

10/8/82

This well is approximately
200 feet from the well Dale Burgett
was drilling when he called
8 Oct 82.

AMAX

EXPLORATION, INC.

A SUBSIDIARY OF AMAX INC.

GEOTHERMAL BRANCH

ΔT Well No. 672-227

Property-Project Animas - 672 Depth Logged 250 m
 Map Swallow Fork Peak Scale 1:24,000 Date: Drilled 10/2-10/4/80 Logged 11-21-80
 State N.M. County Hidalgo of NW of NW of SE of Sec 7 T 25S R 19W
 Instrument Fluid Dynamics 167 Operator Shenker Elevation 4200 (ft/m)
 Comments Just east of dilce, south of powerline.

JUSTIFY

Date Logged

Proj No	Well No	DA	MO	YR	*
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	6 7 2	2 2 7	2 1	1 1	8 0 C M

*19-Write F if Fahrenheit, 20-Write F if Feet

Card A

Site Description	Operator	Editor	DA	MO	YR
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68	0 2	1 0	8 0

(Approx. location, water well?, oil test?, etc.)

Map Location **

Scale Unit	Map Size	N Lat	W Long
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	7.5	32.07.5	108.52.5

Measure from SW corner of map; except AMS sheets measure from bottom center degree mark (W,-)(E,+)

Use decimals

Northing	Easting	Elev
51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80	8.90	15.554200. F

Use decimals

Write M if meters

Segment 1 = Depths

Start	End	Conductivity K	ΔK
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	54.	60.	8.38

Best cond. (-K)
Downward extrapolations (-ΔK)

Segment 2

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80	76.	84.	
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Segment 3

88.	95.		
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Segment 4

120.	152.	7.31	.5
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Segment 5

164.	188.		
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Segment 6

192.	206.		
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Segment 7

208.	218.		
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Segment 8

220.	228.		
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Segment 9

232.	250.	-7.25	-.5
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Segment 10

999			
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After final segment
Start = .999

Date Logged: 11-21-80ΔT Well No. 672-227

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
2.0	7.28	31.09				Air	
			6.57	3285			
4.0	5.70	37.66				Air	
			7.95	3975			
6.0	4.30	45.61				Air	
			6.03	3015			
8.0	3.50	51.64				Air	
			5.71	2855			
10.0	2.90	57.35				Air	
			5.29	2645			
12.0	2.45	62.64				Air	
			4.97	2485			
14.0	2.10	67.61				Air	
			6.07	3035			
16.0	1.75	73.68				Air	
			9.54	4770			
18.0	1.33	83.22				Air	
			6.00	3000			
20.0	1.127	89.22				H ₂ O	
			.88	880			
21.0	1.100	90.11				↓	
			1.03	1030			
22	1.070	91.14					
			1.20	1200			
23	1.036	92.34					
			.92	920			
24	1.011	93.26					
			1.13	1130			
25	.981	94.39					
			1.02	1020			
26	.955	95.41					
			1.18	1180			
27	.926	96.59					
			1.09	1090			
28	.900	97.68					
			1.14	1140			
29	.874	98.82					
			1.13	1130			
30	.849	99.95					
			1.07	1070			
31	.826	101.02					
			1.11	1110			
32	.803	102.13					
			1.20	1200			
33	.779	103.33					
			.93	930			
34	.761	104.26					
			1.06	1060			
35	.741	105.32					
			1.04	1040			
36	.722	106.36					
			.90	900			
37	.706	107.26					

K=Conductivity

.99

990

page 2 of 8

Date Logged: 11-21-80

ΔT Well No. 672-227

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
38	.689	108.25					
39	.675	109.09	.84	840			
40	.665	109.70	.61	610			
41	.653	110.45	.75	750			
42	.643	111.08	.63	630			
43	.634	111.66	.54	540			
44	.627	112.12	.46	460			
45	.617	112.79	.57	570			
46	.610	113.26	.47	470			
47	.603	113.75	.49	490			
48	.596	114.23	.52	520			
49	.591	114.59	.36	360			
50	.585	115.02	.57	570			
51	.579	115.45	.43	430			
52	.573	115.89	.44	440			
53	.569	116.18	.29	290			
54	.565	116.48	.30	300			
55	.563	116.63	.15	150			
56	.560	116.86	.23	230			
57	.558	117.01	.15	150			
58	.556	117.16	.15	150			
59	.554	117.32	.16	160			
60	.552	117.47	.15	150			
61	.551	117.55	.08	80			
62	.550	117.63	.08	80			
63	.550	117.63	.00	0			
64	.550	117.63	.00	0			

K=Conductivity

.00 0

Date Logged: 11-21-80 ΔT Well No. 672-227

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
65	.550	117.63	-.08	-80			
66	.551	117.55	.00	0			
67	.551	117.55	-.08	-80			
68	.552	117.47	-.08	-80			
69	.553	117.39	-.15	-150			
70	.555	117.24	.00	00			
71	.555	117.24	-.15	-150			
72	.557	117.09	.00	0			
73	.557	117.09	-.15	-150			
74	.559	116.94	-.08	-80			
75	.560	116.86	-.08	-80			
76	.561	116.78	-.07	-70			
77	.562	116.71	-.15	-150			
78	.564	116.56	-.15	-150			
79	.566	116.41	-.08	-80			
80	.567	116.33	-.15	-150			
81	.569	116.18	-.14	-140			
82	.571	116.04	-.08	-80			
83	.572	115.96	-.15	-150			
84	.574	115.81	-.14	-140			
85	.576	115.67	-.15	-150			
86	.578	115.52	-.07	-70			
87	.579	115.45	-.15	-150			
88	.581	115.30	-.07	-70			
89	.582	115.23	-.07	-70			
90	.583	115.16	-.07	-70			
91	.584	115.09	-.07	-70			

K=Conductivity

Date Logged: 11-21-80 ΔT Well No. 672-227

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
92	.585	115.02					
			-.08	-80			
93	.586	114.94					
			-.07	-70			
94	.587	114.87					
			-.07	-70			
95	.588	114.80					
			.00	0			
96	.588	114.80					
			.00	0			
97	.588	114.80					
			.00	0			
98	.588	114.80					
			.07	70			
99	.587	114.87					
			.00	0			
100	.587	114.87					
			.15	75			
101	.586	114.94					
102	.585	115.02					
			.07	35			
103	.584	115.09					
104	.584	115.09					
			.07	35			
105	.583	115.16					
106	.583↓	115.16					
			.07	35			
107	.582	115.23					
108	.582↓	115.23					
			.16	80			
109	.581	115.30					
110	.580	115.38					
			.14	70			
111	.580↓	115.38					
112	.578	115.52					
			.37	185			
113	.576	115.67					
114	.574	115.89					
			.29	145			
116	.569	116.18					
			.15	75			
118	.567	116.33					
			.15	75			
120	.565	116.48					
			.15	75			
122	.563	116.63					
			.23	115			
124	.560	116.86					
			.15	75			
126	.558	117.01					
			.23	115			
128	.555	117.24					
			.15	75			
130	.553	117.39					
			.24	120			
132	.550	117.63					
			.15	60			
134	.548	117.78					
			.23	115			
136	.545	118.01					
			.16	80			

K=Conductivity

Date Logged: 11-21-80ΔT Well No. 672-227

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
138	.543	118.17					
140	.541	118.33	.16	80			
142	.539	118.49	.16	80			
144	.536	118.73	.24	120			
146	.534	118.89	.16	80			
148	.532	119.05	.16	80			
150	.530	119.21	.16	80			
152	.527	119.45	.24	120			
154	.524	119.70	.25	125			
156	.521	119.95	.25	125			
158	.518	120.19	.24	120			
160	.516	120.36	.17	85			
162	.513	120.61	.25	125			
164	.511	120.78	.17	85			
166	.508	121.04	.26	130			
168	.506	121.21	.17	85			
170	.503	121.46	.25	125			
172	.500	121.72	.26	130			
174	.498	121.90	.18	90			
176	.495	122.16	.26	130			
178	.492	122.43	.27	135			
180	.490	122.60	.17	85			
182	.487	122.87	.27	135			
184	.484	123.14	.27	135			
186	.482	123.32	.18	90			
188	.480	123.51	.19	95			
190	.478	123.69	.18	90			
			.28	140			

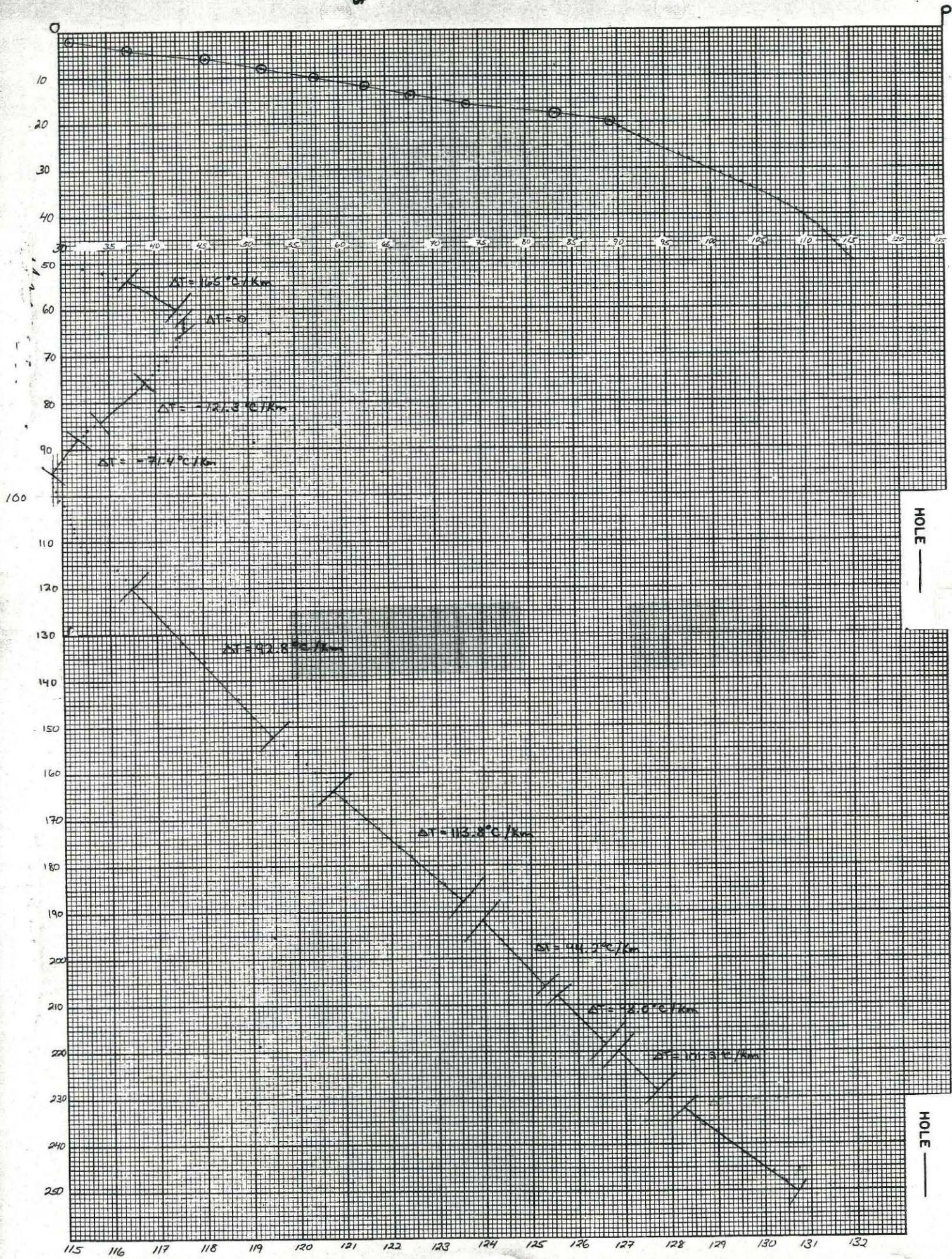
K=Conductivity

Date Logged: 11-21-80ΔT Well No. 672-227

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
192	.475	123.97					
194	.473	124.15	.18	90			
196	.471	124.34	.19	95			
198	.469	124.52	.18	90			
200	.467	124.71	.19	95			
202	.465	124.90	.19	95			
204	.463	125.09	.19	95			
206	.461	125.28	.19	95			
208	.458	125.57	.29	145			
210	.456	125.76	.20	100			
212	.454	125.96	.20	100			
214	.452	126.16	.20	100			
216	.450	126.35	.29	145			
218	.448	126.55	.20	100			
220	.445	126.85	.30	150			
222	.443	127.05	.20	100			
224	.441	127.25	.20	100			
226	.439	127.46	.21	105			
228	.437	127.66	.20	100			
230	.434	127.97	.31	155			
232	.431	128.28	.31	155			
234	.429	128.49	.21	105			
236	.427	128.70	.21	105			
238	.424	129.02	.32	160			
240	.422	129.23	.21	105			
242	.419	129.55	.22	110			
244	.416	129.87	.32	160			
			.33	165			

K=Conductivity

TEMPERATURE



HOLE —

HOLE —

Project: AnimasHole: 672-227Elevation: 4193 Ft (1277m)Date Drilled: 10/2/80-10/4/80Location: T25S, R19W, Sec. 7 NW/NW/SEMethod: MudGeologist: Bill HuntsmanGamma: Background

Depth (m)	Description
0-6	Yellowish brown clay; with moderate amounts of sub-rounded sand to subangular pebbles. Pebbles are a variety of welded tuffs. Minor caliche and magnetite with surface oxidation and CaCO_3 .
6-30	Volcanic alluvium; consisting of welded tuffs and ash flows, rhyolites and minor andesite. The small, sub-rounded to angular fragments show primary oxidation and lack any CaCO_3 . At 15 meters traces of weak secondary oxidation show up and goethite appears at 27 meters.
30-35	Grayish orange pink ash flow; with minor small quartz fragments. Appears to be primary oxidized and probably acts as a water barrier.
36-43	Welded ash flow tuffs; with inclusions of rounded quartz grains. Trace weak 2 ox and fragment size increases with depth.
43-55	Light brown ash flow tuff; with volcanic rock fragments. Slow drilling due to Silica cement forming hard stringers and may act as a water restricter. Chalcedony was found in fractures in the rhyolite, but was predepositional. 50% of sample brown, soft, sticky clays.
55-70	Medium brown, welded ash flow tuff; fine grain containing quartz fragments. Minor kaolinite and clays.
70-75	Very light green gray clays. Increase rate of drill penetration through this unit and the temperature of the drill mud was 40°C .
75-79	Light pink ash flow with alternating hard and soft zones.
79-82	Medium pink welded ash flow; very hard and slow drilling. Minor quartz fragment and kaolinite.
82-88	Ash flow tuffs; soft and hard with moderate amounts of chalcedony (primary). Mud temp. 49°C .
88-106	Pink and light red welded ash flow tuffs. Minor fine grained sub-rounded sands with CaCO_3 cement also from this depth. Sand composition is of well sorted quartz with minor kaolinite.

Project: Animas

Hole: 672-227 - Continued

Elevation: _____

Date Drilled: _____

Location: _____

Method: _____

Geologist: _____

Gamma: _____

Depth (m) Description

106-118 Light greenish gray clays (dry); unit is soft and very sticky. Sample releases methane gas when combined with HCl and is moderately reduced.

118-152 Reddish brown and gray welded ash flow tuffs with traces of weak secondary oxidation. Slightly hard unit but good drilling. Minor quartz fragment, chalcedony, trace magnetite and kaolinite. Mud temp. 61°C.

152-225 Welded ash flow tuffs; white, red, gray, black and brown in color. Minor pieces of glass and traces of kaolinite; pyrite (primary) magnetite and hematite. Primary chalcedony and quartz crystal. Mud temp 67°C.

225-250 Very hard reddish brown welded ash flow tuff. Slower penetration rate to T.D. Mud temp. 75°C.

Thin sections 672 227 - 450
 672 227 - 690
 672 227 - 820

Conductivity Samples
 K672 227-2 60-70m
 K672 227-7 130-140m
 K672 227-9 230-250m