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

PLATE 3
WELL LOG USW G2-3

Well: G2-3
Yucca Mountain Project
Nye Co., Nevada

Location:
Nevada Coordinate System
N-752,690'
E-558,501'

Log measured from
ground level, 4857 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
6.75	516				
		34	Polymer mud	04-02-82	276
		34		04-03-82	
6.75	1122				
		34	Polymer mud, gel mud	04-22-82	
		34		04-23-82	472
6.75	1144				
		34	Polymer mud	04-23-82	472
3.937	1768				
	1144		Polymer and bentonite mud	04-30-82	1371
	1144			05-01-82	
2.98	2644				
	1771		Polymer mud	05-15-82	2462
	1771			05-16-82	
	1771			05-17-82	2456

BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg.	Drift direction min.	True vertical depth (feet)	Rectangular coordinates (feet)	
1000	2	0	S	0	0 E	999.71	21.99 S 0.65 E
2000	4	15	S	39	0 W	1997.85	73.43 S 22.33 W
2616	5	15	S	40	0 W	2611.68	111.09 S 59.06 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	04-22-82	44 -1110
1	CAL			BW	04-30-82	1144 -1742
1	CAL			DA	04-30-82	1144 -1750
1	SP	mv	Spontaneous potential	BW	04-03-82	35 - 449
1	SP			BW	04-22-82	450 -1114
1	SP			BW	04-30-82	1144 -1739
1	SP			BW	05-16-82	1772 -2253
1	GR	API	Gamma ray	BW	04-22-82	37 -1102
1	GR			DA	04-30-82	1144 -1743
2	DBC	g/cc	Density, borehole compensated	BW	04-03-82	35 -1120
2	DBC			BW	04-22-82	1144 -1750
2	DBC			DA	05-14-82	1771 -2490
2	NBC	%	Neutron porosity, compensated	BW	04-03-82	41 - 409
2	NBC			BW	04-23-82	411 -1117
2	NBC			DA	04-30-82	1144 -1742
2	NBC			DA	05-14-82	1771 -2607
2	SBDCA	g/cc	Saturated bulk density, core	USGS	na	54 -2562
2	NBDCA	g/cc	Natural bulk density, core	USGS	na	54 -2562
2	DBDCA	g/cc	Dry bulk density, core	USGS	na	54 -2562
2	SWL	na	Static water level	na	na	2462
3	PVEL	m/s	Comp. velocity, waveform	BW	04-03-82	206 - 511
3	PVEL			BW	04-23-82	512 -1120
3	PVEL			BW	04-30-82	1190 -1750
3	PVEL			BW	05-15-82	1900 -2250
3	SVEL	m/s	Shear velocity, waveform	BW	04-30-82	1190 -1750
3	VELCA	m/s	Comp. velocity, core	USGS	na	54 -2562
4	SN	ohm-m	Resistivity, short normal	BW	04-03-82	49 - 449
4	SN			BW	04-22-82	450 -1114
4	SN			BW	04-30-82	1150 -1375
4	SN			BW	05-16-82	1790 -2050
4	SN			BW	05-17-82	2051 -2599
4	LN	ohm-m	Resistivity, long normal	BW	04-30-82	1151 -1735
4	LN			BW	05-16-82	1840 -2255
4	LN			BW	05-17-82	2256 -2599
4	RILD	ohm-m	Resistivity, deep induction	BW	02-07-82	40 - 509
4	RILD			BW	04-22-82	510 -1114

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

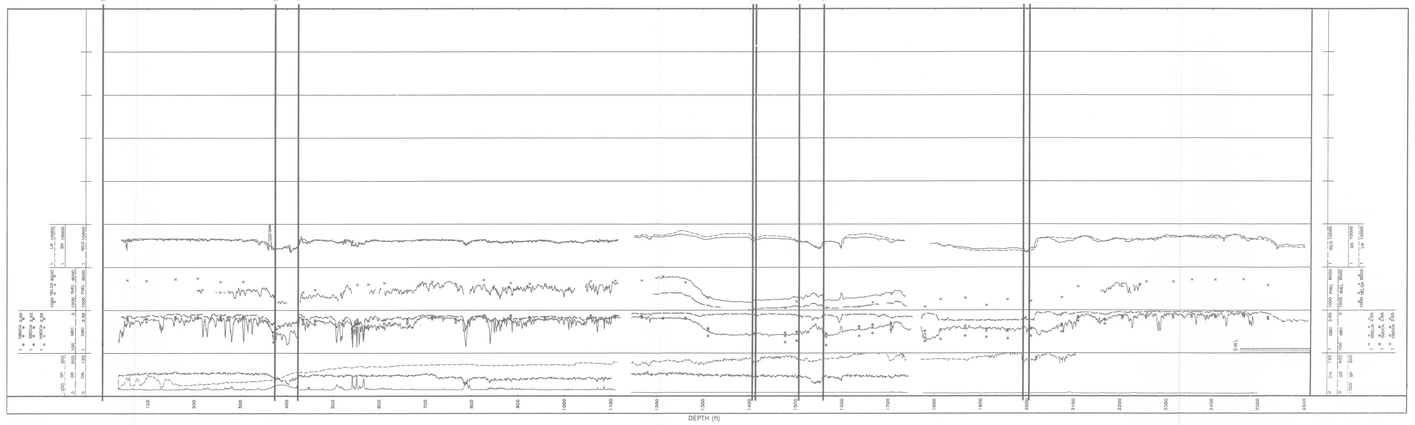


PLATE 4
WELL LOG USW G-3

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

Location:
Nevada Coordinate System
N-752,780'
E-558,483'

Log measured from
ground level, 4857 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
8.75	2520				
		36	Air, soap, polymer mud	02-06-82	2229
		36		02-07-82	2148
		36		02-08-82	2148
3.937	5031				
		2598	Air, soap	03-20-82	2429
		2598		03-22-82	
		2598		03-23-82	
		2598		03-24-82	

BOREHOLE DEVIATION

Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg.	Drift direction min.	True vertical depth (feet)	Rectangular coordinates (feet)	
1000	3	0	S	37	0 E	999.28	23.15 S 19.54 W
2000	0	0	S	0	0 W	1998.70	38.78 S 0.91 E
3000	9	0	N	83	0 W	2993.40	34.29 S 84.08 W
4000	15	45	S	85	0 W	3964.41	28.35 S 321.10 W
4990	25	15	S	74	0 W	4887.94	80.56 S 669.38 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	02-06-82	37 -2238
1	CAL			BW	02-19-82	2600 -5023
1	SP	mv	Spontaneous potential	BW	03-22-82	2598 -5020
1	GR	API	Gamma ray, spectral gamma	BW	02-06-82	37 -2238
1	GR	API	Gamma ray	BW	02-07-82	37 -2108
2	DBC	g/cc	Density, borehole compensated	DA	03-28-82	2600 -5028
2	NBC	%	Neutron porosity, compensated	DA	03-23-82	2600 -5029
2	GRAV	g/cc	Density, borehole gravimeter	USGS	11-16-83	50 -2184
2	SBDCA	g/cc	Saturated bulk density, core	USGS		2617 -5010
2	NBDCA	g/cc	Natural bulk density, core	USGS		2617 -5010
2	DBDCA	g/cc	Dry bulk density, core	USGS		2617 -5010
2	SWL	na	Static water level	na		2462
3	PVEL	m/s	Comp. velocity, waveform	BW	03-22-82	2605 -5024
3	SVEL	m/s	Shear velocity, waveform	BW	03-22-82	2605 -5024
3	VELCA	m/s	Comp. velocity, core	USGS		2617 -5010
4	SN	ohm-m	Resistivity, short normal	BW	03-22-82	2621 -5020
4	LN	ohm-m	Resistivity, long normal	BW	03-22-82	2621 -5020
4	RILD	ohm-m	Resistivity, deep induction	BW	02-07-82	44 -2200
5	NNL	API	Thermal neutron	BW	02-07-82	37 -2115
5	ENP	API	Epithermal neutron	BW	02-08-82	1124 -2199
6	K	%	Potassium, spectral log	DA	03-24-82	1 -4660
7	U	ppm	Uranium, spectral log	DA	03-24-82	1 -4660
7	TH	ppm	Thorium, spectral log	DA	03-24-82	1 -4660
8	IP	mv/v	Induced polarization	USGS	10-15-83	2830 -4450
8	IPC	mv/v	Induced polarization, core	USGS		54 -5010
8	MS	mSI	Magnetic susceptibility	USGS	10-18-83	2600 -4462
8	MSC	mSI	Magnetic susceptibility, core	USGS		43 -5030
9	MAGT	nt	Total magnetic field, fluxgate	LLNL	03-22-82	2610 -5020
9	RMC	amp/m	Remanent magnetization, core	USGS		43 -5030

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

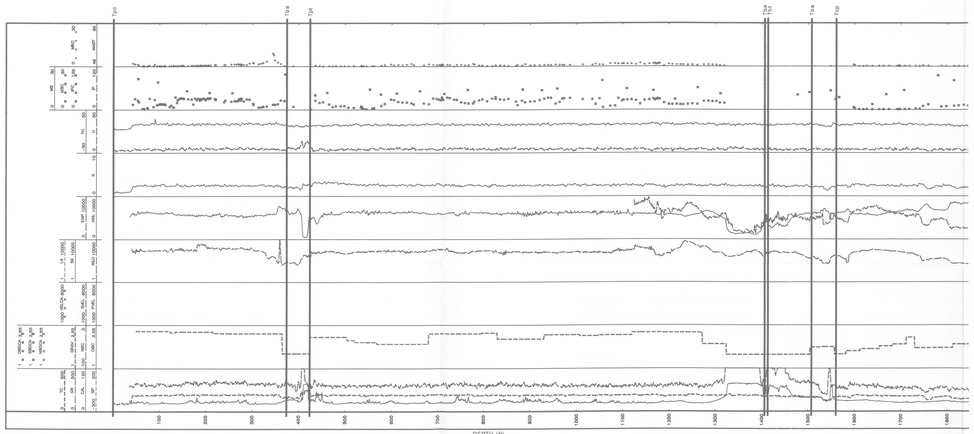


PLATE 5
WELL LOG USW G-4

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

Location:
Nevada Coordinate System
N-765,807'
E-563,082'

Log measured from
ground level, 4167 ft

Bit size (inch)	Drill depth	Casing depth	Circulating media	Logging dates	Fluid level
6.75	455				
		39	Air foam	09-18-82	446
				09-19-82	39 - 446
6.75	1825				
		469		10-23-82	
				10-24-82	1554
4.25	3001				
		1825		11-08-82	
		1968		11-09-82	1774
12.25	2010				
		39	(reamed)	11-21-82	1670 -1674
8.75	3001				
		2017	(reamed)	11-30-82	
8.375	3003				

BOREHOLE DEVIATION

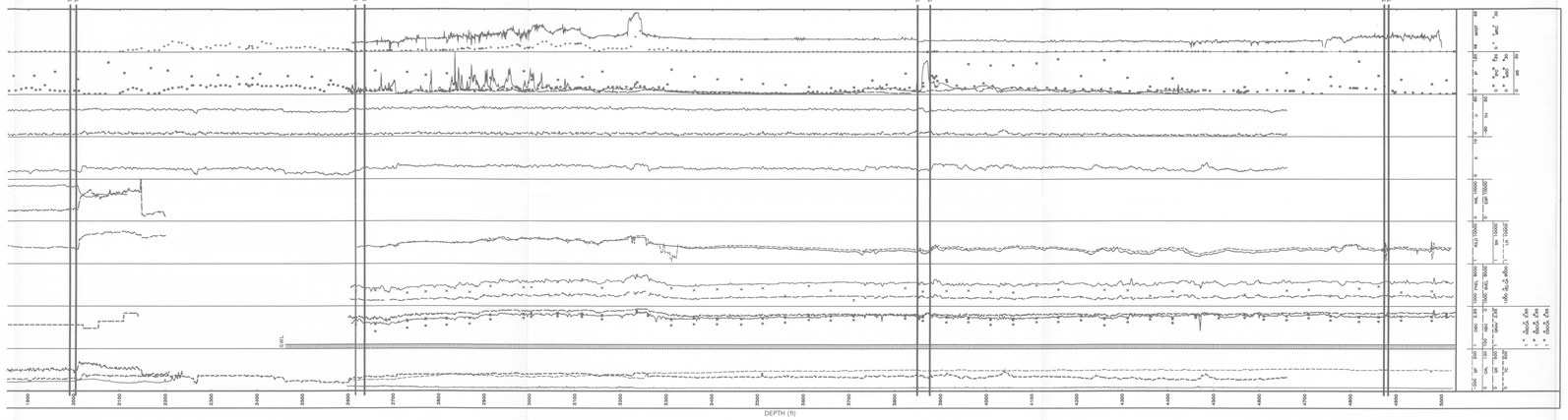
Measured depth (feet)	Drift angle deg.	Drift angle min.	Drift direction deg.	Drift direction min.	True vertical depth (feet)	Rectangular coordinates (feet)	
1000	5	0	S	36	15 W	999.26	18.53 S 18.39 W
2000	9	15	S	56	15 W	1993.58	89.50 S 97.07 W
2975	9	15	S	72	15 W	2959.60	140.36 S 217.60 W

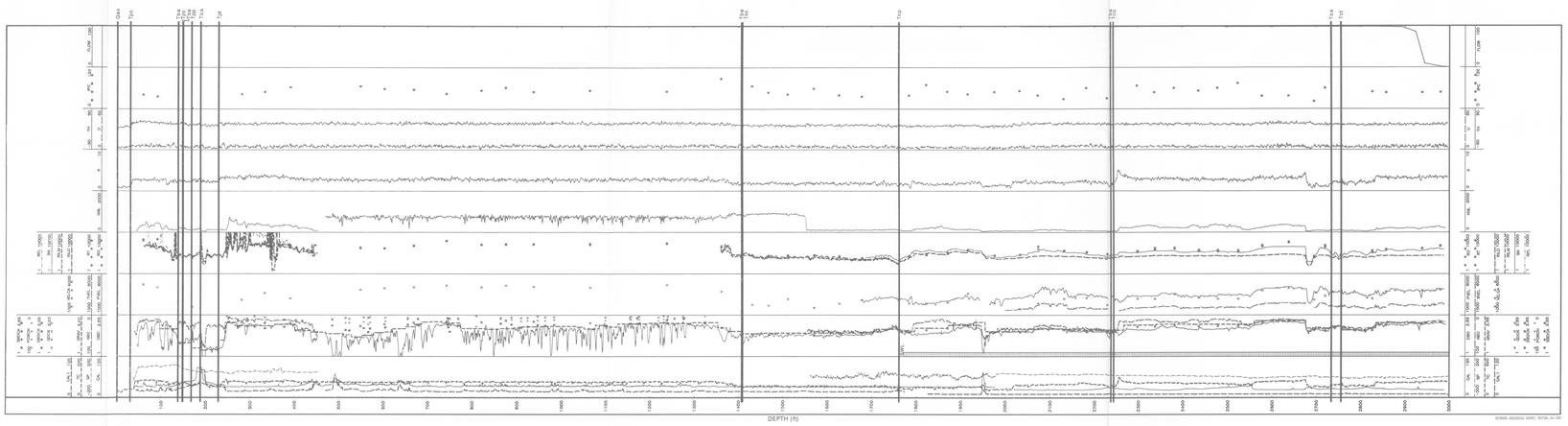
BW- Birdwell, DA- Dresser Atlas, GO- Gearhart Owen, LLNL- Lawrence Livermore National Laboratory, SW- Schlumberger Well Services
USGS- U.S. Geological Survey, na- not applicable

T	Trace	Unit	Name or description	Log	Date	Depth (ft)
1	CALI	cm	Hole diameter, caliper	BW	09-18-82	44 - 446
1	CALI			DA	10-24-82	470 -1776
1	CALI			DA	11-08-82	1825 -2997
1	CAL			BW	11-21-82	39 -1975
1	CAL			BW	11-30-82	2020 -2988
1	SP	mv	Spontaneous potential	DA	09-19-82	38 - 453
1	SP			BW	11-21-82	1670 -1979
1	SP			BW	11-30-82	2020 -2988
1	TC	API	Total count, spectral gamma	DA	11-30-82	1 -2997
2	DBC	g/cc	Density, borehole compensated	DA	09-19-82	46 - 452
2	DBC			DA	10-24-82	466 -1775
2	DBC			BW	11-21-82	1776 -1983
2	DBC			DA	11-09-82	1984 -2991
2	NBC	%	Neutron porosity, compensated	DA	09-19-82	46 - 453
2	NBC			DA	10-24-82	1555 -1620
2	NBC			BW	11-21-82	1671 -1981
2	NBC			DA	11-09-82	1982 -2991
2	GRAV	g/cc	Density, borehole gravimeter	USGS	04-04-85	98 -2950
2	SBDCA	g/cc	Saturated bulk density, core	USGS	na	59 -2980
2	DBDCN	g/cc	Dry bulk density, core	USGS	na	251 -1324
2	GDCN	g/cc	Grain density, core	USGS	na	251 -1324
2	PORCN	%	Porosity, core	USGS	na	247 -1324
2	SWL	na	Static water level	na	na	1770
3	PVEL	m/s	Comp. velocity, waveform	BW	11-09-82	1978 -2988
3	PVEL			BW	11-21-82	1675 -1978
3	SVEL	m/s	Shear velocity, waveform	BW	11-09-82	2001 -2981
3	VELCA	m/s	Comp. velocity, core	USGS	na	
4	SN	ohm-m	Resistivity, short normal	DA	11-21-82	1671 -1978
4	SN			DA	11-09-82	1968 -2987
4	RILM	ohm-m	Resistivity, medium induction	DA	09-19-82	61 - 453
4	RILM			DA	10-24-82	1360 -1774
4	RFL	ohm-m	Resistivity, focused	DA	09-19-82	61 - 453
4	RFL			DA	10-24-82	1560 -1774
4	RILD	ohm-m	Resistivity, deep induction	DA	09-19-82	61 - 453
4	RILD			DA	10-24-82	1360 -1768
4	RILD			BW	11-21-82	1769 -1978
4	RILD			DA	11-09-82	1968 -2987
4	RO	ohm-m	Resistivity, core	USGS	na	59 -2980
4	RO	ohm-m	Resistivity, core	USGS	na	59 -2980

T	Trace	Unit	Name or description	Log	Date	Depth (ft)
5	NNL	cps	Thermal neutron	DA	09-19-82	41 - 455
5	NNL			DA	10-24-82	469 -1768
5	NNL			BW	11-21-82	1769 -1980
5	NNL			DA	11-09-82	1981 -2991
6	K	%	Potassium, spectral log	DA	11-30-82	1 -2997
7	U	ppm	Uranium, spectral log	DA	11-30-82	1 -2997
7	TH	ppm	Thorium, spectral log	DA	11-30-82	1 -2997
8	IPC	mv/v	Induced polarization, core	USGS	na	59 -2980
9	FLOW	%	Radioactive tracer flow log	GO	01-04-83	1934 -3000

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