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 3 OF 10)
Pamphlet accompanies map

Plate 6
WELL LOG UE-25a#1

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

Location: Area 25
Nevada Coordinate System
N-764,900'
E-566,350'

Log measured from ground level, 3934 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
3.875	1297				
2.98	2501				
		86	Mud	08-26-78	1372
		86		08-28-78	1538
			(stuck drill pipe, hole open to 1258)		
		86		08-29-78	
		86		08-30-78	
		86		08-31-78	

BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg. min.	True vertical depth (feet)	Rectangular coordinates (feet)
1000	2	15	S 0 68 W	999.78	7.05 S 17.55 W
2000	5	14	S 0 52 W	1996.95	44.44 S 80.16 W
2483	6	39	S 0 63 W	2477.37	70.83 S 122.36 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	08-31-78	2 - 959
1	CAL			BW	08-26-78	1250 -2500
1	SP	mv	Spontaneous potential	BW	08-26-78	1400 -2494
1	GR	API	Gamma ray	USGS	08-29-78	1 - 880
1	GR			USGS	08-28-78	881 -2484
2	DBC	g/cc	Density, borehole compensated	BW	08-26-78	1250 -2466
2	DBDCN	g/cc	Dry bulk density, core	USGS	na	339 -1304
2	GDCN	g/cc	Grain density, core	USGS	na	339 -1304
2	PORCN	%	Porosity, core	USGS	na	339 -1304
2	SWL	na	Static water level	na	na	1538
3	PVEL	m/s	Comp. velocity, delta-t	USGS	08-28-78	1538 -2480
4	SN	ohm-m	Resistivity, short normal	BW	08-26-78	1400 -2495
4	LN	ohm-m	Resistivity, long normal	BW	08-26-78	1400 -2494
5	NNL	API	Thermal neutron	BW	08-31-78	80 - 393
5	NNL			BW	08-26-78	1250 -2498
8	MS	mSI	Magnetic susceptibility	USGS	08-28-78	1 -2484
8	IP	mv/v	Induced polarization	USGS	08-28-78	1451 -2484
8	IPC	mv/v	Induced polarization, core	USGS	08-28-78	58 -2495

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

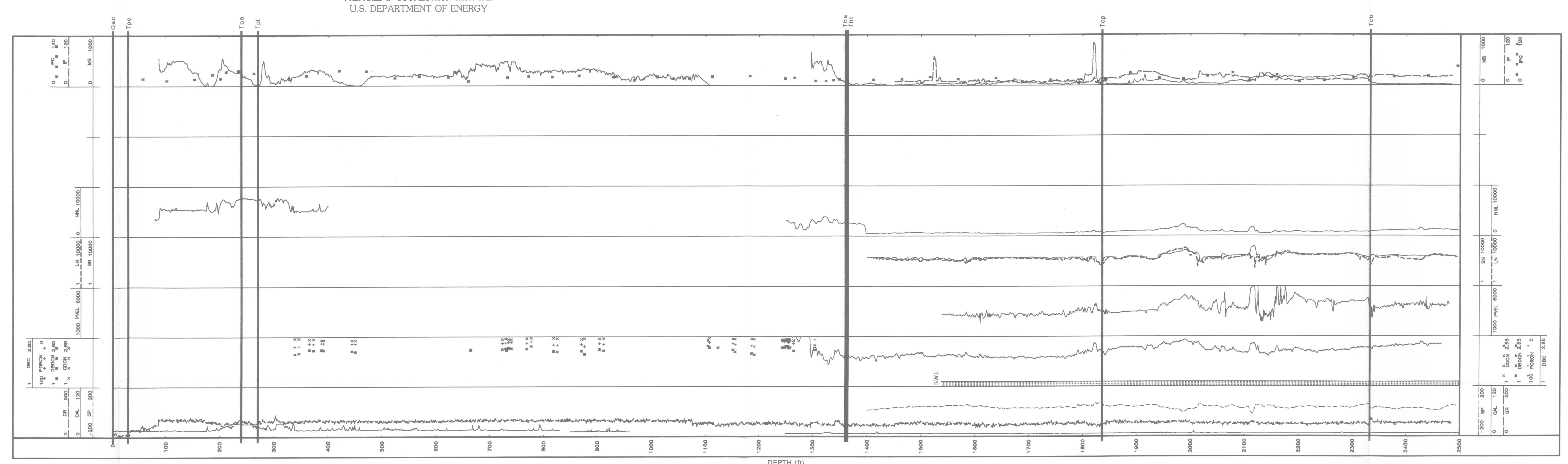


PLATE 7
WELL LOG UE-25b#1

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

Location: Area 25
Nevada Coordinate System
N-765,243'
E-566,416'

Log measured from ground level, 3939 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
18.5	317				
		34	Air foam	04-07-81	
15	318				
12.25	1520				
8.75	1900				
		292	Air foam	04-21-81	1545
		292	(cemented from	04-22-81	
		292	1107-1200)	04-23-81	
12.25	1705				
8.75	2131				
8.5	4002				
		1700	Air foam	07-29-81	
		1700		07-30-81	
		1700		07-31-81	
		1700		08-01-81	
		1700		08-08-81	

BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg. min.	True vertical depth (feet)	Rectangular coordinates (feet)
1000	2	45	S 80 0 W	999.52	3.92 N 25.38 W
2000	3	15	S 77 0 W	1998.88	5.84 S 58.55 W
3000	8	45	S 68 0 W	2992.45	46.03 S 161.70 W
3950	11	15	S 74 0 W	3928.03	92.41 S 319.20 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	04-07-81	34 - 291
1	CAL			BW	04-21-81	292 -1882
1	CAL			BW	07-28-81	1883 -3982
1	SP	mv	Spontaneous potential	BW	04-22-81	1552 -1876
1	TC	API	Total count, spectral gamma	DA	04-22-81	22 -1885
1	TC			DA	07-30-81	1886 -4004
2	DBC	g/cc	Density, borehole compensated	BW	04-22-81	292 -1888
2	DBC			BW	07-31-81	1889 -3993
2	NBC	%	Neutron porosity, compensated	DA	04-22-81	1541 -1881
2	NBC			DA	07-30-81	1882 -4004
2	SWL	na	Static water level	na	na	1542
3	PVEL	m/s	Comp. velocity, waveform	BW	04-23-81	1553 -1885
3	PVEL			BW	08-07-81	1886 -3989
3	SVEL	m/s	Shear velocity, waveform	BW	04-23-81	1607 -1885
3	SVEL			BW	08-07-81	1886 -3989
4	SN	ohm-m	Resistivity, short normal	BW	04-22-81	1552 -1880
4	SN			BW	08-01-81	1881 -3980
4	LN	ohm-m	Resistivity, long normal	BW	08-01-81	1700 -3980
4	RILD	ohm-m	Resistivity, deep induction	BW	04-22-81	320 -1880
5	ENP	API	Epithermal neutron	BW	04-23-81	292 -1886
5	ENP1			BW	08-08-81	1700 -3982
6	K	%	Potassium, spectral log	DA	04-22-81	6 -1885
6	K			DA	07-30-81	1886 -4004
7	U	ppm	Uranium, spectral log	DA	04-22-81	6 -1885
7	U			DA	07-30-81	1886 -4004
7	TH	ppm	Thorium, spectral log	DA	04-22-81	6 -1885
7	TH			DA	07-30-81	1886 -4004
9	FLOW	%	Radioactive Tracer flow log	GO	08-07-81	1565 -3971

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

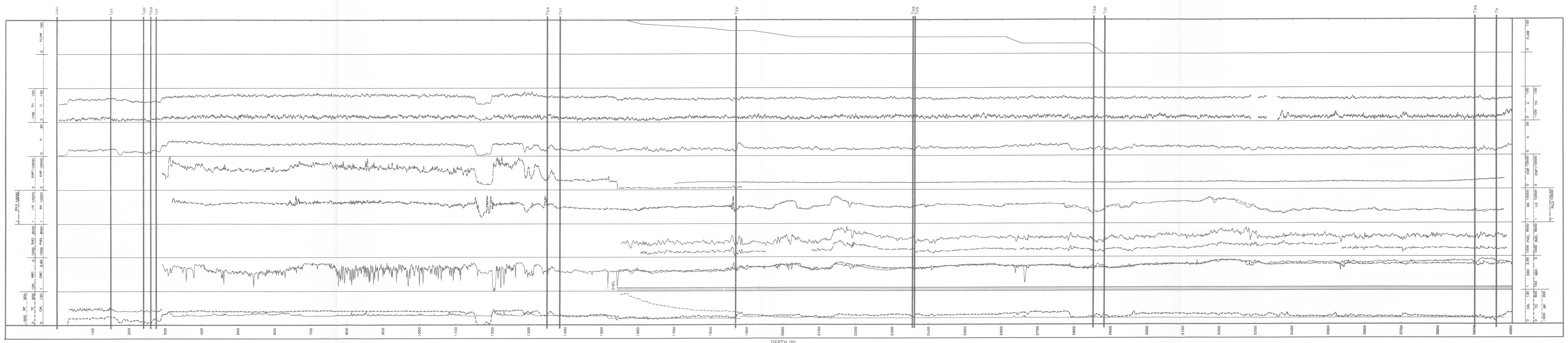


PLATE 8
WELL LOG UE-25p#1

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

Location: Area 25
Nevada Coordinate System
N-756,171'
E-571,485'

Log measured from ground level, 3655 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
17.5	341				
		36	Air foam	11-16-82	empty
		36		11-17-82	
14.75	1598				
		325	Air foam	11-30-82	1262
		325		12-01-82	1262
9.875	4279				
		1581	Air foam	01-16-83	
		1581		01-17-83	1254
		1581		01-18-83	
		1564		02-22-83	
		3950		03-05-83	
		3950		03-07-83	
		4214		03-08-83	
		3991		03-09-83	
6.75	5900				
6.125	5923				
		4256	Air foam	05-02-83	
		4256		05-03-83	
		4256		05-04-83	1192
		4256		06-02-83	
		4256		06-23-83	

BOREHOLE DEVIATION

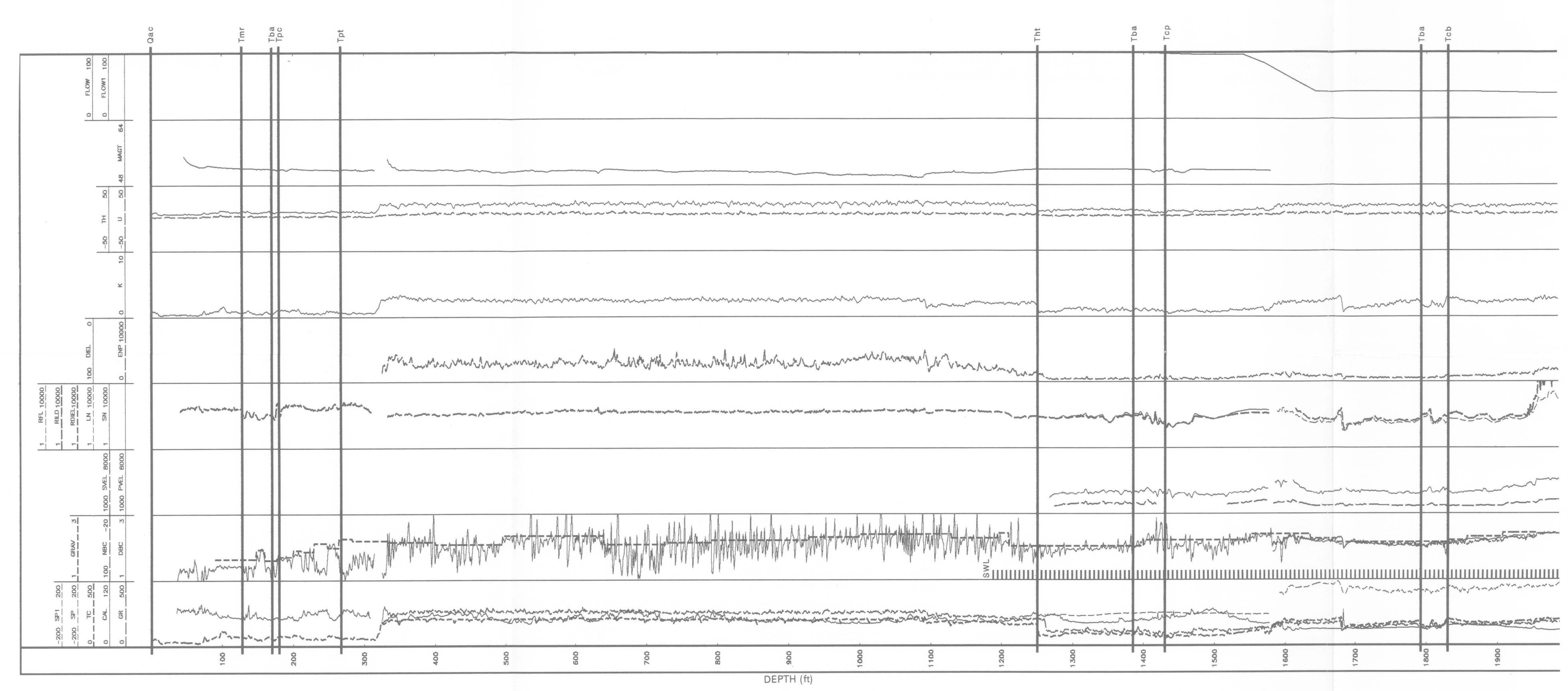
Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg. min.	True vertical depth (feet)	Rectangular coordinates (feet)
1000	0	30	S 31 0 W	999.94	6.31 N 2.79 W
2000	0	30	S 37 0 W	1999.90	2.36 S 4.91 W
3000	0	30	S 14 30 E	2999.79	15.13 S 9.62 W
4000	1	15	S 36 30 W	3999.61	31.87 S 15.11 W
5000	2	15	S 39 30 E	4999.33	44.22 S 3.32 W
5923	8	45	S 2 0 W	5916.70	136.78 S 7.44 E

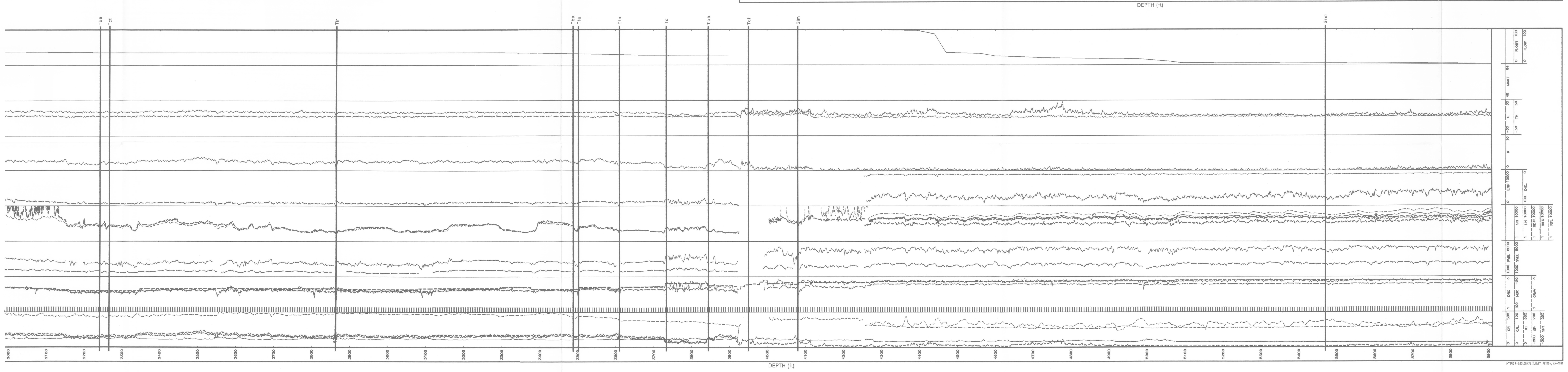
T	Trace	Unit	Name or description	Log	Date	Depth (ft)
1	CAL	cm	Hole diameter, caliper	BW	11-16-82	36 - 309
1	CAL			BW	11-30-82	325 -1578
1	CAL			DA	01-16-83	1583 -3930
1	CAL			BW	03-07-83	3950 -4030
1	CAL			BW	03-08-83	4031 -4246
1	CAL			BW	05-02-83	4257 -5910
1	SP	mv	Spontaneous potential	DA	01-18-83	1592 -3930
1	SP			DA	03-09-83	4000 -4262
1	SP			DA	05-03-83	4063 -5910
1	SP1			BW	11-30-82	1261 -1577
1	SP1			BW	06-23-83	4257 -5910
1	GR	API	Gamma ray	BW	12-01-82	326 -1580
1	GR			BW	01-17-83	1583 -3926
1	TC	API	Total count, spectral gamma	DA	01-18-83	1 -3930
1	TC			DA	05-04-83	3931 -5910
2	DBC	g/cc	Density, borehole compensated	BW	11-16-82	37 - 314
2	DBC			BW	11-30-82	325 -1581
2	DBC			DA	01-18-83	1582 -3922
2	DBC			BW	03-09-83	3991 -4253
2	DBC			BW	05-03-83	4259 -5910
2	NBC	%	Neutron porosity, compensated	DA	01-18-83	1582 -3920
2	NBC			DA	05-03-83	4000 -5910
2	GRAV	g/cc	Density, borehole gravimeter	USGS	11-18-83	90 -5879
2	SWL	na	Static water level	na	na	1188
3	PVEL	m/s	Comp. velocity, waveform	BW	12-01-82	1267 -1580
3	PVEL			DA	01-18-83	1585 -3922
				DA	03-09-83	3922 -4250
				DA	06-02-83	4256 -5900
3	SVEL	m/s	Shear velocity, waveform	BW	12-01-82	1274 -1580
3	SVEL			DA	01-18-83	1583 -3908
3	SVEL			DA	03-09-83	3994 -4243
3	SVEL			DA	06-02-83	4257 -5903
4	SN	ohm-m	Resistivity, short normal	BW	11-30-82	1279 -1575
4	SN			BW	06-23-83	4265 -5908
4	LN	ohm-m	Resistivity, long normal	BW	06-23-83	4265 -5908
4	RFL	ohm-m	Resistivity, focused	DA	01-18-83	1588 -3925
4	RFL			DA	03-09-83	4004 -4262
4	RFL			DA	05-03-83	4260 -5910

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

T	Trace	Unit	Name or description	Log	Date	Depth (ft)
4	RILD	ohm-m	Resistivity, deep induction	BW	11-17-82	41 - 311
4	RILD			BW	11-30-82	330 -1577
4	RILD			DA	01-18-83	1614 -3925
4	RILD			DA	03-09-83	4006 -4256
4	RILD			DA	05-03-83	4268 -5910
4	RDIEL	ohm-m	Resistivity, dielectric	DA	05-04-83	4256 -5910
5	ENP	API	Epithermal neutron	BW	12-01-82	326 -1582
5	ENP			BW	01-17-83	1585 -3924
5	ENP			BW	05-03-83	4261 -5910
5	DIEL	ratio	Dielectric log	DA	05-04-83	4256 -5910
6	K	%	Potassium, spectral log	DA	01-18-83	1 -3930
6	K			DA	05-04-83	3931 -5910
7	U	ppm	Uranium, spectral log	DA	01-18-83	1 -3930
7	U			DA	05-04-83	3931 -5910
7	TH	ppm	Thorium, spectral log	DA	01-18-83	1 -3930
7	TH			DA	05-04-83	3931 -5910
8	MAGT	ut	Total magnetic field, proton	LLNL	11-16-82	43 - 315
8	MAGT			LLNL	11-30-82	330 -1578
8	MAGT			LLNL	01-17-83	1590 -2860
8	MAGT			LLNL	03-09-83	3992 -4250
9	FLOW1	%	Radioactive tracer flow log	GO	02-08-83	1378 -3896
9	FLOW			PLS	05-11-83	4200 -5866

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

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1991