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 4 OF 10)
Pamphlet accompanies map

PLATE 9
WELL LOG USW H-1

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

Location:
Nevada Coordinate System
N-770,254'
E-562,388'

Log measured from ground level, 4274 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
20	335				
		38	Air foam	9-13-80	none
		38		9-14-80	none
15	384				
13.25	1740				
12.25	2257				
		335	Air foam	10-13-80	1879
		335		10-14-80	1879
		335		10-23-80	
			Hole plugged back to 1707	10-26-80	
		335	Water added to well bore	10-27-80	1190 -1408
8.75	6000				
		2255	Air foam	11-23-80	1878
		2255		11-24-80	1882
		2255		11-25-80	1882 -1890
		2255		11-26-80	1878 -1890
		2255		11-28-80	1878
		2255		12-31-80	

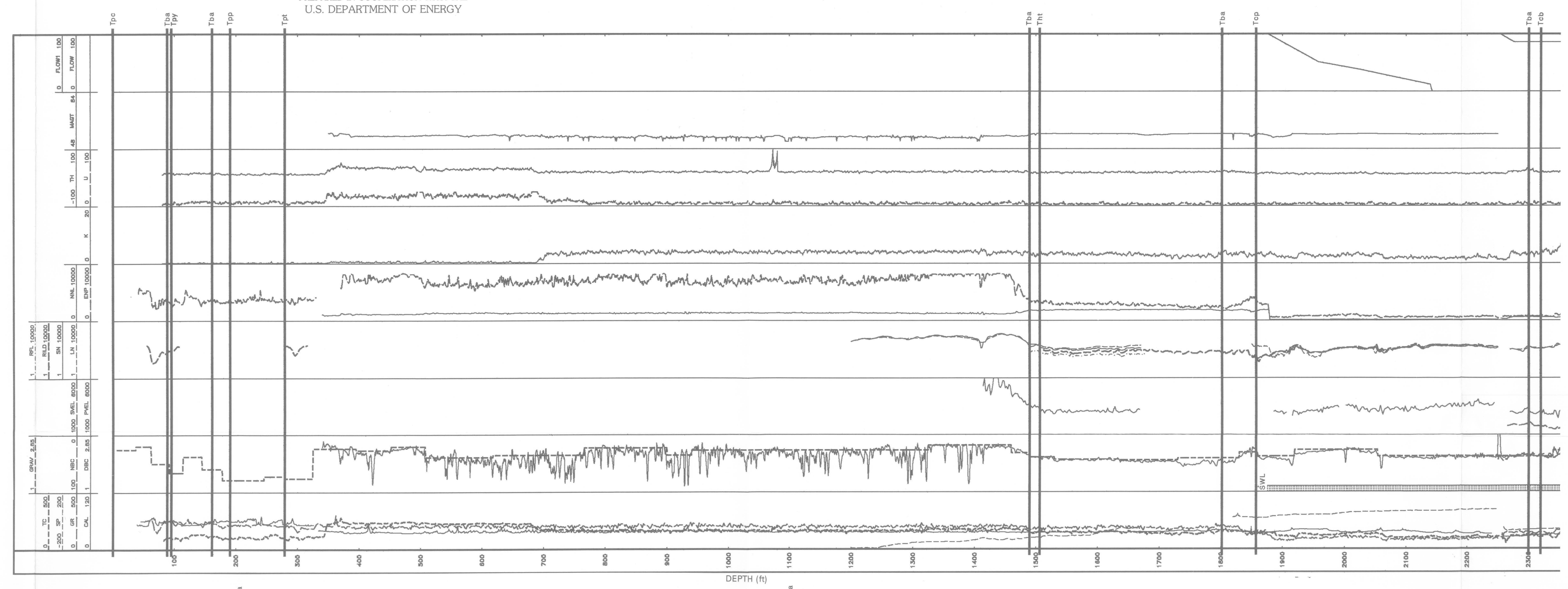
BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg. min.	True vertical depth (feet)	Rectangular coordinates (feet)
1000	1	45	S 84 0 E	999.79	3.22 N 11.33 E
2000	2	0	S 51 0 W	1999.35	16.93 S 0.89 W
3000	2	0	S 45 0 W	2998.69	41.95 S 26.73 W
4000	1	0	S 58 0 W	3998.34	63.42 S 39.96 W
5000	2	0	S 86 0 W	4997.86	58.31 S 67.50 W
5850	2	30	N 48 0 W	5847.23	35.77 S 90.04 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	9-13-80	40 - 320
1	CAL			BW	10-23-80	334 -2240
1	CAL			BW	11-24-80	2257 -6000
1	SP	mv	Spontaneous potential	BW	10-27-80	1150 -1670
1	SP			BW	10-13-80	1820 -2250
1	SP			BW	11-25-80	2260 -6000
1	GR	API	Gamma ray	BW	09-14-80	46 - 340
1	GR			BW	10-14-80	341 -2250
1	GR			BW	11-28-80	2258 -5988
1	TC	API	Total count, spectral gamma	DA	12-31-80	83 -5998
2	DBC	g/cc	Density, borehole compensated	BW	10-13-80	340 -2256
2	DBC			BW	11-25-80	2257 -6000
2	NBC	%	Neutron porosity, compensated	DA	12-31-80	2250 -6000
2	GRAV	g/cc	Density, borehole gravimeter	USGS	03-25-81	7 -5960
2	SWL	na	Static water level	na	na	1876
3	PVEL	m/s	Comp velocity, waveform	BW	10-15-80	1886 -2244
3	PVEL			BW	10-27-80	1414 -1668
3	PVEL			BW	11-24-80	2270 -5996
3	SVEL	m/s	Shear velocity, waveform	BW	11-24-80	2266 -5974
4	SN	ohm-m	Resistivity, short normal	BW	10-27-80	1200 -1670
4	SN			BW	10-13-80	1850 -2250
4	SN			BW	11-25-80	2270 -6000
4	LN	ohm-m	Resistivity, long normal	BW	10-27-80	1200 -1670
4	LN			BW	10-13-80	1850 -2250
4	LN			BW	11-25-80	2270 -6000
4	RFL	ohm-m	Resistivity, focused	DA	10-27-80	1490 -1676
4	RILD	ohm-m	Resistivity, deep induction	BW	9-13-80	56 - 316
4	RILD			BW	10-14-80	1512 -2242
5	NNL	cps	Thermal neutron	BW	10-14-80	340 -2250
5	NNL			BW	11-26-80	2255 -6000
5	ENP	API	Epithermal neutron	BW	9-13-80	42 - 330
5	ENP			BW	10-13-80	370 -2250
5	ENP			BW	11-28-80	2258 -5998
6	K	%	Potassium, spectral log	DA	12-31-80	80 -5995
7	U	ppm	Uranium, spectral log	DA	12-31-80	81 -5995
7	TH	ppm	Thorium, spectral log	DA	12-31-80	81 -5998
8	MAGT	ut	Total magnetic field, proton	LLNL	10-14-80	350 -2250
9	FLOW1	%	Radioactive tracer flow log	GO	10-17-80	1876 -2257
9	FLOW			GO	12-03-80	2253 -5999

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



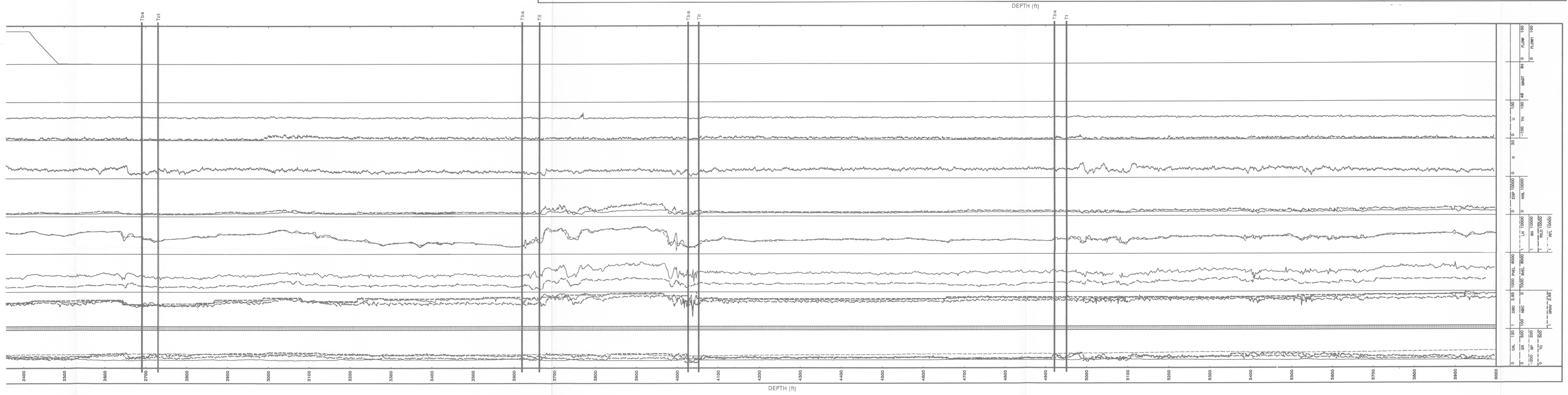


PLATE 10
WELL LOG USW H-3

Well: H-3
Yucca Mountain Project
Nye Co., Nevada

Location:
Nevada Coordinate System
N-756,542'
E-558,452'

Log measured from ground level, 4866 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
26.0	130				
		29	Air and water	02-02-82	124
14.75	2650				
		126	Air, soap, water	02-17-82	2600
		126		02-18-82	2563
		126		02-19-82	2550
8.75	4000				
		2600	Air, soap	03-01-82	2556
		2600		03-02-82	
		2600		03-03-82	2471

BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg. min.	True vertical depth (feet)	Rectangular coordinates (feet)
1000	0	0	0 0	999.96	1.68 N 1.93 W
2000	0	45	N 77 30 W	1999.86	8.29 N 13.21 W
3000	2	0	N 74 30 W	2999.49	17.22 N 38.20 W
3975	2	0	N 80 30 W	3973.51	26.79 N 80.51 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	02-02-82	30 - 123
1	CAL			BW	02-17-82	127 -2618
1	CAL			BW	03-01-82	2622 -3983
1	SP	mv	Spontaneous potential	BW	03-02-82	2601 -3999
1	TC	API	Total count, spectral gamma	DA	03-02-82	1 -3999
2	DBC	g/cc	Density, borehole compensated	BW	02-19-82	127 -2609
2	DBC			BW	03-01-82	2610 -3988
2	NBC	%	Neutron porosity, compensated	DA	03-02-82	2600 -3982
2	SWL	na	Static water level	na	na	2464
3	PVEL	m/s	Comp. velocity, waveform	BW	03-03-82	2601 -3989
3	SVEL	m/s	Shear velocity, waveform	BW	03-03-82	2601 -3989
4	SN	ohm-m	Resistivity, short normal	BW	03-02-82	2601 -3988
4	LN	ohm-m	Resistivity, long normal	BW	03-02-82	2603 -3987
4	RILD	ohm-m	Resistivity, deep induction	BW	02-02-82	36 - 119
4	RILD			BW	02-18-82	135 -2614
5	NNL	API	Thermal neutron	BW	03-01-82	2601 -4000
5	ENP	API	Epithermal neutron	BW	02-19-82	127 -2615
5	ENP			BW	03-02-82	2616 -3926
6	K	%	Potassium, spectral log	DA	03-02-82	1 -3999
7	U	ppm	Uranium, spectral log	DA	03-02-82	1 -4000
7	TH	ppm	Thorium, spectral log	DA	03-02-82	1 -4000
8	MAGZ	ut	Total magnetic field, fluxgate	LLNL	02-18-82	130 -2614
8	MAGZ			LLNL	03-01-82	2615 -4000
9	FLOW	%	Radioactive tracer flow log	GO	03-04-82	2600 -3940

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

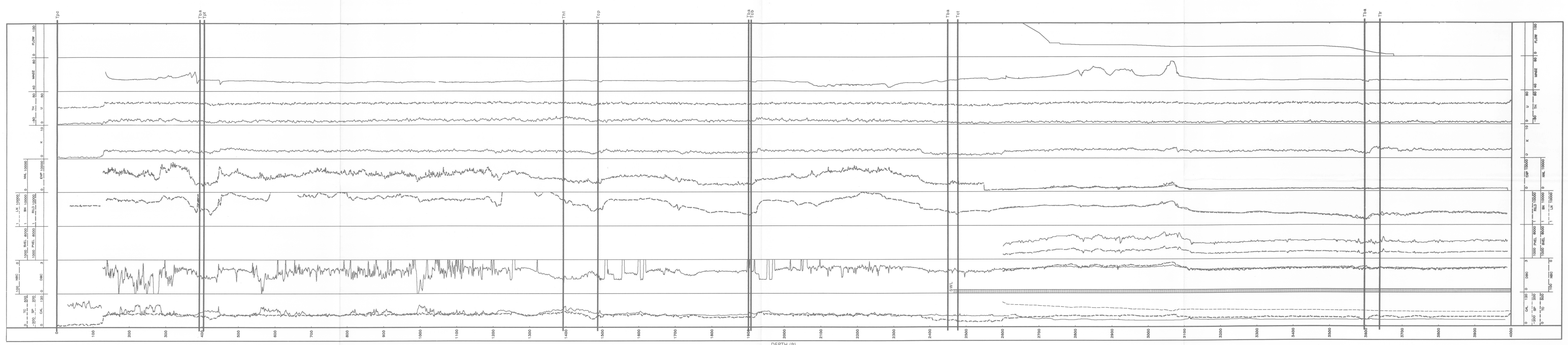


PLATE 11
WELL LOG USW H-4

Well: H-4
Yucca Mountain Project
Nye Co., Nevada

Location:
Nevada Coordinate System
N-761,644'
E-563,911'

Log measured from ground level, 4097 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
26.0	153				
20.0	316				
		35	Air, soap	04-01-82	
14.75	1850				
		311	Air foam	04-12-82	1700
		311		04-13-82	
		311		04-14-82	
8.75	4000				
		1839	Air foam	04-29-82	1702
		1839		04-30-82	
		1839		05-01-82	

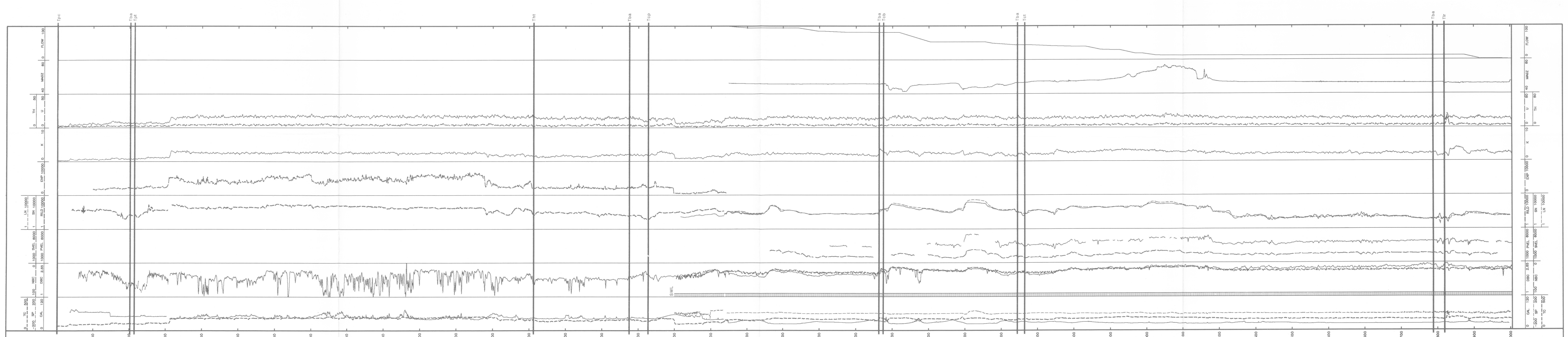
BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg. min.	True vertical depth (feet)	Rectangular coordinates (feet)
1000	0	15	S 47 0 W	999.93	1.14 S 10.42 E
2000	0	45	N 71 0 W	1999.74	4.48 N 6.76 W
3000	1	0	N 56 0 W	2999.63	11.11 N 20.03 W
3980	1	30	S 78 0 W	3979.39	15.00 N 40.73 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	04-01-82	36 - 304
1	CAL			BW	04-12-82	312 -1836
1	CAL			BW	04-29-82	1840 -3995
1	SP	mv	Spontaneous potential	BW	04-14-82	1701 -1836
1	SP			BW	04-29-82	1840 -3999
1	TC	API	Total count, spectral gamma	DA	05-01-82	1 -4004
2	DBC	g/cc	Density, borehole compensated	BW	04-01-82	60 - 310
2	DBC			BW	04-12-82	311 -1840
2	DBC			DA	04-29-82	1841 -4003
2	NBC	%	Neutron porosity, compensated	DA	04-29-82	1705 -4004
2	SWL	na	Static water level	na	na	1700
3	PVEL	m/s	Comp. velocity, delta-t	DA	05-01-82	2129 -4004
3	SVEL	m/s	Shear velocity, waveform	DA	05-01-82	1964 -3964
4	SN	ohm-m	Resistivity, short normal	BW	04-14-82	1717 -1836
4	SN			BW	04-29-82	1837 -3999
4	LN	ohm-m	Resistivity, long normal	BW	04-29-82	1840 -3999
4	RILD	ohm-m	Resistivity, deep induction	BW	04-01-82	41 - 307
4	RILD			BW	04-14-82	316 -1835
5	ENP	API	Epithermal neutron	BW	04-12-82	100 -1841
6	K	%	Potassium, spectral log	DA	05-01-82	1 -4004
7	U	ppm	Uranium, spectral log	DA	05-01-82	1 -4004
7	TH	ppm	Thorium, spectral log	DA	05-01-82	1 -4004
8	MAGZ	ut	Vert. magnetic field, fluxgate	LLNL	04-29-82	1849 -4006
9	FLOW	%	Radioactive tracer flow log	GO	05-10-82	1838 -4002

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



INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1991

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

By
Philip H. Nelson, Douglas C. Muller, Ulrich Schimschal, and Joyce E. Kibler
1991