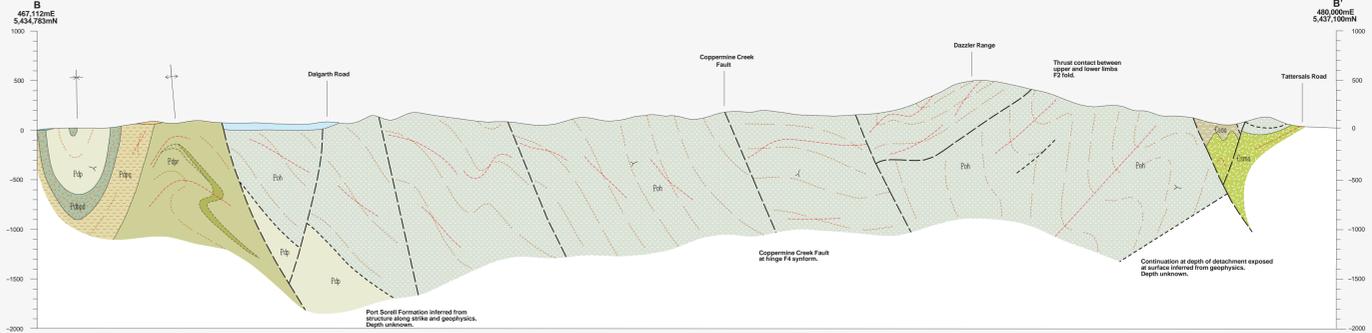
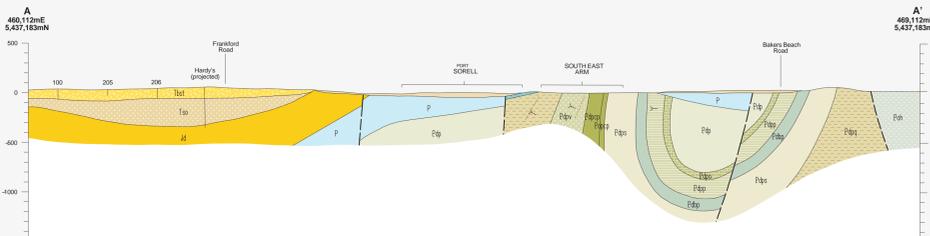
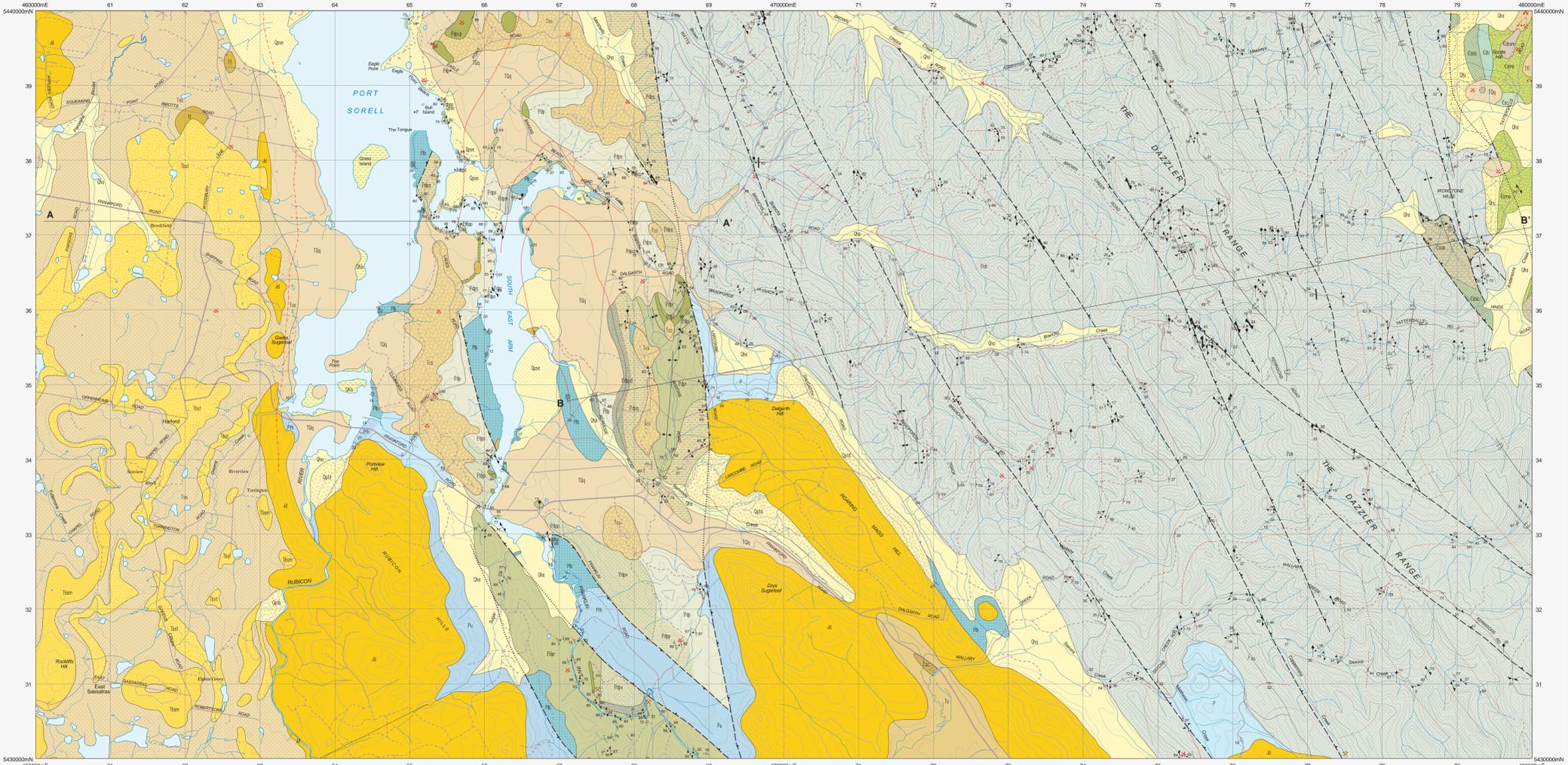
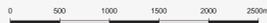


# HARFORD

Scale: 1:25 000



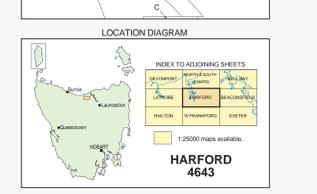
UNIT	CODE	DESCRIPTION
QUATERNARY	Qch	Colluvium (Qch)
	Qsa	Stream alluvium, swamp and marsh deposits (Qsa)
	Qsh	Fluvial clay, silt, sand and minor gravel deposits of modern and recent associated (Qsh)
	Qsp	Coastal fine-grained sand and pebbly sand (Qsp)
	Qst	Talus (Qst), basal till (Qst), talus consisting dominantly of dolerite boulders (Qst)
	Tq	Undifferentiated sand and gravel deposits (Tq)
	Tca	Undifferentiated Palaeogene - Neogene sediments dominantly calcareous, composed of gravel, sand, silt, clay and regolith (Tca)
	Tsa	Semiconsolidated siliceous gravel and fine-grained sand (Tsa)
	Tta	Siliceous conglomerate and coarse-grained sandstone, cemented with iron oxides in places (Tta)
	Tta1	Lignite and carbonaceous shale (Tta1)
PALEOCENE - NEOGENE	Tta2	Sand, quartzite gravel and clay, including interbedded deposits (Tta2)
	Tta3	Olivine basalt, deeply weathered in most areas, dated at 25.9 ± 0.2 Ma (Ar/Ar) (Tta3)
	Tta4	Non-vesicular to highly vesicular and amygdaloidal, in places deeply weathered, thalassite basalt, with minor volcanic sandstone and breccia, dated at 30.1 ± 0.6 Ma (Th/U) (Tta4)
	Tta5	Dolomitic surface
	Tta6	Upper dolomitic sequences of pebbly mudstone, pebbly sandstone and limestone (Tta6)
	Tta7	Lower dolomitic sequences of pebbly mudstone, pebbly sandstone and limestone (Tta7)
	Tta8	Fluorite (Tta8), pliocene limestone (Tta8)
	Tta9	Sand, quartzite gravel and clay, including interbedded deposits (Tta9)
	Tta10	Olivine basalt, deeply weathered in most areas, dated at 25.9 ± 0.2 Ma (Ar/Ar) (Tta10)
	Tta11	Non-vesicular to highly vesicular and amygdaloidal, in places deeply weathered, thalassite basalt, with minor volcanic sandstone and breccia, dated at 30.1 ± 0.6 Ma (Th/U) (Tta11)
PALEOCENE	Pu	Dolomitic surface
	Psh	Upper dolomitic sequences of pebbly mudstone, pebbly sandstone and limestone (Psh)
	Psa	Lower dolomitic sequences of pebbly mudstone, pebbly sandstone and limestone (Psa)
	Pst	Fluorite (Pst), pliocene limestone (Pst)
	Pta	Sand, quartzite gravel and clay, including interbedded deposits (Pta)
	Ptb	Olivine basalt, deeply weathered in most areas, dated at 25.9 ± 0.2 Ma (Ar/Ar) (Ptb)
	Ptc	Non-vesicular to highly vesicular and amygdaloidal, in places deeply weathered, thalassite basalt, with minor volcanic sandstone and breccia, dated at 30.1 ± 0.6 Ma (Th/U) (Ptc)
	Ptd	Dolomitic surface
	Pte	Upper dolomitic sequences of pebbly mudstone, pebbly sandstone and limestone (Pte)
	Ptf	Lower dolomitic sequences of pebbly mudstone, pebbly sandstone and limestone (Ptf)
CAMBRIAN	Cds	Interbedded slate and chert, with lesser sandstone and polymict grit. Possible correlate of Blythe Creek Formation (Cds)
	Csa	Laminated, commonly brecciated chert (Csa)
	Csb	Metamorphic succession comprising chlorite- and biotite-grade metasedimentary rocks, gneiss and serpenitised ultramafic rocks, and banded amphibolite (Csb)
	Csc	Siliceous metamorphic rock principally comprising fine-grained equigranular quartz, feldspar and biotite (Csc)
	Csd	Serpentinised pyroxenite (Csd)
	Cse	Serpentinite with amphibole (Cse)
	Csf	Dolerite (Ptdol)
	Csg	Dolerite (Ptdol)
	Csh	Dolerite (Ptdol)
	Csi	Dolerite (Ptdol)
NEO-PROTEROZOIC	Pp	Basalt (Pp), porphyritic basalt (Ppp)
	Ppa	Mafic-ultramafic sandstone, siltstone and shale, with minor conglomerate (Ppa)
	Ppb	Chert, thinly interbedded with shale in most areas (Ppb)
	Ppc	Dolomite interbedded with chert and shale (Ppc)
	Ppd	Laminated black to grey-green shale with minor siltstone, chert and dolomite, lacking sandstone (Ppd)
	Ppe	Laminated black to grey-green shale with minor siltstone, chert and dolomite, lacking sandstone (Ppe)
	Ppf	Interbedded muscovite quartz sandstone and shale (Ppf)
	Ppg	Dominantly black shale, with minor sandstone, siltstone, chert, dolomite and basalt (Ppg)
	Pph	Laminated black to grey-green shale with minor siltstone, chert and dolomite, lacking sandstone (Pph)
	Ppi	Laminated mudstone, silt and siltstone, with lesser interbedded quartzite (Ppi)
NEO-PROTEROZOIC	Ppj	Conglomerate containing felsic, volcanic and related rocks, sandstone and siltstone (Ppj)
	Ppk	Slate with lesser interbedded dolomitic conglomerate, and minor quartzite and impure dolomite (Ppk)
	Ppl	Sandstone, silt and siltstone (Ppl)
	Ppm	Sandstone, silt and siltstone (Ppm)
	Ppn	Sandstone, silt and siltstone (Ppn)
	Ppo	Sandstone, silt and siltstone (Ppo)
	Ppp	Sandstone, silt and siltstone (Ppp)
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	Ppp	Sandstone, silt and siltstone (Ppp)
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	Ppq	Sandstone, silt and siltstone (Ppq)
	Ppr	Sandstone, silt and siltstone (Ppr)
	Pps	Sandstone, silt and siltstone (Pps)

SYMBOL	DESCRIPTION
—	Geological boundary - position accurate or approximate
---	Geological boundary - inferred
-.-.-	Geological boundary - transitional and inferred
...	Geological boundary - inferred from aeromagnetic data
~	Lithological trend line
—	Trend line - S2 cleavage in Proterozoic sedimentary rocks
---	Aeromagnetic isomagnetic
---	Fault - concealed
---	Fault - normal - position accurate or approximate
---	Fault - reverse - position accurate or approximate
---	Axial surface trace of major later fold - Antiform
---	Axial surface trace of major later fold - Synform
---	Axial surface trace of major early fold - Overturned antiform
---	Axial surface trace of major early fold - Overturned synform
---	Fault - unspecified
(White line)	Limit of mapping of sub-unit within undifferentiated rock unit
---	Alphoic lineament
---	Magnetic gradient - direction toward lower values indicated
---	Limit of mapping

SYMBOL	DESCRIPTION
↗	Strike and dip of bedding - right way up; overturned
↘	Strike and dip of bedding, facing unknown
↖	Strike and dip of compositional layering
↗ ↘	Strike and dip of cleavage of unspecified type and relative age
↗ ↘	Strike and dip of cleavage, relative local age S1, S2, S3, S4, S1 vertical, S2
↗ ↘	Strike and dip of orientation cleavage
↗ ↘	Strike and dip of outcrop-scale fault of unspecified type and relative age with dip indicated vertical dip
↗ ↘	Strike and dip of outcrop-scale fault, relative local age D4, type unspecified
↗ ↘	Strike and dip of cataclastic foliation
↗ ↘	Trend and plunge of minor fold hinge line, unspecified relative age, axial vergence
↗ ↘	Trend and plunge of minor fold hinge line, relative local age F1, F2, F4, F4 axial vergence. Where present, tick denotes dip direction of axial surface
↗ ↘	Trend and plunge of hinge line of recited minor F4 fold
↗ ↘	Trend and plunge of location of unspecified type, bedding/primary cleavage intersection lineation (L1, lineation L2) formed by intersection of cleavages or foliations of relative local ages S1 and S2
↗ ↘	Trend and plunge of mineral elongation lineation
↗ ↘	Generalised paleocurrent direction, showing sense of movement
↗ ↘	On sections: direction of upward stratigraphic younging
↗ ↘	Strike and dip of quartz vein
↗ ↘	Microfossil locality
↗ ↘	Mineral deposit location - hardrock
↗ ↘	Construction material/industrial mineral/gestone location



Compiled by A.R. Reed, B.Sc.(Hons), Ph.D. and C.R. Calver, B.Sc.(Hons), Ph.D. 2007 from the following sources: (see responsibility diagram)

A. DEE, R.D. and LLOYD, P.J. 1971. Geological Atlas 1:63 300 Series. Sheet 38 (Bass Strait). Tasmania: Department of Mines.

B. C.R. Calver, B.Sc.(Hons), Ph.D. - new mapping 1998 - 2000. See also page 1071 (Bass Strait) 1:63 300.

C. GILLIN, A.B. 1973. Geological Atlas 1:63 300 Series. Sheet 39 (Harford). Tasmania: Department of Mines.

D. C.R. Calver, B.Sc.(Hons), Ph.D. - new mapping 1998 - 2000. Gulliver et al. 1973 (Harford) 1:63 300.

E. C.R. Calver, B.Sc.(Hons), Ph.D. - new mapping 1998 - 2000. A.R. Reed, B.Sc.(Hons), Ph.D. - new mapping 1998 - 2000.

F. A.R. Reed, B.Sc.(Hons), Ph.D. - new mapping 1998 - 2000.

G. W.C. Cramer 1980. Quality and geophysical resources of the Devonport - Port Sorell - Squalidra Tertiary Basin. Geological Survey Bulletin 57.

H. M. Vigny 2004 as part of the Western Tasmania Regional Minerals Program, with additional information from Calver, C. and Reed, A.R. 2001. Structure and setting of Proterozoic and Palaeozoic rocks in the Tamar region, Northern Tasmania. Geol. Soc. Aust. Special Group in Tasmania and Structural Geology Field Guide No. 8.

Updated by:

A.R. Reed, B.Sc.(Hons), Ph.D. and C.R. Calver, B.Sc.(Hons), Ph.D. 2007.

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Map produced by the Geospatial Information Branch of Mineral Resources Tasmania using G.I.S. software.

GDA94 - MGA Zone 55. Contour interval 20 metres.

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