



Department of Energy

Richland Operations Office

WM DOCKET CONTROL Box 550
Richland, Washington 99352

86-GTB-73

101

PDR - (1)
LPDR -
WM-10 (2)

See pocket 2 forward

86 DEC 22 AM 11:15
DEC 12 1986

Mr. John J. Linehan, Acting Chief
Repository Projects Branch
Division of Waste Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Linehan:

BOREHOLE GEOPHYSICAL LOGS AND ADDENDUM TO THE ANNUAL TECHNICAL REPORT, 1985,
UNIVERSITY OF WASHINGTON

Per telephone conversations between Harold E. Lefevre of your office and
A. G. Lassila of my office, transmitted herewith is a list of borehole
geophysical logs which were run during 1985 and 1986, and a paper on the
crustal structure of the Columbia Basin, Washington from borehole and
retraction data.

Sincerely,

J. J. Keating, Director
Basalt Waste Isolation Division

BWI:AGL

Enclosure

WM Record File

101.2

WM Project 10

Docket No.

PDR ✓

LPDR ✓ (BT)

Distribution:

J. Linehan

H. Lefevre

B. Hildenbrand

Sac

(Return to WM, 623-SS)

8703160240 861212
PDR WASTE
WM-10 PDR

2259

GEOPHYSICAL LOGS COMPLETED

encl. to 12/12/86 Ho.
1985 to Linahan from
Keating - rec'd 12/22/86
101.2

PACIFIC NORTHWEST-LABORATORY

BOREHOLE	LOGGED INTERVAL (Meters)	TOOL	DATE	
RRL-2B	846.1-871.1	Sp&R	7-25-85	
	67.1-871.1	Temp	7-25-85	
	0-185.9	Caliper	6-2-85	
	6.1-186.2	SP&R	6-2-85	
	6.1-186.2	Nat Gamma	6-2-85	
	6.1-186.2	Neutron	6-2-85	
	6.1-186.2	Gamma-gamma	6-2-85	
	807.7-841.2	Neutron	6-23-85	
	188.7-836.7	Magnetic	6-23-85	
	176.8-833.3	Neutron	6-22-85	
	0-835.2	Sp&R	6-24-85	
	164.6-835.8	Nat Gamma	6-23-85	
	182.9-832.1	Caliper	6-23-85	
	180.4-832.1	X-Y Caliper	6-24-85	
	0-837.6	Gamma-gamma	6-23-85	
	846.1-871.1	Magnetic	7-25-85	
	830.3-865.6	Neutron	6-29-85	
	823.0-871.1	Gamma-gamma	7-25-85	
	823.0-871.1	Nat Gamma	7-25-85	
	823.0-871.1	Neutron	7-25-85	
	807.7-870.8	X-Y Calip	8-1-85	
	838.2-868.7	X-Y Calip	8-7-85	
	70.1-871.1	Temp	9-9-85	
	823.0-870.2	Temp	9-11-85	
	841.2-871.4	Neutron	6-29-85	
	RRL-14	838.2-1210.7	Caliper	8-16-85
		868.7-1218.3	Neutron	8-14-85
		73.2-1219.2	Temp	9-13-85
		868.7-1218.3	Gamma-gamma	8-14-85
		868.7-1218.0	X-Y caliper	8-16-85
RRL-2A	826.9-914.4	Dynamic Temp	1-8-85	
	67.1-914.4	Temp	1-8-85	
	823.0-1051.6	Caliper	1-9-85	
	823.0-1051.6	Neutron	1-9-85	
	823.0-1051.6	Gamma-gamma	1-9-85	
	823.0-1051.6	Sonic	1-9-85	
	70.1-1051.6	Temp	4-4-85	
	823.6-1051.6	Caliper	4-4-85	
	823.6-1051.6	X-Y caliper	4-4-85	
	823.6-1051.6	Neutron	4-4-85	
RRL-2C	823.6-1051.6	Gamma-gamma	4-4-85	
	823.6-1051.6	Dynamic Temp	6-10-85	
	975.4-1014.7	Temp(Piezom)	6-16-85	
	914.4-1013.5	Temp(Piezom)	6-20-85	
	914.4-983.3	Temp(Piezom)	6-18-85	
	914.4-983.3	Temp(Piezom)	6-18-85	
	838.2-1014.4	Temp(Piezom)	6-24-85	
	Time Drive	Temp(Piezom)	9-1to9-3-85	
	853.4-1014.4	Temp(Piezom)	6-22-85	
	67.1-1011.9	Temp(Piezom)	7-1-85	
807.7-1014.4	Temp(Piezom)	6-26-85		

PACIFIC NORTHWEST LABORATORY

<u>BOREHOLE</u>	<u>LOGGED INTERVAL (Meters)</u>	<u>TOOL</u>	<u>DATE</u>
	883.9-1014.4	Temp(Piezom)	6-20-85
	67.1-1037.5	Temp(Piezom)	5-29-85
	0-185.6	Gamma-gamma	4-25-85
	179.8-845.5	Gamma-gamma	5-18-85
	823.0-1023.8	Gamma-gamma	5-24-85
	2.1-1037.2	Gamma-gamma	5-30-85
	184.1-845.5	Sp&R	5-18-85
	0-185.3	Neutron	4-25-85
	658.4-837.9	Neutron	5-16-85
	182.9-845.5	Neutron	5-18-85
	897.9-1023.8	Neutron	5-24-85
	0-185.6	Caliper	4-25-85
	179.8-829.1	Caliper	5-18-85
	838.2-1037.5	Caliper	5-29-85
	0-185.3	X-Y Caliper	4-25-85
	838.2-1036.6	X-Y Caliper	6-1-85
	5.8-608	Magnetic	4-25-85
	0-185.3	Nat Gamma	4-25-85
	179.8-845.5	Nat Gamma	5-18-85
	829.1-1036.9	Nat Gamma	5-30-85
	5.8-185.6	SP&R	4-25-85
	845.5-1037.5	SP&R	6-1-85
	73.2-1014.1	Temp(Piezom)	8-16-85
	.6-1037.5	Neutron	5-24-85
	73.2-1014.4	Temp(Piezom)	8-20-85
RRL-17	188.1-844.3	Sp&R	8-9-85
	182.9-841.2	Gamma-gamma	8-8-85
	182.9-838.2	X-Y Calip	8-8-85
	0-545.6	Temp(Piezom)	8-11-85
	6.1-156.1	Temp(Piezom)	7-23-85
	182.9-838.2	X-Y Calip	8-8-85
	182.9-841.2	Nat Gamma	8-8-85
	182.9-841.2	Neutron	8-8-85
	188.1-844.3	Magnetic	8-8-85
	23.8-187.5	SP&R	7-22-85
	15.2-182.9	X-Y Calip	7-22-85
	0-187.1	Gamma-gamma	7-22-85
	0-187.5	Neutron	7-22-85
	0-187.5	Nat Gamma	7-22-85
	182.9-841.2	Caliper	8-8-85
DC-16B	61.0-424.0	Temp	10-1-84
DC-19C	67.1-924.5	Temp	1-11-85
DC-20C	91.4-839.4	Temp(Piezom)	3-15-85
DC-22C	79.2-1112.5	Temp(Piezom)	3-29-85
DC-3	1065.6-1104.9	X-Y Calip	6-25-85
DC-8	30.5-823.0	Temp	12-3-84
	45.7-823.0	Temp	12-13-84
	51.8-823.0	Temp	1-14-85
	51.8-823.0	Temp	2-7-85
	54.9-823.0	Temp	3-13-85

51.8-823.0 Temp 4-30-85
 PACIFIC NORTHWEST LABORATORY (cont'd)

<u>BOREHOLE</u>	<u>LOGGED INTERVAL (Meters)</u>	<u>TOOL</u>	<u>DATE</u>
399-5-2	54.9-823.0	Temp	5-22-85
	0-1249.7	Temp	5-22-85
	54.9-127.1	X-Y Calip	7-31-85
	1.2-127.1	Temp	3-25-85
	1.8-127.1	Neutron	3-14-85
	1.2-127.1	Gamma-gamma	3-27-85
	59.1-127.1	Sp&R	3-27-85
	1.5-127.1	Nat Gamma	3-25-85
	2.7-127.1	Sonic	3-27-85
	0-124.4	Caliper	3-13-85
	0-125.6	Sp&R	3-13-85
	3-127.1	Gamma	9-6-85
	59.1-127.1	Magnetic	9-5-85
	2.4-127.1	Temp	9-5-85
	2.4-127.1	Temp	9-5-85
	0.9-127.1	Nat Gamma	9-6-85
	54.9-127.1	Caliper (#C002)	6-18-85
	2.7-127.1	Temp (#LS369)	6-18-85
	2.7-127.1	Temp (#LS39)	6-18-85
	51.8-127.1	Calip (#C001)	6-18-85
	1.2-127.1	Gamma-gamma	6-18-85
	2.7-127.1	Neutron (#U5A7)	6-20-85
	2.4-127.1	Neutron (#U5A329)	6-20-85
	59.1-127.1	Magnetic	6-18-85
	1.5-127.1	Nat Gamma (#27A97)	6-19-85
	1.5-127.1	Nat Gamma (#001)	6-19-85
	3.7-127.1	Sonic	6-19-85
	59.1-127.1	SP&R	6-19-85
	0.9-127.1	Nat Gamma	9-6-85
	51.8-127.1	Caliper (#001)	9-5-85
	51.8-127.1	Caliper (#002)	9-6-85
	54.9-127.1	X-Y Calip	9-6-85
	59.1-127.1	SP&R	9-6-85
	2.4-127.1	Neutron	9-5-85
	2.1-127.1	Sonic (#001)	9-6-85
	2.1-127.1	Sonic (34A20)	9-6-85
2.4-127.1	Neutron	9-5-85	

PACIFIC NORTHWEST LABORATORY (cont'd)

<u>BOREHOLE</u>	<u>LOGGED INTERVAL (Meters)</u>	<u>TOOL</u>	<u>DATE</u>
	59.1-127.1	Magnetic	9-5-85
	0.9-127.1	Gamma-gamma	9-6-85
	2.4-127.1	Temp	9-5-85
		(#LS369)	
	2.4-127.1	Temp	9-5-85
		(#LS39)	
	0.9-127.1	Nat Gamma	9-6-85
DC-23W	0-64.9	Temp	9-4-85
	15.2-115.8	Sp&R	9-3-85
	106.7-440.4	Neutron	9-25-85
	0-396.2	Nat Gamma	9-26-85
	106.7-440.4	Caliper	9-24-85
	0-396.2	Gamma-gamma	9-26-85
	0-396.5	Neutron	9-26-85
	0-381.0	Temp	9-26-85
	868.7-1218.0	X-Y caliper	8-16-85
DH-8A	15.5-71.3	Temp	10-1-84
DH-8B	0-71.6	Caliper	8-14-85
	0-72.5	Neutron	8-14-85
DH-27	156.1-222.5	SP/r	5-17-85
	149.4-222.5	Caliper	5-17-85
	0-222.5	Nat gamma	5-17-85
	0-222.5	Neutron	5-17-85
	0-222.5	Gamma-gamma	5-17-85
	156.1-222.5	Magnetic	5-17-85
DH-28	68.6-308.2	Temp	3-29-85
	228.0-300.5	Sp&R	3-29-85
	237.7-254.8	Sp&R	3-29-85
	225.6-303.6	Caliper	3-29-85
	225.6-304.5	Gamma-gamma	3-29-85
	225.6-302.4	Sonic	3-29-85
	0-306.6	Nat Gamma	3-29-85
	0-305.1	Neutron	3-29-85
DB-7	176.2-242.9	Sp&R	8-19-85
	176.2-242.9	Neutron	8-19-85
	150.6-242.9	Caliper	8-19-85
	176.2-242.9	SP/R	8-19-85
DB-4	381.0-416.7	Caliper	9-3-85
	381.0-416.7	Neutron	9-3-85
DB-2	3.0-388.0	Temp	1-31-85
	3.0-388.0	Dynamic Temp	1-31-85
DB-12	24.4-173.7	Temp	3-14-85
	24.4-173.7	Dynamic Temp	3-14-85
DB-13	45.7-52.4	Temp	10-1-84
DB-14	256.0-371.2	SP/R	1-2-85
	64.0-371.2	Dynamic Temp	1-2-85
	64.0-371.9	Temp	1-2-85
	1.2-371.2	Caliper	1-2-85
	0.6-371.2	Nat gamma	1-2-85

WASHINGTON STATE UNIVERSITY

<u>BOREHOLE</u>	<u>LOGGED INTERVAL (Meters)</u>	<u>TOOL</u>	<u>DATE</u>
RRL-14	0-1208.2	Caliper	8-21-85
RRL-2C	0-846.1	Sonic	5-17-85
	0-305.1	Sonic	3-29-85
	0-1044.5	Sonic	6-3-85
DH-27	0-216.1	Gamma-gamma	5-17-85
	0-216.1	Neutron-gamma	5-17-85
	0-216.1	Neutron	5-17-85
	0-216.1	Nat Gamma	5-17-85
	0-216.1	Caliper	5-17-85
	0-216.1	WRES	5-17-85
	0-216.1	SP	5-17-85
	157.6-222.8	Sonic	5-17-85
	0-213.7	Sonic	5-14-85
	0-215.2	Caliper	5-14-85
	0-215.8	Neutron-gamma	5-14-85
	0-215.8	Gamma-gamma	5-14-85
	0-215.5	Nat Gamma	5-14-85
DH-27	0-215.8	Neutron	5-14-85
	0-216.1	SP/WRES	5-14-85
DH-28	0-337.4	Gamma-gamma	5-1-85
	0-337.4	Neutron-gamma	5-1-85
	0-337.4	Neutron	5-1-85
	0-337.4	Nat Gamma	5-1-85
	0-337.4	Caliper	5-1-85
	0-337.4	SP/WRES	5-1-85
	228.0-335.3	Sonic	5-1-85
RRL-2B	845.8-876.3	Sonic	7-24-85
	0-874.8	Caliper	9-16-85
DC-15	670.0-1061.0	Sonic	5-2-85
DC23W	16.5-113.7	Sonic	9-3-85
	0-111.3	Calip-A	9-3-85
	0-112.2	Calip-B	9-3-85
	0-397.2	Sonic	9-26-85
Marley Orchards (Black Rock)	0-454.5	Neutron	5-26-85
	0-744.9	Neutron-gamma	5-27-85
	0-745.8	FR-B	5-27-85
	0-744.9	FT-B	3-27-85
	0-746.2	Gamma-gamma	3-26-85
	0-744.3	Nat Gamma	3-26-85
	0-745.5	Neutron-gamma	3-26-85
Ford	0-235.0	Nat Gamma	3-14-85
	0-235.0	Neutron-gamma	3-14-85
	0-234.7	FT-B	3-14-85
	0-235.6	FR-B	3-14-85
	0-234.4	Caliper	3-14-85
	0-235.3	SP/WRES	3-13-85
	0-234.7	Gamma-gamma	3-14-85
	0-234.7	Neutron	3-14-85
O'Brien	0-178.6	Nat Gamma	3-14-85
	0-177.7	FT-B	3-24-85
	0-178.3	FR-B	3-14-85

WASHINGTON STATE UNIVERSITY (cont'd)

<u>BOREHOLE</u>	<u>LOGGED INTERVAL (Meters)</u>	<u>TOOL</u>	<u>DATE</u>	
Eastwood	0-177.7	Caliper	3-14-85	
	0-178.0	Gamma-gamma	3-14-85	
	0-177.7	Neutron	3-14-85	
	0-178.6	Neutron-gamma	3-14-85	
	0-167.0	Gamma-gamma	4-16-85	
	0-167.0	Neutron	4-16-85	
	0-167.3	Neutron-gamma	4-16-85	
	0-167.3	Nat Gamma	4-16-85	
	0-167.3	FT-B	4-16-85	
	0-167.6	FR-B	4-16-85	
	0-167.6	Caliper	4-10-85	
	0-167.9	SP/WRES	4-16-85	
	Poulin	0-205.4	Gamma-gamma	3-14-85
		0-205.1	Neutron	3-15-85
0-206.0		Neutron-gamma	3-15-85	
0-204.2		Nat Gamma	3-15-85	
0-205.1		FT-B	3-15-85	
Poulin	0-207.0	FR-B	3-15-85	
	0-202.4	Caliper	3-14-85	
399-5-2	0-206.3	SP/WRES	3-14-85	
	0-125.6	SP/WRES	3-13-85	
	51.8-127.1	Caliper	3-25-85	
	0-126.2	FR-B	3-13-85	
	0-125.9	FT-B	3-13-85	
	0-126.8	Nat Gamma	3-13-85	
	0-126.8	Neutron-gamma	3-13-85	
	0-126.5	Neutron	3-13-85	
0-125.6	Gamma-gamma	3-13-85		

DRESSER ATLAS

399-5-2	0-126.8	Densilog/ Neutron/ Gamma ray	5-29-85
	0-126.8	Densilog	5-29-85
	0-126.8	Nat Gamma	5-29-85
RRL-2C	68.3-1037.2	Densilog/ Neutron/ Gamma-ray	5-29-85
	845.8-1037.5	4-arm caliper	5-29-85

GEARHART

RRL-2C	0-843.1	Cement bond	5-20-85
RRL-2B	0-828.8	Cement bond	6-26-85
	0-850.4	Cement bond/CCL8	8-11-85
DC-23W	0-710.2(750 psi)	Cement bond	8-21-85
	114.0-397.2	4-arm caliper	9-26-85
	0-374.0	Cement bond	9-28-85
RRL-17	137.2-840.0	Cement bond	9-27-85

EASTMAN WHIPSTOCK

<u>BOREHOLE</u>	<u>LOGGED INTERVAL (Meters)</u>	<u>TOOL</u>	<u>DATE</u>
RRL-2B	0-861.1	Gyro	8-27-85

WESTECH GEOPHYSICAL

RRL-2C	0-1036.9	Camera	6-13-85
RRL-2B	838.8-869.9	Camera	8-20-85
RRL-14	868.7-1202.7	Camera	8-20-85

USGS

RRL 2-C	944.9-951.0	Televiewer	5-29-85	
	944.9-966.2			
	967.7-975.4			
	844.3-868.7			
	868.7-893.1			
	917.4-941.8			
	966.2-990.6			
	990.6-1015.0			
	1015.0-1033.3			
	844.3-868.7			6-2-85
	868.7-893.1			
	893.1-917.4			
	917.4-941.8			
941.8-966.2				
966.2-990.6				
990.6-1015.0				
1015.0-1027.2				
RRL-14	876.3-885.4	Televiewer	6-2-85	
932.7-941.8				
963.2-972.3				
999.7-1008.9				
1034.8-1043.9				
1120.1-1129.3				

GEOPHYSICAL LOGS COMPLETED
1986

GEOPHYSICAL TOOL	INTERVAL	LOGGED DATE
** BOREHOLE: 399-5-2		
* SUBCONTRACTOR: Gearhart Compensated Neutron/Density	4.3-127.1	03/20/86
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Caliper(#C-001)	59.1-127.4	01/14/86
Caliper(#C-002)	.6-127.4	01/10/86
Gamma-gamma	1.8-127.4	01/13/86
Magnetic	59.1-127.4	01/13/86
Nat Gamma	2.1-127.1	03/03/86
Nat Gamma	0.6-127.1	01/10/86
Neutron	1.2-127.7	01/13/86
Neutron	1.2-127.4	03/03/86
SP&R	60.0-126.5	01/13/86
Temperature(CTD 23 LS 369)	2.7-127.1	01/14/86
Temperature(CTD 23 LS 39)	2.7-127.1	01/14/86
X-Y Caliper	60.0-127.7	01/13/86
* SUBCONTRACTOR: Washington State University		
Sonic	0-126.5	10/15/85
** BOREHOLE: DB-15		
* SUBCONTRACTOR: Eastman Whipstock		
Gyro Survey	0-352.7	07/28/86
* SUBCONTRACTOR: Washington State University		
Sonic	0-357.8	10/15/85
** BOREHOLE: DC-18		
* SUBCONTRACTOR: Eastman Whipstock		
Gyro Survey	0-350.5	07/29/86
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Caliper	239.3-294.1	04/23/86
Caliper	9.1-184.1	02/26/86
Caliper	0-199.6	04/07/86
Dynamic Temperature(CTD 23 LS 39)	198.1-415.7	06/06/86
Density	0-187.1	02/26/86
Magnetic	19.8-187.1	02/26/86
Nat Gamma	0-187.1	02/26/86
Nat Gamma	189.0-415.1	06/04/86
Neutron	182.9-231.0	03/21/86
Neutron	237.7-295.4	04/23/86
Neutron	396.2-474.6	08/29/86
SP&R	19.8-187.1	02/26/86
SP&R	206.0-415.7	06/05/86
SP&R	206.7-231.0	03/21/86

GEOPHYSICAL LOGS COMPLETED
1986

GEOPHYSICAL TOOL	INTERVAL	LOGGED DATE
SP&R	213.4-292.9	04/23/86
Temperature(CTD 23 LS 39)	30.5-415.7	06/06/86
Temperature(CTD 23 LS 39)	30.5-295.4	04/23/86
Temperature(CTD 23 LS 39)	31.1-250.2	04/07/86
Temperature(CTD 23 LS 39)	3.0-167.0	02/28/86
Temperature(CTD 23 LS 39)	24.4-231.0	03/21/86
X-Y Caliper	396.2-474.9	08/29/86
X-Y Caliper	204.8-230.7	03/21/86
* SUBCONTRACTOR: Washington State University		
Sonic Spectrum (3/5 foot)	320.0-407.8	08/05/86
Sonic Spectrum (8/10 foot)	320.0-407.8	08/05/86
Sonic Vel/Amp(3/5 foot-P-wave)	320.0-407.8	08/05/86
Sonic Vel/Amp(3/5 foot-S-wave)	320.0-407.5	08/05/86
Sonic Vel/Amp(3/5 foot-T-wave)	320.0-407.8	08/05/86
Sonic Vel/Amp(8/10 foot-S-Wave)	320.0-407.5	08/05/86
Sonic Vel/Amp(8/10 foot-T-Wave)	320.0-407.5	08/05/86
Sonic Vel/Amp(8/10 foot-P-Wave)	320.0-407.5	08/05/86
Sonic Waveform(3/5 foot)	320.0-407.8	08/05/86
Sonic Waveform(8/10 foot)	320.0-407.5	08/05/86
Sonic(3/5 foot)Field Print	320.0-412.1	08/05/86
Sonic(8/10 foot)Field Print	323.1-410.9	08/05/86
Sonic(Field Print)	0-187.8	02/26/86
Temperature	0-1122.6	08/05/86
** BOREHOLE: DC-2		
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Temperature(CTD 23 LS 39)	48.8-1005.8	03/31/86
** BOREHOLE: DC-22C		
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Temperature(Piezometer)	81.1-1127.8	03/10/86
** BOREHOLE: DC-23GR		
* SUBCONTRACTOR: Eastman Whipstock		
Gyro Survey	0-1066.8	06/11/86
* SUBCONTRACTOR: Gearhart		
Cement Bond	61.0-390.1	04/04/86
Cement Bond	1.2-683.4	04/09/86
Compensated Neutron/Density	386.5-498.3	03/04/86
Compensated Neutron/Density	701.0-1075.9	05/01/86
Compensated Neutron/Density	365.8-726.9	04/04/86
Compensated Neutron/Density	701.0-821.1	04/16/86
Compensated Neutron/Density	670.6-756.5	04/10/86
Composite Density:Neutron	386.5-1076.6	05/01/86
Computed Spectral Gamma	701.0-1075.9	06/12/86

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GEOPHYSICAL TOOL	INTERVAL	LOGGED DATE
Dual Induction	701.0-1075.3	06/12/86
Dual Induction Laterolog	710.2-1075.0	06/12/86
Sonic Signature	381.0-725.4	04/04/86
Spectral Gamma	701.0-1075.9	06/11/86
Spectral Gamma	701.0-1075.3	06/11/86
Temperature	609.6-747.4	04/10/86
Temperature	701.0-1078.1	05/01/86
X-Y Caliper	335.3-495.0	03/04/86
X-Y Caliper	91.4-386.5	02/17/86
X-Y Caliper	335.3-433.1	02/20/86
X-Y Caliper	701.0-1075.3	06/11/86
X-Y Caliper	335.3-670.0	03/25/86
X-Y Caliper	335.3-726.9	04/04/86
X-Y Caliper	701.0-821.1	04/16/86
X-Y Caliper	701.0-1075.9	05/01/86
X-Y Caliper	670.6-756.5	04/10/86
X-Y Caliper(Composite)	495.0-1076.6	05/01/86
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Caliper	112.8-380.4	02/16/86
Caliper	4.9-115.8	02/07/86
Density	115.8-386.8	02/16/86
Dynamic Temperature(CTD 23 LS 39)	716.3-1075.6	06/10/86
Dynamic Temperature(CTD 23 LS 39)	335.3-672.4	03/26/86
Dynamic Temperature(CTD 23 LS 39)	384.0-532.8	03/18/86
Magnetic	726.9-1076.6	06/10/86
Magnetic	386.2-726.9	04/04/86
Nat Gamma	117.0-386.8	02/16/86
Neutron	112.8-382.5	02/16/86
Neutron	353.6-387.1	02/16/86
Neutron	371.2-726.9	04/04/86
Neutron	432.5-383.4	02/20/86
Neutron	0-117.0	02/07/86
SP&R	118.9-386.8	02/16/86
SP&R	387.1-726.9	04/04/86
Temperature(CTD 23 LS 39)	701.0-821.4	04/20/86
Temperature(CTD 23 LS 39)	54.9-433.4	02/20/86
Temperature(CTD 23 LS 39)	0-726.9	04/04/86
Temperature(CTD 23 LS 39)	69.8-1075.6	06/10/86
Temperature(CTD 23 LS 39)	0-685.2	04/08/86
Temperature(CTD 23 LS 39)	0-109.7	02/08/86
Temperature(CTD 23 LS 39)	0-378.0	02/18/86
* SUBCONTRACTOR: Washington State University		
Sonic(Field Print)	46.9-1021.1	05/08/86
Sonic Vel/Amp(3/5 foot-P-Wave)	718.4-1073.8	07/28/86
Sonic Vel/Amp(3/5 foot-S-Wave)	718.4-1073.8	07/28/86
Sonic Vel/Amp(3/5 foot-T-Wave)	718.4-1073.8	07/28/86
Sonic(Field Print)	709.0-1077.5	07/28/86
Sonic(Field Print)	0-387.1	02/17/86

GEOPHYSICAL LOGS COMPLETED
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GEOPHYSICAL TOOL	INTERVAL	LOGGED DATE
Temperature(CTD 23 LS 39)	640.1-906.8	04/27/86
* SUBCONTRACTOR: Westech Geophysical Camera	725.4-1072.9	07/24/86
** BOREHOLE: DC-23W		
* SUBCONTRACTOR: Eastman Whipstock Gyro Survey	0-708.7	10/14/85
* SUBCONTRACTOR: Gearhart Compensated Density/Neutron X-Y Caliper	398.4-716.6 390.1-716.6	10/14/85 10/14/85
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Caliper	384.0-717.5	10/10/85
Caliper	381.0-579.1	10/01/85
Dynamic Temperature(CTD 23 LS 39)	54.3-665.4	11/01/85
Dynamic Temperature(CTD 23 LS 39)	54.6-665.4	10/29/85
Dynamic Temperature(CTD 23 LS 39)	53.6-449.6	10/31/85
Magnetic	396.2-717.5	10/10/85
Nat gamma	381.0-729.1	10/04/85
Neutron	106.7-729.1	10/04/85
Neutron	381.0-582.2	10/01/85
SP&R	396.2-716.3	10/11/85
Temperature(CTD 23 LS 39)	0-716.6	10/11/85
Temperature(CTD 23 LS 39)	48.8-730.0	10/10/85
Temperature(CTD 23 LS 39)	54.6-449.6	10/30/85
Temperature(CTD 23 LS 39)	365.8-418.8	11/15/85
Temperature(CTD 23 LS 39)	54.9-662.3	11/15/85
Temperature(CTD 23 LS 39)	487.7-592.8	11/07/85
Temperature(CTD 23 LS 39)	487.7-662.0	11/07/85
Temperature(CTD 23 LS 39)	426.7-502.9	11/11/85
Temperature(CTD 23 LS 39)	391.7-729.1	10/04/85
Temperature(CTD 23 LS 39)	365.8-490.7	11/14/85
Temperature(CTD 23 LS 39)	396.2-504.4	11/12/85
* SUBCONTRACTOR: Washington State University		
Caliper-B	0-716.6	10/11/85
Sonic	0-582.8	10/01/85
** BOREHOLE: DH-33		
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Caliper	213.4-313.9	06/18/86
Density	178.0-316.4	06/19/86
Density	.6-199.3	05/13/86
Magnetic	18.0-222.2	05/08/86
Magnetic	222.8-315.8	06/18/86
Nat Gamma	222.5-315.8	06/18/86

GEOPHYSICAL LOGS COMPLETED
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GEOPHYSICAL TOOL	INTERVAL	LOGGED DATE
Nat Gamma	0-222.2	05/08/86
Neutron	189.0-316.4	06/18/86
Neutron	0-199.3	05/13/86
SP&R	54.9-221.9	05/08/86
SP&R	222.5-314.9	06/18/86
Temperature(CTD 23 LS 39)	73.2-313.9	06/18/86
Temperature(CTD 23 LS 39)	3.0-199.3	05/13/86
X-Y Caliper	3.0-220.4	05/08/86
X-Y Caliper	213.4-318.8	06/18/86
* SUBCONTRACTOR: Washington State University		
Sonic(3-5' Spacing)	77.7-217.3	05/09/86
Sonic(8-10' Spacing)	79.2-217.3	05/09/86
** BOREHOLE: O Brien		
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Caliper(#C-001)	.9-205.1	02/06/86
SP&R	182.9-204.8	02/06/86
** BOREHOLE: RRL-14		
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Temperature(CTD 23 LS 39)	4.3-861.1	01/28/86
** BOREHOLE: RRL-17		
* SUBCONTRACTOR: Gearhart		
Neutron/Nat Gamma	792.5-1015.6	03/19/86
X-Y Caliper	792.5-1005.8	03/19/86
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Density	182.9-919.0	03/31/86
Neutron	182.9-919.0	03/31/86
* SUBCONTRACTOR: Washington State University		
Sonic	0-708.7	04/30/86
** BOREHOLE: RRL-2B		
* SUBCONTRACTOR: Gearhart		
X-Y Caliper	731.5-869.9	02/16/86
** BOREHOLE: RRL-2C		
* SUBCONTRACTOR: Pacific Northwest Laboratory		
Temperature(CTD 23 LS 39)	762.0-986.0	01/28/86

Internal Letter



Rockwell International

Date November 18, 1986

No . 71320-86-181

TO: (Name, Organization, Internal Address)
. D. L. Banning
. Geologic Analysis Unit
. PBB/1100 Area

FROM: (Name, Organization, Internal Address, Phone)
. L. D. Walker
. Hydrologic Testing Group
. MO-039/600 Area
. 3-1655

Subject . Digitized Geophysical Logs of Selected Boreholes

Per your request, the following list has been compiled representing all of the geophysical logs digitized to date. Please note that these logs have been digitized for presentation purposes (e.g. document plots). The data have not been verified for accuracy.

<u>Borehole</u>	<u>Geophysical Log</u>
DC-2	Temperature
DC-3	Gamma-Gamma Natural Gamma Neutron-Epithermal-Neutron Resistivity Caliper Spontaneous Potential Temperature
DC-4	Gamma-Gamma Neutron-Epithermal-Neutron Sonic Natural Gamma Spontaneous Potential Resistivity Caliper Temperature
DC-5	Spontaneous Potential Caliper Resistivity Neutron-Epithermal-Neutron Gamma-Gamma Sonic
DC-6	Neutron-Epithermal-Neutron Gamma-Gamma Sonic
DC-8	Neutron-Epithermal-Neutron Sonic Gamma-Gamma Caliper Resistivity Temperature



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<u>Borehole</u>	<u>Geophysical Log</u>
DC-12	Temperature
DC-14	Gamma-Gamma Sonic Spontaneous Potential Short Normal Resistivity Caliper Natural Gamma Neutron-Epithermal-Neutron Temperature
DC-15	Density Neutron-Epithermal-Neutron Natural Gamma Temperature Spontaneous Potential Resistivity Caliper
DC-16A	Caliper Temperature Gamma-Gamma Sonic Neutron-Epithermal-Neutron Natural Gamma Spontaneous Potential Resistivity
DC-16C	Sonic Neutron-Epithermal-Neutron Natural Gamma Temperature Caliper Gamma-Gamma Spontaneous Potential Resistivity
DC-18	Density Neutron-Epithermal-Neutron Temperature Caliper Spontaneous Potential Resistivity



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Borehole

Geophysical Log

DC-19A	Temperature Natural Gamma Caliper
DC-19C	Temperature Resistivity Spontaneous Potential Sonic Caliper Gamma-Gamma Neutron-Epithermal-Neutron Natural Gamma
DC-19D	Caliper
DC-20A	Neutron-Epithermal-Neutron Gamma-Gamma Natural Gamma Caliper Resistivity Temperature
DC-20B	Sonic Neutron-Epithermal-Neutron
DC-20C	Neutron-Epithermal-Neutron Gamma-Gamma Temperature Caliper Spontaneous Potential Resistivity Sonic Natural Gamma
DC-20D	Caliper Neutron-Epithermal-Neutron Natural Gamma Restivity
DC-22A	Caliper



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<u>Borehole</u>	<u>Geophysical Log</u>
DC-22B	Neutron-Epithermal-Neutron Gamma-Gamma Spontaneous Potential Resistivity Natural Gamma Caliper Sonic Temperature
DC-22C	Caliper Neutron-Epithermal-Neutron Resistivity Temperature
DC-22D	Natural Gamma Caliper
DC-23GR	Caliper Sonic Neutron-Epithermal-Neutron Compensated Density Compensated Neutron Natural Gamma Temperature Spontaneous Potential
DC-23W	Neutron-Epithermal-Neutron Resistivity Temperature Compensated Neutron Bulk Density Caliper Sonic
DB-2	Sonic Neutron-Epithermal-Neutron Gamma-Gamma Caliper Resistivity Temperature Spontaneous Potential Natural Gamma



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<u>Borehole</u>	<u>Geophysical Log</u>
DB-11	Caliper Temperature Natural Gamma Neutron-Epithermal-Neutron Flowmeter
DB-14	Temperature Neutron-Epithermal-Neutron
DB-15	Temperature
DH-27	Natural Gamma Caliper Density Sonic Neutron-Epithermal-Neutron Spontaneous Potential
DH-28	Natural Gamma Neutron-Epithermal-Neutron Spontaneous Potential Density Sonic
DH-33	Caliper Neutron-Epithermal-Neutron Spontaneous Potential Natural Gamma Resistivity Density
RRL-2	Gamma-Gamma Neutron-Epithermal-Neutron Natural Gamma Sonic Caliper Temperature Spontaneous Potential Resistivity Magnetic
RRL-2B	Neutron-Epithermal-Neutron Caliper Temperature Neutron-Epithermal-Neutron Sonic Gamma-Gamma



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Borehole

Geophysical Log

RRL-2C	Caliper Neutron-Epithermal-Neutron Sonic Temperature Compensated Neutron Compensated Density Resistivity
RRL-4	Natural Gamma Neutron-Epithermal-Neutron
RRL-6B	Gamma-Gamma Neutron-Epithermal-Neutron Resistivity Natural Gamma Sonic Caliper Temperature Spontaneous Potential
RRL-7	Natural Gamma Neutron-Epithermal-Neutron
RRL-9	Natural Gamma Neutron-Epithermal-Neutron
RRL-14	Gamma-Gamma Neutron-Epithermal-Neutron Resistivity Natural Gamma Sonic Spontaneous Potential Caliper Temperature
RRL-17	Caliper Natural Gamma Neutron-Epithermal-Neutron Sonic



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<u>Borehole</u>	<u>Geophysical Log</u>
O-Brian	Neutron-Epithermal-Neutron Gamma-Gamma Caliper Natural Gamma Temperature
Enyeart	Natural Gamma Caliper Resistivity Spontaneous Potential Neutron-Epithermal-Neutron Gamma-Gamma
Ford	Neutron-Epithermal-Neutron Gamma-Gamma Natural Gamma Caliper Temperature
McGee	Gamma-Gamma Neutron-Epithermal-Neutron Natural Gamma Caliper Temperature Sonic Spontaneous Potential Resistivity Flowmeter
Black Rock Valley Wells	Gamma-Gamma Neutron-Epithermal-Neutron Natural Gamma Caliper Temperature
Marley #1	Gamma-Gamma Neutron-Epithermal-Neutron Natural Caliper Temperature



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Borehole

Geophysical Log

Marley #2

Natural Gamma
Gamma-Gamma
Neutron-Epithermal-Neutron
Temperature
Caliper

Taggares Ranch

Natural Gamma
Gamma-Gamma
Neutron-Epithermal-Neutron
Caliper
Temperature

Marley #5

Natural Gamma
Gamma-Gamma
Neutron-Epithermal-Neutron
Temperature

These files were generated for use on the Hewlett-Packard 9845B computer.

If you need further information on these files I can be reach on 3-1655.

L. D. Walker

L. D. Walker, Technician
Hydrologic Testing Group

LDW/sms

cc: L. D. Diediker
D. J. Moak
S. R. Strait *SR*
SCFI Files
BRMC-2/3503/B004/003
LB