U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
U.S. DEPARTMENT OF ENERGY

GEOPHYSICAL INVESTIGATIONS
MAP GP-1001 (SHEET 1 OF 10)
Pamphlet accompanies map

PLATE 1
WELL LOG USW G-1

Well: G-1
Yucca Mountain Project
Nye Co., Nevada

Location:
Nevada Coordinate System
N-770,500
E-561,000

Log measured from
ground level, 4349 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
17.5	280				
		27	Bentonite mud	03-16-80	
3.875	997				
		280	Polymer mud	04-01-80	
		280		04-02-80	795
6.25	1005				
		280	Reamed,air foam,polymer mud	04-19-80	700
		280		04-20-80	
		280		04-21-80	268 - 283
		280		04-22-80	
3.875	6000				
		1016	Polymer mud	08-09-80	1092
		1490		08-11-80	
		1016		08-12-80	
		1016		08-13-80	
		1016		09-14-80	

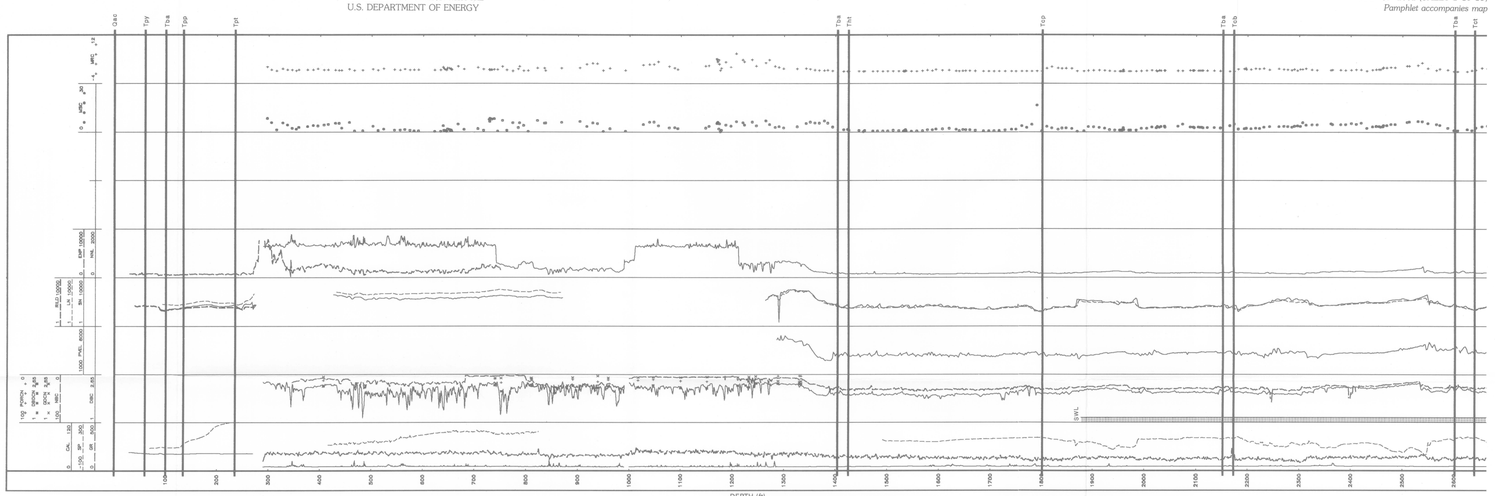
BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	min.	Drift direction deg.	min.	True vertical depth (feet)	Rectangular coordinates (feet)	
1000	1	45	S 7	0 E	999.94	9.16 S	0.17 E
2000	4	0	S 7	0 W	1997.51	74.59 S	21.46 W
3000	7	0	S 34	0 W	2993.78	145.90 S	67.24 W
4000	7	15	S 41	0 W	3986.69	222.51 S	157.99 W
5000	10	15	S 41	0 W	4974.45	336.25 S	263.35 W
5950	14	30	S 40	0 W	5904.19	475.34 S	398.72 W

BW- Birdwell, DA- Dresser Atlas, GO- Gearhart Owen, LLNL- Lawrence Livermore National Laboratory, SW- Schlumberger Well Services
USGS- U.S. Geological Survey, na- not applicable

T	Trace	Unit	Name or description	Log	Date	Depth (ft)
1	CAL	cm	Hole diameter, caliper	BW	03-16-80	30 - 270
1	CAL			BW	04-01-80	290 - 990
1	CAL			DA	08-09-80	1016 -6008
1	SP	mv	Spontaneous potential	BW	03-16-80	70 - 273
1	SP			BW	04-22-80	406 - 823
1	SP			BW	08-12-80	1490 -5990
1	GR	API	Gamma ray	BW	04-02-80	290 - 990
1	GR			BW	08-13-80	1016 -5986
2	DBC	g/cc	Density, borehole compensated	BW	04-19-80	290 - 990
2	DBC			DA	09-14-80	1016 -5878
2	NBC	%	Neutron porosity, compensated	BW	04-22-80	346 - 682
2	NBC			BW	04-19-80	802 - 996
2	NBC			DA	09-14-80	1016 -5878
2	PORCN	%	Porosity, core	USGS	na	407 -1323
2	GDCN	g/cc	Grain density, core	USGS	na	407 -1333
2	DBDCN	g/cc	Dry bulk density, core	USGS	na	407 -1323
2	SWL	na	Static water level	na	na	1876
3	PVEL	m/s	Comp. velocity, waveform	BW	08-12-80	1286 -1700
3	PVEL			BW	08-11-80	1701 -5992
4	SN	ohm-m	Resistivity, short normal	BW	03-16-80	88 - 273
4	SN			BW	04-22-80	426 - 868
4	SN			BW	08-12-80	1264 -1510
4	SN			BW	08-12-80	1511 -5992
4	LN	ohm-m	Resistivity, long normal	BW	03-16-82	94 - 273
4	LN			BW	04-22-80	320 - 868
4	LN			BW	08-12-80	1270 -1562
4	LN			BW	08-12-80	1463 -5992
4	RILD	ohm-m	Resistivity, deep induction	BW	03-16-80	35 - 278
5	NNL	API	Thermal neutron	BW	04-02-80	290 - 993
5	NNL			BW	08-13-80	1016 -5990
5	ENP	API	Epithermal neutron	BW	03-16-80	30 - 276
5	ENP			BW	04-22-80	292 - 750
8	MSC	mSI	Magnetic susceptibility, core	USGS	na	297 -5999
9	MRC	amp/m	Remanent magnetization	USGS	na	297 -5999

NOTE: Geologic unit symbols shown on this plate at the top of each formation are explained in table 4.



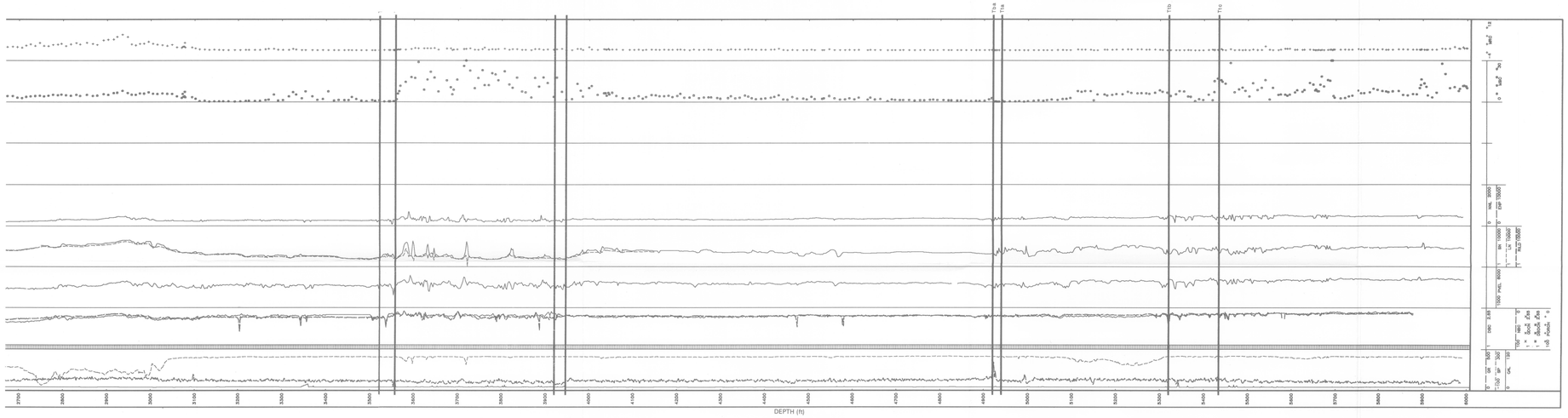


PLATE 2
WELL LOG USW G-2

Well: G-2
Yucca Mountain Project
Nye Co., Nevada

Location:
Nevada Coordinate System
N-778,824'
E-560,504'

Log measured from
ground level, 5098 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
6.25	2793				
		289	Air foam	05-19-81	1952
		289		05-20-81	1752, 1744
		289		05-22-81	1522
		289		05-23-81	
6.25	3108				
6.125	4661				
5.875	4712				
		289	Air foam	08-24-81	1740
		289		08-26-81	
		289		08-26-81	
6.25	4712				
		795	Cleaned hole	09-01-81	
8.75	2670				
6.25	3108				
6.125	4720				
2.98	6006				
		(4720)	Reamed, air foam, polymer	10-12-81	
		(4720)	Note: Drill rod depths are	10-13-81	
		(5248)	listed in parentheses	10-14-81	
		(5248)	Drill rod was used to	10-15-81	
		(5248)	protect the borehole	10-16-81	
		(4150)	instead of casing		
		(4150)		10-17-81	
		(3200)		10-18-81	
		(3790)			
		(3790)		10-19-81	
		(4160)			
		(3790)		10-20-81	
		(3200)			
		(1545)			
		(1545)		10-21-81	

BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	min.	Drift direction deg.	min.	True vertical depth (feet)	Rectangular coordinates (feet)	
1000	1	0	S 21	0 E	999.77	6.58 S	16.36 E
2000	2	45	S 60	0 W	1999.04	27.26 S	6.79 W
3000	3	0	S 73	0 W	2997.75	52.84 S	50.42 W
4000	3	0	N 90	0 W	3996.14	57.62 S	106.65 W
5000	4	30	N 85	0 W	4993.91	52.81 S	172.00 W
5975	4	45	N 82	0 W	5966.02	50.01 S	246.81 W

T	Trace	Unit	Name or description	Log	Date	Depth (ft)
1	CAL	cm	Hole diameter, caliper	BW	08-34-81	290 -4862
1	CAL			BW	10-12-81	4720 -5025
1	CAL			BW	10-14-81	5248 -5988
1	SP	mv	Spontaneous potential	BW	05-23-81	1542 -2782
1	SP			BW	10-20-81	2500 -3790
1	SP			BW	10-19-81	3791 -4086
1	SP			BW	10-16-81	4154 -4618
1	SP			BW	10-14-81	5248 -5992
1	TC	API	Total count, spectral gamma	DA	10-27-81	2 -4112
1	GR	API	Gamma ray	BW	10-20-81	2500 -4150
1	GR			BW	10-18-81	3391 -3798
1	GR			BW	10-19-81	3790 -4106
1	GR			BW	10-17-81	4150 -4614
1	GR			BW	10-13-81	4720 -4872
1	GR			BW	10-15-81	5248 -5982
2	DBC	g/cc	Density, borehole compensated	BW	05-19-81	288 -2790
2	DBC			DA	10-20-81	2492 -3201
2	DBC			DA	10-20-81	3202 -4098
2	DBC			DA	10-19-81	4162 -4692
2	NBC	%	Neutron porosity, compensated	DA	05-22-81	1506 -2792
2	NBC			DA	08-26-81	2793 -4120
2	PORCN	%	Porosity, core	USGS	na	774 -1664
2	DBDCN	g/cc	Dry bulk density, core	USGS	na	774 -1664
2	GDCN	g/cc	Grain density, core	USGS	na	774 -1664
2	SWL	na	Static water level	na	na	1722
3	PVEL	m/s	Comp. velocity, waveform	BW	05-23-81	1600 -2780
3	PVEL			BW	10-20-81	2481 -3406
3	PVEL			BW	10-18-81	3407 -3722
3	PVEL			BW	10-18-81	3790 -4108
3	PVEL			BW	10-17-81	4152 -4618
3	PVEL			BW	10-13-81	4724 -4870
3	PVEL			BW	10-14-81	5244 -5990
3	SVEL	m/s	Shear velocity, waveform	BW	05-23-81	2006 -2480
3	SVEL			BW	10-20-81	2481 -3406
3	SVEL			BW	10-18-81	3407 -3722
3	SVEL			BW	10-18-81	3790 -4108
3	SVEL			BW	10-17-81	4152 -4618
3	SVEL			BW	10-13-81	4724 -4870
3	SVEL			BW	10-14-81	5244 -5988

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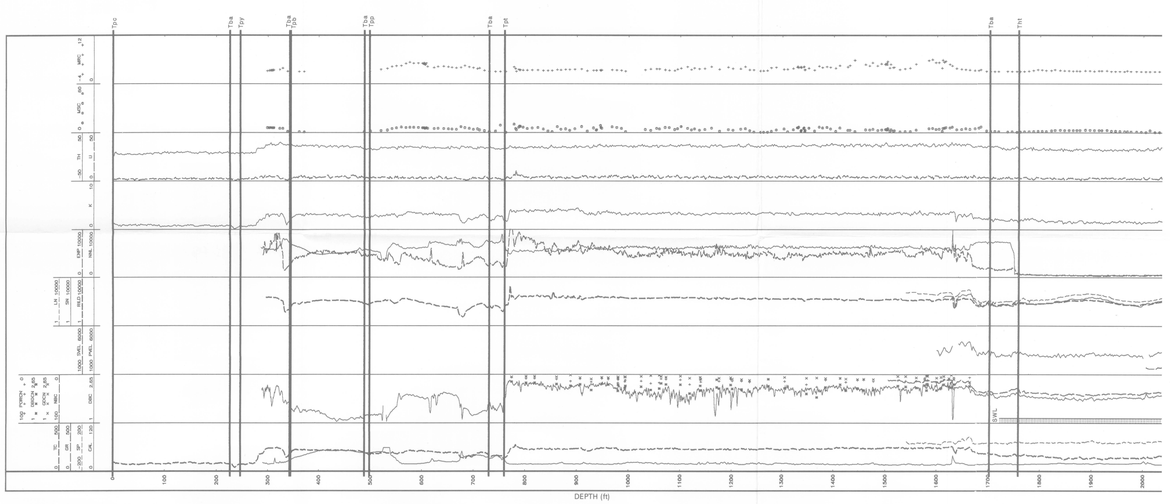
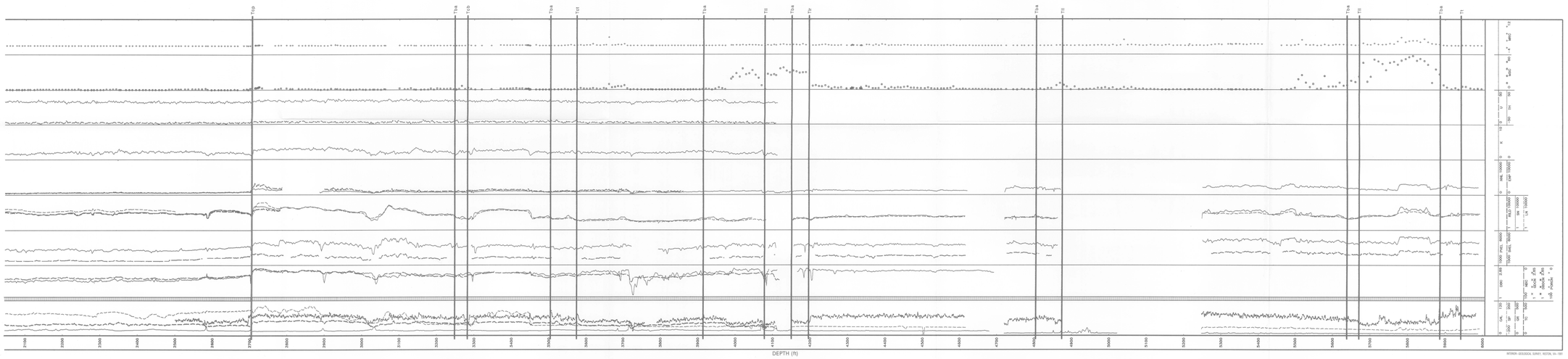
USGS- U.S. Geological Survey, na- not applicable

T	Trace	Unit	Name or description	Log	Date	Depth (ft)
4	SN	ohm-m	Resistivity, short normal	BW	05-23-81	1600 -2780
4	SN			BW	10-20-81	2500 -4049
4	SN			BW	10-19-81	4048 -4086
4	SN			BW	10-16-81	4153 -4616
4	SN			BW	10-13-81	4720 -4872
4	SN			BW	10-15-81	5248 -5992
4	LN	ohm-m	Resistivity, long normal	BW	05-23-81	1600 -2779
4	LN			BW	10-20-81	2500 -4046
4	LN			BW	10-19-81	4047 -4086
4	LN			BW	10-16-81	4153 -4616
4	LN			BW	10-13-81	4720 -4862
4	LN			BW	10-15-81	5252 -5990
4	RILD	ohm-m	Resistivity, deep induction	BW	05-23-81	296 -2780
5	ENP	API	Epithermal neutron	BW	05-20-81	290 -2788
5	ENP			BW	08-01-81	2900 -3860
5	NNL	API	Thermal neutron	BW	05-20-81	286 -2786
5	NNL			BW	10-20-81	2500 -3400
5	NNL			BW	10-18-81	3398 -3764
5	NNL			BW	10-19-81	3790 -4114
5	NNL			BW	10-18-81	4110 -4620
5	NNL			BW	10-13-81	4722 -4873
5	NNL			BW	10-15-81	5248 -5988
6	K	%	Potassium, spectral log	DA	08-27-81	2 -4112
7	U	ppm	Uranium, spectral log	DA	08-27-81	2 -4110
7	TH	ppm	Thorium, spectral log	DA	08-27-81	2 -4112
8	MSC	mSI	Magnetic susceptibility, core	USGS	na	299 -5996
9	MRC	amp/m	Remanent magnetization, core	USGS	na	299 -5996

NOTE: Geologic unit symbols shown on this plate at the top of each formation are explained in table 4.





GEOPHYSICAL LOGS AND CORE MEASUREMENTS FROM FORTY BOREHOLES AT YUCCA MOUNTAIN, NEVADA

By
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