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Results from Downhole Temperature Profile Readings: SEL 26/2005.

Marion Bay, Murdunna, Rheban and Sorell.

Prepared for KUTh Energy Ltd

November 2008 - Final Report

Paul Donaldson

Executive summary

This report provides results obtained from precision temperature logging undertaken in October and November of 2008, of four of KUTh's heat flow holes within tenement SEL26/2005.

All four holes (Marion Bay, Murdunna, Rheban and Sorell) are considered to have reached equilibration. The geothermal gradients are displayed in the enclosed figures, and the logged temperatures are listed in the appendix.

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1.0 Introduction

During October and November 2008, four of the completed geothermal exploration holes drilled by KUTh Energy were sampled for temperature.

Temperatures were logged using a thermistor, a type of resistor that relies on the change in resistance to measure temperature change. Each hole was sampled at 1 metre increments. Results are presented in the following report as graphs of geothermal gradients (Figures 1 to 4) and tables of temperature recorded per metre (

Appendix 1).

The results presented for all four holes listed are the results from the second logging runs of these holes, and are considered to be equilibrated. It is therefore expected that the results presented here are an accurate representation of the actual thermal conditions of the holes.

The results provided in this report are based on data collected from the field sampling. Detailed analysis of the thermal properties of the areas sampled will be provided in a separate report for all four holes listed incorporating the data obtained from the conductivity analysis. The temperature profile data aids in the selection and sampling of appropriate lithological intervals for conductivity analysis.

2.0 Results

The results provide recorded temperatures for each metre of the successfully logged holes.

The gradient profiles for each of the logged holes can be seen as average temperature gradients over 2m, 4m and 10m in Figures 1 to 4. The variable nature of the gradient profile can be indicative of unconfined aquifer flows disturbing the thermal profile of the well.

The corresponding preliminary geothermal gradients for selected sections are displayed in Table 1

Table 1. Geothermal gradient (°C/km) values for selected depth profiles

Depth (m)	Marion Bay	Murdunna	Rheban	Sorell
50 - 150	15.046	34.589	39.024	22.422
150 - BoH	32.150	36.992	44.695	31.198

Figure 1 Marion Bay Geothermal Gradient

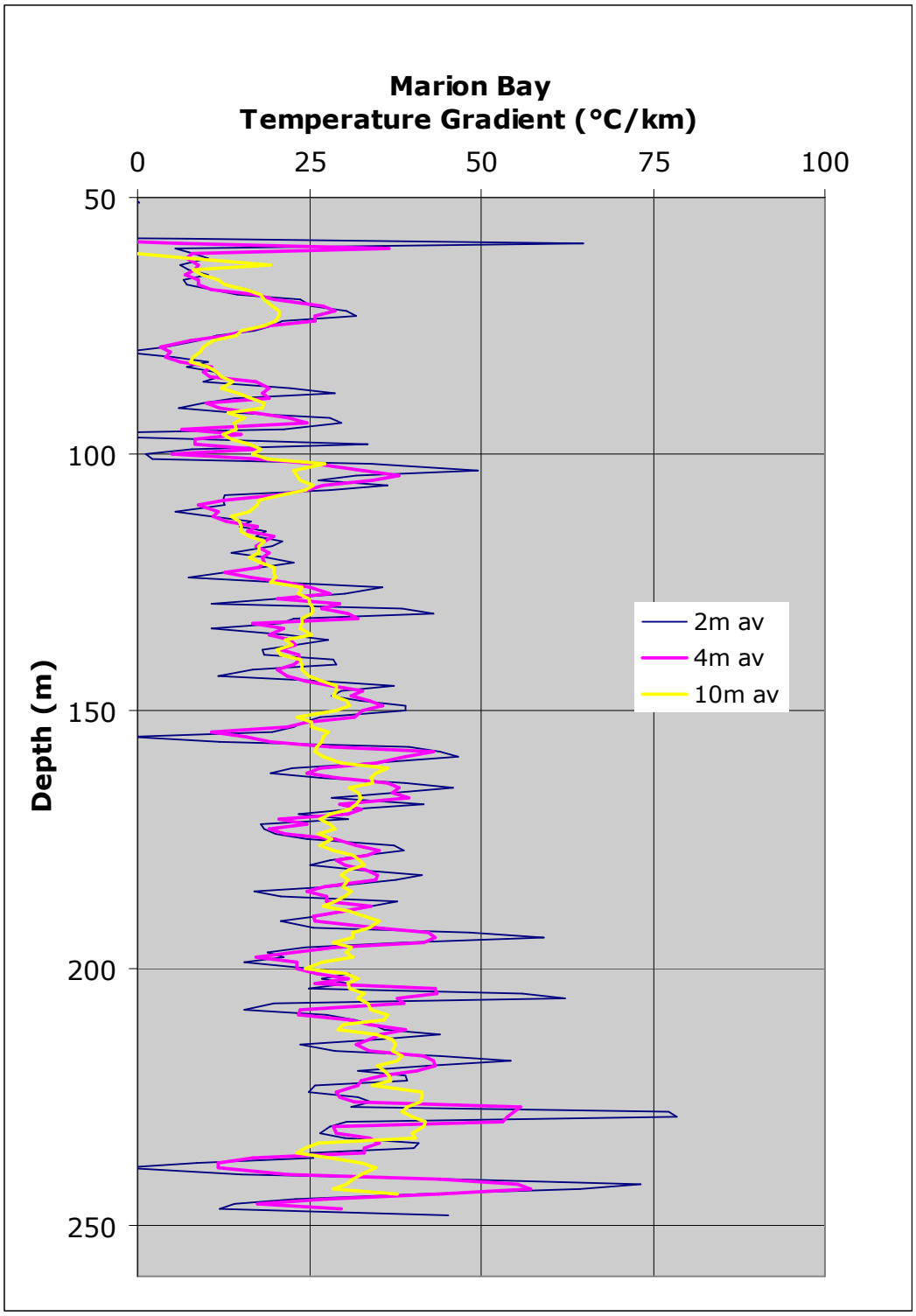


Figure 2 Murdunna Geothermal Gradient

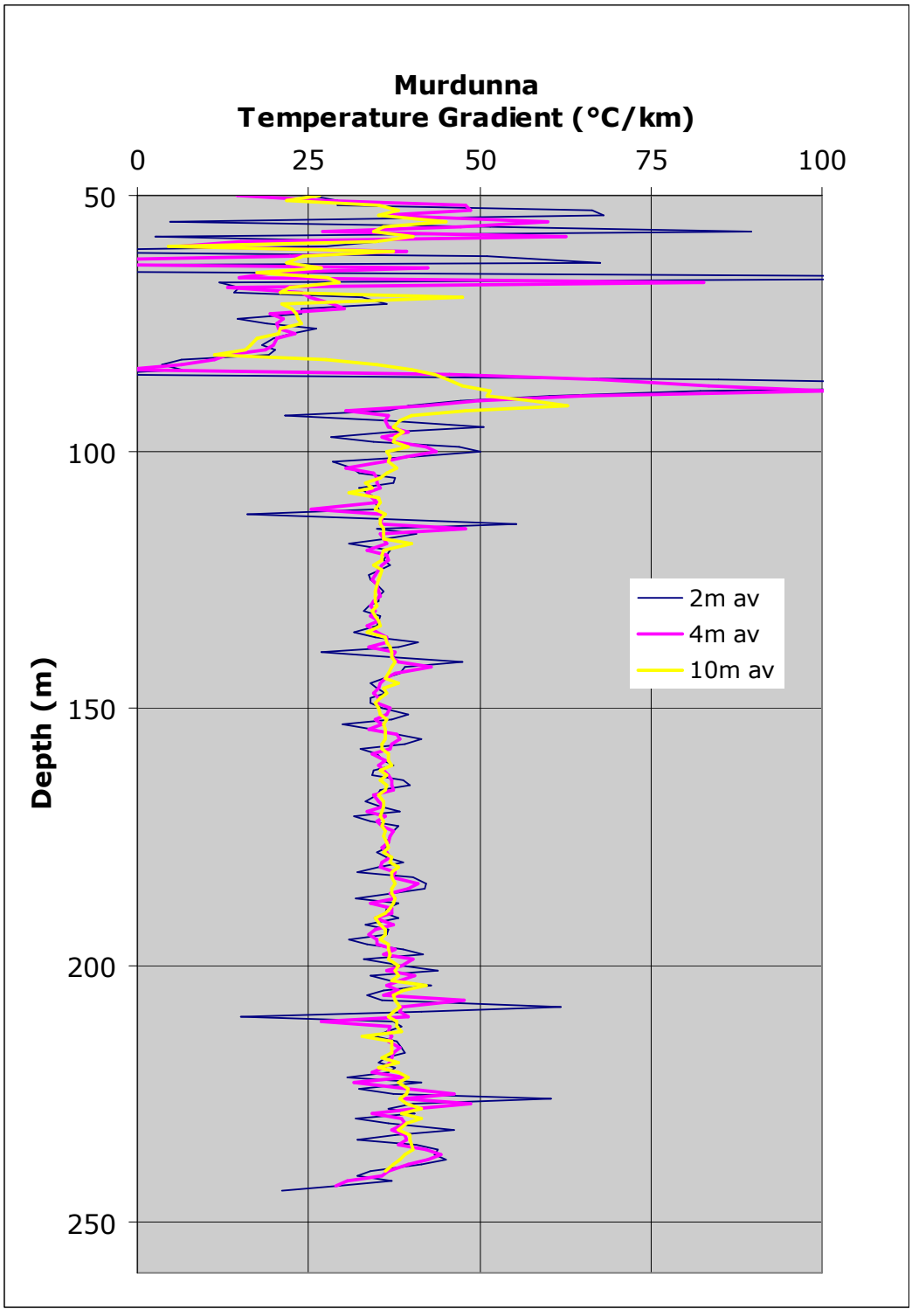


Figure 3 Rheban Geothermal Gradient

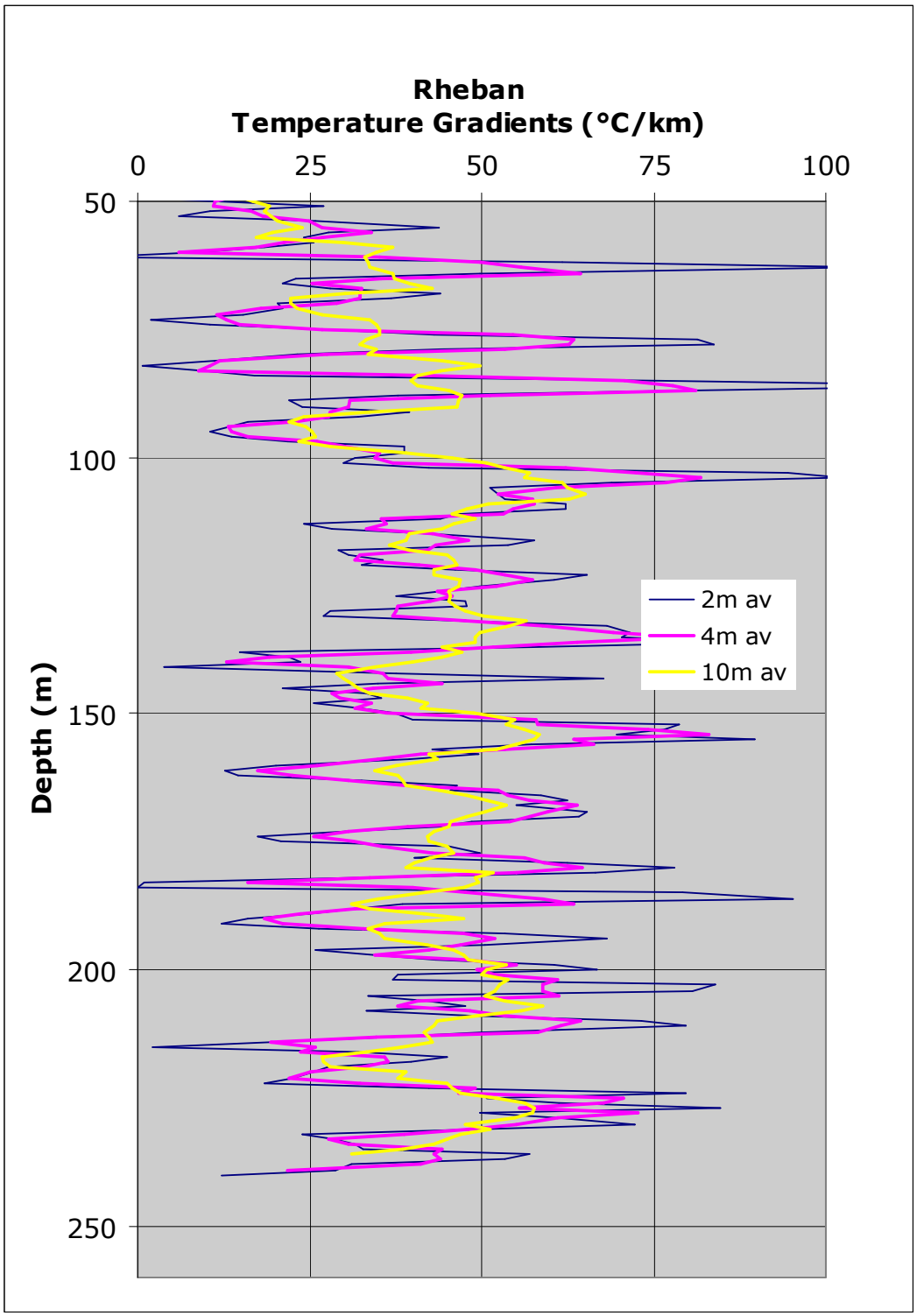
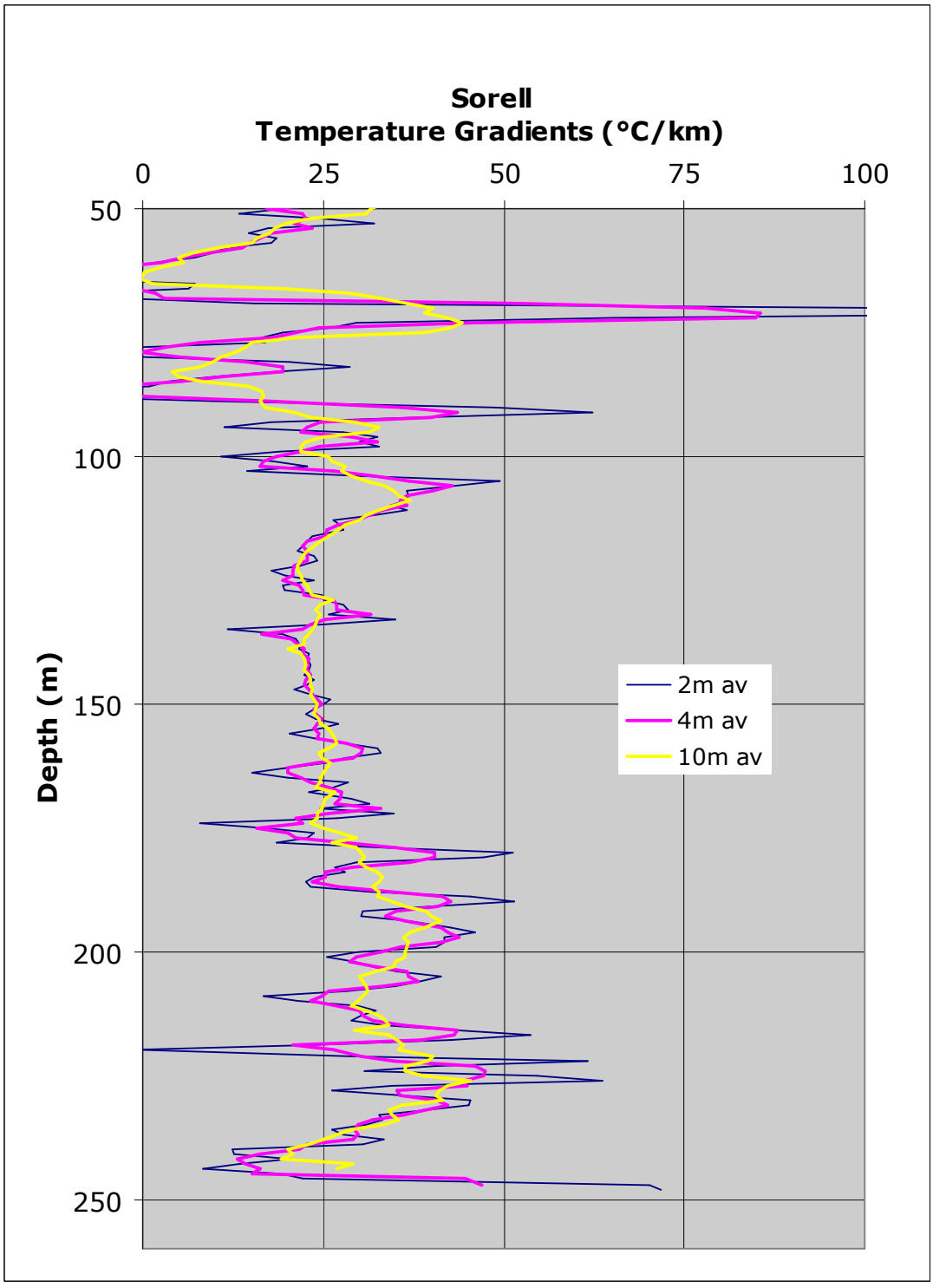


Figure 4 Sorell Geothermal Gradient



Appendix 1:

Tables of recorded down hole temperature

Marion Bay - Depth vs. Temperature results

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
1	**16.0865**	43	**14.5293**	85	**14.6073**	127	**15.3667**
2	**16.0118**	44	**14.5145**	86	**14.6191**	128	**15.3936**
3	**15.9121**	45	**14.4710**	87	**14.6266**	129	**15.4073**
4	**15.8475**	46	**14.4858**	88	**14.6634**	130	**15.4151**
5	**15.8074**	47	**14.4841**	89	**14.6841**	131	**15.4842**
6	**15.7459**	48	**14.4724**	90	**14.6916**	132	**15.5012**
7	**15.6902**	49	**14.4664**	91	**14.7031**	133	**15.5297**
8	**15.6458**	50	**14.4551**	92	**14.7035**	134	**15.5431**
9	**15.6051**	51	**14.4647**	93	**14.7317**	135	**15.5514**
10	**15.5789**	52	**14.4556**	94	**14.7595**	136	**15.5864**
11	**15.5536**	53	**14.4439**	95	**14.7909**	137	**15.6067**
12	**15.5186**	54	**14.4440**	96	**14.8019**	138	**15.6321**
13	**15.4806**	55	**14.4405**	97	**14.7574**	139	**15.6433**
14	**15.3226**	56	**14.3442**	98	**14.8197**	140	**15.6692**
15	**15.2813**	57	**14.2710**	99	**14.8246**	141	**15.7003**
16	**15.2410**	58	**14.1623**	100	**14.8352**	142	**15.7272**
17	**15.1661**	59	**14.2853**	101	**14.8268**	143	**15.7338**
18	**15.1490**	60	**14.2922**	102	**14.8397**	144	**15.7505**
19	**15.0690**	61	**14.2965**	103	**14.8947**	145	**15.7873**
20	**15.0287**	62	**14.3086**	104	**14.9388**	146	**15.8251**
21	**14.9975**	63	**14.3172**	105	**14.9584**	147	**15.8467**
22	**14.9698**	64	**14.3211**	106	**14.9914**	148	**15.8818**
23	**14.9280**	65	**14.3319**	107	**15.0312**	149	**15.9113**
24	**14.9067**	66	**14.3419**	108	**15.0474**	150	**15.9598**
25	**14.8894**	67	**14.3453**	109	**15.0568**	151	**15.9894**
26	**14.8699**	68	**14.3562**	110	**15.0720**	152	**16.0130**
27	**14.8539**	69	**14.3670**	111	**15.0819**	153	**16.0376**
28	**14.8327**	70	**14.3851**	112	**15.0829**	154	**16.0584**
29	**14.8106**	71	**14.4141**	113	**15.1035**	155	**16.0769**
30	**14.7890**	72	**14.4358**	114	**15.1157**	156	**16.0565**
31	**14.7643**	73	**14.4749**	115	**15.1332**	157	**16.1006**
32	**14.7330**	74	**14.4997**	116	**15.1531**	158	**16.1357**
33	**14.6970**	75	**14.5171**	117	**15.1675**	159	**16.1885**
34	**14.6685**	76	**14.5389**	118	**15.1950**	160	**16.2291**
35	**14.6400**	77	**14.5512**	119	**15.2068**	161	**16.2563**
36	**14.6164**	78	**14.5617**	120	**15.2222**	162	**16.2740**
37	**14.6033**	79	**14.5687**	121	**15.2444**	163	**16.2951**
38	**14.5924**	80	**14.5700**	122	**15.2675**	164	**16.3277**
39	**14.5824**	81	**14.5644**	123	**15.2802**	165	**16.3729**
40	**14.5710**	82	**14.5805**	124	**15.2929**	166	**16.4196**
41	**14.5301**	83	**14.5849**	125	**15.2952**	167	**16.4476**
42	**14.5153**	84	**14.5950**	126	**15.3334**	168	**16.4762**

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
169	**16.5309**	209	**17.7145**	249	**19.1403**		
170	**16.5377**	210	**17.7423**	250	**19.1748**		
171	**16.5776**	211	**17.7775**				
172	**16.5990**	212	**17.8106**				
173	**16.6136**	213	**17.8491**				
174	**16.6361**	214	**17.8985**				
175	**16.6537**	215	**17.9188**				
176	**16.6855**	216	**17.9459**				
177	**16.7281**	217	**17.9763**				
178	**16.7629**	218	**18.0339**				
179	**16.7939**	219	**18.0849**				
180	**16.8190**	220	**18.1181**				
181	**16.8442**	221	**18.1492**				
182	**16.8837**	222	**18.1963**				
183	**16.9268**	223	**18.2275**				
184	**16.9591**	224	**18.2482**				
185	**16.9834**	225	**18.2774**				
186	**16.9929**	226	**18.3125**				
187	**17.0252**	227	**18.3455**				
188	**17.0686**	228	**18.3749**				
189	**17.0931**	229	**18.4999**				
190	**17.1292**	230	**18.5317**				
191	**17.1452**	231	**18.5608**				
192	**17.1708**	232	**18.5878**				
193	**17.1965**	233	**18.6137**				
194	**17.2675**	234	**18.6478**				
195	**17.3145**	235	**18.6956**				
196	**17.3444**	236	**18.7282**				
197	**17.3632**	237	**18.7456**				
198	**17.3819**	238	**18.7794**				
199	**17.4058**	239	**18.7630**				
200	**17.4130**	240	**18.7749**				
201	**17.4563**	241	**18.7929**				
202	**17.4746**	242	**18.8669**				
203	**17.5097**	243	**18.9395**				
204	**17.5358**	244	**18.9957**				
205	**17.5593**	245	**19.0217**				
206	**17.6476**	246	**19.0416**				
207	**17.6836**	247	**19.0498**				
208	**17.6872**	248	**19.0653**				

Murdunna - Depth vs. Temperature results.

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
1	**16.0530**	43	**13.6601**	85	**14.6243**	127	**16.3466**
2	**15.8921**	44	**13.6768**	86	**14.6086**	128	**16.3823**
3	**15.7125**	45	**13.6810**	87	**14.7942**	129	**16.4170**
4	**15.6117**	46	**13.6935**	88	**14.8921**	130	**16.4528**
5	**15.5555**	47	**13.6978**	89	**14.9585**	131	**16.4848**
6	**15.5146**	48	**13.7103**	90	**15.0125**	132	**16.5188**
7	**15.4899**	49	**13.7021**	91	**15.0529**	133	**16.5557**
8	**15.4382**	50	**13.7104**	92	**15.0915**	134	**16.5894**
9	**15.3598**	51	**13.7522**	93	**15.1262**	135	**16.6260**
10	**15.2858**	52	**13.7690**	94	**15.1348**	136	**16.6529**
11	**15.1822**	53	**13.8108**	95	**15.1993**	137	**16.6955**
12	**15.1148**	54	**13.9020**	96	**15.2360**	138	**16.7348**
13	**15.0659**	55	**13.9471**	97	**15.2732**	139	**16.7717**
14	**14.8378**	56	**13.9118**	98	**15.2927**	140	**16.7884**
15	**13.5559**	57	**14.0505**	99	**15.3423**	141	**16.8462**
16	**13.2517**	58	**14.0913**	100	**15.3866**	142	**16.8833**
17	**13.1869**	59	**14.0557**	101	**15.4424**	143	**16.9244**
18	**13.1465**	60	**14.1617**	102	**15.4676**	144	**16.9602**
19	**13.1385**	61	**14.1111**	103	**15.4993**	145	**16.9966**
20	**13.1507**	62	**14.1154**	104	**15.5306**	146	**17.0285**
21	**13.1750**	63	**14.2132**	105	**15.5643**	147	**17.0665**
22	**13.1953**	64	**14.2505**	106	**15.6059**	148	**17.1010**
23	**13.1994**	65	**13.9925**	107	**15.6392**	149	**17.1346**
24	**13.2116**	66	**14.2854**	108	**15.6707**	150	**17.1693**
25	**13.2279**	67	**14.2936**	109	**15.7065**	151	**17.2061**
26	**13.2361**	68	**14.3096**	110	**15.7405**	152	**17.2484**
27	**13.2240**	69	**14.3234**	111	**15.7759**	153	**17.2803**
28	**13.2281**	70	**14.3377**	112	**15.8110**	154	**17.3081**
29	**13.2810**	71	**14.3891**	113	**15.8083**	155	**17.3487**
30	**13.3014**	72	**14.4108**	114	**15.8831**	156	**17.3838**
31	**13.3218**	73	**14.4373**	115	**15.9189**	157	**17.4316**
32	**13.3464**	74	**14.4586**	116	**15.9532**	158	**17.4618**
33	**13.3628**	75	**14.4664**	117	**16.0004**	159	**17.4970**
34	**13.4407**	76	**14.4964**	118	**16.0255**	160	**17.5319**
35	**13.4942**	77	**14.5187**	119	**16.0624**	161	**17.5688**
36	**13.5148**	78	**14.5414**	120	**16.0994**	162	**17.6069**
37	**13.5273**	79	**14.5584**	121	**16.1351**	163	**17.6378**
38	**13.5438**	80	**14.5777**	122	**16.1713**	164	**17.6755**
39	**13.5604**	81	**14.5987**	123	**16.2090**	165	**17.7153**
40	**13.5811**	82	**14.6158**	124	**16.2425**	166	**17.7552**
41	**13.6392**	83	**14.6115**	125	**16.2765**	167	**17.7864**
42	**13.7058**	84	**14.6230**	126	**16.3106**	168	**17.8254**

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
169	**17.8530**	209	**19.3769**				
170	**17.8964**	210	**19.3709**				
171	**17.9299**	211	**19.4073**				
172	**17.9598**	212	**19.4459**				
173	**17.9981**	213	**19.4847**				
174	**18.0360**	214	**19.5190**				
175	**18.0729**	215	**19.5544**				
176	**18.1098**	216	**19.5946**				
177	**18.1458**	217	**19.6319**				
178	**18.1830**	218	**19.6728**				
179	**18.2159**	219	**19.7045**				
180	**18.2558**	220	**19.7432**				
181	**18.2937**	221	**19.7797**				
182	**18.3263**	222	**19.8168**				
183	**18.3579**	223	**19.8413**				
184	**18.4067**	224	**19.9000**				
185	**18.4422**	225	**19.9060**				
186	**18.4907**	226	**19.9748**				
187	**18.5166**	227	**20.0269**				
188	**18.5544**	228	**20.0552**				
189	**18.5929**	229	**20.1005**				
190	**18.6271**	230	**20.1365**				
191	**18.6652**	231	**20.1643**				
192	**18.7034**	232	**20.2098**				
193	**18.7318**	233	**20.2567**				
194	**18.7766**	234	**20.2853**				
195	**18.8046**	235	**20.3210**				
196	**18.8387**	236	**20.3669**				
197	**18.8717**	237	**20.4088**				
198	**18.9163**	238	**20.4538**				
199	**18.9550**	239	**20.4988**				
200	**18.9827**	240	**20.5368**				
201	**19.0325**	241	**20.5670**				
202	**19.0705**	242	**20.6009**				
203	**19.1007**	243	**20.6414**				
204	**19.1443**	244	**20.6591**				
205	**19.1863**	245	**20.6835**				
206	**19.2162**						
207	**19.2533**						
208	**19.2878**						

Rheban - Depth vs. Temperature results.

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
1	**16.0381**	43	**14.3248**	85	**15.5119**	127	**17.4574**
2	**15.9758**	44	**14.4129**	86	**15.6501**	128	**17.4896**
3	**15.8603**	45	**14.4397**	87	**15.7610**	129	**17.5525**
4	**15.7005**	46	**14.4562**	88	**15.8114**	130	**17.5854**
5	**15.5466**	47	**14.4775**	89	**15.8366**	131	**17.6085**
6	**15.5149**	48	**14.5022**	90	**15.8552**	132	**17.6394**
7	**15.5011**	49	**14.5109**	91	**15.8843**	133	**17.7013**
8	**15.4791**	50	**14.4935**	92	**15.9340**	134	**17.7758**
9	**15.4416**	51	**14.5340**	93	**15.9485**	135	**17.8444**
10	**15.4018**	52	**14.5475**	94	**15.9659**	136	**17.9163**
11	**15.3262**	53	**14.5549**	95	**15.9753**	137	**18.0211**
12	**15.2830**	54	**14.5592**	96	**15.9871**	138	**18.0311**
13	**15.2219**	55	**14.6064**	97	**16.0026**	139	**18.0506**
14	**15.1889**	56	**14.6466**	98	**16.0304**	140	**18.0754**
15	**15.1533**	57	**14.6620**	99	**16.0800**	141	**18.0980**
16	**15.1043**	58	**14.6949**	100	**16.1080**	142	**18.0828**
17	**15.0737**	59	**14.7133**	101	**16.1431**	143	**18.1731**
18	**15.0589**	60	**14.7318**	102	**16.1679**	144	**18.2182**
19	**15.0370**	61	**14.7304**	103	**16.2279**	145	**18.2432**
20	**15.0012**	62	**14.7190**	104	**16.3568**	146	**18.2602**
21	**14.1500**	63	**14.8541**	105	**16.4329**	147	**18.3098**
22	**13.8554**	64	**14.9309**	106	**16.4948**	148	**18.3312**
23	**13.9160**	65	**14.9536**	107	**16.5355**	149	**18.3611**
24	**13.8911**	66	**14.9768**	108	**16.5997**	150	**18.3959**
25	**13.8836**	67	**14.9959**	109	**16.6421**	151	**18.4356**
26	**13.9117**	68	**15.0326**	110	**16.7243**	152	**18.4760**
27	**13.8911**	69	**15.0841**	111	**16.7665**	153	**18.5931**
28	**13.9358**	70	**15.1061**	112	**16.8177**	154	**18.6289**
29	**13.9438**	71	**15.1249**	113	**16.8547**	155	**18.7323**
30	**13.9311**	72	**15.1483**	114	**16.8661**	156	**18.8083**
31	**14.0233**	73	**15.1555**	115	**16.9111**	157	**18.8467**
32	**13.9564**	74	**15.1523**	116	**16.9508**	158	**18.8939**
33	**14.0368**	75	**15.1767**	117	**17.0264**	159	**18.9457**
34	**14.0364**	76	**15.2078**	118	**17.0583**	160	**18.9728**
35	**14.0432**	77	**15.2630**	119	**17.0848**	161	**18.9861**
36	**13.9733**	78	**15.3706**	120	**17.1193**	162	**18.9983**
37	**14.0601**	79	**15.4304**	121	**17.1559**	163	**19.0155**
38	**14.0703**	80	**15.4583**	122	**17.1846**	164	**19.0632**
39	**13.6517**	81	**15.4766**	123	**17.2485**	165	**19.1082**
40	**13.9733**	82	**15.4807**	124	**17.3152**	166	**19.1539**
41	**14.0958**	83	**15.4780**	125	**17.3694**	167	**19.2254**
42	**14.2072**	84	**15.5000**	126	**17.4146**	168	**19.2787**

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
169	**19.3355**	209	**21.1090**				
170	**19.4094**	210	**21.1790**				
171	**19.4638**	211	**21.2554**				
172	**19.5064**	212	**21.3384**				
173	**19.5514**	213	**21.3554**				
174	**19.5668**	214	**21.4112**				
175	**19.5862**	215	**21.3943**				
176	**19.6085**	216	**21.4156**				
177	**19.6766**	217	**21.4584**				
178	**19.7082**	218	**21.5057**				
179	**19.7571**	219	**21.5379**				
180	**19.8332**	220	**21.5613**				
181	**19.9132**	221	**21.5892**				
182	**19.9661**	222	**21.6063**				
183	**19.9772**	223	**21.6260**				
184	**19.9679**	224	**21.6909**				
185	**19.9772**	225	**21.7854**				
186	**20.1263**	226	**21.7924**				
187	**20.1675**	227	**21.9081**				
188	**20.2034**	228	**21.9616**				
189	**20.2306**	229	**22.0076**				
190	**20.2530**	230	**22.0835**				
191	**20.2625**	231	**22.1519**				
192	**20.2773**	232	**22.1819**				
193	**20.3153**	233	**22.1996**				
194	**20.3842**	234	**22.2389**				
195	**20.4515**	235	**22.2625**				
196	**20.4850**	236	**22.3046**				
197	**20.5030**	237	**22.3764**				
198	**20.5540**	238	**22.4114**				
199	**20.5894**	239	**22.4386**				
200	**20.6750**	240	**22.4691**				
201	**20.7229**	241	**22.4631**				
202	**20.7508**						
203	**20.7969**						
204	**20.9189**						
205	**20.9581**						
206	**20.9858**						
207	**21.0423**						
208	**21.0812**						

Sorell - Depth vs. Temperature results.

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
1	**19.1615**	43	**14.8127**	85	**15.7334**	127	**16.7684**
2	**18.8044**	44	**14.8255**	86	**15.7334**	128	**16.7930**
3	**18.1231**	45	**14.8582**	87	**15.7352**	129	**16.8181**
4	**18.0309**	46	**14.8804**	88	**15.7101**	130	**16.8432**
5	**17.9768**	47	**14.9783**	89	**15.7059**	131	**16.8738**
6	**17.9355**	48	**15.0274**	90	**15.7291**	132	**16.9000**
7	**17.9161**	49	**15.0502**	91	**15.8036**	133	**16.9253**
8	**17.8743**	50	**15.0694**	92	**15.8535**	134	**16.9699**
9	**17.8129**	51	**15.0892**	93	**15.8797**	135	**16.9749**
10	**17.7491**	52	**15.0959**	94	**15.8891**	136	**16.9933**
11	**17.6999**	53	**15.1386**	95	**15.9022**	137	**17.0136**
12	**17.6422**	54	**15.1602**	96	**15.9444**	138	**17.0356**
13	**17.5871**	55	**15.1732**	97	**15.9670**	139	**17.0570**
14	**17.5497**	56	**15.1894**	98	**16.0046**	140	**17.0790**
15	**17.5072**	57	**15.2102**	99	**16.0325**	141	**17.1030**
16	**17.4689**	58	**15.2251**	100	**16.0424**	142	**17.1245**
17	**17.4245**	59	**15.2332**	101	**16.0542**	143	**17.1495**
18	**17.4148**	60	**15.2445**	102	**16.0783**	144	**17.1706**
19	**17.3376**	61	**15.2476**	103	**16.0996**	145	**17.1942**
20	**17.3032**	62	**15.2481**	104	**16.1072**	146	**17.2178**
21	**17.2643**	63	**15.2435**	105	**16.1599**	147	**17.2400**
22	**17.2386**	64	**15.2304**	106	**16.2061**	148	**17.2596**
23	**17.2058**	65	**15.2227**	107	**16.2467**	149	**17.2864**
24	**17.1756**	66	**15.2448**	108	**16.2792**	150	**17.3117**
25	**17.1475**	67	**15.2353**	109	**16.3204**	151	**17.3364**
26	**17.1234**	68	**15.2262**	110	**16.3521**	152	**17.3592**
27	**15.2272**	69	**15.2303**	111	**16.3891**	153	**17.3816**
28	**14.9555**	70	**15.2570**	112	**16.4252**	154	**17.4069**
29	**14.8294**	71	**15.4418**	113	**16.4532**	155	**17.4359**
30	**14.7750**	72	**15.5376**	114	**16.4779**	156	**17.4563**
31	**14.7335**	73	**15.5721**	115	**16.5079**	157	**17.4767**
32	**14.7185**	74	**15.5965**	116	**16.5336**	158	**17.5043**
33	**14.7167**	75	**15.6242**	117	**16.5549**	159	**17.5329**
34	**14.7229**	76	**15.6353**	118	**16.5792**	160	**17.5693**
35	**14.7246**	77	**15.6570**	119	**16.5992**	161	**17.5990**
36	**14.7307**	78	**15.6690**	120	**16.6221**	162	**17.6252**
37	**14.7400**	79	**15.6560**	121	**16.6465**	163	**17.6494**
38	**14.7505**	80	**15.6482**	122	**16.6704**	164	**17.6653**
39	**14.7558**	81	**15.6560**	123	**16.6904**	165	**17.6798**
40	**14.7637**	82	**15.6889**	124	**16.7061**	166	**17.7056**
41	**14.7738**	83	**15.7134**	125	**16.7296**	167	**17.7366**
42	**14.8043**	84	**15.7260**	126	**16.7537**	168	**17.7583**

Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)	Depth	Temp (Deg C)
169	**17.7827**	209	**19.0761**	249	**20.4003**		
170	**17.8159**	210	**19.0889**				
171	**17.8455**	211	**19.1190**				
172	**17.8653**	212	**19.1485**				
173	**17.9148**	213	**19.1836**				
174	**17.9190**	214	**19.2088**				
175	**17.9305**	215	**19.2413**				
176	**17.9535**	216	**19.2755**				
177	**17.9781**	217	**19.3283**				
178	**17.9990**	218	**19.3830**				
179	**18.0153**	219	**19.4135**				
180	**18.0658**	220	**19.4299**				
181	**18.1180**	221	**19.4118**				
182	**18.1602**	222	**19.4882**				
183	**18.1772**	223	**19.5348**				
184	**18.2137**	224	**19.5690**				
185	**18.2334**	225	**19.5964**				
186	**18.2610**	226	**19.6782**				
187	**18.2785**	227	**19.7235**				
188	**18.3073**	228	**19.7471**				
189	**18.3415**	229	**19.7759**				
190	**18.3982**	230	**19.8192**				
191	**18.4443**	231	**19.8666**				
192	**18.4776**	232	**19.9095**				
193	**18.5051**	233	**19.9449**				
194	**18.5380**	234	**19.9752**				
195	**18.5785**	235	**20.0113**				
196	**18.6234**	236	**20.0370**				
197	**18.6707**	237	**20.0639**				
198	**18.7071**	238	**20.0926**				
199	**18.7540**	239	**20.1307**				
200	**18.7884**	240	**20.1536**				
201	**18.8136**	241	**20.1554**				
202	**18.8394**	242	**20.1789**				
203	**18.8723**	243	**20.1960**				
204	**18.9031**	244	**20.2060**				
205	**18.9428**	245	**20.2125**				
206	**18.9858**	246	**20.2443**				
207	**19.0196**	247	**20.2567**				
208	**19.0556**	248	**20.3848**				