

Property-Project ALUM Depth Logged 217m
 Map SILVER PK Scale 15" Date: Drilled 9-8-83 Logged 12-7-83
 State NV County ESM of SW of SW of Sec 31 T 1N R 38 1/2 E
 Instrument SPA-29 Operator JED Elevation 5020 (ft)
 Comments FINAL LOG

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					
1186	5107	12	83	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	69 70 71 72 73 74 75	76 77 78 79 80	81 82 83	84 85 86 87 88	89 90 91 92 93 94 95 96 97 98 99 100																																																											
																																																		JED					JED					08			09			83		

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

Card B

Scale Unit	Map Size	N Lat		W Long	
IN CM	(75, 15, 60)	Degree	Min	Degree	Min
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					
CM	15.0	37.45	0	117.45	0

Use decimals

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

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	81 82 83 84 85 86 87 88 89 90																											
23.90										15.225020										F									

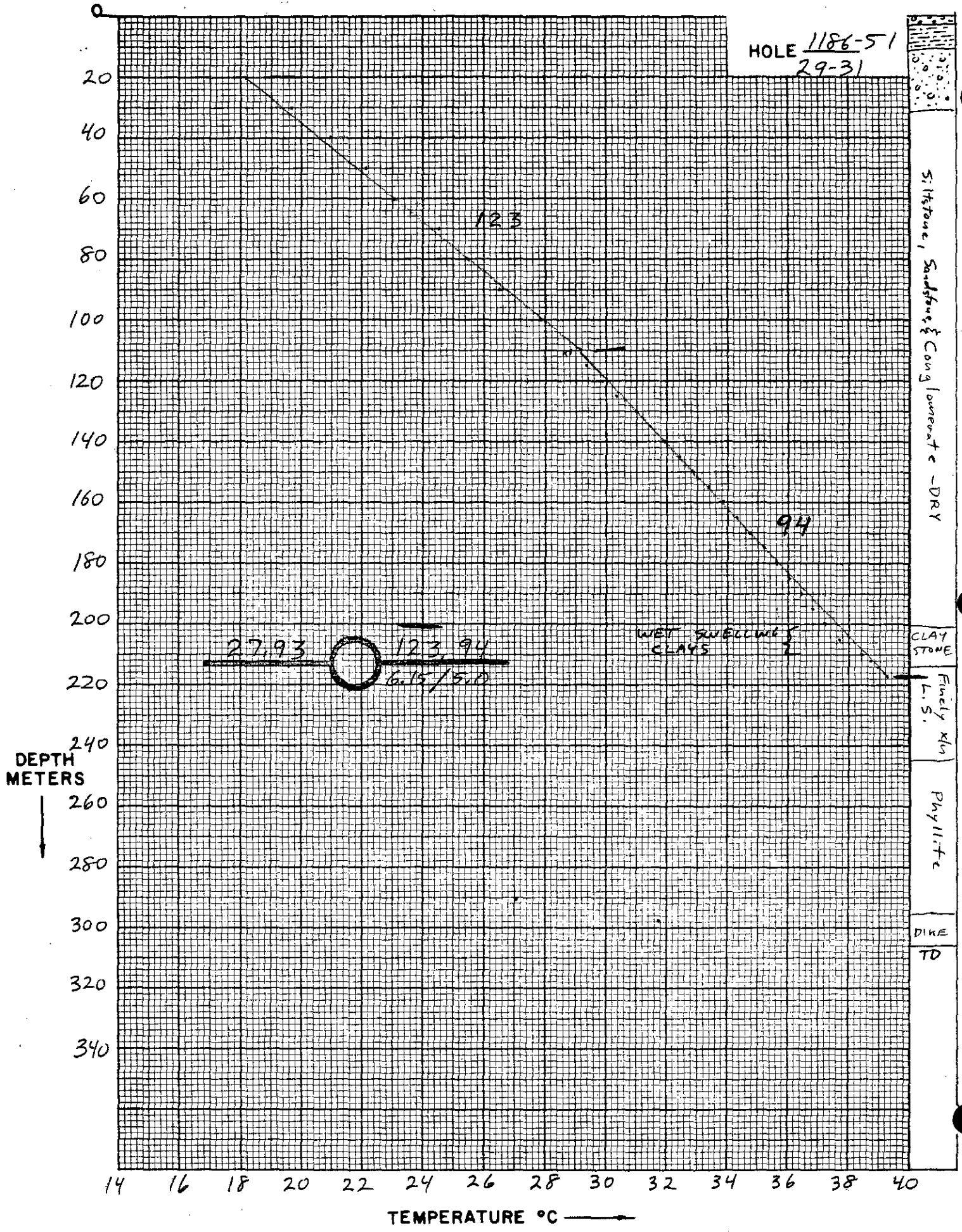
Use decimals

Write M if meters

Segment	Start	End	Conductivity K	ΔK	Best cond. (-K)
Segment 1 = Depths	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		
	20.0	110.0	-5.0	-0.5	
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		
Segment 3	Start →		110.0		217.0
Segment 4	Start →				
Segment 5	Start →				
Segment 6	Start →				
Segment 7	Start →				
Segment 8	Start →				
Segment 9	Start →				
Segment 10	Start →				

After final segment Start = .999

HOLE 1186-51
29-31



Date Logged: 12-7-83

ΔT Well No. 1186-51

29-31

ALUM #3

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
10						AK	C .0896 C —
< 20	111.41	18.14					
30	105.43	19.71	1.57	157			
40	100.90	20.95	1.24	124			
50	96.63	22.16	1.21	121			
60	93.56	23.05	0.89	89			
70	88.69	24.53	1.48	148			
80	85.63	25.50	0.97	97			
90	82.47	26.52	1.02	102			
100	78.32	27.93	1.41	141			
< 110	74.80	29.18	1.25	125		∇	
115	74.50	29.29	0.11	11		H ₂ O	
120	72.96	29.85	0.56	112			
125	71.61	30.36	0.51	102			
130	70.06	30.95	0.59	118			
135	68.71	31.47	0.52	104			
140	67.56	31.93	0.46	92			
145	66.31	32.43	0.50	100			
150	65.12	32.91	0.48	96			
155	64.04	33.37	0.46	92			
160	62.87	33.86	0.49	98		∇	
165	61.79	34.33	0.47	94			
170	60.80	34.76	0.43	86			
175	59.76	35.22	0.46	92			
180	58.79	35.66	0.44	88			
185	57.91	36.06	0.40	80			
190	57.09	36.45	0.39	78			

K=Conductivity

Date Logged: 12-7-83

ΔT Well No. 1186-51

29-31

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H ₂ O Air	Lithology, etc.
195	56.30	36.82	0.37	74			
200	55.49	37.21	0.39	78			
205	54.46	37.71	0.50	100			
210	53.05	38.41	0.70	140			
212	52.42	38.73	0.32	160			
214	51.97	38.96	0.23	115			
216	51.57	39.17	0.21	105			
217	51.42	39.25	0.08	80			α .0909

K=Conductivity

LITHOLOGIC LOG

Project: Alum

Hole: 29-31 (33026-51)

Elevation: 5,020'

Date Drilled: _____

Location: SWSW Sec 31 T1N R39E

Method: rotary/air

Geologist: Pilkington/Deymoanz

Gamma: _____

Depth (m)	Description
0 - 3	<u>Alluvium</u> - Recent gravels in dry wash.
3 - 12	<u>Older Alluvium (Qtz)</u> - Pleistocene or older alluvium, boulders and gravels in a matrix of volcanoclastic debris. The rocks appear to have been involved one period of deformation with the underlying Esmeralda Formation. Boulders and clasts of limestone, quartzite, quartz and siliceous siltstone in a sandy matrix.
12 -	<u>Lower Esmeralda Fm (Unit F)</u>
12- 15	Weathered Lower Esmeralda Formation, reddish-brown, oxidized, iron-stained weathered tuffaceous siltstone. Considerable clay development.
15- 37	Gray-green to brown-green tuffaceous siltstone and sandstones.
37-104	Gray-green, volcanoclastic sandstones and conglomerates. The conglomerate contains clasts of gray limestone, black shale or argillite, some gray quartzite in a volcanoclastic matrix. The matrix contains crystals of feldspar and quartz surrounded by volcanic ash. The ashy matrix has been partially altered to montmorillonite.
104-107	Brown to reddish-brown, oxidized, iron stained tuffaceous siltstone.
107-113	Gray-green to blue-gray, fine-grained tuffaceous siltstones and sandstones.
113-119	Brown, fine-grained, oxidized, iron stained tuffaceous siltstone.

LITHOLOGIC LOG

Project: Alum

Hole: 29-31

Elevation: _____

Date Drilled: _____

Location: _____

Method: _____

Geologist: _____

Gamma: _____

Depth (m) Description

119-201 Gray-green to blue-gray volcanoclastic sandstones and conglomerates. Clastic fragments of gray limestone, black siltstone, gray-green siltstone and gray quartzite in a matrix of feldspar and quartz crystals surrounded by volcanic ash.

Quartz and calcite veins in siltstone common. 10-20% green, mod. hard siltstone, common reddish brown iron staining. 10% tuffaceous material, altered to clays. Much of clay material lost in sample collection.

201-216 Claystone - Med. brown, bedded, soft, dry, commonly sandy. 1-3mm angular dark gray and green siltstone increasing with depth from a trace at 660 to 20% at 710'. This section got wet and swelled up overnight, had to ream section several times. Produced no water.

216-296 Paleozoic

216-245 Limestone - Finely crystalline to aphanitic gray, bedded. Thin coatings of pyrite common along fractures, thin calcite veins also common. Calcite gives rock a mottled appearance. Med. light gray to pale green predominates below 740'. Phyllitic sheen common along crude bedding planes. Began injecting water and foam at 785 feet. Below this point much of sample contaminated with softer uphole material. Most material appears calcareous, but primarily phyllitic below 810'.

245-256 Phyllite - (Wyman or upper Campito Fm.) - Pale green to olive green, most of cuttings are irregular flakes. Abundant mica, and quartz in irregular blebs and thin veins along cleavage planes. Overall texture green mottled.

LITHOLOGIC LOG

Project: Ajum

Hole: 29-31

Elevation: _____

Date Drilled: _____

Location: _____

Method: _____

Geologist: _____

Gamma: _____

Depth (m)	Description
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- | | |
|---------|--|
| 256-262 | <u>Phyllitic Siltstone</u> - Med. gray to green as above. Siltstone with abundant phyllitic surfaces and trace of pyrite. |
| 262-274 | <u>Phyllite</u> - As in 805-840' except minor pistacio green siltstone. |
| 274-296 | <u>Phyllitic Siltstone</u> - As in 840-860' |
| 296-306 | <u>Dike (?)</u> - Mottled dark gray, friable. Cuttings very fine, appears to be altered Feldspars in dark gray devitrified matrix. Drillers noted definite "softening" in formation. |

DAILY DRILLING REPORT

Project - Hole: Alum 83-30 Date: August 29-31

Location: SE of NE Sec. 30 T /N R 38½ E Spud Date: August 29

County, State: Esmeralda, NV Day #: _____

Prog. Depth: 1000' Contractor: Stevens-Harris

Geologist: Pilkington Rig.: Midway 1500

Drilled 0 to 1002' Mud/Air/ Air

Footage Cut 1002 Temp: In _____ Out _____

Hole Size 6 1/4" - 5 5/8" Wt _____

Dev. Survey _____ @ _____ Vis _____

Casing 7" 0-20' Ph _____

Bits, stabs, etc. & ser. # _____

Lithology Esmeralda Fm. - Siltstones, conglomerates, possibly tuffs.

Additional Report Move on site 8-29. Set and cement 20' of 7" casing, drill 6 1/4" hole with air to 390', POH. On 8-30 RIH with rock bit and drill 5 5/8" hole from 390-1002', reach TD at 3:30 p.m. Blow well 15-20 minutes and collect water sample (about 5 GPM and 56°C beginning at 390'). Install tubing. On 8-31 fill tubing with water, cement upper 10' of annulus and move to site 29-31.

Well History

<u>Interval</u>	<u>Hole Size</u>	<u>Casing</u>	<u>Expenditures</u>
<u>0-20</u>	<u>8 3/4"</u>	<u>7"</u>	<u>Total to date</u> _____
<u>20-390</u>	<u>6 1/4"</u>	<u>1 1/4" 0-1002</u>	<u>Projected</u> _____
<u>390-1002</u>	_____	_____	<u>Cost/Ft</u> _____
_____	_____	_____	<u>Budgeted</u> _____
_____	_____	_____	

DAILY DRILLING REPORT

Project - Hole: Alum 29-31 Date: August 31 - September
 Location: SW of SW Sec. 31 T/N R 38½ E Spud Date: August 31
 County, State: Esmeralda, NV Day #: _____
 Prog. Depth: 1000' Contractor: Stevens-Harris
 Geologist: Pilkington Rig: Midway 1500

Drilled 0 to 600 Mud/Air/ Air
 Footage Cut 600 Temp: In _____ Out _____
 Hole Size 6 1/4" Wt _____
 Dev. Survey _____ @ _____ Vis _____
 Casing 7" 0-20' Ph _____
 Bits, stabs, etc. & ser. # _____

Lithology Esmeralda Fm. Siltstones, conglomerates.

Additional Report 8-31, move on location at 10:00 a.m. Drill 0-600 feet. Clutch on sandline down. Repair clutch on 9-1, RIH, clutch or brake on drawworks went out. POH and shut down. Drillers taking labor day time off early, will return 9-6 with another drill rig and continue drilling.

Well History

Interval	Hole Size	Casing
<u>0-20</u>	<u>8 3/4"</u>	<u>7"</u>
<u>20-600</u>	<u>6 1/4"</u>	<u>--</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Expenditures

Total to date _____
 Projected _____
 Cost/Ft _____
 Budgeted _____

DAILY DRILLING REPORT

Project - Hole: 29-31 Date: September 6, 7, 8
 Location: SW of SW Sec. 31 T/N R 38½E Spud Date: August 31
 County, State: Esmeralda, NV Day #: 2, 3, & 4
 Prog. Depth: 1000' Contractor: Stevens-Harris
 Geologist: John Deymonaz Rig.: Failing 1500

Drilled 600 to 1005' Mud/Air/ Air - slash foam infection
 Footage Cut 395' Temp: In _____ Out _____
 Hole Size 6 1/8" Wt _____
 Dev. Survey _____ @ _____ Vis _____
 Casing 20' of 7" casing Ph _____

Bits, stabs, etc. & ser. # _____
 Esmeralda formation 600-700; limestone 710-805; phyllites 805-970;
 Lithology dike? 970-1005.

Additional Report 9/6 - Crew returned at 1:30 p.m., resumed drilling from 600 to 780'.

9/7 - Having trouble re-entering hole, wet caving zone from 720-780' - complete hole from 780-1005'.

9/8 - RIH, cleaned hole set 1 1/4" tubing to 940'.
Tubing dropped in hole 75' below surface after bridge in hole gave way. Fished out top 29 joints of tubing and set new string of tubing to 735' and cement upper 10' of annulus.

Well History

Interval	Hole Size	Casing	Expenditures
<u>0-20</u>	<u>8-3/4"</u>	<u>7"</u>	Total to date _____
<u>20-600</u>	<u>6-1/4"</u>	<u>—</u>	Projected _____
<u>600-1005</u>	<u>6-1/8"</u>	<u>—</u>	Cost/Ft _____
_____	_____	_____	Budgeted _____
_____	_____	_____	