

**KUTh Exploration Ltd
Tasmania**

Drill log sheet

Hole Name:	Marion Bay	Project:	Shallow heat flow program	
Hole No:	K45DD027	Licence area:	SEL45/2007	
Datum:	GDA94 Zone 55	Location:	Bream Creek, Tasmania	
Collar RL (m):	81	Collar co-ordinates:	568645E, 5260030N	
Total depth (m):	252.1			
Logged by:				
Contractor:	Gerald Spaulding Drillers Pty Ltd			
Inclination:	Azimuth:	Survey:	Remarks:	
	vertical hole	no		
Drilling type:	From (m)	To (m)	Start drilling:	Finish drilling:
RC	0	102.1	9/06/2008	12/06/2008
Diamond (HQ)	102.1	252.1	2/07/2008	16/07/2008
Drilling summary:				
0-15m Tert basalt and sediments, 15- 51m J. Dolerite, 60- 125.5m (Upper?) Parmeener Supergroup 125.5- 126.8m J. Dolerite, 126.8- 142.3m (Upper?) Parmeener Supergroup, 142.3- 252.1m J. Dolerite Contamination of samples 51-60m? 500 gal/hr at 75-80m Casing to 252.1m				

Prospect	Hole_ID	RIG	mFrom	mTo	Formation	Rock1	Rock2	Colour	Regolith	Description
SEL45/2007	K45DD027	RC	0	3	Tb	TB		A2/B	SAP	Clay with basalt.
SEL45/2007	K45DD027	RC	3	6	Ts/Tb	LCY	TB	B	USAP	Tertiary clay.
SEL45/2007	K45DD027	RC	6	9	Ts	LCY		B	USAP	Tertiary clays with fragments of medium grained quartz sandstone - white clay matrix
SEL45/2007	K45DD027	RC	9	12	Ts	LCY		A2/B	USAP	As above, clay becoming much darker.
SEL45/2007	K45DD027	RC	12	15	Ts	LCY		A2/B	USAP	Orange brown medium grained quartz sandstone.
SEL45/2007	K45DD027	RC	15	18	Jdl	LCY	JDD	B/A2	LSAP	Contact - Jurassic dolerite with black carbonaceous mudstone. Clay rich.
SEL45/2007	K45DD027	RC	18	21	Jdl	JDD	LCY	B/A2	LSAP	Clayey Dolerite
SEL45/2007	K45DD027	RC	21	24	Jdl	JDD		A2/O	SAPRK	Mildly ferruginised dolerite.
SEL45/2007	K45DD027	RC	24	27	Jdl	LCY	JDD	B/A2	LSAP	Brown doleritic clay and minor fresh dolerite
SEL45/2007	K45DD027	RC	27	30	Jdl	LCY	JDD	B/A2	LSAP	As above, with less clay.
SEL45/2007	K45DD027	RC	30	33	Jdl	JDD	LCY	B/A2	LSAP	Becoming fresher, with clay decreasing.
SEL45/2007	K45DD027	RC	33	36	Jdl	JDD		A2	SAPRK	Bronzite rich dolerite.
SEL45/2007	K45DD027	RC	36	39	Jdl	JDD		A2	FRESH	As above
SEL45/2007	K45DD027	RC	39	42	Jdl	JDD		A2	FRESH	As above

SEL45/2007	K45DD027	RC	42	45	Jdl	JDD		A2/W	FRESH	As above, with carbonate/calcite.
SEL45/2007	K45DD027	RC	45	48	Jdl	JDD		A2	FRESH	Fresh dolerite as above, with minor light brown clay.
SEL45/2007	K45DD027	RC	48	51	Jdl	JDD		A2	FRESH	Fresh dolerite
SEL45/2007	K45DD027	RC	51	54	Jdl/Ru	JDD	RSU	A2	FRESH	Contact - Dolerite with very minor dark grey Triassic mudstone present.
SEL45/2007	K45DD027	RC	54	57	Jdl/Ru	JDD	RSU	A2	FRESH	As above.
SEL45/2007	K45DD027	RC	57	60	Ru/Jd	RSU/RST	JDD	B	FRESH	Brown Parmeener clayey sediments with very minor dolerite.
SEL45/2007	K45DD027	RC	60	63	Ru	RSS		B/A	FRESH	Dominantly red - brown fine grained sericitic sandstone.
SEL45/2007	K45DD027	RC	63	66	Ru	RSS		B/A	FRESH	As above, with increase in grey sandstone - poorly consolidated.
SEL45/2007	K45DD027	RC	66	69	Ru	RSS		A2	FRESH	Medium grained sandstone.
SEL45/2007	K45DD027	RC	69	72	Ru	RSS	RSU	A/B	FRESH	As above
SEL45/2007	K45DD027	RC	72	75	Ru	RSS	RSU	A/B	FRESH	Grey - brown to red sandstone and mudstone. Minor calcite present.
SEL45/2007	K45DD027	RC	75	78	Ru	RSS		B	FRESH	Brown fine to medium grained sandstone. Minor dark grey lithic arkose.
SEL45/2007	K45DD027	RC	78	81	Ru	RST		A	FRESH	Unconsolidated sandy/muddy grey siltstone.
SEL45/2007	K45DD027	RC	81	84	Ru	RST	RSS	A2/D	FRESH	As above, with dark grey to black sand sized particles
SEL45/2007	K45DD027	RC	84	87	Ru	RST	RSU	A	FRESH	Unconsolidated clayey silt

SEL45/2007	K45DD027	RC	87	90	Ru	RST	RSU	A	FRESH	as above
SEL45/2007	K45DD027	RC	90	93	Ru	RST	RSU	A	FRESH	as above
SEL45/2007	K45DD027	RC	93	96	Ru	RST	RSU	A	FRESH	as above
SEL45/2007	K45DD027	RC	96	99	Ru	RST	RSU	A2	FRESH	as above
SEL45/2007	K45DD027	RC	99	102.1	Ru	RST	RSU	B	FRESH	as above becoming brown in colour
SEL45/2007	K45DD027	DD	102.1	103.85	Ru	RSS		Y1/B1	FRESH	Normally (upward) grading quartz sandstone with subordinate mudstone intervals. Minor sheeted calcite veins sub mm scale - orientation generally sub vertical. Very minor muscovite present. Beds sub horizontal.
SEL45/2007	K45DD027	DD	103.85	125.1	Ru	RSS		Y1/B1	FRESH	Dominantly yellow brown medium grained quartz sandstone with minor disseminated muscovite. Core very broken between 103.85 to 108.6m. Fe oxides increasing at 111 to 113.4m. Core broken again at 112.9 to 112.98, 113.5. to 119.3m, 120.75 to 121m & 121.3 to 123.2m.
SEL45/2007	K45DD027	DD	125.1	125.5	Ru	RSS			FRESH	Unconformity at 125.1m - sandstone beds dipping generally horizontally above 125.1 & steeply (~70degrees) below 125.1m becoming weakly hornfelsic at 125.5m.
SEL45/2007	K45DD027	DD	125.5	126.8	Jd	JDD		A1	FRESH	Chilled highly fractured dolerite. Stockwork veining dominantly calcareous with minor gypsum/talc.
SEL45/2007	K45DD027	DD	126.8	126.9	Ru	RSS		Y/B	FRESH	Sandstone hornfels dipping sub - horizontally.
SEL45/2007	K45DD027	DD	126.9	129.1	Ru	RSS		Y/B	FRESH	Medium grained quartz yellow brown sandstone dipping sub - horizontally.

SEL45/2007	K45DD027	DD	129.1	133	Ru	RSS		Y/B	FRESH	As above but very broken and faulted.
SEL45/2007	K45DD027	DD	133	142.1	Ru	RSS	RSU	Y1/B1	FRESH	Sub - horizontal medium to fine grained quartz sandstone. Very broken between 135.6 to 137m..
SEL45/2007	K45DD027	DD	142.1	142.3	Ru	RSS		A/B	FRESH	Sandstone hornfels.
SEL45/2007	K45DD027	DD	142.3	156.6	Jdl	JDD		A1	FRESH	Very fine grained dolerite broken at 156.6m. Weakly magnetic with minor patchy epidote alteration.
SEL45/2007	K45DD027	DD	156.6	159	Jdl	JDD		A	FRESH	Fault - Carbonate/gypsum matrix with angular matrix supported monomictic brecciated dolerite clasts which are weakly Fe altered with minor bronzite alteration of pyroxenes proximal to fault. Dolerite breccia clasts mm to cm scale and subordinate to matrix.
SEL45/2007	K45DD027	DD	159	165.85	Jdl	JDD		A2	FRESH	Blotchy (likely to be variably magnetite and/or chlorite enriched zones) dolerite which is variably magnetic with some (cm) minor zones very magnetic. Core becoming increasingly competent towards 168m. Competent intervals generally around 30cm or greater. Carbonate veins dipping approx 30degrees to core axis.
SEL45/2007	K45DD027	DD	165.85	166.15	Jdl	JDD		G/B	FRESH	Steeply dipping carbonate/gypsum veins within fine grained dolerite.
SEL45/2007	K45DD027	DD	166.15	166.4	Jdl	JDD			FRESH	Chlorite altered dolerite with substantial cm scale calcite/gypsum vein steeply dipping >70 degrees.
SEL45/2007	K45DD027	DD	166.4	166.9	Jdl	JDD	JDD	A2	FRESH	Very fine grained light grey dolerite dyke cross - cutting fine grained dolerite at approx 70 degrees.
SEL45/2007	K45DD027	DD	166.9	168.55	Jdl	JDD		A2	FRESH	Competent medium grained dolerite - dark minerals creating a blotchy black appearance to core (magnetite, chlorite and possibly hornblende in places).

SEL45/2007	K45DD027	DD	168.55	168.61	Jdl	JDD	JDD	A2	FRESH	Magnetite rich very fine grained dolerite dyke approx 6cm thick cross - cutting host dolerite which is much less magnetic.
SEL45/2007	K45DD027	DD	168.61	168.9	Jdl	JDD		A2	FRESH	Calcite zeolite vein variable but generally sub vertical orientation approx 2mm thick through "blotchy" magnetite dolerite as described above.
SEL45/2007	K45DD027	DD	168.9	175.3	Jdl	JDD	JDD	A2	FRESH	Competent medium grained dolerite with scattered carbonate zeolite veins diffuse to wispy. Dolerite blotchy with very scattered dark magnetite bands within the dolerite. These bands are typically horizontal to sub-horizontal.
SEL45/2007	K45DD027	DD	175.3	175.9	Jdl	JDD	JDD	A2	FRESH	As above.
SEL45/2007	K45DD027	DD	175.9	176.1	Jdl	V		A/W	FRESH	Carbonate zeolite vein dip >70 degrees Fe alteration halo associated with vein - minor chlorite.
SEL45/2007	K45DD027	DD	176.1	185.1	Jdl	JDD			FRESH	Dolerite as above with increasing fractures towards 182.7 183.8m.
SEL45/2007	K45DD027	DD	185.1	187.9	Jdl	JDD			FRESH	Aphanitic dolerite with stockwork carbonate zeolite veins mostly <0.5mm thick but common within this interval. Common m scale chlorite phenocrysts disseminated throughout this interval.
SEL45/2007	K45DD027	DD	187.9	188.5	Jdl	JDD		W/B1	FRESH	Very minor fault <4cm wide with patchy Fe & Chlorite alteration. Abundant calcite and zeolite - vuggy in places. Bronzite common within the vein/fault halo.
SEL45/2007	K45DD027	DD	188.5	201.6	Jdl	JDD		A	FRESH	Medium grained competent dolerite with dark "blotchy" appearance as described above.
SEL45/2007	K45DD027	DD	201.6	206.4	Jdl	JDD		A	FRESH	Dolerite with decreasing competence and increasing vein density. Veins mostly sub-vertical to <70 degrees.
SEL45/2007	K45DD027	DD	206.4	208.2	Jdl	JDD		A2/B	FRESH	Aphanitic dolerite dyke dipping >70degrees. Minor Fe alteration of zeolites within the dyke at 206.9m. Minor fault breccia containing

										dolerite clasts. Core moderately competent and moderately to strongly magnetic.
SEL45/2007	K45DD027	DD	208.2	210	Jdl	JDD		A2	FRESH	Competent coarse grained dolerite with minor sub mm carbonate zeolite veins.
SEL45/2007	K45DD027	DD	210	214.6	Jdl	JDD	JDD	A	FRESH	Dolerite becoming increasingly less competent with increasing vein density. Talc vein @211.2m. Dolerite dyke @ 211.3 to 214.6. Dyke significantly more magnetic than the host dolerite. Fault between 213.6 to 214.5m.
SEL45/2007	K45DD027	DD	214.6	219.6	Jdl	JDD		A2/B	FRESH	Competent medium grained dolerite with pervasive chlorite and Fe alteration from 214.6 to 215.3m becoming patchy to 216m. Minor gypsum, carbonate and zeolite filled fault with brecciated dolerite at 218.9m.
SEL45/2007	K45DD027	DD	219.6	222.8	Jdl	JDD		A/G	FRESH	Dolerite becoming very broken with abundant gypsum, talc, carbonate and zeolite veins. Weak chlorite and Fe staining associated with veins. Dolerite brecciated between 221 to 222.5m. Strongly altered within this interval.
SEL45/2007	K45DD027	DD	222.8	224.8	Jdl	JDD		A	FRESH	Dolerite becoming very coarse grained to marginally granophyric between 223.4 to 224.8m.
SEL45/2007	K45DD027	DD	224.8	227.8	Jdl	JDD		A	FRESH	Competent dolerite becoming increasingly magnetic @ 225.1 to 226.8m.
SEL45/2007	K45DD027	DD	227.8	252.1	Jdl	JDD		A	FRESH	Generally moderately to locally strongly enriched zones of magnetite and hornblende within the dolerite with epidote rich gypsiferous veins at 235.5m dipping steeply to sub vertically to >70 degrees.

Drill hole recovery RQD

DataSet	Hole_ID	mFrom	mTo	Recovered (m)	Recovery (%)	sum lengths core >10cm (m)	No. breaks	RQD
KUTH_2008	K45DD027	102.1	102.6	0.5	100.0	0.5	1	100.0
KUTH_2008	K45DD027	102.6	105.6	2.3	76.7	1.37	>12	45.7
KUTH_2008	K45DD027	105.6	108.6	2.99	99.7	1.06	>20	35.3
KUTH_2008	K45DD027	108.6	111.6	3.02	100.7	2.08	>20	69.3
KUTH_2008	K45DD027	111.6	114.6	3	100.0	1.4	>20	46.7
KUTH_2008	K45DD027	114.6	117.6	1.22	40.7	0.16	>20	5.3
KUTH_2008	K45DD027	117.6	120.6	2.89	96.3	0.89	>20	29.7
KUTH_2008	K45DD027	120.6	123.6	1.8	60.0	1.43	>20	47.7
KUTH_2008	K45DD027	123.6	126.6	3.05	101.7	1.62	>20	54.0
KUTH_2008	K45DD027	126.6	129.6	3.04	101.3	1.87	>12	62.3
KUTH_2008	K45DD027	129.6	132.6	2.36	78.7	0.8	>20	26.7
KUTH_2008	K45DD027	132.6	135.6	2.99	99.7	2.23	20	74.3
KUTH_2008	K45DD027	135.6	138.6	3	100.0	0.99	>20	33.0
KUTH_2008	K45DD027	138.6	141.6	3	100.0	2.28	>20	76.0
KUTH_2008	K45DD027	141.6	144.3	2.7	100.0	1.7	>20	63.0
KUTH_2008	K45DD027	144.3	146.1	1.8	100.0	1.29	>20	71.7
KUTH_2008	K45DD027	146.1	147.6	1.46	97.3	0.76	10	50.7
KUTH_2008	K45DD027	147.6	149.9	2.24	97.4	1.44	>20	62.6
KUTH_2008	K45DD027	149.9	152.7	2.87	102.5	1.87	>20	66.8
KUTH_2008	K45DD027	152.7	155.4	2.66	98.5	1.72	15	63.7
KUTH_2008	K45DD027	155.4	156.6	1.2	100.0	1.2	3	100.0
KUTH_2008	K45DD027	156.6	159.6	3.12	104.0	2.33	14	77.7
KUTH_2008	K45DD027	159.6	162.6	3.05	101.7	1.94	20	64.7
KUTH_2008	K45DD027	162.6	165.6	3.14	104.7	2.8	12	93.3
KUTH_2008	K45DD027	165.6	168.6	2.95	98.3	2.51	10	83.7
KUTH_2008	K45DD027	168.6	171.6	3.15	105.0	3.09	12	103.0
KUTH_2008	K45DD027	171.6	174.6	3	100.0	3	7	100.0

KUTH_2008	K45DD027	174.6	177.6	3.04	101.3	3.04	6	101.3
KUTH_2008	K45DD027	177.6	180.6	3	100.0	3	10	100.0
KUTH_2008	K45DD027	180.6	183.6	3.09	103.0	2.41	11	80.3
KUTH_2008	K45DD027	183.6	186.6	3	100.0	2.72	15	90.7
KUTH_2008	K45DD027	186.6	189.6	3.06	102.0	2.83	10	94.3
KUTH_2008	K45DD027	189.6	192.6	3.03	101.0	3.03	9	101.0
KUTH_2008	K45DD027	192.6	195.6	2.96	98.7	2.4	14	80.0
KUTH_2008	K45DD027	195.6	198.6	3.05	101.7	2.74	11	91.3
KUTH_2008	K45DD027	198.6	201.6	3.02	100.7	2.83	12	94.3
KUTH_2008	K45DD027	201.6	204.6	3.13	104.3	2.07	21	69.0
KUTH_2008	K45DD027	204.6	207.6	3	100.0	2.36	14	78.7
KUTH_2008	K45DD027	207.6	210.6	3.04	101.3	2.75	16	91.7
KUTH_2008	K45DD027	210.6	213.6	3.06	102.0	2.49	21	83.0
KUTH_2008	K45DD027	213.6	216.6	2.95	98.3	2.29	14	76.3
KUTH_2008	K45DD027	216.6	219.6	2.98	99.3	2.33	17	77.7
KUTH_2008	K45DD027	219.6	222.6	3.12	104.0	0.86	>30	28.7
KUTH_2008	K45DD027	222.6	225.6	2.9	96.7	2.57	13	85.7
KUTH_2008	K45DD027	225.6	228.6	3.09	103.0	2.93	8	97.7
KUTH_2008	K45DD027	228.6	231.6	3.15	105.0	3.07	6	102.3
KUTH_2008	K45DD027	231.6	234.6	2.93	97.7	2.46	11	82.0
KUTH_2008	K45DD027	234.6	237.6	3.01	100.3	2.97	6	99.0
KUTH_2008	K45DD027	237.6	240.6	3.06	102.0	2.94	10	98.0
KUTH_2008	K45DD027	240.6	243.6	3.13	104.3	2.96	5	98.7
KUTH_2008	K45DD027	243.6	246.6	3	100.0	2.93	9	97.7
KUTH_2008	K45DD027	246.6	249.6	3.03	101.0	2.83	6	94.3
KUTH_2008	K45DD027	249.6	252.1	2.54	101.6	2.39		95.6