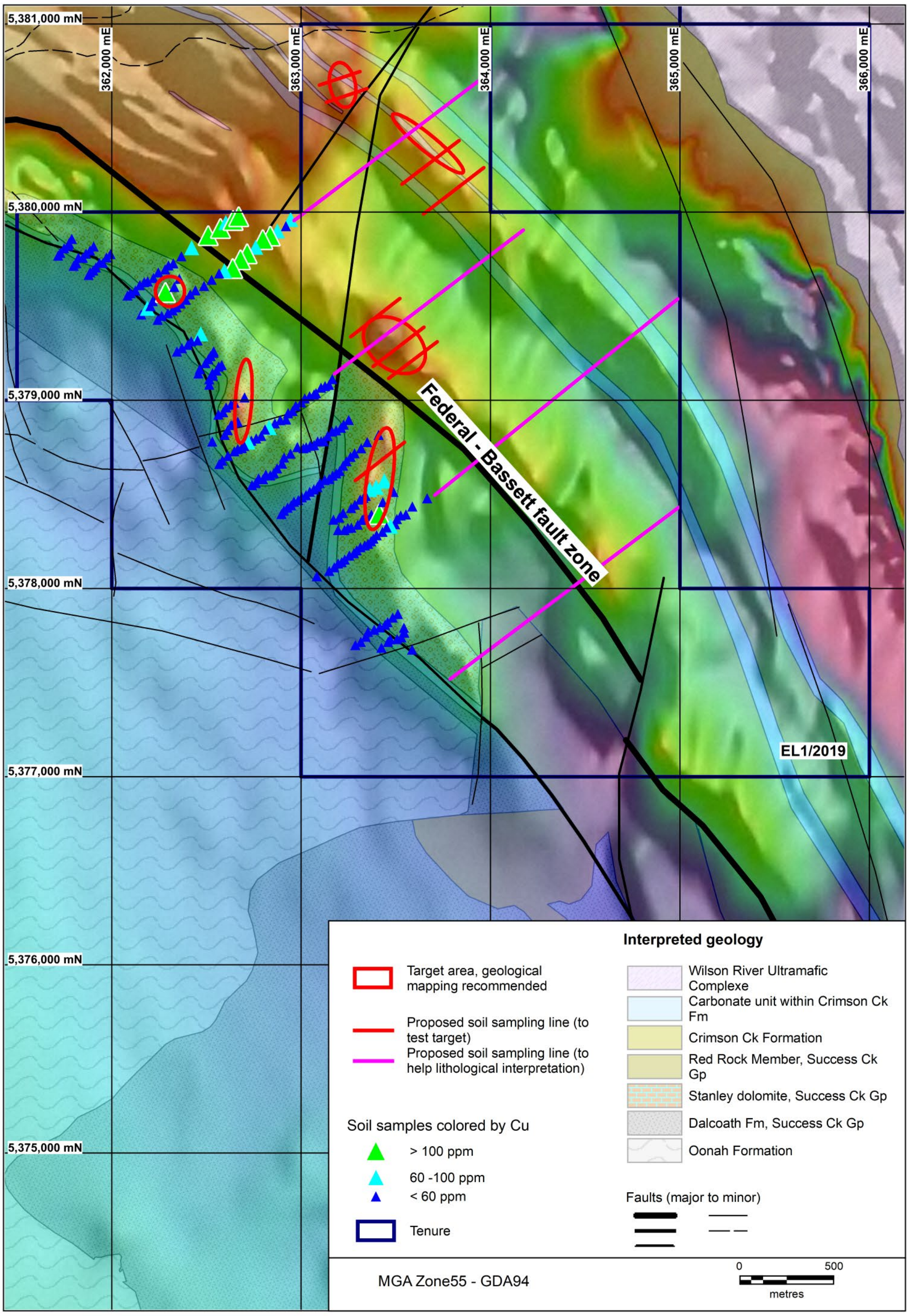

Figure 5 : Cu soil anomalism, targets and proposed soil lines, and magnetic imagery (TMI rtp) on interpreted basement geology

8 Conclusions and Recommendations

Exploration Licence EL1/2019, part of the Mt Lindsay Project, was granted to Venture Minerals Ltd late 2020. The tenement sits along strike from the existing Renison mine and partially covers the Stanley dolomite, part of the Renison mine sequence, and the Federal - Bassett fault zone.

From the relogging of 2021 rockchips combined with the review of surface geochemistry and magnetic imagery, a revised interpretation of the basement geology has been proposed seeing notably a shift in the Federal – Bassett fault zone inferred location.

2022 targeting activities highlighted:

- a strongly magnetic pimple sitting within the Crimson Ck Fm on a slightly magnetic ridge running parallel to the known stratigraphy: this spotty magnetic anomaly is only slightly offset of the interpreted Federal - Bassett fault zone (which hosts the Renison Bell Tin Mine) and constitutes a prime target for Sn-W-magnetite mineralization. Two previous soil sampling lines crossed this magnetic trend approx. 500 m north along strike and returned a coherent + 100 ppm Cu soil anomaly, in line with what is known of the Crimson Ck Fm geochemical surface expression.
- two magnetic anomalies potentially sitting on the Main skarn carbonate unit within the Crimson Ck Fm
- two magnetic anomalies hosted by the Red Rock Member coinciding with +100 ppm Cu soil anomalism which could indicate magnetite-mineralized horizons
- a third magnetic anomaly hosted by the Red Rock Member, no obvious soil geochemical anomalism associated, potentially indicating a magnetite-mineralized horizon

It is recommended that next year’s activities include surface sampling and/or mapping of the above-mentioned Crimson Ck & Red Rock Member targets. Soil sampling lines parallel to the known stratigraphy should also be conducted to help with EL1/2019 lithological interpretation.

9 References

Brown, A. V., 1986. Geology of the Dundas – Mt Lindsay – Mt Youngback region. Tasmania Department of Mines. Geological Survey Bulletin 62.

Derriman, M., 2015. Lake Pieman Project – E.L. 15/2007 Final Report for the Period 23 July 2014 to 22 July 2015. Available from Mineral Resources Tasmania.

Haley, E., 2021. Mt Lindsay Project. Exploration Licence 21/2005. Annual Technical Report for the period 22/8/2020 to 21/8/2021. Venture Minerals Ltd. Unpublished report for Mineral Resources Tasmania.

Haley, E., 2021. Mt Lindsay Project. Exploration Licence 1/2019. Annual Technical Report for the period 04/12/2021 to 03/12/2022. Venture Minerals Ltd. Unpublished report for Mineral Resources Tasmania.

Holmes, T., 2020. Mt Lindsay Project. Exploration Licence 21/2005. Annual Technical Report for the period 22/8/2019 to 21/8/2020. Venture Minerals Ltd. Unpublished report for Mineral Resources Tasmania.

Kitto, P. A., 1992. The geological and structural controls on mineralisation at the Renison Bell tin mine. Tasmania Department of Mines. Geological Survey Bulletin 70, p97-117.

Kwak, T. A. P., 1982. The geology and geochemistry of the zoned, Sn-W-F-Be skarns at Mt Lindsay, Tasmania, Australia. Unpublished report available from Mineral Resources Tasmania (TCR82-1805).

Owen, S., 2008. Mt Lindsay Project. Exploration Licence 21/2005. Annual Technical Report for the period 22/8/2007 to 22/8/2008. Venture Minerals Ltd. Unpublished report for Mineral Resources Tasmania.

Pearson, H. F., 1952. Report on the Mt Lindsay Tin Mine near Zeehan, Tasmania. Unpublished report held by Mineral Resources Tasmania, written at latest 1952 (MRT Report No. 61-0337).

Waterhouse, L. L., 1914. The Stanley River Tin Field. Tasmania Department of Mines. Geological Survey Bulletin 15.

Yap, E., 2013. EL15/2007. Unpublished report by Geos Mining Consultants for China Coal Resources Pty Ltd, Report to the Director of Mines, Hobart, available from Mineral Resources Tasmania.

Zhang, J. et al., 2011. Lake Pieman Project – E.L. 15/2007 Annual Report for the Period 24 July 2010 to 23 July 2011. Available from Mineral Resources Tasmania.

Zhang, J and Zhang Z., 2012. Lake Pieman Project – E.L. 15/2007 Annual Report for the Period 24 July 2011 to 23 July 2012. Edited by C. Swensson. Available from Mineral Resources Tasmania.

Appendix 1

Rock sampling and geolocs

H0002	Version	1									
H0003	Date_generated	9/12/2022									
H0004	Reporting_period_end_date	3/12/2022									
H0005	State	TAS									
H0100	Tenement_no	EL1/2019									
H0101	Tenement_holder	Venture Minerals Ltd									
H0102	Project_name	Mt Lindsay									
H0106	Tenement_operator	Venture Minerals Ltd									
H0200	Start_date_of_data_acquisition	16/01/2021									
H0201	End_date_of_data_acquisition	2/12/2022									
H0202	Template_format	SL_1									
H0203	Number_of_data_records	28									
H0204	Date_of_metadata_update	8/12/2022									
H0300	Related_data_files										
H0302	Downhole_lithology_data_file										
H0303	Downhole_geochem_data_file										
H0304	Downhole_survey_data_file										
H0305	Surface_Geochem_data_file	EL012019_202212_01_Appendix_SL_1									
H0307	Lithology_code_file	EL1_2019_202212_02_Appendix_loggingcodes									
H0308	File verification list										
H0318	QAQC_data_file										
H0400	Drill_code										
H0401	Drill_contractor										
H0402	Drill_description										
H0500	Feature_located	Surface sample									
H0501	Geodetic_datum	MGA94									
H0502	Vertical_datum	AHD									
H0503	Projection	UTM									
H0530	Coordinate_system	Projected									
H0531	Projection_Zone	55									
H0532	Surveying_instrument	Garmin GPS64s									
H0533	Surveying_company	Venture Minerals Ltd									
H1000	Geoloc	Sample_Id	Easting	Northing	Elevation	Outcrop	Lith1	Lith2	Sample_description	Comments	Survey_accuracy
H1001	Units		metres	metres	metres						
H1004	Accuracy		1	1	1						
D	STS037	**EHSC001**	362538	5379248	169	subcrop	grSM		lam graphitic shale		8
D	STS045	**EHSC002**	362597	5378812	184	subcrop	hesiSCGP		hematite & chert beds after granule conglomerate?	float in soil sample hole	12
D	STS053	**EHSC003**	362604	5378958	181	subcrop	mtSCGP		well sorted drd magnetite+hematite+qz pebble conglomerate = ferruginised oolite? & silicified ?dolomite	Steep slope SW of road, deep A horizon then refusal on cobbles	30
D	STS059	**EHSC004**	363249	5378371	238	subcrop	siSCOO		wt & lgy silicified oolite	sample from rootball of large fallen myrtle	6
D	STS065	**EHSC005**	363412	5378391	234	subcrop	qzSST		magnetic bn saprock after shale & fg qzwacke, subcrop in rootballs	open tall eucalypt forest on ridge	4
D	EHSC006	**EHSC006**	363349	5378488	202	outcrop	grSM		bk graphitic shale, contact? on SW bank of creek, NE bank is rd og clay		7
D	STS089	**EHSC007**	363543	5377787	216	subcrop	heSCGP		vuggy ferruginous polymict pebble conglomerate, clasts subrounded to subangular, some hematite pebbles, HCl -ve	Float from soil sample hole	4
D	STS096	**EHSC008**	362300	5379712	180	outcrop	SST		drd - dbn weakly magnetic shale with chalcedonic silica veinlets	o/c in creek gully	8
D	STS105	**EHSC009**	362084	5379552	196	outcrop	siSST		siliceous dgy lam siltstone, very hard, steeply dipping	o/c in creek bed & banks	7
D	EHSC020	**EHSC020**	362713	5379962	130	outcrop	SM		interbedded lam to tnb lbn & og weathered sandstone & shale with rusty (ex sx?) spots	o/c in and near old road cutting.	8
D	STS143	**EHSC021**	362567	5379670	178	outcrop	qzSS		gy lam fg-mg micaceous qz sandstone	o/c in creek gully	10
D	EHSC022	**EHSC022**	362509	5379630	180	outcrop	ctSSM		contorted/disrupted lam-tnb gy-dgy shale & sandstone		8
D	STS172	**EHSC030**	362648	5378725	212	subcrop	sptSM		rdbn-bkbn si shale with prismatic qz septarian fractures to 20mm tk		8
D	STS191	**EHSC041**	362944	5378712	245	outcrop	SCGP		gngy & lgy poorly sorted polymict conglomerate with clasts to 10mm size, weakly magnetic & some metallic crystals <1mm	o/c on spur	12
D	EHSC042	**EHSC042**	362815	5378600	200	outcrop	heSCGP		vuggy ferruginous pebble conglomerate		12
D	EHSC050	**EHSC050**	363490	5378339	220	outcrop	ctSSM		contorted/disrupted fg-mg gy qz sandstone beds & lams in shale	o/c in creek bed	8
D	EHST001	**SCZW001**	361745	5379909	133	float	pySSM		oxidizing py nodules to c. 2cm in vuggy shale & ?qzwacke	float in creek	10
D	EHST017	**SCZW002**	362145	5379585	187	subcrop	siSDOL		vuggy wt siliceous dolomite possibly oolitic		16
D	EHST024	**SCZW003**	362690	5378644	218	subcrop	SSM		rd & og weathered lam shale & fg qzwacke		8
D	EHST033	**SCZW004**	362616	5378713	224	subcrop	SCHT	pyV	rdbn chert/silicified shale with pyrite veins to 10mm tk		10
D	EHST044	**SCZW005**	362518	5378894	165	subcrop	SS		bk weakly micaceous bk ?sandstone with wt veinlets (<1mm)		10
D	EHST050	**SCZW006**	362708	5379119	168	subcrop	siSCOO		hard bk ooilitic chert with qz veinlets, HCl -ve		10
D	EHST051	**SCZW007**	362680	5379180	153	subcrop	SS		dgy & pl sandstone with bright gn ?epidote veinlets		10
D	EHST063	**SCZW008**	363459	5377614	214	outcrop	qzSS		lgy - wt fg micaceous qzwacke	in road on top of hill, change in vegetation to gahnia, bauera, lept	7
D	EHST067	**SCZW009**	363429	5377789	219	subcrop	SCGP		rd & wt well sorted stylolitic granule (2-3mm) conglomerate with vuggy hematitic frags	float under tree rootball	7
D	EHST083	**SCZW010**	362657	5379020	165	outcrop	mtSCGP		Vuggy ferruginous mw polymict clast supported granule conglomerate with qz vein, pl, rd and bk clasts, locally strongly magnetic	outcrop in roadside	9
D	EHST086	**SCZW011**	361891	5379813	176	outcrop	SCGP		brd&og&gy poorly sorted polymict grit-coarse graied sandstone, HCl-	outcrop in road cutting	6
D	EHST091	**SCZW012**	361772	5379817	182	subcrop	siSCOO		wt & gy silicified oolite, HCl -ve		7
EOF											

Appendix 2

Logging Codes

Lithologic Codes	Description
Regolith (R*)	
R	undifferentiated regolith
RCAC	calcrete
RSIC	silcrete
RFEC	ferricrete
RL	undifferentiated laterite
RLG	lateritic gravel (loose)
RLI	in situ laterite
RLT	transported laterite or cemented lateritic gravel
RCLY	in situ clay
RSAP	undifferentiated saprolite
RGOS	gossan ("iron cap") = iron oxide rock formed by weathering of sulphide rick rock. Textural or mineral prefix as appropriate (e.g. aciRGOS = acicular gossan, mcRGOS = malachite gossan)
Unconsolidated Sediments (S*)	
S	undifferentiated sediment
SLG	lateritic gravel
SGVL	unconsolidated gravel
SPCS	unconsolidated pebbly or cobbly sands
SAND	unconsolidated sand
SILT	unconsolidated silt
SMUD	unconsolidated mud
SCLY	unconsolidated clay (transported)
cyRB	regolith breccia with clay matrix
Sedimentary Rocks (S*)	
SS, qzSS, volcSS, lithSS, ccSS	>75% sandstone (undifferentiated) over minimum 5m logging interval, prefixes qzSS = quartz sandstone, lithSS = lithic sandstone, volcSS = volcanogenic sandstone, ccSS = calcareous sandstone
SM	>75% mudstone over minimum 5m logging interval
ST	>75% siltstone over minimum 5m logging interval
SSM	25-75% sandstone & mudstone over minimum 5m logging interval
SST	25-75% sandstone & siltstone over minimum 5m logging interval
SMH	shale
SML	slate
SMA	argillite (weakly metamorphosed mudstone)
SMP	phyllite
SGRT	grit
SSPC	pebbly or cobbly sandstone
SSIC	intraclastic sandstone and conglomerate
SCG	conglomerate
SCGR	mud chip conglomerate (rip-ups)
SCGM	monomict conglomerate
SCGP	polymict conglomerate
SBRM	monomict breccia
SBRP	polymict breccia
SCB, ooSCB, stSCB, bcSCB	undifferentiated carbonate, prefixes oo = oolitic, st = stromatolitic, bc = bioclastic
SLST	limestone
SDOL	dolomite
STIL	tillite
STUF	tuffite (redeposited)
SLAP	redeposited lapilli-stone
SCHT	chert
SBIF	banded iron formation
SLIG	lignite
Igneous Rocks (U* for Ultramafic, M* for Mafic, I* for Intermediate, F* for Felsic)	
UM	undifferentiated ultramafic
UDUN	dunite
UHAR	harzburgite
UPX	pyroxenite
UPD	peridotite
USERP	serpentinite
UKIM	kimberlite
ULAP	lamproite
ULAY	ultramafic lamprophyre
UK	komatiite (undifferentiated)
UKSTX	spinifex textured part of komatiite flow
UKoOC	olivine orthocumulate part of komatiite flow
UKoMC	olivine mesocumulate part of komatiite flow
MG	gabbro
MGL	leucogabbro
MD	dolerite
MB	basalt

Lithologic Codes	Description
MBHM	high-magnesium basalt
MBP	pillow-basalt
MBHY	basaltic hyaloclastite
MLAP	mafic lapilli-stone
MTUF	mafic tuff
IAND	andesite
IDIO, pxIDIO, amIDIO, btIDIO	diorite, with lower case mineral prefixes for key mafic phases, eg btIDIO, amIDIO, pxIDIO
F	undifferentiated felsic rock
FG, amFG, pxFG, btFG	undifferentiated granitoid, with lower case mineral prefixes for key mafic phases, eg btFG, amFG, pxFG
FGRA, amFGRA, btFGRA	granite, with lower case mineral prefixes for key mafic phases, eg btFGRA, amFGRA
FGRD, amFGRD, btFGRD	granodiorite, with lower case mineral prefixes for key mafic phases, eg btFGRD, amFGRD
FMON, amFMON, btFMON	monzonite, with lower case mineral prefixes for key mafic phases, eg btFMON, amFMON
FSYE, amFSYE	syenite, with lower case mineral prefixes for key mafic phases, eg btFSYE, amFSYE
FTUF	felsic tuff
FV	undifferentiated felsic volcanic rock
FRHY	rhyolite
FDAC	dacite
FPEG	pegmatite
FIGM	ignimbrite
Metamorphic & Metasomatic Rocks (Z*)	
ZSCH	undifferentiated schist
mZSCH	undifferentiated mafic schist, typically dominated by amphibole, chlorite and/or biotite with lesser feldspar, quartz, accessory leucoxene etc...
fZSCH	undifferentiated felsic schist, domianted by quartz & feldspar, muscovite, & accessory mafic minerals
btZSCH, btclZSCH, tcZSCH, etc…	biotite schist, biotite-chlorite schist, etc… using mineral code prefixes for only the distinguishing minerals
ZGNS	undifferentiated gneiss
btZGNS, kspZSCH, etc…	biotite gneiss, k-feldspar gneiss, etc… using mineral code prefixes for the key minerals
ZAMP	undifferentiated amphibolite
ZHF, pxZHF, btZHF, andZHF	hornfels = ZHF, microcrystalline, up to 2 lower case mineral prefixes as appropriate, eg. btZHF, andZHF, pxZHF etc...)
ZMRB, gtZMRB, olZMRB, veZMRB, etc...	marble, with up to 2 key alteration mineral prefixes, eg gtZMRB, gtpxZMRB, olZMRB, srZMRB, veZMRB
ZXS, gtZXS, gtpxZXS, woZXS	ZXS = exoskarn, with maximum 2 dominant mineral prefixes in alphabetical order, eg gtZXS, gtpxZXS, ccwoZXS, woZXS, gtmtZXS, cpygtZXS etc...
ZNS, gtpxZNS, epZNS,	ZNS = endoskarn (skarn formed within genetically related granitoid), with up to 2 dominant mineral prefixes in alphabetical order, eg epgtZNS, epZNS, pxZNS
ZGRS, tzZGRS, qztuZGRS	ZGRS = greisen comprising fine saccharoidal aggregate of quartz and muscovite, with up to 2 dominant mineral prefixes, eg. tzZGRS, qztuZGRS
Veins (V)	
*V	Veins, up to 2 key mineral prefixes as appropriate (eg qzV, qztuV), only use in Lith1 column
*VB	Vein breccias, up to 2 key mineral prefixes as appropriate according to mineralogy of cemment (eg clccVB), only use in Lith1 column
Hydrothermal Breccias, Faults and Shear Rocks (X*)	
XHB	hydrothermal breccia
XMYL	mylonite
XFB	Fault breccia - incohesive >30% clastic
XFG	Fault gouge - incohesive <30% clastic
XFC	Fault cataclasite - cohesive more than >30% clastic
No Recovery & Cavities (N*)	
NCAV	cavity
NREC	no sample recovery (unknown problems)
NSAV	sample no longer available (applies to relogging)

Mineral Codes	
aca	acanthite
act	actinolite
aik	aikinite
ala	alabandite
alb	albite
alm	almandine
am	amphibole
ana	anatase
adl	andalusite
and	andradite
ank	ankerite
ano	anorthite
atg	antigorite
ars	arsenates
asp	arsenopyrite
aue	auerlite
aug	augite
ax	axinite (Ca-Mg-Al borosilicate)
az	azurite
bar	baryte
bth	berthierite
byl	beryl
bt	biotite
bim	bismuthinite
bor	borate (undifferentiated)
brn	brannerite
bau	braunite
bru	brucite
bus	bustamite
cc	calcite
can	canfieldite
cb	carbonate (undifferentiated)
cs	cassiterite
cer	cerrusite
cha	chalcedony
cpy	chalcopyrite
cvx	chenevixite
cl	chlorite
cdp	chrome diopside
chr	chromite
cyb	chrysoberyl
crp	chrysoprase
crt	chrysotile
cin	cinnabar
cy	clay (undifferentiated)
cpx	clinopyroxene
cob	cobaltite
col	columbite
cd	cordierite
cos	cosalite
cub	cubanite
da	danalite
dd	diamond
di	diopside
dol	dolomite
dum	dumortite
elc	electrum
eng	enargite
ep	epidote
fay	fayalite
fsp	feldspar
fe	fe-oxide or hydroxide
feg	fergusonite
flu	flourite
flb	fluoborite
for	forsterite
gal	galena
gt	garnet
go	goethite
Au	gold
gra	graphite
grs	grossular
hau	hausmannite
hed	hedenbergite
he	hematite
hb	hornblende
hul	hulsite
ilt	illite
ilm	ilmenite
ilv	ilvaite
ixi	ixiolite
jap	jalpaite
jam	jamesonite
ka	kaolin
kes	kesterite
ksp	k-feldspar (undifferentiated)
kob	kobellite
ky	kyanite
lau	laumontite
lep	lepidolite
lx	leucoxene
lm	limonite (undifferentiated iron oxyhydroxide)
lol	loellingite
lw	ludwigite
luz	luzonite
mg	magnesite
mt	magnetite
mlc	malachite
mly	malayaite
mi	mica (undifferentiated)
mcr-pcl	microlite-pyrochlore
mn	mn-oxides
ms	moissanite
mol	molybdenite
mz	monazite
mon	montmorillonite
mu	muscovite

nac	nacrite
Bi	native bismuth
ol	olivine
ops	opaline silica
or	orthoclase
sxo	oxidised sulphide
pav	pavonite
pnt	pentlandite
pv	perovskite
pen	phenacite
phl	phlogopite
pl	plagioclase
pbs	polybasite
pcr	polycrase
pmg	polymignyte
prh	prehnite
pru	proustite
pyg	pyrargyrite
py	pyrite
pp	pyrope
px	pyroxene
po	pyrrhotite
qz	quartz
rhd	rhodenite
rdc	rhodochrosite
rf	rock fragments
rut	rutile
sam	samarskite
sa	saponite
scp	scapolite
sh	scheelite
sco	scorodite
se	sercite
sr	serpentine
sd	siderite
si	siliceous
spc	specularite
sph	sphalerite
spn	spinel
spd	spodumene
stan	stannite
snd	stannoidite
stb	stibnite
sb	stilbite
stp	stilpnomelane
stv	strueverite
sx	sulphide
tc	talc
tap	tapiolite
tt	tetrahedrite-tennantite
ti	titanite (sphene)
tz	topaz
tu	tourmaline
trm	tremolite
ve	vesuvianite (idocrase)
vo	vonsenite (Fe borate)
wlf	wolframite
wo	wollastonite
ze	zeolites
zin	zinnwaldite

Texture Codes	
aci	**acicular, mineral specific types coded with mineral code followed by a (eg mta = acicular magnetite)**
amg	amygdaloidal
anh	anhedral
bdn	boudins
blb	blobs; reasonably circular-ovoid, sharp-diffuse alteration shapes; ie. am-po-qz in hornfels.
blt	blotchy; harsher more irregular than mot, characterstic of recrystallised carbonate ie. in ccSS
bnd	banded
bot	botryoidal
bxw	boxwork
ctc	chaotic; disturbed bedding by structural or soft-sediment deformation; not an alteration product
chk	chunky
cqp	**specifically quartz prisms in calcite matrix**
col	cauliflower texture (of mineral growth)
den	dendritic
dis	disseminated
euh	euhedral
eqg	equigranular
fol	foliated
gph	graphic & micrographic texture (as in granites)
grd	graded bedding
grn	**granular texture (cf acicular or tabular textures), mineral specific types coded with mineral code followed by g (eg mtg = granular magnetite, gtg = granular garnet texture)**
gtp	specifically garnet or ex-garnet porphyroblastic texture
hbr	healed breccia (texture) ie. pre-alteration breccia that has been overprinted
lam	laminated
mas	massive
mos	mosaic
mot	mottled; irregular/diffuse patchy alteration running across bed boundaries, particularly in hornfels
mta	acicular magnetite (after vonsenite)
mtg	granular magnetite
mzn	mineral zoning in fine laminae
oph	ophitic
orb	**orbicules of any mineral, typically concentrically layered or zoned, mineral specific types coded with mineral code followed by o (eg veo = vesuvianite orbicules)**
pbl	**porphyroblastic, large metamorphic or metasomatic minerals in a finer matrix**
pcl	porphyroclastic
plt	platy (as in coarse mica, but also seen in pyrrhotite + others?)
ppy	porphyritic
psm	general prismatic texture code which could apply to a number of minerals
rcz	recrystalised
ruc	rip-up clasts; distinguish in comments between Carter's-like (small, platy), and large & irregular
sch	schistose
scl	cleaved
shz	shear or shear zone
spk	dark minerals such as biotite or magnetite scattered though paler matrix
s+p	specifically salt and pepper skarn with atoll textured magnetite with microscopic qz prisms and feldspar, in siderite matrix
spt	spotted, such as spotting in a hornfels
sqp	**specifically quartz prisms in siderite matrix**
stk	streaky; charactersitic of vw RCLY
stwk	stockwork
sub	subhedral
tab	**tabular, mineral specific types coded with mineral code followed by t (eg vet = vesuvianite tablets)**
tad	am±po spots with tales in px matrix
tuf	tuffaceous
ves	vesicular
vet	tabular vesuvianite texture
wrg	wrigglite
Structure Codes	
bkn	weak core broken by drilling (typically near beginning of hole)
brc	brecciated
flt	fault
frc	fracture zone
ftz	fault or fault zone
mcf	microfaults- displacement <1cm scale
slk	slickensides
sfl	small-scale folding (<4m period)
ssf	small-scale faulting (>1cm, <core diameter)
ssd	soft sediment deformation; disturbed protolith (precursor to ctc texture?)
BCA	acute angle between core axis and bedding (=alpha)
SCA	acute angle between core axis and cleavage or schistosity (=alpha)
FCA	acute angle between core axis and fault (=alpha)
Sedimentary Bedding Codes	
lam	laminated (<10mm)
tnb	thin bedded (10-100mm)
mdb	medium bedded (100-300mm)
tkb	thick bedded (>300mm)
vtkb	very thick bedded (>1m)
Sedimentary Grain size	
svfg	very fine grained <64 um (mud, silt & clay)
sfg	fine grained 64 um to 0.25 mm (fine sand)
smg	medium grained 0.25 to 0.5mm (medium sand)
scg	coarse grained 0.5 to 2 mm (coarse sand)
svcg	very coarse grain >2mm (2 - 4mm granules, 4 - 16mm pebbles, 16-256 mm cobbles, >256 mm boulders)
Igneous & Metamorphic Grain Size	
ifg	fine grained <1 mm
img	medium grained 1-5 mm
icg	coarse grained 5-30 mm
ipg	pegamatitic >30 mm
Weathering Codes	
vw	very weathered, BOTH PRIMARY TEXTURE & MINERALOGY DESTROYED by weathering, no sulphide, generally dominated by Fe and Al oxides and/or silica (= laterite, duricrust, lateritic gravel & massive textureless clays)

mw	moderately weathered, PRIMARY TEXTURE REMAINS but MINERALOGY SECONDARY clays (= saprolite)
ww	weakly weathered, MAINLY PRIMARY TEXTURE & MINERALOGY, low clay content, partially oxidised sulphide (= saprock & fresh rock with iron staining and clay development restricted to fractures)
fr	fresh (compeletely primary texture & mineralogy without significant iron staining on fractures)
Moisture Codes	
S	Sloppy
M	Moist
D	Dry
Colour Codes	
l	light (e.g. lgn = light green, lgy = light grey)
d	dark (e.g. dgn = dark green, dgy = dark grey)
bk	black
bl	blue
bn	brown
bz	bronze (e.g. sulphides such as pyrrhotite & pyrite)
cm	cream
gn	green
gy	grey
kk	khaki
og	orange
ov	olive
pk	pink
pl	purple
rd	red
wt	white
yw	yellow
Sample Recovery Codes	
ideally measured as weight in kg, below codes for estimates	
e	excessive
g	good
m	moderate
p	poor
n	none