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Department of Energy

Richland Operations Office

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Distribution:

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GWKRL

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Mr. Allen V. Pinkham, Chairman  
Nez Perce Tribal Executive Committee  
Box 305  
Lapwai, ID 83540

Gentlemen:

MONTHLY TRANSMITTAL OF "SCHEDULE FOR NEAR TERM BWIP SITE CHARACTERIZATION  
ACTIVITIES"

Enclosed for your use is our monthly update and schedule for Site, Engineered  
Barriers, and Geomechanics Department activities in this precharacterization  
phase.

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As committed, we will continue to update this information on a regular basis. Should you have any questions relative to this transmittal, please contact Mr. Max L. Powell of my staff on (509) 376-5267.

Very truly yours,

**ORIGINAL SIGNED BY  
O. L. OLSON**

O. L. Olson, Director  
Basalt Waste Isolation Division

BWI:MLP

Enclosure

bcc's for letter, Olson to States/Indian Tribes, "Monthly Transmittal of  
Schedule for Near Term BWIP Site Characterization Activities"

bcc, w/encl:

Russell Jim, Yakima Indian Nation

Ronald Halfmoon, Nez Perce Tribe


Peter P. Ramatowski, Umatilla Conf. Tribes

Wyatt Rogers, CERT

Bill Dixon, State of Oregon

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BWI Record Cy

M. L. Powell File

# SITE, ENGINEERED BARRIERS, AND GEOMECHANICS DEPARTMENT ACTIVITIES

Activities	Date	Rev.*
<u>Site</u>		
o Drill DC-23GR entry hole	12/09-13/85	12
o Test casing shoe in RRL-2B	Delete	
o Install piezometers in DC-23W	Complete	12
o Groundwater monitoring of boreholes DC-19, DC-20, DC-22, and RRL-14	Daily	
o Monitoring of other boreholes	Weekly	
o Electronmicroprobe analysis of flow top samples	Ongoing	
o X-ray diffraction analysis of flow top samples	Ongoing	
o Modeling gravity, magnetic data	Ongoing	
o Collection of magnetic and gravity data	Ongoing	
o Seismic surveillance and data analysis	Ongoing	
o Lab studies on sorption and chemical dissolution	Daily	
o Drill DC-23W	Complete	
o Collection of paleomagnetic samples	Complete	
o Drill DC-24GR entry hole	12/17-24/85	12
<u>Solution Chemistry Laboratory</u>		
o Develop method for rock analysis using ICP-AES	Complete	
o Upgrade anion analysis on ion chromatography	Complete	
o Develop method for analysis of groundwater tracer using HPLC	Complete	
o Support to Site Department database development	Ongoing	
o Development of methods for analysis using AA	Ongoing	
o Procedure development	Ongoing	
o Analysis of aqueous solution samples from hydrothermal testing and groundwater sampling	Ongoing	
o Field and field analyses of water from local springs, unconfined aquifer and other test horizons	Ongoing	
o Study of kinetic of decomposition of hydrogen peroxide with basalt under various conditions using uv-visible spectrophotometry	Ongoing	
o Develop method for analysis of fixed gases in water samples by gas chromatography	Complete	
o Develop improved methods for chemical speciation measurements of arsenic and selenium for use in analysis of hydrothermal samples	Complete	
o Development and initiation of improved methods of records retention	Ongoing	
o Support groundwater tracer analysis and groundwater sampling during large-scale testing	Begin 02/86	
o Analyses of selenium species in conjunction with selenium solubility studies with non-radioactive hydrothermal testing team	Ongoing	
o Analyses of minerals and clays by ICP-AES	Ongoing	
o Analyses of halides in basalt/methods development	Ongoing	
o Provide analyses of dissolved gases, iron species, and dissolved oxygen on request for Hydrochemistry Group	Ongoing	

## Activities

Date

Rev.\*

### Solution Chemistry Laboratory (Continued)

- o Methods development for measurement of dissolved hydrogen (H<sub>2</sub>) in aqueous samples from autoclaves in the Non-Radioactive Hydrothermal Laboratory Ongoing
- o Analyze solutions from experiments on sorption phenomena of flow top materials being done at PNL Ongoing

### Microcharacterization (Solids) Laboratory

#### Scanning Transmission Electron Microscope -

- o Analysis of flow-through run products Ongoing
- o Analysis of Dickson autoclave run products Ongoing
- o Initiate coring of RRL-17 12/02-31/85
- o Initiate drilling of DC-18 12/11/85-09/30/86
- o Initiate rotary drilling of DC-24 12/09/85-01/10/86
- o Conduct geologic field mapping 01/08-20/86 |12

#### X-Ray Diffractometer -

- o Analysis of McCoy Canyon, Umtanum and high-Mg flow tops Complete
- o Analysis of flow-through run products Ongoing
- o Analysis of Dickson autoclave run products Ongoing
- o Analysis of fault gouge Complete
- o Analysis of sedimentary interbed minerals 01/86-10/86 (Work Transferred to PNL) |12
- o Analysis of corrosion water surface coatings Ongoing

#### Electron Microprobe -

- o Analysis of Rocky Coulee flow tops Complete
- o Analysis of Dickson Autoclave run products Ongoing
- o Analysis of oxide minerals in Rocky Coulee/Cohasset flow tops Complete

### Radioactive Hydrothermal Laboratory

- o Basalt + bentonite + synthetic groundwater tests in flow-through autoclave Ongoing |12
- o Radionuclide-doped simulated Savannah River Plant Defense glass + basalt and synthetic groundwater Ongoing
- o Experiments using fully radioactive waste forms in the presence of various waste package components (metal, barriers, and/or basalt) April 1986
- o Experiments on the behavior of specific radionuclides, introduced individually with groundwater, in the presence of packing material at low temperatures Ongoing

Non-Radioactive Hydrothermal Laboratory

- |  |         |
|--|---------|
| o Hydrothermal tests on basalt + bentonite + groundwater   | Ongoing |
| o Long-term hydrothermal tests (1-5 years) on basalt + groundwater   | Ongoing |
| o Determine the solubility of selenium under hydrothermal conditions simulating the near-field environment | Ongoing |
| o Evaluate Redox conditions in a hydrothermal experiment simulating a near-field environment               | Ongoing |
| o Dehydration experiments  | Ongoing |

Waste Package Packing Investigatory Testing

- |                        |           |          |
|------------------------|-----------|----------|
| o Uniaxial compression | 50 tests  | Complete |
| o Brazillian tension   | 50 tests  | Complete |
| o Direct shear         | 50 tests  | Complete |
| o 4-point flexure      | 40 tests  | Complete |
| o Density              | 100 tests | Complete |

Concrete Testing Laboratory

- |  |             |    |
|--|-------------|----|
| o Near-Surface Testing Facility Remedial Shotcrete | Ongoing     |    |
| o Dowell's chemical seal ring tests                | Begin 12/85 | 12 |
| o Fracture alteration testing                      | Begin 12/85 |    |

Backfill Testing Laboratory

- |  |             |    |
|--|-------------|----|
| o Hydraulic conductivity tests (packing and seals)           | Ongoing     | 12 |
| o Swelling pressure permeameter and triaxial tests (packing) | Ongoing     |    |
| o Long-term flow through permeameter tests (packing)         | Ongoing     |    |
| o Swelling pressure permeameter and triaxial tests (seals)   | Begin 01/85 |    |

Rock Mechanics Testing at Near-Surface Test Facility

- |   |             |    |
|---|-------------|----|
| o Overcoring developmental testing with CSIRO triaxial cell     | 01/85-03/86 | 12 |
| o Development testing of a prototype thermal conductivity probe | Begin 12/85 |    |
| o Rock support materials development testing                    | 02/86-02/88 | 12 |

Rock Mechanics Laboratory

- |  |             |    |
|--|-------------|----|
| o Thermal conductivity/thermal expansion development testing | 12/85-02/86 | 12 |
|--|-------------|----|

\*Changes in this schedule from that last issued are indicated by a revision bar and revision number. Items will remain on listing for a two-month period after completion.