



Department of Energy

Richland Operations Office
P.O. Box 550
Richland, Washington 99352

87-GTB-15

101.2 LPDR
WM-10 (1)

FEB 20 1987

Those on Attached List

Ladies and Gentlemen:

NUCLEAR REGULATORY COMMISSION HYDROLOGY DATA REVIEW MEETING OF
DECEMBER 2-5, 1986

During and immediately subsequent to the above subject Data Review Meeting a
variety of data requests was received. The task of assembling and dealing
with the volume of material, including reproduction, has been extremely time
consuming and we apologize for the delay. In an endeavor to satisfy all
participants we have decided to provide each requester a complete set of the
following materials:

- All material presented at the meeting and defined by Attachment 1 and,
All material requested at the meeting but not presented or available
immediately at that time as defined by Attachment 2.

The material above includes hydrologic pressure and water levels from the
Basalt Waste Isolation Project (BWIP) Integrated Data Base. The latter is
data that has been collected from boreholes on and around the Hanford Site for
use by BWIP and includes both data that has and has not been verified for
correctness against original records. The status of that data verification
and use limitations are described in Table 1. Attachment 5 is also provided
to augment data identified which may need some clarification regarding
unexpected pressure readings or gaps in certain data packages. Attachment 5
is self-explanatory.

It is here noted that some special requests involving one-of-a-kind hand
carried and specialty items were also requested, but not readily available.
These requests are listed on Attachment 3 and are being provided to the
specific requester as they are reproduced or become available.

Some requests as noted on Attachment 4 have been searched for and at this time
the request cannot be fulfilled because of the following:

- The request is too vague and added clarification and information is
needed to fulfill it. The requester should, if he is able to, define
the request more clearly by letter or telecon and we will do our best
to fulfill it.

WM Record File 101.2
WM Project 10
Docket No.
PDR
ALPDR (B)
Distribution: Linehan, Hildenbrand, Corrado
(Return to WM, 623-SS) Sac

B705080047 B70226
PDR WASTE
WM-10 PDR

2339

FEB 26 1987

- The request and/or data does not exist and the request cannot be fulfilled. It is the obligation of the requester to re-request the information at a later date or during the course of a future meeting.

If there are any questions regarding this communication or the data provided please contact Mr. K. M. Thompson of my staff (509) 376-6421.

Sincerely,

J. J. Kenting
for John H. Anttonen, Assistant Manager
for Commercial Nuclear Waste

BWI:JEM

Enclosures

Addressees for letter dated FEB 26 1987

Mr. John J. Linehan, Acting Chief
Repository Projects Branch
U. S. Nuclear Regulatory Commission
Mail Stop 623-SS
Washington, DC 20555

Mr. Terry Husseman, Program Director
High-Level Nuclear Waste
Management Office
Washington State Department of
Ecology
Mail Stop PV-11
Olympia, WA 98504

Mr. Max Power
Washington State Institute
for Public Policy
Science and Technology Project
The Evergreen State College
3164 Seminar Building
Olympia, WA 98505

Mr. Melvin R. Sampson, Chairman
Yakima Tribal Council
Yakima Indian Nation
P. O. Box 151
Toppenish, WA 98948

Mr. Russell Jim, Program Manager
Nuclear Waste Operations Office
Yakima Indian Nation
P. O. Box 151
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Mr. William H. Burke, Director
Nuclear Waste Study Program
Confederated Tribes of the
Umatilla Indian Reservation
P. O. Box 638
Pendleton, OR 97801

Mr. Elwood H. Patawa, Chairman
Board of Trustees
Confederated Tribes of the
Umatilla Indian Reservation
P. O. Box 638
Pendleton, OR 97801

Mr. Ron Halfmoon, Program Manager
Nuclear Waste Program
Nez Perce Indian Tribe
P. O. Box 305
Lapwai, ID 83540

Mr. J. Herman Reuben, Chairman
Nez Perce Tribal Executive Committee
P. O. Box 305
Lapwai, ID 83540

Ms. Mary Lou Blazek
Hanford Coordinator
Oregon State Department of Energy
625 Marion Street NE
Salem, OR 97310

Mr. Louie Dick, Chairman
Nuclear Waste Advisory Committee
Confederated Tribes of the
Umatilla Indian Reservation
P.O. Box 638
Pendleton, OR 97801

Table 1 - Status of Data Verification

- Pressure data for boreholes DC-19, DC-20, DC-22, DC-23W, and RRL-02 from the beginning of collection to May 20, 1986, have not been verified to match the original data. Verification of these data is in process.
- Pressure data for boreholes DC-19, DC-20, DC-22, and RRL-02 from May 21, 1986, to January 5, 1987, were run through an automatic (computerized) verification procedure. Listed below are some general data use limitations. Other data use limitations may also exist.
 - Data have not been adjusted for pressure probe drift.
 - Data gaps may exist due to transmission errors (Attachment 5).
 - Nonrepresentative readings were recorded during probe installation (Attachment 5).
 - Data flagged as CPP40B were collected with instrumentation past the calibration due date. Final disposition of these data will be determined upon calibration of the equipment.
- Water-level data for boreholes DC-19, DC-20, DC-22, DC-23W, and RRL-02 have been verified to be correct from the beginning of readings to December 3, 1986.
- Pressure data for boreholes other than DC-19, DC-20, DC-22, RRL-02, and triple probe data reside in the Hewlett Packard Shared Resource Manager Data Files but have not been transferred to the BWIP Integrated Data Base. Data in the Shared Resource Manager Data Files are verified from the beginning of readings to November 12, 1986.
- Water-level data for all boreholes except DC-19, DC-20, DC-22, DC-23W, and RRL-02 have been transferred to the subset portion of the BWIP Integrated Data Base. The data range is from beginning of reading to June 30, 1986, (more recent data resides in the Hewlett Packard Data Files awaiting verification). These data have not been verified. The data before September 1985, have been adjusted to the most current measuring point to allow plotting of data as though it were measured from the same measuring point. Data during and after September 1985, are not adjusted.
- Barometric pressures from Battelle are verified from August 1, 1985, to November 30, 1986.
- Data that have gone through the verification process have been checked against original field records and errors have been corrected. There is still the possibility of erroneous readings and some caution must be taken when utilizing these data.
- The hydrology data were collected, updated, verified, and reported using software that is not in compliance with Project Management Procedures Manual procedures. The software is not in a formal configuration control environment and is not formally certified. In addition, the hardware used is not configuration controlled. Therefore, caution should be exercised in the use and distribution of the hydrology data.
- The BWIP Integrated Data Base compliance activities rank as the highest priority and are currently being developed. Hydrology software and hardware compliance is a portion of this activity.

MATERIAL PRESENTED AT MEETING
TEAM I

Daily Status Reports for DC-23GR, DC-23W, RRL-14, RRL-6B (Folder)

Daily Status Reports (Drilling) for DC-2 (Workover), RRL-17, DC-18, DH-33

Drilling and Testing Specification

SD-BWI-SS-006	Drilling Completion Specifications for CX Series Multilevel
SD-BWI-TC-013	Drilling and Testing Specs for DC-18
SD-BWI-TP-039	Integrity Testing Plans for Selected Hanford Wells
	Drilling, Piezometer Design and Testing Specifications for DC-19, DC-20 and DC-22 Borehole Clusters
	Drilling Specifications for Borehole RRL-17
SD-BWI-TC-026	Drilling and Completion Specifications for Wanapum (Type W) and Grande Ronde (Type GR) Multilevel Piezometer Nests
SD-BWI-TC-023	Drilling Completion Specifications for Borehole RRL-23 and RRL-2C (Multilevel Piezometer Nest)
SD-BWI-TC-018	Drilling and Testing Specifications for Boreholes DH-27, DH-28 and DH-29

Data Acquisition Records

DAR No. 0300029	Subject/Title -	SA-6035, DH-27, Shift Reports Diamond Drill for Borehole DH-27
DAR No. 0300027	Subject/Title -	SA-6035, DH-28, Shift Reports for Borehole DH-28

Hydrologic Testing Sample Reports

(52) 1-page reports on water chemistry at different depths and at different boreholes.

Data Acquisition Packages (DAP's)

DAP 03-00103 - Shift Reports, SA-6036, DC-23W
DAP 03-00216 - Visuloggers 1-35
DAP 03-00161 - Shift Reports RRL-14, RRL-6B, DC-23W, RRL-2B, DC-22C, RRL-17
DAP 03-00029 - Borehole Basalt Core Data Log for DH-29
DAP 03-00030 - Borehole Basalt Core Data Log for DH-27

Miscellaneous

- Thesis by David Livesay - Hydrogeology, Upper Wanapum Basalt, Cold Creek Syncline.
- Internal letter to S. M. Baker from F. A. Spane, Jr; subject - Preliminary Results and Hydrologic Test Summary for DC-23GR (Letter No. 75220-86-114)
- Internal Reports (2) for DC 2A2/IF/Z05 and 2A2/IF/Z04
- Reports by Natural Resources Division of Science Applications Inc.
- As Builts for DC-23 - blue line sheets with borehole geophysical data and construction data.

Folder of Westbay Material

Memorandum on Modification Made to Electric Sampler Probe ES-192 (Letter from Westbay to R. L. Jackson)

Meeting minutes - Pre-probe Removal Meeting @ RRL-14 (from R. L. Jackson)

Schematic Diagram of Westbay Multi-Level Piezometer - RRL-14

Internal Letter No. 71320-86-160 - Subject - Westbay Ltd's Site Visit Report 9/16 - 10/3; from R. L. Jackson.

Ongoing Letter No. R84-4195 to Mr. O. L. Olson, DOE-Richland, from E. B. Ash - Subject - Status Report on Multi-Level/Multi-Port System for Small Diameter Boreholes Within and Around the RRL, Hanford Site.

Internal Letter No. 10120-85-352 (to R. L. Jackson from L. D. Diedieker) - Subject - Borehole Packer Seat Selection in RRL-14 for Westbay Multi-level Packer System.

Incoming Letter - from W. R. Salden (Westbay) to R. L. Jackson - Subject - Memorandum of Field Adjustments for Improved Noise Filtering of Paroscientific Model 702 Pressure Computer.

Outgoing Letter No. R86-3086 to W. Black (Westbay Inst. Inc.) from R. L. Jackson - Subject - Packer Integrity Testing Results.

Internal Letter No. 71320-86-183 from R. L. Jackson - Subject - Westbay Inst. Inc.
Site Visit Report 10/21 - 10/31 1986.

Meeting Minutes - Finalized Field Test Instructions for Removing the Multi-level
Packer System from Borehole RRL-14 (from R. L. Jackson)

Incoming Letter - from F. D. Patton of Westbay Inst. Inc. to R. L. Jackson -
Subject - Sampling and Analysis of Formation Water in RRL-14.

BINDER CONTAINING INFORMATION ON PROCEDURES

Drilling Fluid Losses

- Drilling and Testing Group Desk Instructions DI-75220-029 - Calculation and Documentation of Drilling Fluid Gain/Loss During Drilling.
- SD-BWI-TC-026 (Rev. 2), Appendix D, Documentation of Fluid Gains/Losses During Drilling.

Integrity Testing - see BOP C-2.8

Operational Status of Westbay RRL-14.

- Purchase Order to Westbay Instrument Inc. - Purchase Order U4D011 - total value \$318,002.00
- Verification Plan (Westbay Plan for Verifying Integrity and Operation of Multi-level Packer [MLP] System).

Composition of Water in Piezometer

- RHO-BWI-MA-4 BOP - Groundwater Sampling and Analysis
- RHO-BWI-MA-4 BOP - Groundwater Sampling, Offsite Shipment and Storage
- DI-75220-030 (Drilling and Testing Group Desk Instructions) - Sampling With a Stainless Steel Bailer Using and "A" Frame Support and Hydraulic Winch

Procedures and Results of Grout Testing

- RHO-BWI-MA-4 BOP - Hydraulic Conductivity of Cementitious Materials

Stratigraphy and Geophysical Data for DC-23W/GR

- RHO-BWI-MA-4 BOP - Geophysical Well Logging

Geophysical and Water-Level Data Relative to Yakima Barricade

- RHO-BWI-MA-4 BOP - Geophysical Surveying

Water-Level Data at Primary Monitoring Facilities

- RHO-BWI-MA-4 BOP - (Includes Change Notices CN-012) - Hydraulic Head Monitoring Procedures
- Test and Operating Procedure - Hydraulic Head Monitoring
- Computational Brief (CB) No. 00263 - Calculation of Barometric Efficiency and Removal of Atmospheric Effects from Water-Level and Downhole Data. (Yeatman and Wilcox)

Lab Calibration of Pressure Transducers

- RHO-BWI-MA-4 BOP - Measuring Test Equipment Calibration
- RHO-BWI-MA-4 Quality Assurance Program Manual - BWIP Title - Calibration and Control of Measuring and Test Equipment

Document Pressure Responses in Piezometers

- RHO-BWI-MA-4 BOP - Hydraulic Head Monitoring Procedures
- RHO-BWI-MA-4 BOP - Transmittal of Piezometric Data

Results of Recent Hydraulic Testing

- RHO-BWI-MA-4 BOP - Hydrologic Field Testing Procedures

Well Construction and Development Since December 1984

TEAM II

Simple Gravity Map (Yakima Barricade Area)

Ground Magnetic Map (Total Field) (Yakima Barricade Area)

BOP RHO-BWI-MA-4 - Geophysical Well Logging

TEAM III

Controlled Notebook RHO-BW-NB-322 DC-23GR Piezometer Notebook #2

Notebook of Drawdowns Data for McGee, DB-11, Ford, O'Brian and Enyeart

Folder of Hydrographs and Computer Printout of Water Level Information for:

Ford	- Rosalia	DH-27	- Composite Selah/Esquatzei
Enyeart	- Rosalia	DH-28	- "
McGee	- Rocky Coulee	RRL-2	- Gr. Ronde composite
O'Brian	- Rosalia	RRL-2A	- Rocky Coulee F.T.
BH-17	- Mabton	RRL-2B	- " "
DB-1	- Rosalia	RRL-6	- " "
DB-2	- Priest Rapids/Rosalia	299-E25-10	- Middle Ringold
DB-4	- Mabton	299-E26-01	- Hanford/Pasco Grav.
DB-7	- "	299-E26-08	- Rttlsnk Rdg Intbd.
DB-9	- "	299-W19-01	- Middle Ringold
DB-12	- Rosalia	699-25-70	- Suprabasalt Sediments
DB-13	- Mabton	299-W19-04	- Middle Ringold
DB-14	- "	299-W19-04	- Basal Ringold
DB-14	- Rosalia	699-32-70B	- Middle Ringold
DB-15	- Composite Wanapum	699-32-72	- Suprabasalt Sediments
DC-1	- Gr. Ronde/Schwana Seq.	699-32-77	- Pleist./Mid Ringold
DC-1	- Gr. Ronde/Schwana	699-35-78-A	- Middle Ringold
DC-1	- Umtanum Flow Bottom	699-37-82A	- Middle Ringold
DC-1	- Umtanum Flow Top	699-42-40ABC	- Ringold/Saddle Mtn.
DC-1	- Composite Wanapum	699-43-42	- Middle Ringold
DC-2	- Composite Gr. Ronde	699-43-88	- Suprabasalt Sediments
DC-4	- Rocky Coulee Flow Top	699-47-50	- Rttlsnk Rdg Interbed
DC-5	- " " " "	699-49-79	- Suprabasalt Sediments
DC-7	- Composite Gr. Ronde	699-50-53	- Hanford/Pasco Gravels
DC-12	- " " "	699-50-85	- Middle Ringold
DC-15	- " " "	699-50-85	- Lower Ringold
DC-16B	- Mabton Interbed	699-52-46A	- Rttlsnk Rdg Interbed
DC-16C	- Rosalia Flow Top	699-53-50	- " "
DC-19A,D	- Ringold/Saddle Mtn.	699-54-45A	- Hanford/Pasco Gravels
DC-19C	- F. T. of Rosalia, Sent. Gap, Ginkgo, Rky. Coulee, Cohasset, and Umtanum	699-54-45B	- Rttlsnk Rdg Interbed
		699-54-57	- " "
		699-55-50A	- Hanford/Pasco Gravels
DC-20A,D	- Ringold/Saddle Mtn.	699-55-50C	- " "
DC-23W	- (Hydrographs missing)	699-55-50D	- " "
DC-20C	- " "	699-55-57	- " "
DC-22A,D	- Ringold/Saddle Mtn.	699-56-53	- Rttlsnk Rdg Interbed
DC-22C	- (Hydrographs Missing)	699-59-55	- Hanford/Pasco Gravels
DDH-3	- Ginkgo	699-61-62	- " "
DH-8B	- Composite Umatilla/Mabton	DB-11	- Rosalia Flow Top (Transducer PSI)

Folder of Water Level Information for DC-19

Contains: Water Level Measurement Data Sheets
Computer listing of Pressure Data --
WHYDAT Listing

HEDL Calibration Procedure

- General Purpose Pressure Devices - Procedure # WHC-IHP-PRESGAX
- Calibration of Digiquartz Pressure Transducers -- PARASCIENTIFIC, INC.
- Transducer Full Calibration -- source: unavailable
- Parascientific Pressure Computer -- Procedure # WHC-PSC-General
- Slope Indicator -- Procedure # WHC-SNO-56401

Water Level Measurement Data Sheets and Recovery Pumping Data Sheets for DB-11

BWIP Certified Transmittal Package #86-71360-0014

(Coversheet for transmittal of water level Measurement data sheets for 699 wells)

WHYDAT Computer Printouts - water level data for DC-19 ←

TEAM IV

NOTEBOOK 1 DC-23GR

BOREHOLE TEST INSTRUCTION #60301

1. Notes from Field Notebooks, 6 pages dated 3/18/86 - 4/2/86.
 2. Borehole Information Sheets, 2 pages dated 3/26/86. (Construction Discharge Air Lift Test).
 3. Drawdown Pumping Test Data Sheet, 1 page dated 3/26/86. (For Construction Discharge Air Lift)
 4. DC-23GR Pressure Reading Tapes, 8 pages dated 3/26/86 at 07:01:59 hours - 4/2/86 at 16:25:10 hours.
 5. Pressure Probe Installation Sheet, 1 page dated 3/26/86.
 6. Downhole Pressure Probe Installation, 1 page (2 of 2 coversheet) dated 3/26/86.
 7. DC-23GR Recovery of Air-Lift Pumping, 12 pages dated 3/26/86 at 14:19:55 hours - 3/31/86 at 10:50:00 hours.
 8. Borehole Information Sheet, 1 page dated 3/31/86. (Lower Ginkgo Flow Top Injection)
 9. Instantaneous Slug Test Data Sheet, 1 page dated 3/31/86.
 10. Slug Injection Test, 5 pages dated 3/31/86 at 10:59:22 hours - 3/31/86 at 12:10:00 hours.
 11. Borehole Information Sheet (with diagram, "DC-23GR Well Head Configuration"), 1 page dated 4/9/86 and 1 page dated 3/31/86 - 4/2/86.
 12. Drawdown Pumping Test Data Sheets, 5 pages dated 3/31/86 - 4/2/86. (Construction discharge - submersible pump).
 13. DC-23GR Ginkgo Constant Discharge Withdrawal Test Readings, 11 pages dated 3/31/86 at 12:15:25 hours to 4/2/86 at 16:32:00 hours.
- Borehole Test Requirement Form #60403 - Installation and Cementing of Casing Across Wanapum Strate @ DC28GR
 - DAP-03-00389 Borehole Test Instructions #60403
BTI (Borehole Test Instructions) #60403
Rotary Rig Shift Report - for 699-57-83C 4/6/86
Rotary Rig Shift Report - 4/7/86 to 4/9/86

RHO-BW-NB-332 Field Notebook - Drilling Activities for DC-23GR

- BTRF-60402 Rocky Coulee F. T. and Hydrology Testing and Formal Hydrochemical Sampling
- DAP 03-00295 Subject - Borehole Test Instructions for DC-23GR Rocky Coulee F.T.

BOREHOLE TEST INSTRUCTION #60402

BTI #60402, 6 pages dated 4/7/86

Air-Lift Development---

1. Borehole Information Sheet (with drawing "DC-23GR Set Up for Air Lift Development"), 2 pages dated 4/11/86.
2. Downhole Pressure Probe Installation, 1 page (page 2 of 2 coversheet) dated 4/11/86. (For Rocky Coulee F. T.)
3. Pressure Probe Installation, 1 page dated 4/11/86. (For Rocky Coulee F.T.)
4. Bridge Plug As-Built (Diagram), 1 page dated 4/11/86.
5. Drawdown Pumping Test Data Sheets, 2 pages dated 4/11/86.
6. Recovery Pumping Test Data Sheets, 3 pages dated 4/11/86 - 4/12/86.
7. During Drawdown Recovery Test Data Sheet, 1 page dated 4/11/86 - 4/14/86.
8. Rocky Coulee Flow Top Data Tapes, 3 pages dated 4/10/86 at 23:42:31 hours - 4/12/86 at 04:00:10 hours.

Slug Test ---

1. Borehole Information Sheet (with drawing, "DC-23GR Slug Test"), 2 pages dated 4/11/86.
2. Instantaneous Slug Test Data Sheets, 3 pages dated 3/12/86 - 4/14/86.
3. Rocky Coulee Flow Top Data Tapes, 13 pages dated 4/12/86 at 05:00:10 hours - 4/14/86 at 10:05:10 hours.

Constant Head Injection Test---

1. Borehole Information Sheet (with drawing, "DC-23GR Well Head Diagram"), 1 page dated 4/21/86 and 1 page dated 4/14/86.
 2. Constant Head Injection Test Data Sheets, 2 pages dated 4/14/86.
 3. Sinco Data Sheet, 1 page dated 4/14/86 at 10:30:31 hours - 4/14/86 at 22:09:23.
- BTRF #60405 DC-23GR Cohasset Flow Top Hydrologic Test and Hydrochemical Sample
 - Data Acquisition Package #03-00300 DC-23GR - Hydrology Test Data From Testing of the Cohasset F. T.
BTI-60405 for DC-23GR Test Instructions for Sampling and Testing of Cohasset Flow Top.
Field Data Record - H.P. Computer Data Sheets (14 pg.) Packer As Built (1 pg.) Probe Installation (2 pg.)
Test Data Sheet - 1 pg.
Drawdown Pumping Test Data Sheet
Field Data Record Pulse Data Sheets (2 pg.); H.P. Computer Data Sheets (8)
Field Data Record Cohasset Head Test (2 pg.); H.P. Computer Data Sheets (16 pgs.) Well Head Diagram (1)
 - BTRF #60406 (Borehole Test Requirements Form) "Hydrologic Testing and Hydrochemical Sampling in the Birkett and Umtanum Flow Tops at DC-23GR.
 - DAP#03-00315 DC-23GR Birkett Flow Top Hydrology Testing and Hydrochemical Sampling

BOREHOLE TEST INSTRUCTIONS #60406

1. Borehole Test Instruction, 6 pages dated 4/21/86.
2. DC-23GR Birkett Flow Top Activity Log for Hydrologic Testing, 3 pages dated 4/23/86 - 4/27/86.
3. Borehole Test Information Sheet, 1 page dated 5/12/86.

4. Downhole Pressure Probe Installation Sheets, 2 pages dated 4/23/86.
5. Birkett Flow Top Diagram (Packer As Built), 1 page dated 4/23/86.
6. DC-23GR Birkett Flow Top Pressure Readings, 5 pages (1 of 54 through 5 of 54) dated 4/23/86 at 08:48:04 hours - 4/23/86 at 15:34:00 hours.
7. Borehole Test Information Sheet, 1 page dated 5/12/86.
8. Drawdown Pumping Test Data Sheet, 1 page dated 4/23/86.
9. Recovery Pumping Test Data Sheet, 1 page dated 4/24/86.
10. DC-23GR Birkett Flow Top Pressure Data, 6 pages (6 of 54 through 11 of 54) dated 4/23/86 at 15:35:01 hours - 4/23/86 at 05:40:00 hours.
11. Borehole Test Information Sheet, 1 page dated 5/12/86.
12. Recovery Test Data Sheet, 1 page dated 4/24/86.
13. DC-23GR Birkett Flow Top, 9 pages (12 of 54 through 20 of 54) dated 4/24/86 at 05:50:10 hours - 4/24/86 at 13:30:00 hours.
14. Borehole Test Information Sheet, 1 page dated 3/12/86. (Triple Probe Pressure Data)
15. Recovery Test Data Sheet, 1 page dated 4/24/86 - 4/25/86.
16. DC-23GR Birkett Flow Top, 11 pages (21 of 54 through 31 of 54) dated 4/24/86 at 13:32:01 hours - 4/24/86 at 22:55:00 hours.
17. Borehole Test Information Sheet, 1 page dated 3/12/86.
18. Constant Head Injection Test Data Sheets, 3 pages dated 4/25/86.
19. DC-23GR Birkett Flow Top, 23 pages (32 of 54 through 54 of 54) dated 4/24/86 at 23:00:00 hours - 4/27/86 at 07:00:00 hours.

NOTEBOOK 2 DC-23GR

- DAP 03-00451 DC-23GR Umtanum Flow Top Hydrology Testing and Hydrochemical Sampling

1. BTI#60406a, 7 pages dated 5-01-86 to 9-20-86
2. BTRF#60406, 3 pages dated 4-18-86 to 4-21-86 Uh9 9/27/86
3. Borehole Test Information Sheet, 1 page dated 9-19-86

4. Well Head Diagram, 1 page dated 9-18-86
 5. Activity Log, 2 pages dated 5-01-86 to 6-12-86
 6. Bridge Plug As-Built Illustrations, 5 pages dated 5-12-86 to 6-03-86
 7. Drawdown Pumping Test Data Sheet, 1 page dated 5-15-86
 8. Drawdown Pumping Test Data Sheets, 8 pages dated 5-19-86 at 15:30 to 5-28-86 at 08:42
 - Drawdown Pumping Test Data Sheets, 1 page dated 5-23-86 to 5-28-86
 9. Drawdown Pumping Test Data Sheets, 3 pages dated 5-28-86 at 13:00 to 5-30-86 at 12:30
 - Drawdown Pumping Test Data Sheets, 1 page dated 5-31-86
 10. Drawdown Pumping Test Data Sheets, 2 pages dated 6-04-86 at 08:02 to 6-04-86 at 17:05
 11. Drawdown Pumping Test Data Sheet, 1 page dated 6-05-86 at 08:10 to 13:47
 12. Drawdown Pumping Test Data Sheet, 1 page dated 6-10-86 at 11:45 to 14:29
 13. Pressure Data, 6 packets, 186 pages dated 5-14-86 at 12:41:43 to 6-06-86 at 08:39:02
- DAP 03-00452
1. BTI#60602, 6 pages dated 6-10-86 to 9-25-86 DM 10-01-86
 2. Borehole Test Information Sheet, 1 page dated 9-19-86
 3. Well Head Diagram, 1 page dated 9-18-86
 4. Activity Log, 1 page dated 6-12-86 to 6-24-86
 5. Bridge Plug As-Built Illustrations, 2 pages dated 6-13-86 (only 2 of 2 is in notebook)
 6. Drawdown Pumping Test Data Sheet, 1 page dated 6-16-86 at 09:10
 7. Constant Head Injection Test Data Sheet, 2 pages dated 6-23-86 at 09:17 to 6-24-86 at 07:22
 8. Pressure Data Sheets, 62 pages dated 6-12-86 at 10:55:00 to 6-24-86 at 08:10:05

- DAP 03-00450

1. BTI#60602A, 5 pages dated 6-25-86 to 7-17-86
2. BTRF#60602, 3 pages dated 6-06-86 to 6-10-86
3. Borehole Test Information Sheet, 1 page dated 9-19-86
4. Well Head Diagram, 1 page dated 9-18-86
5. Activity Log, 1 page dated 6-25-86 to 7-17-86
5. Bridge Plug As-Built Illustration, 4 pages dated 6-25-86 to 6-27-86
7. Drawdown Pumping Test Data Sheets, DMW 9/24/86, 8 pages dated 7-01-86 at 07:56 to 7-11-86 at 09:33
3. Drawdown Pumping Test Data Sheets, 3 pages dated 7-14-86 at 12:30 to 7-16-86 at 13:30
9. Downhole Pressure Data, 105 pages dated 6-26-86 at 6:37:16 to 7-17-86 at 3:40:07

NOTEBOOK 3

- BTRF (Borehole Test Requirement Form) #60304
 - DAP 03-00288 (Contains Surveillance Report #BSRP 86-195)
1. Downhole Pressure Probe Installation, 2 pages dated 3/26/86.
 2. Borehole Information Sheet, 1 page dated 4/16/86.
 3. Drawdown Pumping Test Data Sheet, 1 page dated 3/27/86.
 4. Recovery Pumping Test Data Sheet, 1 page dated 3/27/86.
 5. DC-18 Data Sheets, 19 pages dated 3/26/86 - 3/28/86.
 6. Borehole Information Sheet, 1 page dated 4/16/86.
 7. Instantaneous Slug Test Data Sheet, 1 page dated 4/16/86.
 8. Slug Test #1, 4 pages dated 3/28/86 at 10:19:12 hours - 3/28/86 at 12:02:31 hours.
 9. DC-18 Data Sheets, 16 pages dated 3/28/86 at 10:45:55 hours - 3/28/86 at 13:12:01.

10. Instantaneous Slug Test Data Sheet, 1 page dated 3/28/86.
 11. Slug Test #2, 1 page dated 3/28/86 at 13:22:36 hours - 13:26:55.
 12. DC-18 Data Sheets, 6 pages dated 3/28/86 at 13:14:01 hours - 3/28/86 at 13:39:25.
 13. Instantaneous Slug Test Data Sheet, 1 page dated 3/28/86.
 14. Slug Test #3, 4 pages dated 3/28/86 at 13:44:59 hours - 3/28/86 at 13:53:29.
 15. DC-18 Data Sheets, 8 pages dated 3/28/86 at 13:44:59 hours - 3/28/86 at 13:53:29.
 16. Borehole Information Sheet, 1 page dated 4/16/86.
 17. Drawdown Pumping Test Data Sheets, 9 pages dated 3/28/86 - 4/1/86.
 18. Recovery Pumping Test Data Sheet, 1 page dated 4/1/86 - 4/2/86.
- BTRF #60305 (3 sheets + transmittal form)
 - DAP 03-00302/BTI #60305
Surveillance Report #BSRP-86-196 + Coversheet for DAP

Borehole Test Instructions #60305 and Test Data

1. BTI #60305, 7 pages dated 4/3/86.
2. DC-18 Roza Flow Top Activity Log for Hydrologic Testing, 2 pages dated 4/7/86 - 4/16/86.
3. Downhole Pressure Probe Installation Sheets, 2 pages dated 4/8/86.
4. Borehole Information Sheet, 1 page dated 4/30/86.
5. Drawdown Pumping Test Data Sheet, 1 page dated 4/8/86.
6. Recovery Pumping Test Date Sheet, 1 page dated 4/8/86.
7. DC-18 Pressure Data, 4 pages dated 4/8/86 at 09:32:00 hours - 4/8/86 at 12:16:00 hours.
8. Borehole Information Sheet, 1 page dated 4/30/86.

9. Instantaneous Slug Withdrawal Test Data Sheet, Slug Test #1, 1 page dated 4/8/86.
10. Instantaneous Slug Withdrawal Test Data Sheet, Slug Test #2, - 1 page dated 4/8/86.
11. DC-18 Sinco Transducer Tapes, 5 pages dated 4/8/86 at 13:10:01 hours - 4/8/86 at 13:08:01 hours.
12. DC-18 Pressure Data, 3 pages dated 4/8/86 at 12:47:30 hours - 4/8/86 at 13:04:42 hours.
13. DC-18 Pressure Data, 2 pages dated 4/8/86 at 13:08:09 hours - /8/86 at 13:27:42.
14. Borehole Information Sheet, 1 page dated 4/30/86.
15. Drawdown Pumping Test Data Sheets, 5 pages dated 4/9/86 - 4/15/86.
16. Recovery Pumping Test Data Sheet, 1 page dated 4/15/86- 4/16/86.
17. DC-18 Sinco Transducer Tapes, 22 pages dated 4/9/86 at VLA 5/7/86, 14:19:51 hours - 4/16/86 at 07:46:15.
 - DAP # 03-00322 Borehole Test Instr. #60305 (DC-18 Sentinel Gap Hydraulic Testing and Hydrochemical Sampling)
 1. Borehole Test Instruction, 7 pages dated 4/21/86.
 2. Borehole Test Information Sheet, 1 page dated 5/9/86.
 3. Drawdown Pumping Test Data Sheet, 1 page dated 4/24/86.
 4. Air-Lift Development Pumping Sinco Pressure Data, 3 pages dated 4/24/86 at 10:48:01 hours - 4/24/86 at 14:00:01 hours.
 5. Borehole Test Information Sheet, 1 page dated 5/9/86.
 6. Instantaneous Slug Test #1 Data Sheet, 1 page dated 4/24/86.
 7. Instantaneous Slug Test #2 Data Sheet, 1 page dated 4/24/86.
 8. Slug Withdrawal Test Sinco Pressure Data, 8 pages dated 4/24/86 at 14:23:22 hours - 4/24/86 at 15:13:01 hours.
 9. Borehole Test Information Sheet, 1st page dated 5/9/86.
 10. Instantaneous Slug Test Data Sheet, 1 page dated 5/5/86.
 11. Instantaneous Slug Test Data Sheet, 1 page dated 5/5/86.

12. Slug Withdrawal Test Sinco Pressure Data, 4 pages dated 5/5/86 at 09:28:33 hours - 5/5/86 at 09:45:58 hours.
 13. Borehole Pumping Test Data Sheets, 1 page dated 5/21/86.
 14. Drawdown Pumping Test Data Sheets, 7 pages dated 4/25/86 - 5/2/86.
 15. Recovery Pumping Test Data Sheet, 1 page dated 5/2/86.
 16. Constant Discharge Pumping Test Sinco Pressure Data, 7 pages dated 4/25/86 at 09:22:03 hours - 4/27/86 at 12:34:01 hours.
- DAP 03-00360 (Borehole Test Instructions #60305) (DC-18 Roza Flow Top Hydraulic Testing and Hydrochemical Sampling)
1. Borehole Test Instructions - 7 pages, date 4/3/86
 2. Activity Log - 2 pages dated 4/7/86 - 4/16/86
 3. Downhole Pressure Probe Installation - 2 pages, 4/28/86
 4. Borehole Testing Information
 5. Drawdown Pumping Test Data - 1 page, 4/30/86
 6. Recovery Pumping Test Data - 1 page, 4/30/86
 7. Pressure Probe Data - 4 pages, 4/23/86
 8. Borehole Test Information - 1 page, 4/30/86
 9. Inst. Slug Test Data - 1 page, 4/30/86
 10. Inst. Slug Withdrawal Data - 1 page, 4/30/86
 11. DC-18 (Roza) Slug Test Withdrawal (Slug Test #2) - 2 Pages, 4/23/86
 12. DC-18 (Roza) Slug Test Withdrawal (Slug Test #1) - 3 pages, 4/23/86
 13. Pressure Probe Data - 3 pages, 4/23/86
 14. Pressure Probe Data - 2 pages, 4/23/86
 15. Borehole Test Information - 1 page, 4/30/86
 16. Drawdown Pumping Test Data (DC-18) - 5 pages, 4/25/86
 17. Recovery Pumping Test Data - 1 page, 4/30/86
 18. Pressure Probe Data - Const. Discharge Pumping - 22 pages, 4/22/86

- Borehole Test Requirement Form #60503 + Transmittal Coversheet (Geophysical Logging @ DC-18)
 - DAP 03-00362 Coversheet + Borehole Test Instr. #60503 - 6/2/86
 - BTRF # 60601 (Hydrol. Testing + Hydrochem. Sampling and Borehole Mapping of DC-18 Tectonic Zones) + Coversheet
-
- DAP 03-00376 (Hyd. Testing of Fractured Zones @DC-18 w/in Frenchman Springs Member @ DC-18).
1. BTI #60601-A, 6 pages dated 6/9/86.
 2. DC-18 Frenchman Springs Tectonic zone #1 Activity Log for Hydrologic Testing, 7 pages dated 6/10/86 to 7/13/86.
 3. Borehole Test Information sheet, 1 page dated 8/5/86.
 4. Drawdown Pumping Test Data Sheet, 1 page dated 6/11/86 (VLA 8/18/86)
 5. DC-18 Tectonic zone #1 Air-Lift Development Pumping Pressure Data, 4 pages dated 6/11/86 at 8:45:44 to 6-12-86 at 9:10:01.
 6. Borehole Test Information sheet, 1 page dated 6/19/86.
 7. DC 18 Water Level Measurements Data Sheet, 1 page dated 6/12/86, (VLA 8/18/86)
 8. Borehole Test Information Sheet, 1 page dated 8/5/86.
 9. Instantaneous Slug Test Data Sheet, 1 page dated 6/12/86, (VLA 8/18/86)
 10. DC-18 Tectonic Zone #1 Slug Withdrawal Test Sinco Pressure Data, 4 pages dated 6/12/86 at 9:56:01 to 6/12/86 at 10:24:15.
 11. Borehole Test Information Sheet, 1 page dated 8/5/86.
 12. Instantaneous Slug Test Data Sheet, 1 page dated 6/12/86, (VLA 8/18/86).
 13. DC-18 Tectonic Zone #1 Slug Withdrawal Test #2 Sinco Pressure Data, 3 pages dated 6-12-86 at 10:38:01 to 6-12-86 at 11:00:43. (Pages 1 and 2 are missing)
 14. Borehole Test Information Sheet, 1 page dated 8/5/86.
 15. Drawdown Pumping Test Data Sheet, 15 pages dated 6/12/86 - 7/2/86 (VLA 8/18/86)

- 16. Recovery Pumping Test Data Sheet, 1 page dated 7/2/86.
- 17. DC-18 Tectonic Zone #1 Constant Discharge Submersible Pumping Test Sinco Pressure Data, 22 pages dated 6/12/86 at 14:07:00 to 7/2/86 at 6:06:01.
 - DAP 03-00375 (Hyd. Testing of Comp. Fract. Zones and Flow Tops) DC-18
- 1. BTI #60601-B, 6 pages date 7/1/86.
- 2. DC-18 Frenchman Springs Tectonic zone #2, Activity Log for Hydrologic Testing, 7 pages dated 7/14/86 to 7/18/86.
- 3. Borehole Test Information Sheet, 1 page dated 8/6/86.
- 4. Drawdown Pumping Test Data Sheet, 1 page dated 7/15/86 - 7/16/86.
- 5. DC-18 Tectonic Zone #2, Pretest Trend for Air-Lift Development Pressure Data; 4 pages dated 7/15/86 at 13:30:01 hours to 7/15/86 at 15:23:01 hours.
- 6. DC-18 Tectonic Zone #2 Air-Lift Development Pumping Data, 6 pages dated 7/15/86 at 15:26:01 hours to 7/16/86 at 14:30:01 hours.
- 7. Borehole Test Information Sheet, 1 page dated 8/6/86.
- 8. Instantaneous Slug Test #1 Data Sheet, 1 page dated 7/17.
- 9. DC-18 Tectonic Zone #2, Sinco Transducer Tapes, 4 pages dated 7/17/86 at 08:29:01 to 7/17/86 at 10:32:01.
- 10. Borehole Test Information Sheet, 1 page dated 8/6/86.
- 11. Instantaneous Slug Test Data Sheet, 1 page dated 7/17.
- 12. DC-13 Tectonic zone #2 Slug Injection Test #2 Pressure Data Sheet, 6 pages dated 7/17/86 at 10:33:01 to 7/17/86 at 10:52:01.
- 13. Borehole Test Information Sheet, 1 page dated 8/6/86.
- 14. Constant Head Injection Test Data Sheet, 1 page dated 7/18/86.
- 15. DC-18 Tectonic Zone #2 Constant Head Injection Pressure Data, 3 pages dated 7/18/86 at 8:28:30 to 7/18/86 at 13:23:01.

NOTEBOOK 4

- BTRF #60306 (Hyd. Isolation of the Umtanum Flow Top of the V. High MG Flow [Umtanum Flow Bottom] in DC-2A2)
 - DAP 03-00269 (Borehole Test Instructions 60306)
 - BTRF #60501 (Installation of Casing Across the Hanford and Ringold Strata @ Borehole DH-33)
 - DAP 03-00378 (Borehole Test Instructions #60501) + Core Drilling Shift Report
 - BTRF #60603 (Geophysical Logging of Borehole DH-33 from Top of Basalt to Total Depth)
 - DAP 03-00379 (BTI #60603 Performance of Geophysical Logging at DH-33)
 - 1. Core Drilling Shift Report 2 pgs. 6/18/86
 - 2. Core Drilling Shift Report 1 pg. 6/19/86
 - BTRF 60604 (Evaluation of Packer Integrity of Multiport Piezometer System in RRL-14, 3 pgs. 6/19/86)
 - DAP 03-00412 (BTI-60604 Hydr. Collection and Evaluation of Integrity of Multiport Piezometer System in RRL-14)
- BTI-60604 3 pages dated 6/17/86
- Activity Log 4 pages dated 6/20/86 to 7/03/86
- Borehole Test Information 1 page dated 7/03/86
- Constant Drawdown Test Data 3 pages dated 6/27/86 and 6/30/86
- Constant Drawdown Test Data 2 pages dated 6/30/86
- Constant Drawdown Test Data 2 pages dated 6/30/86
- Constant Drawdown Test Data 2 pages dated 6/30/86
- Constant Head Injection Test 3 pages dated 7/01/86
- Photocopy of Activity Notebook (RHO-N-479) 32 pages dated 6/20/86 to 7/03/86
- BTRF #60803 (Collecting Groundwater Samples from Multilevel Piezometer Monitoring Facility at RRL-14)

DAP 03-00440

1. BTI 60803 - Collecting Groundwater Samples @ RRL-14
2. Activity Log
3. Site Controlled Notebook (RHO-BW-NB-358) pgs. 59-143 9/2/86 - 10/13/86
4. Hydrology Field Notebook (RHO-BW-NB-379) pgs. 1-79 10/21-86 - 10/31/86

PROCEDURES NOTEBOOK

- Quality Assurance Program Manual (Data Acquisition Package) No. 11-205 10 pages
- Project Management Procedures Manual (Records Submittal via Transmittal Packages No. 8-113 15 pages
- Quality Assurance Program Manual (Records Management System) No. 17-101 18 pages

Preparing Basalt Records Management Center Desk Instr.- 1 page
(Appendix A17-101)

BWIP Document List (Exhibit 1, 17-101) 14 pages

- Internal Letter No. 71000-86-LC-389 Subj. - Procedural Control of Borehole DC-18
- Basalt Operating Procedure # C-2.8 Hydrologic Field Testing Procedures (+ change notice) 17 pages 1/23/84
- BOP C-2.8 Appendix A; Hydrologic Formation Development 2 pgs. 1/84
- BOP C-2.8 Appendix B; Const. Dischg. Test - Air Lift Method 2 pgs. 1/84
- BOP C-2.8 Appendices C-H 17 pgs. 1/84
- BOP C-2.10 Geophysical Well Logging (+ change sheet) 8 pgs. 10/22/84
- BOP C-2.12 Hydraulic Head Monitoring Procedures + Appendices A and B + several change notices 18 pages 7/84
- BOP C-2.13 Transmittal of Piezometer Data + Change Sheets 10 pgs. 10/84
- BOP C-4.71 Groundwater Sampling Offsite Shipment and Storage + Change Sheets 19 pgs. 1/15/85

- BOP C-4.73 Solution Chemistry Laboratory Operating Procedures + Change Notices 16 pgs. 2/1/85
- BOP C-4.82 Field Analysis Method 12 pgs. 4/11/86
- SD-BWI-TC-013 Drillhole and testing Specifications for Borehole DC-18 and Appendices A-C 46 pgs. 3/10/86
- SD-BWI-TC-026 Drilling and Completion Specs. for Wanapum (Type W) and Grande Ronde (Type GR) Multilevel Piezometer Nest Boreholes + Appendices A-F; 73 pgs. Revision 2 and Revision 3
- Internal Letter No. _____ from L. R. Fitch; Subject - Interim Issuance of BOP C-2.16 and C-2.17. (Includes a copy of BOP C-2.17)
- Internal Letter from L. R. Fitch; Subject - Extension of BOPs Previously Issued as Interim for BOP C-2.16, C-2.17 and C-2.18 (contains BOP C-2.16).
- BOP C-2.4 Groundwater Sampling and Analysis + Appendices A, B, D, E, F, H, I, K, L, M, N, O, P, Q, R, S, T, U, and V.

Geophysical Data (one of a kind-- returned to BRMC)

- DAP No. 03-00169 Geophysical Logs for Borehole DH-27
- DAP No. 03-00201 Geophysical Logs for DC-23GR
- DAP No. 03-00362 Borehole Geophysical Logs for Borehole DC-18 and BTI-60503
- DAP No. 03-00363 Borehole Geophysical Logs for Borehole DC-23GR
- DAP No. 03-00176 Geophysical Logs Completed in Borehole DH-28
- DAP No. 03-00217 Borehole Geophysical Logs for Borehole DC-23GR
- DAP No. 03-00320 Borehole Geophysical Logs for Borehole DC-23GR

TEAM V (HYDROCHEMISTRY)

PART 1 Introductory Material - Index + Evaluation of GW Tracers for
Columbia Plateau Aquifers @ Hanford Site

PART 2 Hydrochemistry for Borehole DC-18 (Abstract of Poster
Presentation at GSA Meeting - 1986)

Internal Letter No. 75232-86-027 from S. Hall to R. Smith
Subject - Analysis of Development Pumping Water Samples for Borehole
DC-18, Rosalia Flow Top + Normal Listings of Data

Internal Letters No. 75232-86-028; 75232-86-035

PART 3 Hydrochemistry for Borehole DC-23W and DC-23/GR
Drawdown Pumping Test Data-Sheets for DC-23W (internal 13G1-2244)
Nomad Listing for Open Hole Thru Wanapum

PART 4 Field Notebooks - all present (from list)

PART 5 Data Used in EQ 3/6 Model - Watstore Hydrochemistry Data (This
was requested by G. K. Jacobs).

HYDROCHEMISTRY DATA INDEX

Part 1 - Introductory Material

1. Index
2. Abstract and illustrations: "Evaluation of Groundwater Tracers for Columbia Plateau Basalt Aquifers at the Hanford Site, Washington."

Part 2 - Hydrochemistry for Borehole DC-18

1. Stratigraphic column for DC-18
2. Rosalia Flow Top
3. Roza Flow Top
4. Sentinel Gap Flow Top
5. Frenchman Springs Tectonic zone
6. Ginkgo Flow Top

Part 3 - Hydrochemistry for Boreholes DC-23\W and DC-23/GR

1. DC-23\W (open hole through Wanapum)
2. Rosalia Flow Top
3. Sentinel Gap Flow Top
4. Ginkgo Flow Top
5. Umtanum Flow Top
6. "Borehole Development History at DC-23/GR" (Draft Summary Report)

Part 4 - Notebooks

1. DC-23/W Field Notebooks - Hydrochemistry
2. DC-23/GR Field Notebook - Hydrochemistry
3. DC-18 Field Notebook - Hydrochemistry
4. Sample Log Book, Vol. 1
5. Sample Log Book, Vol. 2

Part 5 - Database Printout, Since 1/1/85

1. Development Samples
2. Formal Samples
3. General Samples
(This Part excludes DC-18 and DC-23 data, which have been inserted into Parts 2 and 3, respectively).

Organization of Parts 2 and 3:

- A. These data packages are arranged in stratigraphic sequence.
- B. The organization of data for each stratum is as follows:

1. Summary of results (or appropriate production data, etc.) where available.
2. The results of FORMAL sampling and analysis, at the end of the pumping campaign.
3. Results of laboratory analysis of PRE-DEVELOPMENT samples (e.g., drilling fluid, "system" water, etc.)
4. Results of laboratory analysis of DEVELOPMENT samples (i.e., time-series samples collected during development pumping).
5. Results of FIELD ANALYSIS of pre-development or development samples. These data sheets include dates, times, and volumes.

Caution:

The FORMAL sample results are the results of laboratory analysis and have not been corrected for residual contamination by drilling fluids. Further, the Hydrochemistry Unit considers the FORMAL oxygen measurements to be in error (see DC-18 internal letters summarizing the results of field analysis).

AVAILABLE MATERIAL REQUESTED AT THE
MEETING WHICH WAS NOT COVERED BY ATTACHMENT 1

Attachment 2

• HEADCO - Spane & Mercer

- RHO-BW-ST-71 P Program for Converting Observed Water Levels and Pressure Measurements to Formation Pressure and Standard Hydraulic Head (Includes Program Listing)
- SD-BWI-TI-313 Preliminary Evaluation of Piezometer Responses at DC-19, DC-20 and DC-22 During Construction of DC-23W
- SD-BWI-TD-025 Results of Integrity Testing and Selected Boreholes in the Immediate Reference Repository Area
- RHO-BW-TI-329 Design Drilling and Construction of Well RRL-2B and Piezometer Nest RRL-2C, R. Jackson
- RHO-BW-NB-321 DC-23W Piezometer Brown and Strait Notebook 1
- SD-BWI-TI-226 Piezometer Completion Report for Borehole Cluster Sites DC-19, 20, 22
- HT-ES-200 Entry, Transmittal and Verification of Piezometric Barometric Data and Calibration Coefficients

Water Level Data Sheets for DB-11

Piezometer Responses in BWIP Monitoring Wells During Construction and Testing of DC-23W and DC-23GR - DRAFT

The following material will be supplied at a later date:

- DH-27, DH-28: Completion information; vertical seismic profiles
- DC-23GR: Results of integrity testing
- DB-11: Vertical seismic profiles; water-levels (adjusted for atmosphere, pressure and raw data, to 1986)
- RRL-2B, 2C: Geophysical logs
- Data Package 35

Procedures:

- Basalt Operating Procedures, RHO-BWI-MA-4, Number 2-16
- Basalt Operating Procedures, RHO-BWI-MA-4, Number 2-17
- Preparation of controlled notebooks for wellsite (must be identified)

Maps:

- (1) Large Hanford Site blueprint with evaluation contours
- (2) Large blueprint of the Basalt Waste Isolation Project well locations with length
- (3) Acetate base maps (data points, wells) for contoured gravity and magnetic

Reports:

- RHO-BWI-C-8: Hole History, DC-10, 1977
- RHO-BWI-C-31: Drilling History, DC-2-A1, 1978
- 03-00248, B067916, Core Data, DC-18
- 03-00235, B0899157, Geophysical Logs, DC-18
- 03-00272, B088559, Geophysical Logs, DC-18
- 03-00316, B093012, Geophysical Logs, DC-18
- 03-00239, B088332, Shift Reports, DC-18
- 03-00240, B089154, Geolograph, DC-18

The following material cannot be supplied for the following reasons:

1. N. Coleman request:
 - a. DC-19, -20, -22, -23: Neutron-epithermal neutron logs (digitized format not available).
2. D. Ralston request:
 - a. DH-27, -28, -33; DB-11; DC-02-A2: Hydrologic testing controlled notebooks and data plots (do not exist).
3. M. Webber requests:
 - a. DH-27, -28: Completion diagrams (do not exist)
 - b. Chemistry data on Total Dissolved Solids (TDS) variation in plazometer tubes (do not exist)
 - c. Procedures and calculations to convert chemistry data to TDS for HEADCO program (request is too vague)
4. D. L. Chery requests:
 - a. GW-3 Revision (too vague)
 - b. Basalt Operating Procedure, C-2.14; and Basalt Operating Procedure C-2.15 (do not exist)
 - c.
 - Field water level (too vague)
 - "HP" data listing of same levels (too vague)
 - Basalt Technical Base (too vague)
 - Rosalia Flow Top, 10/84, 2/86 (too vague)
 - Basalt Ringold, 9/85 (too vague)
5. G. K. Jacobs requests:
 - a. Pressurized water sample from DC-23 -- data collected during instrument shake-out not meant for interpretation (too vague).
 - b. Results of interlaboratory comparisons of groundwater analyses (do not exist).
6. N. Coleman requests:
 - a. "Hydrogeology data bases" (too general)
 - b. Data Entry Verification Form (do not exist)
7. P. Davis (SNL) request:
 - a. Procedure for identifying geologic units in boreholes (too general)
8. V. Nguyen requests:
 - a. Quality Assurance Procedure to clarify personnel responsibilities for:
 - Official document release (too vague)
 - Drawings/maps/plans (too vague)
 - Computer data base (too vague)
 - b. Procedures for:
 - Drilling fluid loss (too vague)
 - Integrity testing (too vague)
 - c. BWIP Quality Assurance Plan 8606 4/16/86 - (unknown)
9. D. Ralston request:
 - a. Arithmetic or logarithmic presentations of hydrologic data for DC-23 GR&W, DC-18 (do not exist)
10. N. Coleman and A. Dierrari request:
 - a. Large, multicolor pen plots of hydraulic heads (DC-19, -20, -22, -23, RRL-2) (small pen plots provided; should be sufficient)

Listed below are transmission errors identified during the automated data verification process and readings taken during probe installation. This covers the date range of May 21, 1986, to October 31, 1986. These are listed to help explain possible unexpected pressure readings or gaps in the data.

Borehole	Horizon Code	Date	Time (PST)	Activity Problem
DC-22C	UTTO0	7-03-86	11:00:40	Transmission Error
DC-22C	RCT00	7-04-86	19:00:31	Transmission Error
DC-20C	COT00	7-09-86	10:00:34	Probe Installation
			to	
			14:00:35	
DC-22C	UTTO0	7-11-86	11:00:41	Probe Installation
DC-22C	UTTO0	7-11-86	12:00:40	Probe Installation
RRL-02C	RCT00	7-25-86	13:00:09	Probe Installation
RRL-02C	RCT00	7-25-86	14:00:07	Probe Installation
RRL-02C	BKT00	7-29-86	13:00:25	Field Computer Error
RRL-02C	BKT00	7-29-86	14:00:24	Field Computer Error
DC-22A	a11	8-11-86	14:00:23	Faulty Cable on
DC-22C	a11	8-11-86	to	Signal Conditioner
DC-22D	a11	8-11-86	14:06:22	
DC-22C	COT00	8-13-86	07:47:24	No Signal
			to	From Probe
			10:00:47	
DC-19C	SGT00	9-21-86	14:00:23	Transmission Error
DC-20A	RRIO0	9-28-86	14:00:08	Transmission Error
DC-22A	RRIO0	10-1-86	00:00:09	Transmission Error
DC-22C	RCT00	10-13-86	08:00:30	Transmission Error