TASMANIA
GRANGE RESOURCES
SAVAGE RIVER MINE

LONG PLAINS SOUTH PROJECT

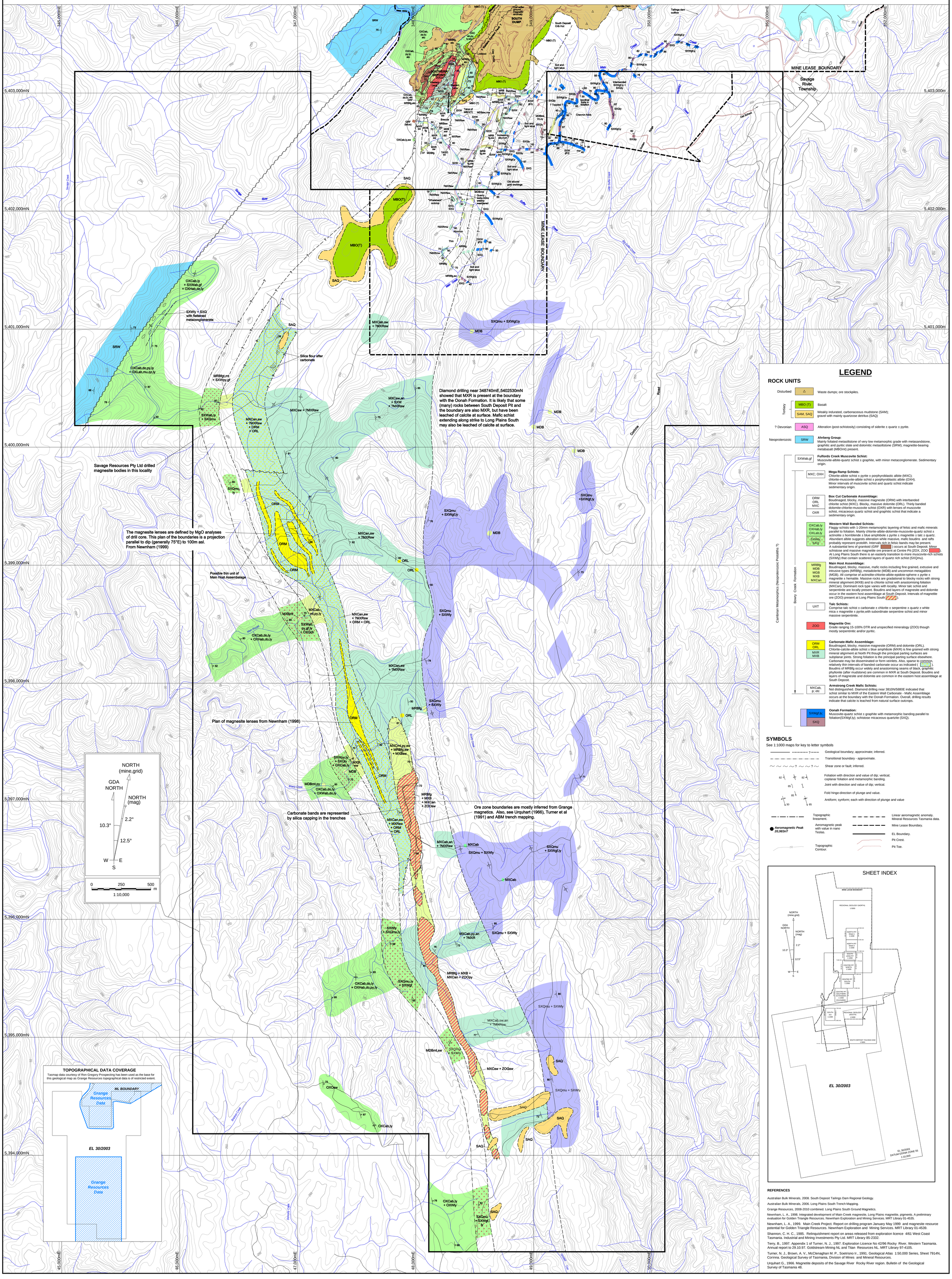
REGIONAL GEOLOGY (2012/2013) - COMPILATION OF PREVIOUS WORK

DETAILS

Base map derived from Tasmap data with GDA94 grid, courtesy of Ron Gregory Prospecting.

Compilation by Nic Turner December 2012/January 2013. Sources are of varied accuracy in terms of geographic positioning and geological recording.

Cartography by Gillian Bennett, January 2013.



LEGEND

ROCK UNITS

Disturbed	△	Waste dumps; ore stockpiles.
Tertiary	MBO (T)	Basalt
	SAM, SAQ	Weakly indurated, carbonaceous mudstone (SAM); gravel with mainly quartzose detritus (SAQ)
? Devonian	ASQ	Alteration (post-schistosity) consisting of siderite ± quartz ± pyrite.
Neoproterozoic	SRW	**Ahrberg Group:** Mainly foliated metasiltstone of very low metamorphic grade with metasandstone, graphitic and pyritic slate and dolomitic metasiltstone (SRW); magnetite-bearing metabasalt (MBOmt) present.

Cambrian Metamorphics (Neoproterozoic Protoliths ?) — Bowry Creek Formation

SXWab,gf	**Fulfords Creek Muscovite Schist:** Muscovite-albite-quartz schist ± graphite, with minor metaconglomerate. Sedimentary origin.
MXC; OXH	**Mega Ramp Schists:** Chlorite-albite schist ± pyrite ± porphyroblastic albite (MXC); chlorite-muscovite-albite schist ± porphyroblastic albite (OXH). Minor intervals of muscovite schist and quartz schist indicate sedimentary origin.
ORM, ORL, MXC, OXR	**Box Cut Carbonate Assemblage:** Boudinaged, blocky, massive magnesite (ORM) with interbanded chlorite schist (MXC). Blocky, massive dolomite (ORL). Thinly banded dolomite-chlorite-muscovite schist (OXR) with lenses of muscovite schist, micaceous quartz schist and graphitic schist that indicate a sedimentary origin.
OXCab,ly; OXHab,ly; OXLab,ly; SXWly, SXQ	**Western Wall Banded Schists:** Flaggy schists with 1-20mm metamorphic layering of felsic and mafic minerals parallel to foliation. Mainly chlorite-albite-dolomite-muscovite-quartz schist ± actinolite ± hornblende ± blue amphibole ± pyrite ± magnetite ± talc ± quartz. Abundant albite suggests alteration while massive, mafic boudins and rafts probably represent protolith. Intervals rich in felsic bands may be present. A substantial lens of granitoid (GRF) occurs at South Deposit. Minor schistose and massive magnetite ore present at Centre Pit (ZOX, ZOO). At Long Plains South there is an easterly transition to more muscovite-rich schists (SXWly) that contain scattered layers of quartz rich schist (SXQmu).
MRBfg; MDB; MGB; MXB; MXCan	**Main Host Assemblage:** Boudinaged, blocky, massive, mafic rocks including fine grained, extrusive and intrusive types (MRBfg), metadolerite (MDB) and uncommon metagabbro (MGB). All comprise of actinolite-chlorite-albite-epidote-sphene ± pyrite ± magnetite ± hematite. Massive rocks are gradational to blocky rocks with strong mineral alignment (MXB) and to chlorite schist with anastomising foliation (MXCan). Dominant rock type varies with locality. Minor talc schist and serpentinite are locally present. Boudins and layers of magnesite and dolomite occur in the eastern host assemblage at South Deposit. Intervals of magnetite ore (ZOO) present at Long Plains South ( ).
UXT	**Talc Schists:** Comprise talc schist ± carbonate ± chlorite ± serpentine ± quartz ± white mica ± magnetite ± pyrite,with subordinate serpentine schist and minor massive serpentinite.
ZOO	**Magnetite Ore:** Grade ranging 15-100% DTR and unspecified mineralogy (ZOO) though mostly serpentinitic and/or pyritic.
ORM, ORL, MXR, MXB	**Carbonate-Mafic Assemblage:** Boudinaged, blocky, massive magnesite (ORM) and dolomite (ORL). Chlorite-calcite-albite schist ± blue amphibole (MXR) is fine grained with strong mineral alignment at North Pit though the principal parting surfaces are subplanar joints. Strong foliation is the principal parting surface elsewhere. Carbonate may be disseminated or form veinlets. Also, sparse to common, relatively thin intervals of banded carbonate occur as indicated ( ). Boudins of MRBfg occur widely and anastomising seams of black, graphitic phyllonite (after mudstone) are common in MXR at South Deposit. Boudins and layers of magnesite and dolomite are common in the eastern host assemblage at South Deposit.
MXCab, p; etc	**Armstrong Creek Mafic Schists:** Not distinguished. Diamond drilling near 3810N/5880E indicated that schist similar to MXR of the Eastern Wall Carbonate - Mafic Assemblage occurs at the boundary with the Oonah Formation. Overall, drilling results indicate that calcite is leached from natural surface outcrops.
SXWgf,ly; SXQ	**Oonah Formation:** Muscovite-quartz schist ± graphite with metamorphic banding parallel to foliation(SXWgf,ly); schistose micaceous quartzite (SXQ).

SYMBOLS

See 1:1000 maps for key to letter symbols

- Geological boundary; approximate; inferred.
- Transitional boundary - approximate.
- Shear zone or fault; inferred.
- Foliation with direction and value of dip; vertical; coplanar foliation and metamorphic banding.
- Joint with direction and value of dip; vertical.
- Fold hinge-direction of plunge and value.
- Antiform; synform; each with direction of plunge and value
- Topographic lineament.
- Aeromagnetic peak with value in nano Teslas. *Aeromagnetic Peak 20,983nT*
- Topographic Contour.
- Linear aeromagnetic anomaly. Mineral Resources Tasmania data.
- Mine Lease Boundary.
- EL Boundary.
- Pit Crest.
- Pit Toe.

TOPOGRAPHICAL DATA COVERAGE

Tasmap data courtesy of Ron Gregory Prospecting has been used as the base for this geological map as Grange Resources topographical data is of restricted extent.

SHEET INDEX

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