Department of State Growth
MINERAL RESOURCES TASMANIA

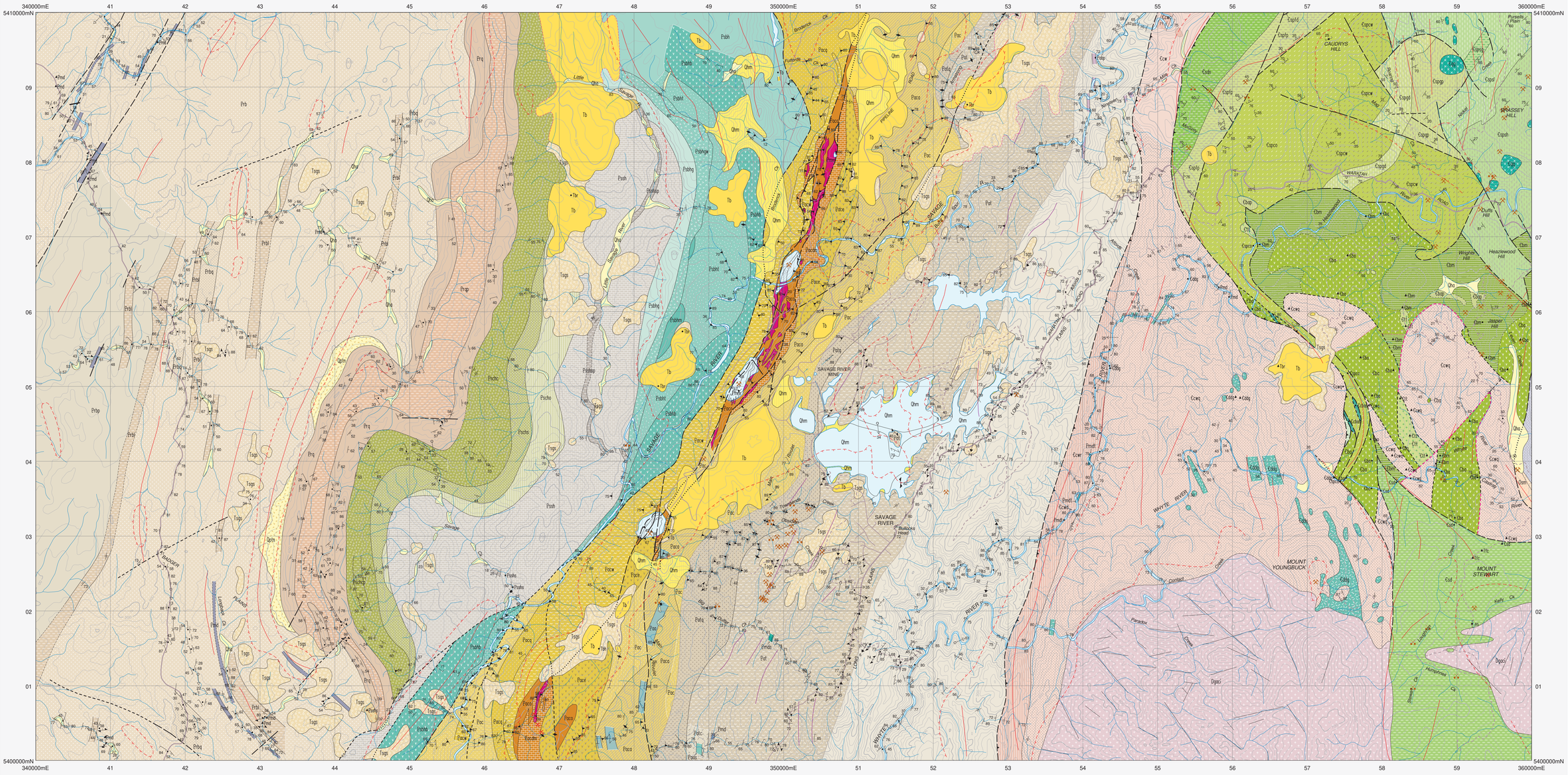
DIGITAL GEOLOGICAL ATLAS 1:25 000 SCALE SERIES
SAVAGE RIVER, SHEET 3440

SAVAGE RIVER

Scale: 1:25 000

0 500 1000 1500 2000 2500m

Tasmanian Government



CENOZOIC

QUATERNARY

- **Qhm** — *Mine tailings and man–disturbed ground (Qhm).*
- **Qha** — *Stream alluvium, swamp and marsh deposits (Qha).*
- **Qptn** — *Talus of Proterozoic orthoquartzite (Qptn).*

Erosional surface.

PALEOGENE – NEOGENE

- **Tb** — *Basalt (Tb); transitional olivine basalt (Tbr) and hawaiite indicated (Tbh).*
- **Tbat** — *Crystal–rich basaltic breccia, sandstone, tuff and agglomerate (Tbat).*
- **Tsgs** — *Interbedded siliceous gravel, quartz sand and clay (Tsgs).*
- **Tsqb** — *Silica–cemented quartzite breccia (Tsqb).*
- **Tfc** — *Ironstone float developed on Cambrian serpentinite (Tfc).*

Unconformity.

EASTERN AREA

SILURIAN

- **SDcg** — *Quartz sandstone with minor mudstone and granule conglomerate (correlate of Crotty Formation) (SDcg).*

ORDOVICIAN

- **Ol** — *Limestone and impure limestone (correlate of Gordon Group) (Ol).*
- **Osm** — *Poorly sorted quartz sandstone and minor mudstone (probable correlate of Moina Sandstone) (Osm).*

Angular unconformity and faulted contacts attributed to major deformation, thrusting and metamorphism of Arthur Metamorphic Complex (Tyennan Orogeny).

MIDDLE CAMBRIAN

- **Ccwm** — *Volcaniclastic lithicwacke with interbedded siltstone, mudstone and minor mafic volcaniclastics (€ccwm), dominantly basaltic wacke with detrital spinel (€ccwmb)*
- **Ccwc** — *Interbedded grey, brown and maroon chert, shale and argillite (€ccwc).*
- **Ccwq** — *Micaceous quartzose lithicwacke with interbedded siltstone, mudstone and minor mafic volcaniclastics (including correlates of Crescent Spur Sandstone) (€ccwq).*
- **Ccwd** — *Interbedded fine–grained dolostone and diamictite (€ccwd).*
- **Ccwr** — *Red, maroon and brown argillaceous siltstone and mudstone (€ccwr).*
- **Ccw** — *Mafic volcaniclastic sandstone– siltstone– mudstone–chert– minor carbonate sequences with intercalated tholeiitic basalt flows. Considered allochthonous (€cw).*

EARLY CAMBRIAN

- **Cbo** — *Fine– to coarse–grained, commonly vesicular and locally pillowed or flow–banded boninitic lava (high magnesium andesite and basalt), intercalated with breccia and agglomerate. Usually porphyritic with commonly pseudomorphed phenocrysts of clinoenstatite and orthopyroxene (€bo).*
- **Cbm** — *Fine– to coarse–grained, massive to amygdaloidal, locally pillowed flows of aphyric to sparsely and finely plagioclase–phyric basalt (low titanium tholeiite), with intercalated breccia, agglomerate and minor sedimentary rocks. Interstitial primary quartz commonly present; locally grades to granophyre (€bm).*
- **Cbc** — *Minor intercalated chert and sedimentary rocks (€bc).*

Faulted contacts (major thrusts) of Early Cambrian rocks with Donah Formation.

CENTRAL AREA

NEO–PROTEROZOIC

- **Po** — *Graded beds of quartzwacke, interbedded with pelitic siltstone and mudstone (Po).*
- **Pob** — *Mafic vesicular lavas (Pob); pillow lavas indicated (Pobp).* — DONAH FORMATION

Transitional metamorphic boundary.

TONIAN

- **Patq** — *Quartzite and quartz–mica schist with lesser phyllite (Patq).*
- **Patc** — *Chlorite schist and mica–schist, with lesser quartz–mica schist, and phyllite (Patc).*
- **Pat** — *Quartz–mica schist with lesser quartzite, phyllite, and rare dolostone (Pat).* — KEITH SCHIST

Transitional to relatively sharp lithological boundary of Keith Schist (Pat, Patq) with Pac, Paca.

- **Paca** — *Quartz–chlorite–albite schist (characterised by 1–2mm, rounded, albite porphyroblasts). Armstrong Creek Schists (Paca).*
- **Pace** — *Chlorite–albite +/– epidote +/– amphibole +/– carbonate meta–mafic rocks. Includes Eastern Wall Mafic Assemblage (Pace).*
- **Pacm** — *Massive to banded magnesite–stone +/– dolostone and interbanded metamafic rocks and talc +/– chlorite +/– carbonate schist. Includes Carbonate–Mafic Assemblage (Pacam).*
- **Paco** — *Lithologically diverse unit of boudinaged talc +/– serpentine +/– amphibole +/– magnetite +/– chlorite +/– pyrite +/– carbonate schists with metamafics. Includes Main Host Assemblage to magnetite ore and magnesian skarns (Paco).*
- **Pacw** — *Lithologically diverse unit including albite +/– quartz +/– amphibole +/– chlorite +/– mica and carbonate schists. Includes massive albitite, amphibolite and quartzite. Includes Western Wall Banded Schists (Pacw).*
- **Pacq** — *Interbanded phyllite, muscovite–quartz +/– graphite schist. Minor porphyroblastic schist, amphibolite and metacoloured quartzite. Includes Tuffords Creek Muscovite Schist (Pacq).*
- **Pac** — *Undifferentiated chlorite, amphibole, muscovite and quartz schists, metamafics, carbonates and magnetite (Pac).*

BOWRY FORMATION; TIMBS GROUP (probable partial correlate of Ahrberg Group); ARTHUR METAMORPHIC COMPLEX (Early Cambrian Metamorphism)

Faulted contact of Arthur Metamorphic Complex (Pac, Pacq, Pacw etc) with Ahrberg Group (Pbh, Pssh etc).

Geological boundary – position accurate or approximate
Geological boundary – inferred
Geological boundary – transitional
Unconformable boundary – position accurate or approximate
Unconformable boundary – concealed
Metamorphic boundary – position approximate
Fault – position accurate or approximate
Fault – inferred
Fault – concealed
Fault – inferred from airborne radiometric data
Thrust fault (teeth on upper plate) – position accurate or approximate
Lineament visible on aerial photographs
Lineament visible in airborne magnetic data
Lineament visible in airborne LiDAR data
Magnetic gradient or lineament (direction towards lower values indicated)
(white line) Limit of mapping of sub–unit within undifferentiated rock units.

WESTERN AREA

NEOPROTEROZOIC — TONIAN

(WESTERN) AHRBERG GROUP

BERNAFAI VOLCANICS AND CORRELATES

- **Pssbhm** — *Abundant metabasalt, with grey volcaniclastic and pelitic siltstone (Pssbh).*
- **Pssbrb** — *Relatively massive metabasalt or fine–grained metaboninite (Pssbrb).*
- **Pssbht** — *Interbanded slaty or phyllitic to relatively massive, green to grey, volcaniclastic and pelitic, chloritic metasiltstone with minor fine–grained foliated metamorphosed basalt and basaltic wacke (Pssbht).*
- **Pssbhgw** — *Dominantly grey volcaniclastic and pelitic metasiltstone with scattered layers of pebbly basaltic sandstone (Pssbhgw).*
- **Pssbhg** — *Dominantly grey volcaniclastic and pelitic metasiltstone (Pssbhg).*
- **Pssbhd** — *Dolostone (Pssbhd).*
- **Pssbh** — *Interbanded metabasalt, basaltic sandstone, slaty to phyllitic siltstone, quartz sandstone and minor dolostone (Pssbh).*

Conformable boundary.

SAVAGE DOLOMITE

- **Pssh** — *Pale grey and cream, fine–grained dolostone, locally oolitic, with stromatolites, or interbedded with richly carbonaceous siltstone (Pssh).*
- **Pssha** — *Planar laminated, carbonaceous, grey–black to pale–cream–orange weathering siltstone (mappable unit within Pssha) (Pssha).*
- **Pssha** — *Variably silicified dolostone (variant of Pssh) (Pssha).*

Conformable boundary.

DONALDSON FORMATION (correlate of Donah Formation)

- **Pscho** — *Grey slaty pelitic siltstone with minor banded chert and thin layers of silicified oolitic? dolostone (Pscho).*
- **Pschs** — *Micaceous quartzwacke in graded beds with interlayered slaty, locally pelitic siltstone and mudstone (Pschs).*
- **Pschc** — *Poorly sorted conglomerate, with well–sorted conglomerate and sandstone near base (Pschc).*
- **Pschp** — *Planar dark grey laminated and locally slaty pelitic siltstone and mudstone with thin interbeds of pale fine–grained sandstone (mappable unit within Pschc) (Pschcp).*
- **Psch** — *Undifferentiated siltstone, conglomerate and minor carbonate (Psch).*

Inferred angular unconformity of Donaldson Formation (Pschc) on Rocky Cape Group (Prq).

MESOPROTEROZOIC — ECTASIAN

ROCKY CAPE GROUP

- **Prq** — *Common to dominant micaceous quartz sandstone and cross–bedded orthoquartzite within siltstone (Prq). Dominantly planar laminated grey and dark grey to pale–cream weathering pelitic siltstone and mudstone with thin micaceous fine–grained cross–bedded quartzose sandstone interbeds (mappable unit within Prq) (Prqp).*
- **Prqp**
- **Prbp** — *Slaty to relatively massive grey–green to grey chloritic planar bedded siltstone, interbedded with thin, commonly lenticular, graded beds of siltstone, with sandstone on scoured bases (Prbp).*
- **Prbi** — *Siliceous (pale grey) to ?carbonaceous (dark grey siltstone, commonly with pervasive wavy lamination and finely developed alternation of pale and dark laminae (Prbi).*
- **Prbq** — *Interbedded packages of micaceous quartzose sandstone siliceous siltstone with laminated carbonaceous shale (Prbq).*
- **Prb** — *Undifferentiated cross–bedded quartzarenite, micaceous quartz sandstone, planar–bedded slaty to relatively massive chloritic siltstone and minor mudstone (Prb). (Prb, Prbp, Prbi, Prbq – correlates of Balfour Subgroup).*

INTRUSIVE ROCKS

UPPER DEVONIAN

- **Dgoci** — *Very coarse–grained equigranular biotite–bearing syenogranite/alkali feldspar granite, with very abundant intrusions of fine– to coarse–grained, porphyritic (quartz, K–feldspar and plagioclase) biotite granite and abundant quartz–tourmaline nodules (Meredith Granite; I–type) (Dgoci).*

LATE(?) CAMBRIAN

- **Cddg** — *Dolerite and microgabbro (Cddg).*
- **Cbap** — *Coarse–grained pyroxenite related to boninitic lavas (Cbap).*
- **Ctt** — *Massive, fine– to medium–grained tonalite and related rocks (Ctt).*
- **Cgg** — *Multiply intruded irregular bodies and dykes of very fine– to medium–grained gabbronorite (Cgg).*

CAMBRIAN — EARLY CAMBRIAN

HEAZLEWOOD RIVER ULTRAMAFIC COMPLEX — ALLOCHTHONOUS SEQUENCES

- **Cspsh** — *Well–layered adcumulate to orthocumulate sequence of harzburgite and plagioclase harzburgite, with subordinate serpentinised dunite, plagioclase dunite, troctolite and orthopyroxenite, and minor websterite, plagioclase orthopyroxenite and anorthosite, and with cross–cutting gabbronorite and anorthosite dykes (Brassey Hill Harzburgite) (Cspsh).*
- **Cspsl** — *Layered orthocumulate to adcumulate sequence of serpentinised dunite and plagioclase dunite, plagioclase lherzolite, troctolite, harzburgite, plagioclase harzburgite and rare olivine anorthosite, with cross–cutting plagioclase pyroxenite, gabbronorite and anorthosite dykes (Purcells Plain Lherzolite, Upper Member) (Cspsl).*
- **Cspdg** — *Massive serpentinised plagioclase dunite, intruded by numerous sills (1–3m thick) of medium–grained to pegmatitic leucocratic gabbronorite, grading to plagioclase websterite (part of Purcells Plain Lherzolite) (Cspdg).*
- **Cspgp** — *Poorly layered adcumulate to mesocumulate sequence of orthopyroxenite, plagioclase orthopyroxenite and plagioclase websterite, with rafts of dunite, harzburgite and ortho–pyroxenite derived from lower member (Gabbro Hill Plagioclase Pyroxenite, upper member) (Cspgp).*
- **Cspgd** — *Well–layered coarse–grained adcumulate sequence of serpentinised dunite, harzburgite and orthopyroxenite with cross–cutting plagioclase pyroxenite and gabbronorite dykes (Gabbro Hill Plagioclase Pyroxenite, lower dunite member) (Cspgd).*
- **Cspow** — *Poorly layered orthocumulate to mesocumulate sequence of orthopyroxenite and olivine orthopyroxenite, with plagioclase orthopyroxenite, plagioclase websterite and plagioclase lherzolite (Caudrys Hill Orthopyroxenite, upper plagioclase websterite member) (Cspow).*
- **Cspco** — *Poorly layered adcumulate sequence of orthopyroxenite and olivine orthopyroxenite with minor serpentinised dunite and harzburgite (Caudrys Hill Orthopyroxenite, lower orthopyroxenite member) (Cspco).*
- **Cspfp** — *Layered adcumulate sequence of olivine orthopyroxenite, harzburgite and dunite with minor lherzolite, wehrlite and orthopyroxenite (Fentons Spur Peridotite, upper pyroxenite member) (Cspfp).*
- **Cspfd** — *Coarsely layered adcumulate sequence of dunite and harzburgite with minor orthopyroxenite and rare lherzolite (Fentons Spur Peridotite, lower dunite member) (Cspfd).*
- **Csdn** — *Strongly deformed adcumulate sequence of massive, variably serpentinised dunite with subordinate thin (10–1000mm) layers of harzburgite and orthopyroxenite (Nineteen Mile Creek Dunite) (Csdn).*
- **Csd** — *Serpentinised interlayered dunite and minor harzburgite, with common dykes of orthopyroxenite (includes Mt Stewart Ultramafic Complex) (Csd).*
- **Csm** — *Massive serpentinite (Csm).*
- **Ccbas** — *Fine–grained foliated amphibolite (within metamorphic sole of allochthonous sequences) (€cbas).*

Data derived from Mineral Resources Tasmania DEPOSITS data base. Data point position has not been verified in every case.

PROTEROZOIC

- **Pmd** — *Undifferentiated dolerite dykes (Pmd).*
- **Pmdt** — *Tholeiitic dolerite dykes (Pmdt).*
- **Pmds** — *Cr–spinel bearing dolerite dykes (Pmds).*
- **Paa** — *Amphibolite (Paa).*
- **Paas** — *Cr–spinel bearing amphibolite (Paas).*

MINERALISATION

- **Pmm** — *Magnetite ore and magnesian skarns (Pmm).*

Strike and dip of bedding – right way up; overturned; facing unknown; vertical with facing indicated by single tic; vertical; facing unknown.
Generalised palaeocurrent direction, showing sense of movement.
Strike and dip of cleavage of unspecified type and relative age – dipping; vertical; parallel to bedding; facing unknown; vertical and parallel to bedding; facing unknown.
Strike and dip of penetrative cleavage; vertical; strike and dip of crenulation cleavage; vertical.
Strike and dip of cleavage, relative local age S1; vertical; strike and dip of cleavage, relative local age S2; vertical.
Strike and dip of cleavage, relative local age S3; vertical.
Strike and dip of metamorphic foliation other than cleavage; vertical; strike and dip of metamorphic foliation other than cleavage, parallel to compositional layering; vertical; strike of vertical metamorphic foliation other than cleavage, relative local age S2.
Strike of outcrop scale fault of unspecified type and relative age; dip indicated; vertical.
Trend and plunge of slickensides, movement sense unspecified.
Strike and dip of cataclastic foliation; vertical; strike and dip of mylonitic foliation or mylonite zone; strike and dip of ductile shear–band.
Trend and plunge of lineation of unspecified type; trend and plunge of crenulation lineation.
Trend and plunge of bedding/primary cleavage intersection lineation (L1); of S1–S2 intersection lineation (L2); of lineation formed by intersection of S3 with older cleavage or foliation (L3).
Trend and plunge of minor fold hinge line, unspecified relative age; with dip and dip direction of axial surface indicated; vertical; horizontal.
Trend and plunge of minor fold hinge line, unspecified relative age; minor antiform; minor synform; vergence dextral; vergence sinistral.
Trend and plunge of minor fold hinge line, relative local age F1; with dip and dip direction of axial surface; relative local age F2; with dip and dip direction of axial surface; vergence dextral.
Trend and plunge of minor fold hinge line, relative local age F3; with dip and dip direction of axial surface; relative local age F4; with dip and dip direction of axial surface.
Trend and plunge of chevron–fold hinge line, unspecified relative age; with dip and dip direction of axial surface indicated; trend and plunge of kink–fold hinge line, sense of displacement unknown; with dip and dip direction of axial surface indicated.
Trend and plunge of kink–fold hinge line, with dip and dip direction of axial surface, and sense of displacement viewed down–plunge: dextral; sinistral; strike and dip of kink band, movement sense unspecified; vertical; with sense of displacement viewed down plunge: sinistral.
Strike and dip of primary igneous banding or platy alignment, and schlieren in granitic rocks; vertical; primary igneous banding, with parallel penetrative foliation in ultramafic rocks.
Strike and dip of dominant joint set, dipping; vertical.
Sense of lateral offset on wrench or oblique–slip faults: sinistral.
Strike and dip of dyke or vein, rock unit or mineral specified in digital data; vertical; dip unknown.
Field station for adjacent readings on the map.
Notable small outcrop with rock unit indicated.
Notable small float or lag occurrence, with rock unit indicated.
Mineral deposit location – hardrock
Mineral deposit location – alluvial/tailings
Construction material/industrial mineral/gemstone location

Compiled by G.V. Cumming, B.Sc. (Hons); C.J. Jackman, B.Sc. (Hons) and J.L. Everard, B.Sc. (Hons) 2019 from the following sources (see responsibility diagram):

A PECK, D.C. 1990. Platinum–group element geochemistry and petrogenesis of the Heazlewood River mafic–ultramafic complex, Tasmania. PhD thesis, University of Melbourne (unpubl).

B J.L. Everard. Field mapping. Savage River 2016 – 2018.

C BROWN, A.V., 1986. Geology of the Dundas – Mt Lindsay – Mt Youngback Region. Geological Survey Bulletin 62. Tasmanian Department of Mines, Hobart.

D RIGG, A.M., and MORRISON, K.C. 2013. EL40/2010 Heazlewood Hill annual report for the period 1 June 2012 – 31 May 2013. Rubicon Min Tech Ventures Pty Ltd (TCR 13 – 6653).

E RADFORD, D., 2016. Geological Mapping from Radar Imagery with Machine Learning. Hons thesis, University of Tasmania.

F TURNER, N.J., BROWN, A.V., MCCLENAGHAN, M.P. & SOETRISNO, I. 1991. Geological Atlas 1:50 000 series. Sheet 7914N (43) Corinna. Tasmanian Department of Mines.

G JOYCE, P.M., 1982. Meredith Granite Project. EL16/1978 Savage River progress report for the six months ending April 20. Aberfoyle Exploration Pty Ltd (TCR 82 – 1785).

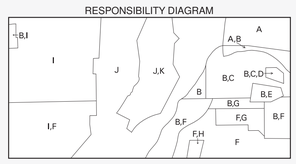
H MARTIN, A., OWEN, S., 2014. Post Office and Paradox Creeks Exploration Licence 33/2007 – Final relinquishment report to the period ending 28/8/2007 to 27/8/2014. Ventura Minerals Limited (TCR 14 – 6952).

I C.J. Jackman Field Mapping. Savage River 2017 – 2018.

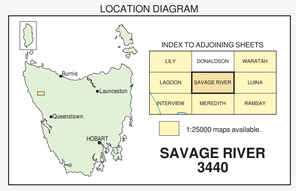
J G.V. Cumming Field Mapping. Savage River 2017 – 2018.

K N. Turner, 2005 – 2016. 1:10 000 Geological mapping of Savage River and compilation of previous work for Australian Bulk Minerals Savage River Project – A Division of Goldamere Pty Ltd.

RESPONSIBILITY DIAGRAM



LOCATION DIAGRAM



REFERENCE THIS MAP AS:

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Website: www.mrt.tas.gov.au

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