

Defining the shallow geothermal heat-exchange potential for a lower fluvial plain of the Central Apennines: the Metauro Valley (Marche Region, Italy)

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^a Following the G.POT algoritms of Casasso and Sethi (2016), see text for explanation

^b Following Signorelli and Kohl (2004) empirical equation, see text for explanation

								Values avaraged over 100 m of subsoil						
ID	Est (UTM WGS84 33N)	North (UTM WGS84 33N)	Altitude a.s.l. (m)	Borehole depth (m)	Depth of the bedrock (m)	Saturation depth (m)	Saturated thickness (m)	Thermal conductivity (W m ⁻¹ K ⁻¹)	Specific Heat Extraction 2400h (kW)	Volumetric Heat Capacity (MJ m ⁻³ K ⁻¹)	Geothermal Potential (MWh y ⁻¹) ^a	Depth to reach 4 kW (m)	Ground Temperature (°C) ^b	Typology
1	340406	4853672	20.00	38	35.7	15.46	20.24	1.73	4.04	2.35	9.4	99	15.02	Geognostic drilling
2	340282	4856990	7.00	64.33	34.33	4.84	29.49	1.77	4.05	2.53	9.7	99	15.15	Geognostic drilling
3	338584	4854865	21.41	27.5	26.4	9.78	16.62	1.81	4.11	2.42	9.8	97	15.00	Geognostic drilling
4	338739	4855390	16.63	30	18	7.18	10.82	1.85	4.17	2.39	9.9	96	15.05	Geognostic drilling
5	334202	4849779	63.01	12	1.3	63.01	1.20	1.89	4.18	2.39	9.8	96	14.57	Geognostic drilling
6	336584	4852043	99.92	14	10			2.01	4.48	2.41	10.0	89	14.21	Geognostic drilling
7	336565	4851973	113.39	7	1.5			1.58	3.68	1.21	7.9	109	14.08	Geognostic drilling
8	335247	4851358	63.96	14	9			1.78	4.05	2.42	9.4	99	14.56	Geognostic drilling
9	338744	4852168	31.05	30	24.1	17.32	6.78	1.68	3.94	2.28	9.1	102	14.90	Geognostic drilling
10	340099	4852413	24.15	40	33	15.07	17.93	1.67	3.91	2.30	9.2	102	14.97	Geognostic drilling
11	340015	4855737	13.95	34	32	9.96	22.04	1.79	4.10	2.38	9.7	98	15.08	Geognostic drilling
12	339209	4857473	15.37	21	16	4.57	11.43	1.85	4.14	2.44	9.9	97	15.07	Geognostic drilling
13	338004	4850506	38.11	30.1	28	20.06	7.94	1.60	3.83	2.24	8.8	104	14.83	Geognostic drilling
14	337423	4850777	40.00	34	26.2	20.21	5.99	1.80	4.21	2.31	9.6	95	14.81	Geognostic drilling
15	340700	4854122	19.08	35	33	14.98	18.02	1.67	3.92	2.38	9.2	102	15.03	Geognostic drilling
16	341118	4855785	9.39	41	34.4	7.35	27.05	1.85	4.19	2.47	10.0	95	15.13	Geognostic drilling
17	340580	4853572	20.00	44.64	35	15.15	19.85	1.70	3.97	2.35	9.3	101	15.02	Geognostic drilling
18	341780	4855450	6.70	41	39.5	5.58	33.92	1.78	4.05	2.46	9.7	99	15.16	Geognostic drilling
19	341543	4855092	9.89	40	34	8.49	25.51	1.76	4.02	2.36	9.6	100	15.12	Geognostic drilling
20	346051	4851775	4.63	35	25.2	4.22	20.98	1.85	4.14	2.49	10.0	97	15.18	Geognostic drilling
21	344440	4852987	10.69	32.5	30	9.93	20.07	1.74	3.99	2.44	9.6	100	15.12	Geognostic drilling
22	337048	4849705	41.04	30	26	17.90	8.10	1.64	3.88	2.26	8.9	103	14.80	Geognostic drilling
23	339708	4851462	30.00	35	30	17.38	12.62	1.64	3.89	2.27	9.0	103	14.91	Geognostic drilling
24	340720	4852443	20.00	40	32	12.31	19.69	1.71	3.96	2.30	9.3	101	15.02	Geognostic drilling
25	340319	4852672	21.25	40.2	33	13.99	19.01	1.68	3.93	2.32	9.2	102	15.00	Geognostic drilling
26	339211	4850613	29.19	29.7	26	14.61	11.39	1.68	3.94	2.31	9.2	102	14.92	Geognostic drilling
27	341483	4854764	12.23	37	35.5	10.27	25.23	1.75	4.02	2.36	9.6	100	15.10	Geognostic drilling
28	345696	4851798	5.96	26.7	24	5.33	18.67	1.82	4.10	2.49	9.9	98	15.17	Geognostic drilling
29	345258	4851914	10.00	27	25	7.92	17.08	1.80	4.09	2.43	9.8	98	15.12	Geognostic drilling
30	345099	4852336	10.00	30.3	21	8.60	12.40	1.77	4.03	2.40	9.7	99	15.12	Geognostic drilling
31	344030	4852935	10.45	29	26	10.34	15.66	1.75	4.02	2.40	9.6	100	15.12	Geognostic drilling
32	343946	4852977	10.09	30	29.4	10.01	19.39	1.77	4.05	2.43	9.7	99	15.12	Geognostic drilling
33	339466	4850061	25.09	31	23	9.00	14.00	1.76	4.02	2.33	9.5	100	14.96	Geognostic drilling
34	337671	4849417	35.56	27.6	23	14.42	8.58	1.69	3.94	2.28	9.2	102	14.85	Geognostic drilling
35	337864	4849576	35.80	27.9	23	15.13	7.87	1.68	3.92	2.28	9.1	102	14.85	Geognostic drilling
36	337976	4849545	35.06	31.1	26.1	14.58	11.52	1.68	3.93	2.28	9.1	102	14.86	Geognostic drilling
37	339222	4851476	30.00	900	25	17.21	7.79	1.67	3.94	2.26	9.1	102	14.91	Geognostic drilling
38	342718	4852222	14.07	727	13.2	9.57	3.63	1.78	4.05	2.33	9.6	99	15.08	Geognostic drilling
39	336601	4851732	55.58	28	17	14.81	2.19	1.93	4.38	2.38	10.0	91	14.65	Geognostic drilling
40	338177	4853312	39.67	27	25	20.20	4.80	1.63	3.88	2.26	8.9	103	14.81	Geognostic drilling
41	336029	4849802	47.43	29	19	17.82	1.18	1.65	3.88	2.26	8.9	103	14.73	Geognostic drilling
42	340346	4851539	24.04	27.5	27	13.23	13.77	1.70	3.94	2.34	9.3	102	14.97	Geognostic drilling
43	343579	4852431	13.49	20	15.5	11.35	4.15	1.75	4.03	2.34	9.5	99	15.09	Geognostic drilling
44	336647	4851107	46.04	25	18	16.24	1.76	1.71	3.91	2.29	9.2	102	14.74	Geognostic drilling
45	339040	4851131	30.00	29	28	16.62	11.38	1.70	3.98	2.30	9.2	101	14.91	Geognostic drilling
46	339346	4852209	25.78	30	26	15.21	10.79	1.68	3.92	2.28	9.2	102	14.96	Geognostic drilling
47	336631	4849227	42.79	28	25	17.46	7.54	1.64	3.87	2.28	8.9	103	14.78	Geognostic drilling
48	342385	4852405	10.98	40	7.5	7.43	0.07	1.80	4.07	2.34	9.7	98	15.11	Geognostic drilling
49	339277	4854693	20.77	19	17	11.40	5.60	1.74	4.00	2.31	9.4	100	15.01	Geognostic drilling
50	340057	4850738	23.39	28	20	10.72	9.28	1.74	4.00	2.31	9.4	100	14.98	Geognostic drilling
51	339894	4854429	20.00	71	34	13.77	20.23	1.75	4.04	2.38	9.5	99	15.02	Geognostic drilling
52	340028	4855943	13.01	34	32	9.19	22.81	1.83	4.15	2.42	9.9	96	15.09	Geognostic drilling
53	339071	4849691	29.07	31.5	28.5	10.50	18.00	1.75	4.01	2.46	9.5	100	14.92	Geognostic drilling
54	339179	4849810	27.55	29	28	10.07	17.93	1.74	3.99	2.41	9.4	100	14.94	Geognostic drilling
55	339334	4849667	23.92	17	14.5	6.36	8.14	1.81	4.07	2.40	9.7	98	14.97	Geognostic drilling
56	339088	4849442	26.11	17	14.5	7.35	7.15	1.79	4.06	2.40	9.6	99	14.95	Geognostic drilling
57	338934	4849527	30.00	27	26.5	10.87	15.63	1.73	3.98	2.43	9.4	101	14.91	Geognostic drilling
58	339266	4849723	25.49	28	27	7.80	19.20	1.77	4.03	2.40	9.6	99	14.96	Geognostic drilling

59	338850	4849504	30.00	28	27.4	11.00	16.40	1.72	3.97	2.37	9.3	101	14.91	Geognostic drilling
60	338793	4849410	30.00	26	24	10.32	13.68	1.74	3.99	2.35	9.4	100	14.91	Geognostic drilling
61	343151	4852377	13.31	10.5	10.2	9.50	0.70	1.77	4.03	2.33	9.6	99	15.09	Geognostic drilling
62	337270	4847314	59.00	15	4.8			1.84	4.12	2.36	9.6	97	14.61	Geognostic drilling
63	337297	4847125	90.00	11	5			1.84	4.12	2.36	9.4	97	14.30	Geognostic drilling
64	336886	4846951	74.66	16	5.5			1.83	4.11	2.36	9.5	97	14.45	Geognostic drilling
65	336621	4847072	39.08	10	8	5.86	2.14	1.82	4.10	2.36	9.7	98	14.82	Geognostic drilling
66	336655	4847142	38.12	6	5	4.90	0.10	1.84	4.12	2.36	9.7	97	14.83	Geognostic drilling
67	337548	4846515	98.70	9	3			1.87	4.15	2.38	9.5	96	14.22	Geognostic drilling
68	334562	4851264	77.57	18	7			1.81	4.08	2.34	9.4	98	14.43	Geognostic drilling
69	343098	4852453	12.54	25	8	7.90	0.10	1.79	4.06	2.34	9.7	99	15.10	Geognostic drilling
70	337942	4851251	40.00	21	20	19.67	0.33	1.62	3.85	2.24	8.8	104	14.81	Geognostic drilling
71	342600	4850725	45.27	18	4.8			1.84	4.12	2.36	9.7	97	14.75	Geognostic drilling
72	339525	4857663	4.27	18	15	2.69	12.31	1.91	4.23	2.42	10.2	95	15.18	Geognostic drilling
73	336117	4851304	49.54	21	15	14.50	0.50	1.74	4.03	2.28	9.3	99	14.71	Geognostic drilling
74	338300	4856262	31.38	16	14	6.35	7.65	1.82	4.10	2.42	9.7	98	14.90	Geognostic drilling
75	337645	4846393	111.58	10	2			1.88	4.17	2.38	9.5	96	14.09	Geognostic drilling
76	333324	4850359	124.60	5	1.5			1.89	4.17	2.39	9.4	96	13.97	Geognostic drilling
77	332771	4849876	80.00	5	3.5			1.86	4.14	2.37	9.6	97	14.40	Geognostic drilling
78	334581	4849316	52.10	20	16.5	11.40	5.10	1.73	3.99	2.31	9.2	100	14.68	Geognostic drilling
79	333706	4849079	73.49	9	6.5			1.82	4.09	2.35	9.5	98	14.47	Geognostic drilling
80	334489	4849559	54.48	12.7	11.6	9.25	2.35	1.77	4.04	2.33	9.4	99	14.66	Geognostic drilling
81	334156	4848974	56.99	14	13	11.06	1.94	1.75	4.01	2.31	9.3	100	14.63	Geognostic drilling
82	334010	4849192	59.17	12.5	12	8.70	3.30	1.78	4.04	2.33	9.4	99	14.61	Geognostic drilling
83	333948	4849066	59.63	12	11.5	9.12	2.38	1.77	4.03	2.33	9.3	99	14.61	Geognostic drilling
84	332560	4848980	75.11	12	10			1.77	4.03	2.32	9.3	99	14.45	Geognostic drilling
85	334664	4849107	51.26	19	14.5	12.84	1.66	1.72	3.98	2.30	9.2	101	14.69	Geognostic drilling
86	335199	4847794	44.65	19	18	10.89	7.11	1.74	4.00	2.31	9.3	100	14.76	Geognostic drilling
87	336201	4848022	40.37	20	18	9.50	8.50	1.76	4.02	2.32	9.4	100	14.80	Geognostic drilling
88	336375	4847768	34.22	15	13.5	4.80	8.70	1.83	4.11	2.36	9.7	97	14.87	Geognostic drilling
89	336373	4847946	37.48	17	15.5	7.23	8.27	1.79	4.06	2.34	9.6	99	14.83	Geognostic drilling
90	336546	4847881	35.05	13	11.5	5.62	5.88	1.82	4.09	2.35	9.7	98	14.86	Geognostic drilling
91	335376	4848020	45.25	24	22	13.07	8.93	1.70	3.96	2.30	9.2	101	14.75	Geognostic drilling
92	335069	4848081	50.00	23	21.5	15.70	5.80	1.67	3.91	2.27	9.0	102	14.70	Geognostic drilling
93	336205	4847566	31.60	10	6.5	3.14	3.36	1.86	4.14	2.38	9.9	97	14.89	Geognostic drilling
94	334522	4849048	52.77	22	14	12.36	1.64	1.73	3.98	2.30	9.2	101	14.68	Geognostic drilling
95	333797	4848651	59.82	12	10	9.29	0.71	1.77	4.04	2.33	9.3	99	14.60	Geognostic drilling
96	332833	4848574	90.03	30	10			1.77	4.03	2.32	9.2	99	14.30	Geognostic drilling
97	334001	4848907	58.51	22	11	9.95	1.05	1.77	4.03	2.32	9.3	99	14.62	Geognostic drilling
98	346263	4851356	3.69	29	22	5.00	17.00	1.83	4.12	2.46	10.0	97	15.19	Geognostic drilling
99	344582	4852010	12.55	15	10	9.90	0.10	1.76	4.03	2.32	9.6	99	15.10	Geognostic drilling
100	344844	4851727	12.31	10.5	10	9.07	0.93	1.78	4.04	2.34	9.7	99	15.10	Geognostic drilling
101	345048	4851589	10.00	7	5			1.84	4.11	2.36	9.9	97	15.12	Geognostic drilling
102	345155	4851754	10.00	9	6	5.90	0.10	1.82	4.09	2.35	9.8	98	15.12	Geognostic drilling
103	344595	4851882	16.08	3.5	3			1.86	4.15	2.38	10.0	96	15.06	Geognostic drilling
104	335844	4849472	49.35	25.5	25	18.77	6.23	1.63	3.86	2.28	8.9	104	14.71	Geognostic drilling
105	340405	4850303	20.00	7	5.5	4.82	0.68	1.84	4.12	2.37	9.9	97	15.02	Geognostic drilling
106	340737	4850170	13.56	4	3.2	1.66	1.54	1.88	4.17	2.40	10.1	96	15.08	Geognostic drilling
1	340603	4850111	14.22	4.5	3.5	1.66	1.84	1.88	4.17	2.41	10.1	96	15.08	Geognostic drilling
108	340309	4850095	20.00	5	4	3.50	0.50	1.86	4.14	2.38	9.9	97	15.02	Geognostic drilling
109	336717	4846407	120.00	6	5			1.84	4.12	2.36	9.3	97	14.01	Geognostic drilling
110	336683	4846872	57.53	14	13	6.50	6.50	1.82	4.09	2.38	9.6	98	14.63	Geognostic drilling
111	336170	4846454	63.21	15	13.6	10.72	2.88	1.76	4.01	2.31	9.3	100	14.57	Geognostic drilling
112	336319	4846404	69.46	14	12.5	10.13	2.37	1.77	4.03	2.32	9.3	99	14.51	Geognostic drilling
113	333691	4848334	59.01	9.5	8.8	8.50	0.30	1.79	4.05	2.33	9.4	99	14.61	Geognostic drilling
114	333428	4848294	66.03	3.5	3			1.87	4.15	2.38	9.7	96	14.54	Geognostic drilling
115	333536	4848721	69.47	12	3			1.86	4.15	2.38	9.6	96	14.51	Geognostic drilling
116	332967	4848752	81.55	12	2			1.88	4.17	2.38	9.6	96	14.39	Geognostic drilling
117	331151	4842642	90.00	10.5	10	8.35	1.65	1.83	4.15	2.33	9.4	96	14.30	Geognostic drilling
118	330235	4842808	80.00	13	12.5	11.28	1.22	1.78	4.09	2.31	9.3	98	14.40	Geognostic drilling
119	330211	4843091	70.44	16.5	15	8.98	6.02	1.82	4.12	2.33	9.5	97	14.50	Geognostic drilling
120	330108	4842963	80.00	29	27	12.30	14.70	1.74	4.04	2.30	9.1	99	14.40	Geognostic drilling
121	327581	4842455	77.17	5	3.5	2.67	0.83	1.87	4.16	2.38	9.6	96	14.43	Geognostic drilling
122	327920	4842614	76.68	7	6	3.40	2.60	1.86	4.14	2.38	9.6	97	14.43	Geognostic drilling
123	327401	4842554	88.89	6	5.5	5.45	0.05	1.83	4.11	2.36	9.4	97	14.31	Geognostic drilling
124	327301	4842490	88.91	11	10	7.18	2.82	1.80	4.07	2.37	9.3	98	14.31	Geognostic drilling
125	327013	4842283	80.00	6	3.5	3.40	0.10	1.86	4.14	2.37	9.6	97	14.40	Geognostic drilling
126	327646	4842338	72.79	3	2.5	1.77	0.73	1.88	4.17	2.39	9.7	96	14.47	Geognostic drilling

127	327999	4842379	70.00	6	4.5	2.34	2.16	1.88	4.17	2.39	9.7	96	14.50	Geognostic drilling
128	327414	4842667	94.90	7	6.5	5.50	1.00	1.83	4.11	2.36	9.4	97	14.25	Geognostic drilling
129	328121	4843238	91.86	6.5	5.5	4.94	0.56	1.84	4.11	2.36	9.4	97	14.28	Geognostic drilling
130	327461	4842415	79.05	6	3.5	3.40	0.10	1.86	4.14	2.37	9.6	97	14.41	Geognostic drilling
131	327486	4842325	75.91	6	3	2.95	0.05	1.87	4.15	2.38	9.6	96	14.44	Geognostic drilling
132	327124	4842349	88.49	14	13	6.72	6.28	1.83	4.12	2.37	9.4	97	14.32	Geognostic drilling
133	334008	4844932	75.62	16.5	14.5	11.70	2.80	1.77	4.07	2.31	9.2	98	14.44	Geognostic drilling
134	333504	4844649	71.64	15	14	9.12	4.88	1.82	4.13	2.33	9.5	97	14.48	Geognostic drilling
135	334456	4845849	56.46	23	22	6.00	16.00	1.86	4.18	2.41	9.7	96	14.64	Geognostic drilling
136	333143	4845212	60.00	29	28	10.55	17.45	1.84	4.19	2.37	9.6	95	14.60	Geognostic drilling
137	333541	4845056	62.68	29	28	8.95	19.05	1.79	4.09	2.33	9.4	98	14.57	Geognostic drilling
138	333794	4844901	72.68	22	16	10.93	5.07	1.78	4.08	2.31	9.3	98	14.47	Geognostic drilling
139	334844	4845961	54.82	20	16	4.15	11.85	1.87	4.17	2.42	9.8	96	14.65	Geognostic drilling
140	333652	4844930	69.45	17	16	9.24	6.76	1.81	4.11	2.33	9.4	97	14.51	Geognostic drilling
141	333863	4846243	40.18	5.5	4.5	1.50	3.00	1.93	4.27	2.39	10.1	94	14.81	Geognostic drilling
142	333781	4845347	66.78	18	17	12.14	4.86	1.76	4.06	2.30	9.3	99	14.53	Geognostic drilling
143	333952	4844287	70.00	13	12			1.77	4.07	2.30	9.3	98	14.50	Geognostic drilling
144	333181	4845552	50.00	16	14	7.00	7.00	1.84	4.15	2.34	9.7	96	14.70	Geognostic drilling
145	333627	4845246	63.50	31.5	28.5	10.75	17.75	1.83	4.18	2.37	9.6	96	14.57	Geognostic drilling
146	333288	4845014	66.73	26	22	11.44	10.56	1.81	4.14	2.34	9.5	97	14.53	Geognostic drilling
147	334125	4844597	110.00	6	2.5			1.92	4.25	2.38	9.6	94	14.11	Geognostic drilling
148	335395	4845004	176.08	12	10.5			1.76	4.01	2.32	8.7	100	13.49	Geognostic drilling
149	335886	4845440	170.00	8	7			1.81	4.08	2.34	8.9	98	13.55	Geognostic drilling
150	332891	4844386	76.18	12	10	9.67	0.33	1.81	4.12	2.32	9.4	97	14.44	Geognostic drilling
151	334633	4844646	153.60	8	3.5			1.91	4.23	2.37	9.3	95	13.70	Geognostic drilling
152	333576	4846058	40.00	5.5	4.5	1.20	3.30	1.94	4.27	2.39	10.1	94	14.81	Geognostic drilling
153	334197	4845807	52.46	15	13	5.30	7.70	1.86	4.18	2.37	9.7	96	14.68	Geognostic drilling
154	333627	4844796	63.30	9	10	7.14	2.86	1.85	4.16	2.35	9.6	96	14.57	Geognostic drilling
155	333387	4844395	78.71	18	12.5	9.90	2.60	1.82	4.13	2.33	9.4	97	14.41	Geognostic drilling
156	333907	4846002	47.52	10	9	4.67	4.33	1.88	4.20	2.36	9.8	95	14.73	Geognostic drilling
157	333822	4844516	81.70	6	4			1.90	4.23	2.37	9.7	95	14.38	Geognostic drilling
158	334864	4844703	155.97	5	2.5			1.92	4.25	2.38	9.4	94	13.68	Geognostic drilling
159	335730	4845277	180.00	6	0			1.91	4.20	2.40	9.2	95	13.46	Geognostic drilling
160	332798	4844736	68.99	23	22	13.10	8.90	1.75	4.04	2.30	9.2	99	14.51	Geognostic drilling
161	334101	4848238	54.22	18	15	12.47	2.53	1.72	3.97	2.32	9.2	101	14.66	Geognostic drilling
162	334279	4848107	51.64	15	13	12.00	1.00	1.73	3.99	2.30	9.2	100	14.69	Geognostic drilling
163	333184	4847831	71.34	25	5.5	3.20	2.30	1.86	4.14	2.40	9.6	97	14.49	Geognostic drilling
164	333044	4847602	73.49	6	1.5			1.89	4.17	2.39	9.7	96	14.47	Geognostic drilling
165	333100	4847338	58.50	5.5	5	2.90	2.10	1.90	4.24	2.38	9.8	94	14.62	Geognostic drilling
166	333324	4847325	54.40	7	2.5			1.92	4.25	2.38	9.9	94	14.66	Geognostic drilling
167	333861	4847382	51.51	12	11	4.40	6.60	1.84	4.11	2.36	9.7	97	14.69	Geognostic drilling
168	332865	4847177	66.95	14	11	3.24	7.76	1.90	4.22	2.42	9.8	95	14.53	Geognostic drilling
169	332982	4847122	59.32	11	6.5	3.20	3.30	1.91	4.23	2.38	9.9	95	14.61	Geognostic drilling
170	332950	4846693	57.93	12	8.5	3.60	4.90	1.90	4.22	2.38	9.8	95	14.62	Geognostic drilling
171	333081	4846542	51.54	12	4.5	3.27	1.23	1.91	4.24	2.37	9.9	94	14.69	Geognostic drilling
172	332660	4846981	90.00	23	7.5	3.43	4.07	1.90	4.23	2.38	9.7	95	14.30	Geognostic drilling
173	332678	4846840	90.00	9	7.5	3.20	4.30	1.90	4.23	2.37	9.7	95	14.30	Geognostic drilling
174	332441	4846785	90.00	21	6.5	3.20	3.30	1.90	4.23	2.37	9.7	95	14.30	Geognostic drilling
175	332591	4846356	62.54	15	9	3.70	5.30	1.90	4.22	2.37	9.8	95	14.58	Geognostic drilling
176	332683	4846196	56.70	21	5	3.70	1.30	1.90	4.23	2.38	9.9	95	14.64	Geognostic drilling
177	332264	4846350	69.07	8	6	3.20	2.80	1.91	4.23	2.37	9.8	95	14.51	Geognostic drilling
178	332303	4846222	65.25	10.5	10	3.50	6.50	1.90	4.22	2.41	9.8	95	14.55	Geognostic drilling
179	332376	4846030	52.00	6	5	3.90	1.10	1.90	4.22	2.37	9.9	95	14.68	Geognostic drilling
180	332444	4845520	43.54	10	9	4.10	4.90	1.90	4.24	2.40	9.9	94	14.77	Geognostic drilling
181	331884	4846431	96.53	7.5	7	2.90	4.10	1.91	4.22	2.38	9.7	95	14.24	Geognostic drilling
182	331883	4846527	80.00	9	6			1.87	4.19	2.35	9.6	95	14.40	Geognostic drilling
183	331886	4846681	97.04	2	1			1.94	4.28	2.39	9.8	93	14.23	Geognostic drilling
184	331931	4846929	102.24	13	11			1.80	4.10	2.31	9.2	98	14.18	Geognostic drilling
185	332067	4847170	100.00	20	10			1.81	4.12	2.32	9.3	97	14.20	Geognostic drilling
186	332333	4847034	93.63	7.5	6			1.87	4.19	2.35	9.5	95	14.27	Geognostic drilling
187	332202	4846858	90.84	8.5	7.5			1.85	4.16	2.34	9.5	96	14.29	Geognostic drilling
188	331211	4846349	120.00	30	23			1.62	3.88	2.22	8.4	103	14.01	Geognostic drilling
189	331110	4846357	130.00	14	6.5			1.86	4.18	2.35	9.3	96	13.92	Geognostic drilling
190	331001	4846234	143.75	28	20			1.66	3.93	2.24	8.5	102	13.79	Geognostic drilling
191	330790	4846122	147.80	18	4			1.90	4.23	2.37	9.3	95	13.75	Geognostic drilling
192	331945	4846210	96.32	17	4	2.90	1.10	1.91	4.24	2.39	9.7	94	14.24	Geognostic drilling
193	332048	4845975	63.70	15	6	3.10	2.90	1.91	4.23	2.39	9.9	95	14.56	Geognostic drilling
194	331579	4845317	58.73	10	5	4.76	0.24	1.89	4.21	2.36	9.8	95	14.61	Geognostic drilling

195	331306	4845291	70.00	21	9	6.30	2.70	1.86	4.18	2.35	9.6	96	14.50	Geognostic drilling
196	331643	4845490	60.00	8	5	4.70	0.30	1.89	4.21	2.36	9.8	95	14.60	Geognostic drilling
197	331771	4845903	69.94	10	9	3.15	5.85	1.90	4.22	2.43	9.8	95	14.50	Geognostic drilling
198	331766	4845781	67.47	6	4	3.30	0.70	1.91	4.24	2.37	9.8	94	14.53	Geognostic drilling
199	331643	4845774	74.14	10	9	3.86	5.14	1.89	4.21	2.39	9.7	95	14.46	Geognostic drilling
200	331175	4844162	60.00	13	12	8.66	3.34	1.82	4.13	2.36	9.5	97	14.60	Geognostic drilling
201	331064	4844533	63.89	14	11	8.48	2.52	1.82	4.13	2.33	9.5	97	14.56	Geognostic drilling
202	330802	4844301	62.45	14	11	7.72	3.28	1.84	4.15	2.34	9.6	96	14.58	Geognostic drilling
203	330403	4844640	72.86	11	6			1.87	4.19	2.35	9.6	95	14.47	Geognostic drilling
204	330596	4844894	80.32	19	17	6.20	10.80	1.85	4.17	2.35	9.5	96	14.40	Geognostic drilling
205	330696	4844821	74.08	10	7			1.85	4.17	2.34	9.6	96	14.46	Geognostic drilling
206	330739	4844728	70.88	8	3			1.91	4.24	2.38	9.8	94	14.49	Geognostic drilling
207	330176	4845531	143.65	11	7			1.86	4.17	2.34	9.2	96	13.79	Geognostic drilling
208	329915	4845504	158.06	4	1			1.95	4.28	2.39	9.4	93	13.66	Geognostic drilling
209	328964	4844936	210.00	17	3			1.92	4.25	2.38	9.1	94	13.20	Geognostic drilling
210	329811	4844641	85.13	9	6.5	4.60	1.90	1.89	4.21	2.38	9.7	95	14.35	Geognostic drilling
211	329796	4843789	63.04	6	4	2.50	1.50	1.92	4.25	2.40	9.9	94	14.57	Geognostic drilling
212	329118	4844139	109.39	20	15			1.93	4.37	2.37	9.6	92	14.11	Geognostic drilling
213	329255	4844002	89.16	9	8	3.60	4.40	1.90	4.22	2.37	9.7	95	14.31	Geognostic drilling
214	329799	4844266	80.80	9	7	3.56	3.44	1.90	4.23	2.37	9.7	95	14.39	Geognostic drilling
215	329557	4844276	89.77	11	9	3.80	5.20	1.90	4.22	2.37	9.7	95	14.30	Geognostic drilling
216	329401	4841398	100.00	28	20			1.63	3.86	2.24	8.6	104	14.20	Geognostic drilling
217	329480	4841116	100.00	15	14			1.71	3.96	2.29	8.9	101	14.20	Geognostic drilling
218	329004	4840867	150.00	4	0			1.96	4.30	2.40	9.5	93	13.73	Geognostic drilling
219	327856	4841014	93.21	25	23	3.40	19.60	1.88	4.20	2.37	9.6	95	14.27	Geognostic drilling
220	328175	4841149	100.00	25	23	4.84	18.16	1.87	4.21	2.38	9.5	95	14.20	Geognostic drilling
221	328190	4840875	103.60	25	20	4.25	15.75	1.86	4.17	2.47	9.5	96	14.17	Geognostic drilling
222	328170	4840602	109.31	10	8	4.00	4.00	1.89	4.22	2.37	9.5	95	14.11	Geognostic drilling
223	328115	4840425	101.76	7	6	3.80	2.20	1.90	4.22	2.37	9.6	95	14.19	Geognostic drilling
224	328060	4839942	104.05	10	8.5			1.83	4.15	2.33	9.3	96	14.17	Geognostic drilling
225	327939	4839883	99.80	6	5			1.88	4.21	2.36	9.5	95	14.21	Geognostic drilling
226	327282	4839664	110.00	8.5	6.5			1.86	4.18	2.35	9.4	96	14.11	Geognostic drilling
227	326497	4840436	90.00	25	20	2.15	17.85	1.89	4.22	2.42	9.6	95	14.30	Geognostic drilling
228	326438	4841755	97.74	6	4			1.90	4.22	2.37	9.6	95	14.23	Geognostic drilling
229	326346	4841567	95.52	6	3			1.92	4.24	2.38	9.7	94	14.25	Geognostic drilling
230	326344	4841255	90.00	7.5	6.5	4.77	1.73	1.89	4.21	2.38	9.6	95	14.30	Geognostic drilling
231	326080	4840811	92.74	10.5	10	5.40	4.60	1.87	4.19	2.38	9.5	95	14.28	Geognostic drilling
232	326077	4840944	96.81	11.5	11	6.50	4.50	1.85	4.17	2.37	9.4	96	14.24	Geognostic drilling
233	325661	4841494	109.92	8	7	6.25	0.75	1.86	4.18	2.35	9.4	96	14.11	Geognostic drilling
234	325380	4841308	110.00	13	7	3.85	3.15	1.90	4.22	2.37	9.5	95	14.11	Geognostic drilling
235	325110	4839955	84.82	10	9			2.02	4.49	2.42	10.1	89	14.35	Geognostic drilling
236	325022	4839760	90.00	10	9.5			2.01	4.48	2.41	10.1	89	14.30	Geognostic drilling
237	324754	4840337	105.16	11	6.5	1.79	4.71	2.13	4.62	2.53	10.4	87	14.15	Geognostic drilling
238	324529	4840800	138.50		0			2.10	4.60	2.60	10.1	87	13.84	Outcrop
239	324501	4840321	107.48	6	4.5	1.70	2.80	2.13	4.64	2.50	10.4	86	14.13	Geognostic drilling
240	324560	4840100	101.33	5	2			2.14	4.65	2.48	10.4	86	14.19	Geognostic drilling
241	324512	4839956	97.58		0			2.18	4.70	2.50	10.6	85	14.23	Outcrop
242	324418	4840030	100.41	6	3			2.13	4.63	2.47	10.4	86	14.20	Geognostic drilling
243	324286	4840051	105.21	4	3.5			2.12	4.62	2.47	10.4	87	14.15	Geognostic drilling
244	324155	4840231	115.86	6.5	4.5			2.10	4.60	2.46	10.2	87	14.05	Geognostic drilling
245	324143	4840403	139.71	16	13			1.96	4.41	2.38	9.6	91	13.83	Geognostic drilling
246	324242	4840518	140.00	12	4			2.11	4.61	2.46	10.1	87	13.82	Geognostic drilling
247	324107	4840598	160.71	10	9			2.03	4.50	2.42	9.7	89	13.63	Geognostic drilling
248	324230	4840781	143.08	10	4			2.11	4.61	2.46	10.1	87	13.80	Geognostic drilling
249	324123	4840742	159.34	15	14.5			1.94	4.38	2.37	9.4	91	13.65	Geognostic drilling
250	323895	4840389	179.69	2	0			2.18	4.70	2.50	10.1	85	13.46	Geognostic drilling
251	323799	4840218	151.01	16	12.5			1.22	3.20	2.30	6.8	125	13.72	Geognostic drilling
252	323682	4840209	165.06	8	7			1.26	3.24	2.34	6.9	123	13.59	Geognostic drilling
253	323649	4840070	160.00	16	12.5			1.90	4.34	2.39	9.3	92	13.64	Geognostic drilling
254	323176	4840013	254.08		0			2.09	4.60	2.40	9.4	87	12.82	Outcrop
255	323790	4839600	107.15	21	20.5			1.74	4.15	2.24	8.9	96	14.14	Geognostic drilling
256	323890	4839617	104.79	9	8			1.95	4.42	2.34	9.7	90	14.16	Geognostic drilling
257	323840	4839530	103.23	21	20			1.75	4.16	2.24	9.0	96	14.17	Geognostic drilling
258	323497	4839542	110.41	4	2			2.06	4.56	2.38	10.1	88	14.10	Geognostic drilling
259	323348	4839601	115.22	6	5			2.01	4.49	2.36	9.9	89	14.06	Geognostic drilling
260	323246	4839751	136.85	17	16			1.82	4.25	2.27	9.1	94	13.85	Geognostic drilling
261	323267	4839694	121.81	5	4.5			2.01	4.50	2.36	9.8	89	13.99	Geognostic drilling
262	323142	4839598	109.69	2	1			2.07	4.58	2.39	10.1	87	14.11	Geognostic drilling

263	323218	4839502	101.53	13	12.5			1.89	4.34	2.30	9.5	92	14.19	Geognostic drilling
264	323307	4838869	134.68		0			2.09	4.60	2.40	10.0	87	13.87	Outcrop
265	322520	4838649	141.09	12	11			1.91	4.36	2.31	9.4	92	13.81	Geognostic drilling
266	322472	4838583	146.11		0			2.09	4.60	2.40	10.0	87	13.77	Outcrop
267	322833	4839002	119.14	4	3.5			2.03	4.53	2.37	9.9	88	14.02	Geognostic drilling
268	325740	4840897	99.63	8	6	4.70	1.30	1.88	4.21	2.36	9.5	95	14.21	Geognostic drilling
269	322030	4839202	120.00	5	2.5			2.05	4.55	2.38	10.0	88	14.01	Geognostic drilling
270	322093	4839304	125.77	4	1.5			2.07	4.57	2.39	10.0	88	13.96	Geognostic drilling
271	321825	4839195	120.00	5	4.5			2.01	4.50	2.36	9.9	89	14.01	Geognostic drilling
272	325442	4840548	91.16		0			1.96	4.30	2.40	9.9	93	14.29	Outcrop
273	325133	4840924	110.00	12	10	2.58	7.42	1.91	4.23	2.38	9.6	95	14.11	Geognostic drilling
274	322810	4839732	131.28		0			2.09	4.60	2.40	10.1	87	13.91	Outcrop
275	322736	4839625	100.00		0			2.09	4.60	2.40	10.3	87	14.20	Outcrop
276	322326	4839244	114.05	28	4			2.02	4.51	2.37	9.9	89	14.07	Geognostic drilling
277	322823	4839443	100.00	4	3			2.04	4.53	2.38	10.1	88	14.20	Geognostic drilling
278	322696	4839290	101.55	4	2			2.06	4.56	2.38	10.1	88	14.19	Geognostic drilling
279	320870	4839097	121.85	3	0			2.27	4.90	2.40	10.7	82	13.99	Geognostic drilling
280	327137	4839512	110.13	7	6			1.87	4.19	2.35	9.4	95	14.11	Geognostic drilling
281	328160	4841874	70.00	8	6	3.16	2.84	1.86	4.14	2.37	9.6	97	14.50	Geognostic drilling
282	320207	4838973	125.68	3387	0			2.12	4.65	2.42	10.2	86	13.96	Geognostic drilling
283	321126	4839262	125.78	210	20			1.90	4.40	2.24	9.4	91	13.96	Geognostic drilling
284	333200	4849962	120.00	96	0			1.91	4.20	2.40	9.5	95	14.01	Geognostic drilling
285	332803	4845334	50.00	13.5	10	6.80	3.20	1.85	4.17	2.36	9.7	96	14.70	Geognostic drilling
286	332015	4843270	80.60	11	9.5	3.90	5.60	1.91	4.26	2.39	9.8	94	14.40	Geognostic drilling
287	331921	4843423	73.66	15	10.5	3.65	6.85	1.92	4.27	2.39	9.8	94	14.46	Geognostic drilling
288	332040	4843600	71.46	12	11	3.35	7.65	1.93	4.28	2.40	9.9	93	14.49	Geognostic drilling
289	332220	4843686	71.89	13	11.5	4.10	7.40	1.92	4.26	2.39	9.8	94	14.48	Geognostic drilling
290	333835	4846578	40.00	6	5.5	1.10	4.40	1.91	4.21	2.40	10.0	95	14.81	Geognostic drilling
291	334409	4847064	40.00	5	4.5	3.20	1.30	1.87	4.16	2.38	9.8	96	14.81	Geognostic drilling
292	332280	4844778	55.05	7	6.5	5.70	0.80	1.87	4.20	2.36	9.7	95	14.65	Geognostic drilling
293	332501	4845044	57.92	25	23.5	10.00	13.50	1.84	4.18	2.36	9.6	96	14.62	Geognostic drilling
294	332441	4844927	60.00	25	24	10.15	13.85	1.83	4.18	2.36	9.6	96	14.60	Geognostic drilling
295	332374	4844723	58.80	12	10.5	7.60	2.90	1.85	4.17	2.35	9.6	96	14.61	Geognostic drilling
296	336348	4847010	38.60	15	6.8	6.30	0.50	1.82	4.09	2.35	9.7	98	14.82	Geognostic drilling
297	339071	4857534	29.09	6	0			1.91	4.20	2.40	10.1	95	14.92	Geognostic drilling
298	337530	4852462	42.18	5	4			1.85	4.13	2.37	9.8	97	14.78	Geognostic drilling
299	341041	4854575	15.16	39	36.7	12.45	24.25	1.76	3.92	2.40	9.6	102	15.07	Geognostic drilling
300	342796	4854884	7.06	82	49	6.54	42.46	1.76	4.02	2.53	9.7	100	15.15	Geognostic drilling
301	342714	4854937	7.01	58	51.5	6.49	45.01	1.74	3.98	2.62	9.6	101	15.15	Geognostic drilling
302	343799	4851876	36.04	7	4			1.85	4.13	2.37	9.8	97	14.85	Geognostic drilling
303	337261	4849036	37.82	24	22	14.00	8.00	1.69	3.94	2.29	9.2	102	14.83	Geognostic drilling
304	321200	4838378	250.31	390	0			2.09	4.60	2.40	9.4	87	12.85	Geognostic drilling
305	324944	4841519	161.18	400	0			1.96	4.30	2.40	9.5	93	13.63	Geognostic drilling
306	337945	4854039	82.96		0			1.91	4.20	2.40	9.7	95	14.37	Outcrop
307	339035	4848933	20.00		0	0.00		1.91	4.20	2.40	10.1	95	15.02	Outcrop
308	339277	4849247	20.00		0	0.00		1.91	4.20	2.40	10.1	95	15.02	Outcrop
309	339591	4849433	20.00		0	0.00		1.91	4.20	2.40	10.1	95	15.02	Outcrop
310	339962	4849707	20.00		0	0.00		1.91	4.20	2.40	10.1	95	15.02	Outcrop
311	340426	4849856	20.00		0	0.00		1.91	4.20	2.40	10.1	95	15.02	Outcrop
312	340687	4849938	10.00		0	0.00		1.91	4.20	2.40	10.2	95	15.12	Outcrop
313	340954	4850050	10.00		0	0.00		1.91	4.20	2.40	10.2	95	15.12	Outcrop
314	341147	4850464	10.00		0	0.00		1.91	4.20	2.40	10.2	95	15.12	Outcrop
315	341241	4851001	10.00		0	0.00		1.91	4.20	2.40	10.2	95	15.12	Outcrop
316	341393	4851421	10.00		0	0.00		1.91	4.20	2.40	10.2	95	15.12	Outcrop
317	341598	4852034	13.08		0	0.00		1.91	4.20	2.40	10.2	95	15.09	Outcrop
318	337468	4847893	20.00		0	0.00		1.91	4.20	2.40	10.1	95	15.02	Outcrop
319	340541	4849556	26.01		0			1.91	4.20	2.40	10.1	95	14.95	Outcrop
320	341210	4850252	31.71		0			1.91	4.20	2.40	10.1	95	14.89	Outcrop
321	335587	4851348	68.74		0			1.91	4.20	2.40	9.8	95	14.51	Outcrop
322	327213	4843002	152.70		0			1.91	4.20	2.40	9.3	95	13.71	Outcrop
323	327581	4843223	156.38		0			1.91	4.20	2.40	9.3	95	13.67	Outcrop
324	323187	4838857	131.50		0			2.09	4.60	2.40	10.1	87	13.90	Outcrop
325	323719	4838968	134.33		0			2.09	4.60	2.40	10.1	87	13.88	Outcrop
326	321438	4839246	100.00		0	0.00		2.09	4.60	2.40	10.3	87	14.20	Outcrop
327	321506	4839151	100.00		0	0.00		2.09	4.60	2.40	10.3	87	14.20	Outcrop
328	323269	4839322	90.00		0	0.00		2.09	4.60	2.40	10.3	87	14.30	Outcrop
329	323341	4839265	90.00		0	0.00		2.09	4.60	2.40	10.3	87	14.30	Outcrop
330	323441	4839165	90.00		0	0.00		2.09	4.60	2.40	10.3	87	14.30	Outcrop

331	323742	4839094	90.00	0	0.00	2.09	4.60	2.40	10.3	87	14.30	Outcrop
332	323773	4839172	90.00	0	0.00	2.09	4.60	2.40	10.3	87	14.30	Outcrop
333	324298	4839707	90.00	0	0.00	2.09	4.60	2.40	10.3	87	14.30	Outcrop
334	324703	4839780	86.94	0	0.00	2.09	4.60	2.40	10.3	87	14.33	Outcrop
335	324825	4839849	80.00	0	0.00	2.09	4.60	2.40	10.4	87	14.40	Outcrop
336	324972	4839947	80.00	0	0.00	2.09	4.60	2.40	10.4	87	14.40	Outcrop
337	325107	4840066	80.00	0	0.00	2.09	4.60	2.40	10.4	87	14.40	Outcrop
338	325813	4839958	80.00	0	0.00	2.09	4.60	2.40	10.4	87	14.40	Outcrop
339	325916	4839986	80.00	0	0.00	2.09	4.60	2.40	10.4	87	14.40	Outcrop
340	327295	4840198	80.00	0	0.00	2.09	4.60	2.40	10.4	87	14.40	Outcrop
341	326563	4841289	70.00	0	0.00	1.96	4.30	2.40	10.0	93	14.50	Outcrop
342	330496	4844407	50.00	0	0.00	1.96	4.30	2.40	10.1	93	14.70	Outcrop
343	330533	4844503	54.22	0	0.00	1.96	4.30	2.40	10.1	93	14.66	Outcrop
344	331248	4843473	50.00	0	0.00	1.96	4.30	2.40	10.1	93	14.70	Outcrop
345	331357	4843355	50.00	0	0.00	1.96	4.30	2.40	10.1	93	14.70	Outcrop
346	331668	4843465	50.00	0	0.00	1.96	4.30	2.40	10.1	93	14.70	Outcrop
347	331757	4843769	50.00	0	0.00	1.96	4.30	2.40	10.1	93	14.70	Outcrop
348	331870	4843843	49.72	0	0.00	1.96	4.30	2.40	10.1	93	14.71	Outcrop
349	332278	4844230	45.00	0	0.00	1.96	4.30	2.40	10.1	93	14.76	Outcrop
350	332197	4844522	45.00	0	0.00	1.96	4.30	2.40	10.1	93	14.76	Outcrop
351	332097	4844610	45.00	0	0.00	1.96	4.30	2.40	10.1	93	14.76	Outcrop
352	332128	4844943	43.25	0	0.00	1.96	4.30	2.40	10.2	93	14.77	Outcrop
353	332229	4845003	40.96	0	0.00	1.96	4.30	2.40	10.2	93	14.80	Outcrop
354	333409	4846155	40.00	0	0.00	1.96	4.30	2.40	10.2	93	14.81	Outcrop
355	333532	4846346	40.00	0	0.00	1.96	4.30	2.40	10.2	93	14.81	Outcrop
356	333624	4846524	40.00	0	0.00	1.96	4.30	2.40	10.2	93	14.81	Outcrop
357	333723	4846611	40.00	0	0.00	1.96	4.30	2.40	10.2	93	14.81	Outcrop
358	333850	4846710	40.00	0	0.00	1.96	4.30	2.40	10.2	93	14.81	Outcrop
359	333991	4846937	40.00	0	0.00	1.91	4.20	2.40	10.0	95	14.81	Outcrop
360	334025	4847066	40.00	0	0.00	1.91	4.20	2.40	10.0	95	14.81	Outcrop
361	334080	4847131	40.00	0	0.00	1.91	4.20	2.40	10.0	95	14.81	Outcrop
362	334159	4847176	40.00	0	0.00	1.91	4.20	2.40	10.0	95	14.81	Outcrop
363	335351	4847231	33.44	0	0.00	1.91	4.20	2.40	10.0	95	14.88	Outcrop
364	324661	4839192	188.51	0		1.32	3.30	2.40	7.0	121	13.38	Outcrop
365	326934	4839180	150.00	0		1.91	4.20	2.40	9.4	95	13.73	Outcrop
366	330823	4842566	79.41	0		1.96	4.30	2.40	9.9	93	14.41	Outcrop
367	330975	4842443	75.01	0		1.96	4.30	2.40	10.0	93	14.45	Outcrop
368	329292	4844318	134.69	0		1.96	4.30	2.40	9.6	93	13.87	Outcrop