

Meeting Minutes Transmittal/Approval
Unit Managers' Meeting
200 Area Groundwater and Source Operable Units
1200 Jadwin Avenue, Richland, Washington
October 20, 2005

0068086

- APPROVAL: *Larry Romine* Date: 12-15-05
Larry Romine, 200 Area Unit Manager, DOE/RL
- APPROVAL: *Arlene Tortoso* Date: 12/15/05
Arlene Tortoso, 200 Area Assistant Manager, DOE/RL
unit
- APPROVAL: *Craig Cameron* Date: 11/18/2005
Craig Cameron, 200 Area Unit Manager, EPA
- APPROVAL: *John B. Price* Date: 11/11/2005
John Price, 200 Area Unit Manager, Ecology

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**DISTRIBUTION
UNIT MANAGERS' MEETING,
200 AREA GROUNDWATER SOURCE OPERABLE UNITS**

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Administrative Record (2)	H6-08
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Please inform Dee Goodson – FH (373-4456)
of deletions or additions to the distribution list.

Meeting Minutes are attached. Minutes are comprised of the following:

Attachment 1	Attendance Record
Attachment 2	Agenda
Attachment 3	Groundwater Operable Units Status
Attachment 4	Groundwater Operable Units Status Figures
Attachment 5	200-PW-1 OU Soil Vapor Monitoring Plan
Attachment 6	Source Operable Units and Facilities Status
Attachment 7	Source Operable Units and Facilities Schedule
Attachment 8	Agreements and Issue Resolution Meeting
Attachment 9	Action Item List

200 AREA UNIT MANAGERS' MEETING AGENDA

1200 Jadwin/Rm 1-C1

October 20, 2005

GROUNDWATER OPERABLE UNITS STATUS (8:30-9:15)

SOURCE OPERABLE UNITS AND FACILITIES STATUS (9:15-9:45)

ISSUE RESOLUTION MEETING (10:00-11:30)

- (See Issues List)

General

- Outstanding Action Items
- Open for Regulatory Topics or Action Items
- Risk Assessment Configuration Management Board Update

200 AREA UNIT MANAGERS' MEETING GROUNDWATER OPERABLE UNITS STATUS

1200 Jadwin/Rm 1-C1

October 20, 2005

GROUNDWATER OPERABLE UNITS STATUS

200-UP-1 OU

- Rebound Study:
 - Study started January 26.
 - The first ten rounds of groundwater sampling were successfully implemented February 2, 9, 23, March 30, April 27, May 25, June 29, July 27, August 31, and September 28 (Attachment 4, Figures 1, 2, 3, and 4).
 - Tc-99 and uranium concentrations remain below interim remedial action objectives in all monitoring wells.
- RI/FS Work Plan:
 - Transmittal to Ecology from RL has been initiated.
- RI Report:
 - On hold. Ecology noted in last month's 200 Area UMM that they would prefer to review a 200-UP-1 RI Report to contains a full RI/FS data set. Since 12 new groundwater monitoring wells identified in the RI/FS Work Plan still need to be installed and sampled prior to completing this data set, the 200-UP-1 RI Report has been put on hold.
 - Since waiting to get started on the RI Report could cause the December 31, 2008 M-15-00 and M-15-00C milestones to be missed, Ecology, DOE-RL, and EPA are currently discussing the option of renegotiating these milestone dates. Until these re-negotiations have be completed, all work on the 200-UP-1 RI Report will be placed on hold. It is noted that Ecology does not agree that there is an impact to 200-UP-1.

200-ZP-1 OU

- Remediation Treatment Status:
 - All nine extraction wells are currently online. We are currently pumping at ~310 to 320 gpm.
 - We will be replacing the pumps in extraction wells #1 and #4 in near future to further increase pumping rates.
 - DNAPL contractor (Vista Engineering) has requested that 200-ZP-1 extraction well #4 be taken offline and hookup deep screened well 299-W15-6 instead for

a 3 month pumping test. Vista wants to see if CCL4 concentrations increase over time (suggesting DNAPL source). This will likely result in a decreased overall 200-ZP-1 pumping rate of 20 to 30 gpm for this period. EPA did not agree that taking Well 4 off-line was the right approach and suggested that running Well 4 and pumping from deep within the aquifer would provide better hydraulic control.

- EPA stated they would like to review the revised 200-ZP-1 RD report which needs to be formally transmitted from RL to EPA
- DNAPL Investigation Status:
 - Waiting for load testing on Z-9 cover prior to perform thermal measurements beneath cover. Well 299-W15-6 is being cleaned out to allow depth-discrete groundwater sampling. This well will then be hooked up to treatment plant. Collecting Cold Creek fine grained samples in coming months (using casing driver).
- New Well Status:
 - Currently scheduled to drill 3 new wells in FY2006 and 3 new wells in FY2007 (if needed) to help define extent of deep CCL4 contamination detected in vicinity of Old Laundry Facility and T Plant.
 - EPA stated they would need to see a SAP shared with Vista and PNNL and that two weeks would be needed for EPA to send the SAP to the USGS.
 - A meeting with Dennis Faulk was held on 5-Year Review findings on September 29, 2005 as requested.
- RI/FS Status:
 - RI Report preparation began October 1, 2005. The scope of the baseline risk assessment was discussed in a meeting with EPA on August 3, 2005 (Attachment 4, Figure 5). The approach for evaluation of the constituents of concern was discussed in a meeting with EPA on September 15, 2005 (Attachment 4, Figure 6). An outline of the RI report was provided to EPA. (Attachment 4, Figure 7),
 - Feasibility Study/Proposed Plan is scheduled to begin March 6, 2006.
- Tc-99 Investigation Status:
 - DQO interview process initiated on 9/28. Stakeholder workshop is planned for November.
 - Well 299-W11-45 (C4948) (“T-2”) reached a depth of 323 ft below ground surface on 10/18 (70 ft below the water table). Field screening results are available for groundwater samples collected approximately every 5 ft to 45 ft below the water table. These results indicate that the highest Tc-99 concentration is approximately 7,000-7,500 pCi/L at 30 ft below the water table. (Attachment 4, Figure 8).

- EPA questioned the differences in detention limits for Cr and PNNL stated they have asked the laboratory for an explanation.

200-PO-1 OU

- The Sampling and Analysis Plan was transmitted to Ecology; we are awaiting approval.
- Interviews were completed for the DQO.
- Proposal to add Waste Treatment Plant seismic boreholes to the 200-PO-1 Waste Control Plan (Attachment 4 Figure 9).
- An action item was taken for DOE to set up a path forward discussion meeting with Ecology.

200-BP-5 OU

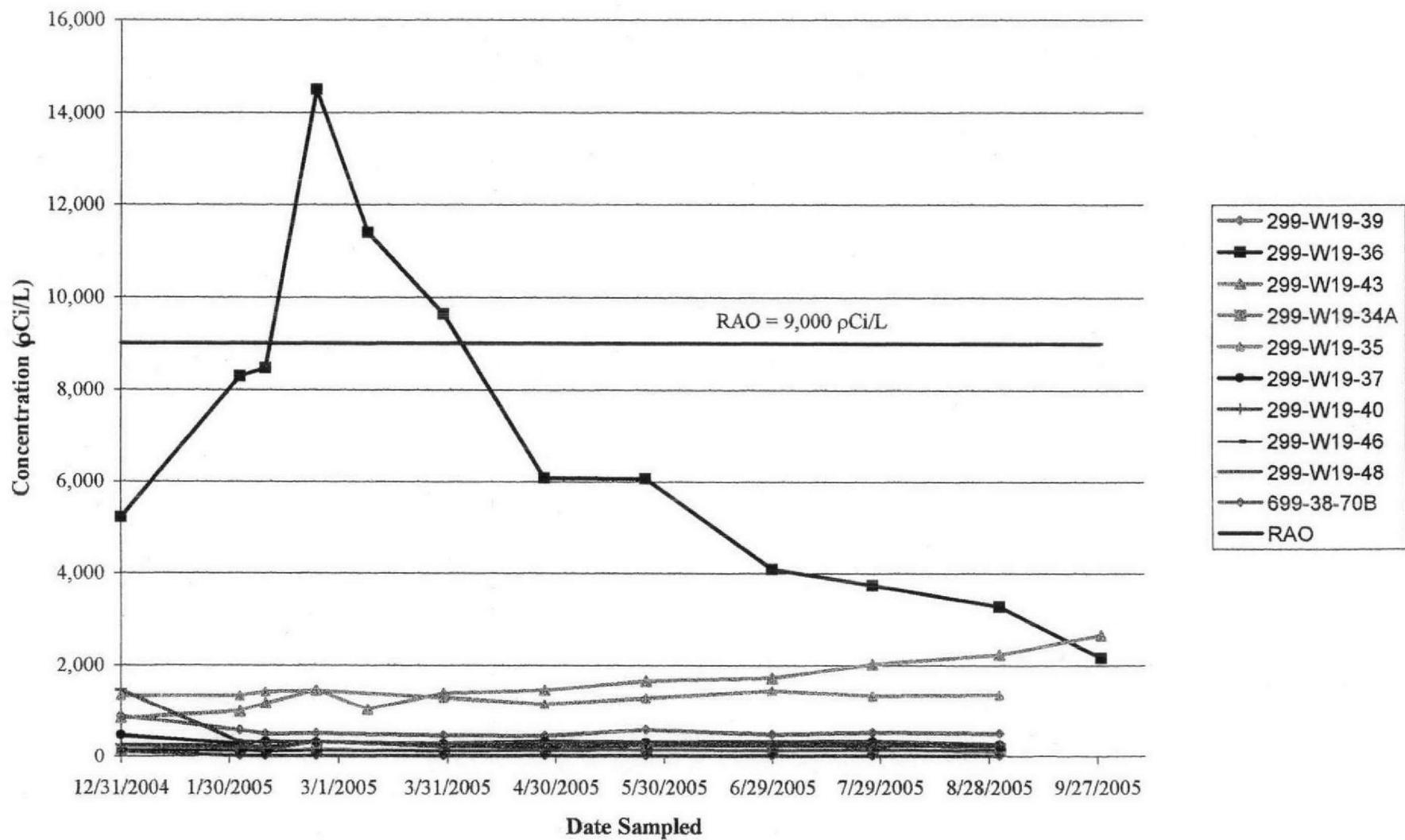
- Well 699-50-59 was completed in September. There was only two feet of aquifer above the basalt at this location.
- The draft DQO report now is planned to be completed for stakeholder review in December. The additional time is needed to refine the COPC list and exclusion rationale, adequately identify the uncertainties, and determine the necessary actions required in the RI/FS.
- The draft CERCLA 5 year review report for 200-BP-5 was completed and transmitted to RL September 27, 2005.

200-PW-1 (200-ZP-2) OU

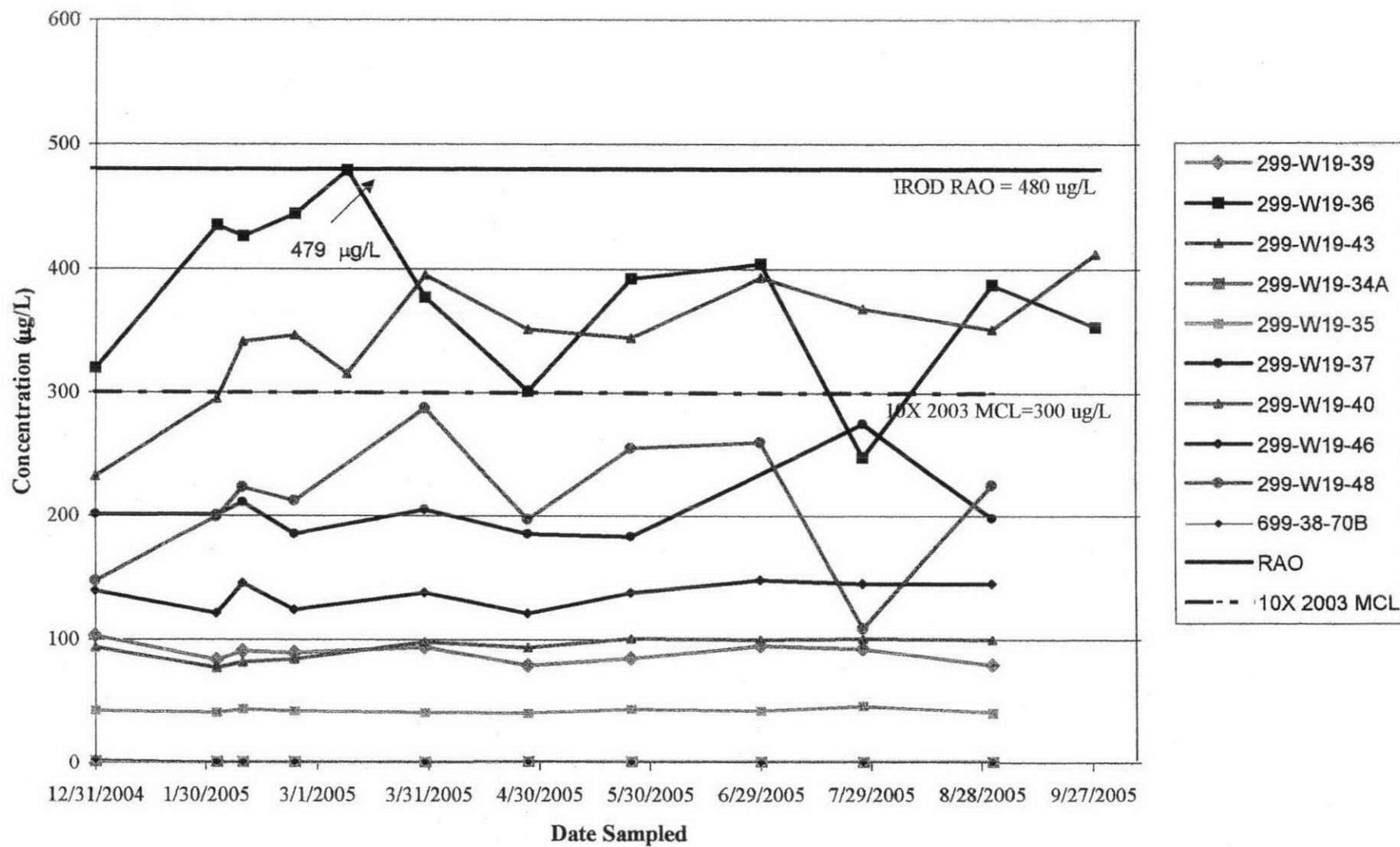
- Soil Vapor Extraction System (SVE) Status:
 - The system was shutdown October 18, 2005 for the winter.
 - Performance data for the SVE system was not available this month due to staffing changes.
 - FH plans to excess the 1,000 and 1,500 cfm units since they would cost hundreds of thousands of dollars to get operational again, and are continuing to cost the program money having them sit around (e.g., must meet DOT requirements prior to moving at PFP request).
- The passive system remains operational.
- Monthly monitoring
 - Comparison of Maximum Carbon Tetrachloride Rebound Concentrations. (Attachment 4 Figure 10)
 - Monthly Carbon Tetrachloride Concentrations for monitoring wells update (Attachment 4 Figure 11).
 - Soil Gas Vapor Concentrations at passive wells update (Attachment 4 Figure 12).

- The Carbon Tetrachloride Monitoring Plan for October 2005 through March 2006 was approved at the Unit Managers Meeting and is attached. (Attachment 5).

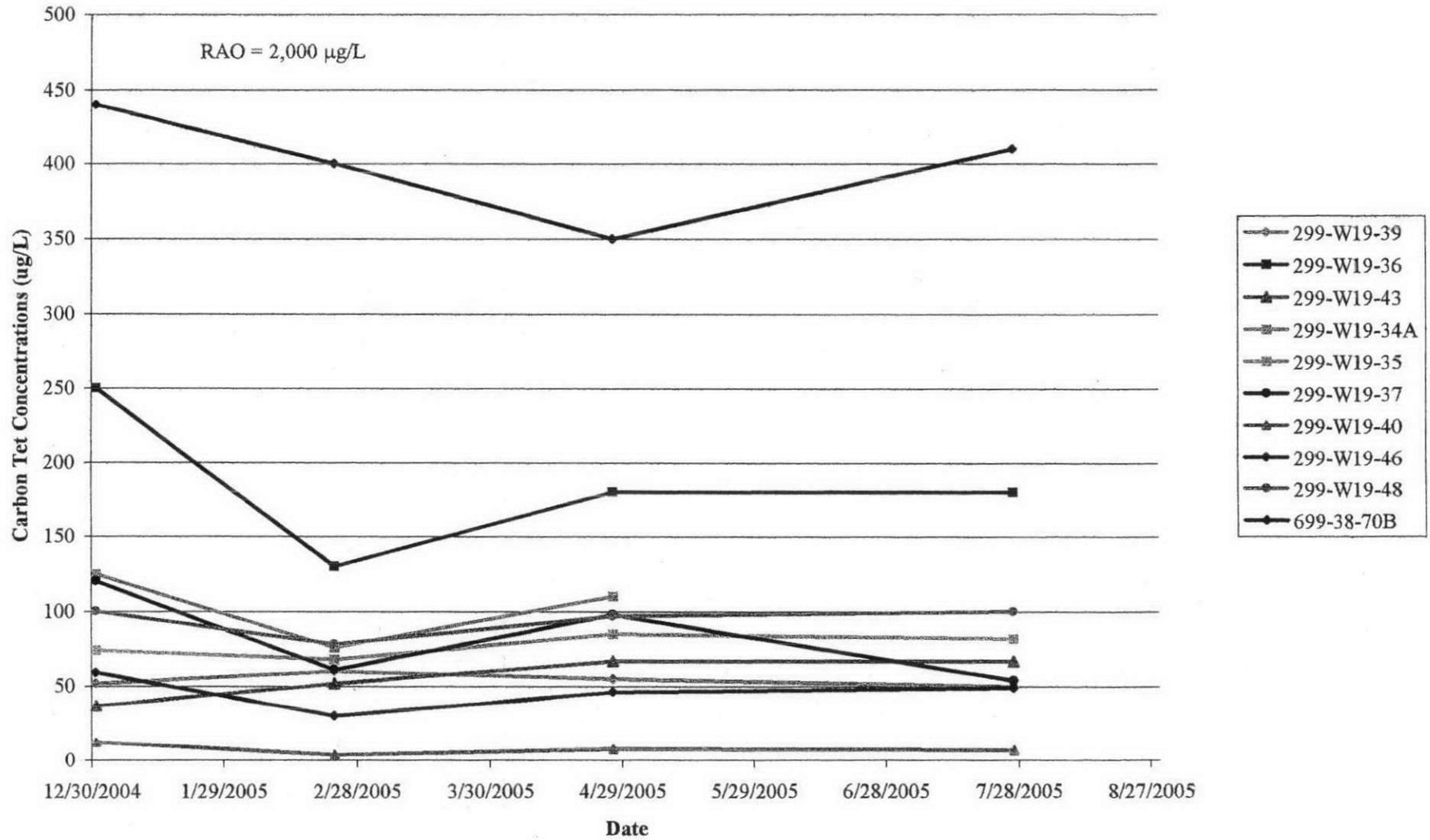
200-UP-1 Rebound Study, Technetium-99 ($\rho\text{Ci/L}$)



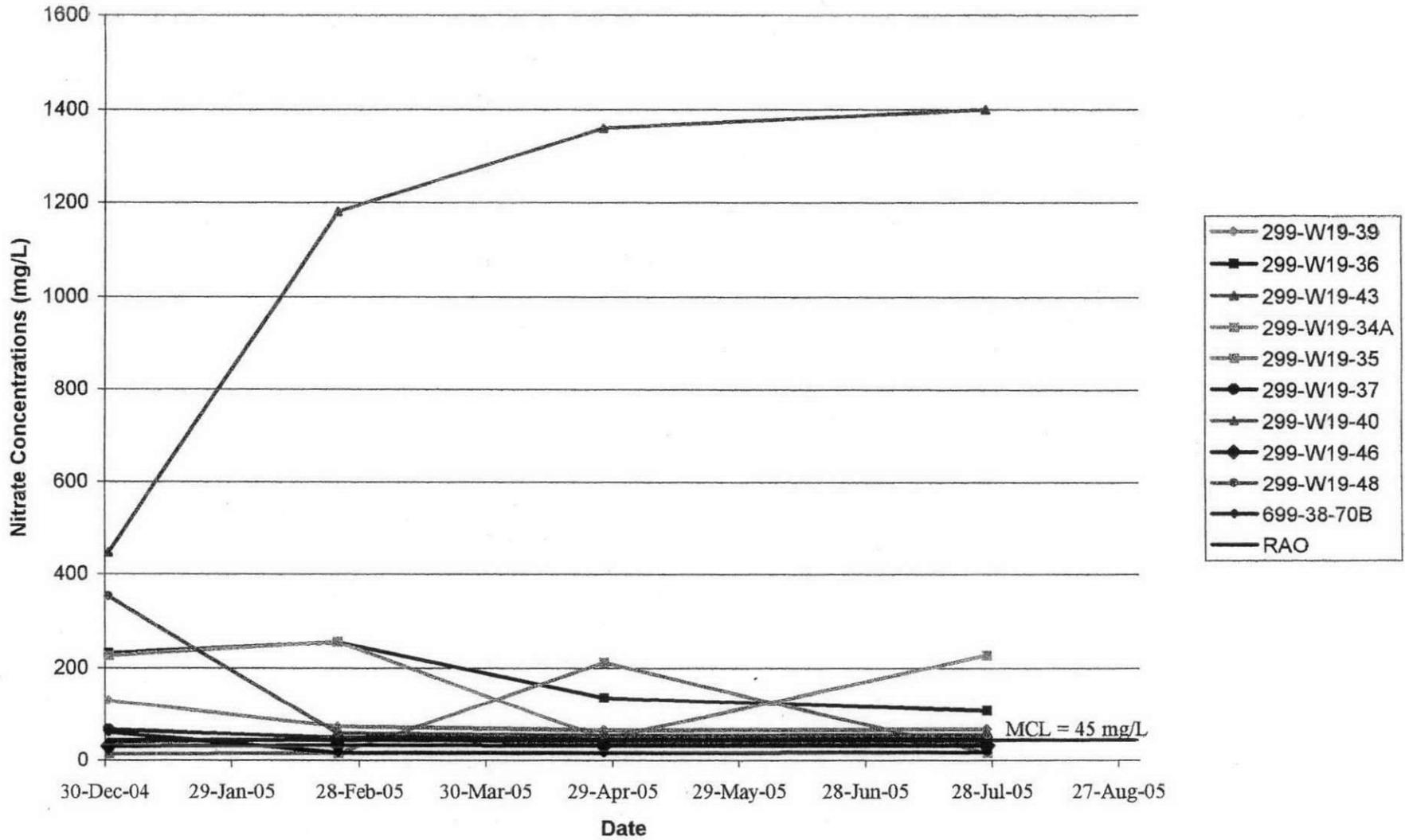
200-UP-1 Rebound Study, Uranium Concentrations



Carbon Tetrachloride Rebound Study, 200-UP-1



Nitrate - Rebound Study 200-UP-1





GROUNDWATER PROTECTION PROGRAM

Meeting Minutes

SUBJECT GROUNDWATER BASELINE RISK ASSESSMENT MEETING MINUTES

TO Distribution

FROM M. Byrnes

DATES 08-03-05

ATTENDEES

See Attachment 1

DISTRIBUTION

Attendees

(OTHERS TO BE ADDED)

The focus of the discussion was to ask EPA to discuss what they view as scope of the baseline risk assessment for groundwater OU 200-ZP-1. Fluor indicated that the schedule was aggressive to have Submit Draft A 200-ZP-1 CERCLA RI Report to EPA 31-May-06 as part of milestone M-015-48A. Given the schedule, it is important to get the correct effort completed.

EPA indicated that there are several key items:

- Model the risk at each point of calculation noted on page A-16 of the Work Plan which include:
 - Core Zone boundary
 - Central Plateau Boundary
 - Columbia River
 - Area of highest concentration (for carbon tetrachloride, CCl₄, this will likely be at PFP crib Z-9).
 - OU boundary which will translate the boundary covered by the plumes (likely the CCl₄ plume will define this).
- Model the effects of turning off the pump and treat
- For the source term, for the CCl₄ plume assume 150,000 pounds removed and 850,000 pounds remain as source term.

PNNL indicated that given the uncertainties in the source and the forthcoming data being gathered near the Z-9 Crib, rather than remodel, perhaps a report already done by PNNL could be referenced and/or updated and used as a first-cut basis for analysis of the CCl₄ plume. The report was given to EPA was PNNL 14885, *Recent Site-Wide, Transport Modeling Related to Carbon Tetrachloride Plume at the Hanford Site*, September 2004. EPA agreed to read the report and consider this approach.

EPA noted that they are willing to delay the baseline risk assessment until all of the necessary analytical data is available. The baseline risk assessment would then be included in the feasibility study (instead of the RI report) along with the risk assessment associated with various potential remedial alternatives. EPA indicated that it is already well known that the CCl₄ plume far exceeds drinking water standards (risk levels) and that some remedial action is required. EPA indicated that if the PNNL report on CCl₄ plume is used, overlay the Central Plateau Boundary and model out 150 years for the RI report.

The question was asked whether all the constituents of concern (COCs) or only a few should be modeled. EPA agreed that the following should be modeled or the focus of the baseline:

- Tc-99
- Uranium
- CCl₄

These COCs represent the primary risk drivers with known plumes and sufficient mass to be of concern.

For the other radiological and non-radioactive COCs, EQM, Inc. proposed that we generate a trend analysis of all the data by well (note that this will be > 600 plots based on the wells and COCs in the work plan). Meet with EPA to review the trends and determine which results should be used for any statistical calculations prescribed by MTCA regulations. EPA pointed out that as part of this assessment, we must ask the question, is enough mass present in the aquifer to generate a real plume and thus risk. The Work Plan does have action levels (e.g., drinking water standards, etc.) for most of the COCs for comparison. Thus, modeling may not be needed but simply a numerical comparison. In addition, if all results are non-detects and the non-detects are at a reasonable level with respect to action levels, then no further work would be needed for these COCs.

Another important point made by EPA and agreed upon by all, is that if possible, any modeling needs to be set up in a manner so that it is simple to alter parameters so that it can be used in the feasibility modeling. In addition, EPA wanted the model to be set up so that as data are gathered it is entered without great difficulty. The RI should list the data needs/parameters that are needed to decrease the uncertainty in the modeling. The FS will focus on the use of these new parameters and data.

Another issue which all agreed to be important is the fact that the water table is declining and current forecasts are that it will continue to decline for 50 to 100 yrs. However, the remedial alternatives are likely to be implemented before the 50 yr. Do the models take that into account the current transient state or should models assume the water level has declined and model the static state. EPA is most interested in the transient model because the focus on actions is the next 20 yrs. So the big issue to them is whether the plume(s) move outside the 200 West Area in the next 20 yrs.

Consistency is needed between the EPA and Ecology managed OUs (200-ZP-1 and 200-UP-1), thus we need to have meetings between all parties to discuss the approaches.

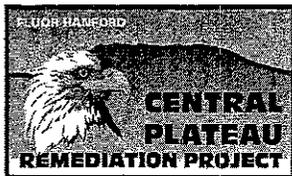
The following action items were agreed upon.

Item #	Person(s) Responsible	Actions	Dates Due
1	M. Miller	Prepare list of COCs with justifications for any exclusions, meet to discuss trends and exclusions with EPA and Ecology	When RI report starts in Oct 2006
2	D. Faulk	Read PNNL 14855 and determine whether this is reasonable approach for CCl ₄ ,	
3	M Byrnes	Set up a meeting with R. Lobos, D. Faulk, J. Price, Z. Jackson to discuss the approach for ZP and the COCs	
4	M. Miller	Prepare summary of how we plan to proceed	Aug 2006

	M. Bergeron	on ZP-1 for use in the above meetings	
5	M. Byrnes	Tell CMG what is planned for ZP-1 Baseline and ask if this is acceptable	

Attachment 1**08/03/05 Meeting Attendees**

Name	Company/ Organization	Telephone	Email
Mark Byrnes	FH	373-3996	Mark_E_Byrnes@RL.gov
Dennis Faulk	EPA	376-8631	faulk.dennis@epa.gov
Marcel Bergeron	PNNL	372-6104	marcel.bergeron@pnl.gov
Robert Bryce	PNNL	373-3586	rw.bryce@pnl.gov
Arelene Tortoso	DOE-RL	373-9631	Arlene_C_Tortoso@rl.gov
Rod Lobos	EPA	376-3749	Lobos.rod@epa.gov
Mitzi Miller	EQM, Inc.	(509) 946-4985, ext. 24	Mitzim@eqminc.com



GROUNDWATER PROTECTION PROGRAM

Meeting Minutes

SUBJECT GROUNDWATER COC EVALUATION AND BASELINE RISK ASSESSMENT
MEETING MINUTES

TO Distribution

FROM M. Byrnes

DATES 09-15-05

ATTENDEES

See Attachment 1

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Attendees

(OTHERS TO BE ADDED)

The focus of the discussion was to ask EPA to discuss the attached approach for evaluation of the constituents of concern (COC) and to affirm the agreements on the baseline risk assessment from the previous meeting of 8-3-05 for groundwater OU 200-ZP-1. All parties agreed to the attached approach for the COC evaluation in Attachment 2. All parties agreed that the baseline risk assessment for 200-ZP-1 will be included in the feasibility study as opposed to the remedial investigation (RI) report due to time constraints and wanting as much field data available to support this study. EPA agreed that what would be included in the RI report is a summary of PNNL 14885, *Recent Site-Wide, Transport Modeling Related to Carbon Tetrachloride Plume at the Hanford Site*, September 2004. Also, digital maps of the primary risk driving contaminant plumes will be generated using FY2005 groundwater analytical results. Baseline risk-based contour maps will then be created from these contaminant contours and included in the RI report. This approach was considered adequate for the RI Report since there is no question that some form remedial action will be required to address the 200-ZP-1 groundwater contaminant plumes, and that a feasibility study is needed to screen potential remedial alternatives.

Attachment 1**09/15/05 Meeting Attendees**

Name	Company/ Organization	Telephone	Email
Mark Byrnes	FH	373-3996	Mark_E_Byrnes@RL.gov
Dennis Faulk	EPA	376-8631	faulk.dennis@epa.gov
Marcel Bergeron	PNNL	372-6104	marcel.bergeron@pnl.gov
Rick Dinicola	USGS		Dinicola@usgs.gov
Arelene Tortoso	DOE-RL	373-9631	Arlene_C_Tortoso@rl.gov
Mitzi Miller	EQM, Inc.	(509) 946-4985, ext. 24	Mitzim@eqminc.com

200-ZP-1 REMEDIAL INVESTIGATION REPORT OUTLINE

1. Introduction
1.1. Purpose
1.2. Supporting Documents and Remedial Investigation Basis
1.3. Data Evaluation Methodology
1.3.1. Identification of COCs
1.3.2. Modeling Approach
1.3.3. Human Health Risk Evaluation
1.3.4. Ecological Risk Evaluation
1.4. Background for the 200-ZP-1 Operable Unit
2. Remedial Investigation Approach
2.1 Groundwater Monitoring
2.1.1 Enhanced Monitoring Network
2.1.2 Routine Monitoring Strategy
2.1.3 Monitoring for Additional COCs
2.2 Defining Three Dimensional Distribution of COCs
2.3 Collecting Modeling Input Parameters for Soil
2.3.1 Physical/Geological Parameters
2.3.2 Hydraulic and Transport Parameters
2.3.3 Geochemical Parameters (see Serne Report)
2.3.4 Microscopic Analysis (See Serne Report)
2.4 Collecting Modeling Input Parameters for Water
2.4.1 Hydraulic and Transport Parameters (include aquifer testing (PNNL slug testing) results, groundwater gradient, water production flow rates, water level changes, groundwater pumping performance, dispersivity)
2.4.2 Geochemical Parameters (include major cations, Kd, specific conductivity, TOC, TIC, pH, temperature, alkalinity, dissolved oxygen, turbidity)
3. Other Supporting Studies Performed Outside the 200-ZP-1 RI/FS Process
3.1. Special CCL4 Studies
3.1.1. DNAPL Investigations Within The 200-ZP-1 OU
3.1.2. Geostatistical Analysis of the Persistence of Carbon Tetrachloride in 200 West Area
3.1.3. Particle Tracking Analysis Related to Carbon Tetrachloride
3.1.4. Partitioning Coefficient Studies
3.1.5. Basis For The Abiotic Degradation Rates
3.1.6. Use of the Abiotic degradation and partition coefficients
3.1.7. Soil Vapor Extraction
3.1.8. STOMP Modeling of Z-9 Crib Releases
3.2. RCRA Groundwater Monitoring
3.3. Interim Action Pump and Treat Performance

3.4. Contaminant Migration Modeling for the Central Plateau Closure Plan
3.5. Summary of Vadose Zone Results Pertinent to 200-ZP-1
4. Remedial Investigation Results
4.1 Hydrogeologic Framework
4.1.1. Topography
4.1.2. Geology
4.1.3. Hydrogeology
4.2. Contaminants of Concern Evaluation Based on Section 2.1
4.3. Operable Unit Contamination
4.4. Results from 3-Dimensional Distribution of the COCs
4.5. Modeling Input Parameters for Soil
4.5.1. Physical/Geological Parameters
4.5.2. Hydraulic and Transport Parameters
4.5.3. Geochemical Parameters
4.5.4. Microscopic Analysis
4.6. Modeling Input Parameters for Water
4.6.1. Hydraulic and Transport Parameters
4.6.2. Geochemical Parameters
5. Groundwater Contaminant Fate and Transport Modeling
5.1. (To be prepared by PNNL)-support Human Health
5.2. Support Ecological Risk Evaluation
6. Risk Evaluation
6.1. Overview of Human Health Evaluation
6.1.1. Human Health Risk Evaluation Using Existing Groundwater Data as compared to Preliminary Remediation Goals
6.1.2. Human Health Risk Evaluation of Major Risk Drivers
6.2. Ecological
7. Conclusions
7.1. Summary
7.1.1. Characterization
7.1.2. Contaminant Distribution Models and Exposure Models
7.1.3. Contaminants of Concern and Human Health Site Risks Evaluation
7.1.4. Contaminants of Concern and Ecological Site Risks Evaluation
7.2. General Conclusions
7.3. Path Forward
7.3.1. Feasibility Study
7.3.2. Proposed Plan
7.4. Post-Record of Decision Activities
Appendix A Data Evaluation and Data Summary Tables
Appendix B Quality Assurance Data
Appendix C Modeling Data

The following approach will be used for the Ecological Risk Evaluation:

There are no direct exposure pathways from Central Plateau groundwater to ecological receptors; the main concern regarding ecological exposures is at the Columbia River. A simple bounding analysis of ecological risks is proposed to include three exposure scenarios. First, the groundwater concentrations at the OU will be compared to applicable ecological indicator concentrations that are protective of aquatic and riparian organisms. This comparison based on no dilution will be the worst case condition and will indicate if there is any potential for ecological effects from the OU. Two dilution scenarios will also be explored to determine the more likely impact of groundwater contaminants on the OU. These dilution scenarios will address a mass-balance dilution of groundwater in the hyporheic zone and a mass-balance dilution in the Columbia River. Each of these dilution scenarios will also be compared to applicable ecological indicator concentrations for aquatic and riparian organisms. While this bounding analysis does not account for contributions of multiple groundwater OUs, it should provide information to understand which contaminants and OU are more likely to present ecological risks to the Columbia River.

The following approach will be used for the Human Health Evaluation:

Given the uncertainties about the current understanding of past and continuing sources from the vadose zone to groundwater for the key COCs (carbon tetrachloride, technetium-99, and uranium) within the ZP-1 operable unit and the ongoing drilling and field characterization that will update current understanding of existing plume behavior, an agreement was reached with EPA to defer detailed modeling and analysis of the baseline risk as outlined above until the current characterization efforts and re-interpretation of plume behavior are updated. Information from recent characterization efforts that are expected to be completed in the coming months will be included to the extent possible in a baseline risk assessment developed as part of the planned Feasibility Study of selected remedial alternatives planned later in FY 2006.

Per agreement with EPA, discussion of risk in this RI report will be limited to the following two risk areas.

* Discussion of preliminary risks associated with the carbon tetrachloride plume based on information developed in a previous modeling study of the CCL4 plume in PNNL 14855, Recent Site-Wide, transport Modeling Related to Carbon Tetrachloride Plume at the Hanford Site, September 2004.

* Discussion of preliminary estimates of existing risks based on current interpretations of other contaminant plumes (i.e. trichloroethylene, nitrate, chromium, fluoride, tritium, iodine-129, technetium-99, chloroform, and uranium) that originate within the ZP-1 OU and exceed drinking standards as developed in the Annual Groundwater Monitoring Report for FY 2005 (in preparation).

Analytical Results for Well T-2 During Drilling

Sample Depth (ft bgs)	Depth Below Water Table (ft)	Sample Number	Sample Method	Tc-99 (pCi/L)	Cr (ug/L)	Nitrate (mg/L)	U (ug/L)	Analytical Batch
259.5	6.3	B1DN10	Kabis	<3410	<20	425	0.610	1
263	10	B1DWY0	Kabis	<3410	<20	375	1.60	1
268	15	B1DN08	Kabis	<3410	<20	409	0.458	1
268	15	B1DN12	Kabis	<3410	<20	408	0.422	1
274	21	B1DN13	3" Bailer	<3410	<20	360	1.67	1
274	21	B1DN45	3" Bailer	<3410	<20	358	1.77	1
278	25	B1DN04	Pump	<4250	32.2	532	2.27	2
278	25	B1DN11	Kabis (after pump)	<4250	<5	530	1.77	2
278	25	B1DN14	Kabis (after pump)	<4250	<5	531	1.76	2
283	30	B1DN46	Pump	7,174	29.9	596	1.10	2
283	30	B1DWY1	Pump	7,497	11.1	583	1.00	2
288	35	B1DN16	Kabis	<4250	<5	401 ^a	<0.250	2
293	40	B1DN17	Kabis (before pump)	<4250	69.5	618	1.55	3
294	41	B1DN47	Pump	<4250	69.6	616	1.54	3
298	45	B1DN18	Kabis	<4250	<5	579	0.278	3
298	45	B1DN19	Kabis	<4250	<5	579	0.282	3
303	50	B1DN48	Pump	NAY	NAY	478	NAY	3

^a Analyzed with Analytical Batch # 3

NAY = Not Analyzed Yet

Addition of WTP Seismic Boreholes to the 200-PO-1 Operable Unit

(Request presented at UMM Meeting October 20, 2005)

Description of Project

Five boreholes and 1-5 core holes will be drilled at the WTP construction site to support PNNL seismic studies. Each hole will be approximately 1300 ft. deep. Drilling techniques used to prepare for seismic testing will preclude use of the holes for groundwater monitoring. Measures will be employed to prevent co-mingling of water from the unconfined aquifer and the confined aquifers. Boreholes are located outside any waste sites; however the vadose zone does contain contaminated water that has migrated from other sites. Holes will be decommissioned after seismic testing is complete. Drilling scheduled to begin in FY 2006.

Request and Rationale

- Request is for inclusion of these boreholes in the 200-PO-1 Operable Unit
- Documentation for waste control already exists
 - may require Addendum to Waste Control Plan to cover boreholes and IDW storage/disposal sites

General Waste Disposal Plan

- Waste will be designated using a combination of process knowledge, historical data, and sample analyses
- Clean drill cuttings will be collected in stockpiles near the point of generation and spread on ground after holes are decommissioned
- Contaminated drill cuttings will be sent to ERDF
- Liquids will be managed as purgewater
- A pit will be constructed to hold excess/extra drilling mud and after project is completed, pit will be covered
- Solid waste will be disposed of at an offsite landfill, ERDF, or CWC as appropriate
- Locations for waste and mud pit will be decided with input from WTP personnel

Actions Needed

- Approve this request and include in UMM meeting minutes
- After waste collection sites and the mud pit location are determined with the WTP personnel, an addendum to the *Waste Control Plan for the 200-PO-1 Operable Unit* will be prepared for approval.

Comparison of Maximum Carbon Tetrachloride Rebound Concentrations
Monitored at 200-PW-1 Soil Vapor Extraction Sites
FY 2001 - FY 2005

200-PW-1 (200-ZP-2)	Location (Well or Probe) /feet bgs	Site	July 2001 - June 2002		July 2002 - September 2003		July 2002 (Z-9) or October 2003 (Z-1A) - March 2004		July 2002 (Z-9) or April 2004 (Z-1A) - September 2004		October 2004 - June 2005		July 2005 - September 2005	
			Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound
	79-03/ 5 ft	Z-18												
	79-06/ 5 ft	Z-1A												
	79-11/ 5 ft	Z-1A												
	86-05/ 5 ft	Z-9												
	86-05-01/ 5 ft	Z-9												
	86-06/ 5 ft	Z-9												
	87-05/ 5 ft	Z-1A												
	87-09/ 5 ft	Z-1A												
	94-02/ 5 ft	Z-9												
	95-11/ 5 ft	Z-9												
	95-12/ 5 ft	Z-9												
	95-14/ 5 ft	Z-9												
	CPT-13A/ 9 ft	Z-1A												
	CPT-16/ 10 ft	Z-9												
	CPT-17/ 10 ft	Z-9	3.2	6	6.6	15	9.0	21	9.9	27	11.4	5	2.5	3
	CPT-18/ 15 ft	Z-9	1.4	6	2.4	15	2.4	21	2.5	27	3.1	5	0	3
	CPT-4A/ 25 ft	Z-1A	3.4	10										
	CPT-4E/ 25 ft	Z-1A	2.6	12	1.3	0			2.4	0	2.4	9	1.5	0
	CPT-16/ 25 ft	Z-9	1.1	6	2	15	2.8	21	3.6	27	4.4	5	1.2	3
	CPT-31/ 25 ft	Z-12												
	CPT-32/ 25 ft	Z-1A	13.0	12	8.3	6	6	6			8.6	9		
	CPT-30/ 28 ft	Z-18	0	12	0	6	0	6			1.6	9		
	CPT-13A/ 30 ft	Z-1A	2.6	12	1.6	6	2	6	1.9	0	8.3	9	3.9	0
	CPT-7A/ 32 ft	Z-1A	5.6	12	3.9	6	9.5	8	1.9	0	4.4	9	2.3	0
	CPT-27/ 33 ft	Z-9	1.5	6	1.7	15	2.7	21	2.7	27	8.4	5	1.2	3
	CPT-1A/ 35 ft	Z-12	11.3	12	22.0	15	18.3	6	18.0	0	14.0	9	9.2	0
	CPT-28/ 40 ft	Z-9									5.4	0		
	CPT-33/ 40 ft	Z-18	2.3	12							3.9	9		
	CPT-34/ 40 ft	Z-18	2.2	12	1.6	0			1.8	0	3.0	9	2.0	0
	CPT-21A/ 45 ft	Z-9									7.9	0	167	3
	W15-220ST/ 52 ft	Z-9			1.5	1								
	CPT-9A/ 60 ft	Z-9	45.3	6	35.9	15	35.9	21	35.9	27	32.4	5	29.2	3
	CPT-28/ 60 ft	Z-9	56.5	6							68.3	0		
	CPT-C3872/ 61 ft	Z-1A									15.5	9		
	CPT-16/ 65 ft	Z-9	not measured		4.2	15			4.2	27	6.7	5	5.5	3
	CPT-21A/ 65 ft	Z-9	133	6	90.0	15	150	21	150	27	170	0		
	CPT-1A/ 68 ft	Z-12	5.5	12							13.7	9		
	CPT-30/ 68 ft	Z-18												
	CPT-13A/ 70 ft	Z-1A												
	CPT-24/ 70 ft	Z-9			4.7	15			9.1	27			3.9	3
	CPT-32/ 70 ft	Z-1A	7.7	12										
	W15-219SST/ 70 ft	Z-9			1.9	1			5.7	22	5	9		
	CPT-4A/ 75 ft	Z-1A	7.1	3										
	CPT-18/ 75 ft	Z-9			4.5	15			8.3	27			0	3
	CPT-31/ 76 ft	Z-12												
	CPT-33/ 80 ft	Z-18												
	W15-82/ 83 ft	Z-9	66.7	6	85.8	15	85.8	21	85.8	27	95.8	5	7.6	3
	CPT-21A/ 86 ft	Z-9	186	6	206	15	244	21	244	27	209	5	223	3
	CPT-34/ 86 ft	Z-18												
	W15-95U/ 86 ft	Z-9												
	W15-219SST/ 86 ft	Z-9			1.6	2								
	CPT-28/ 87 ft	Z-9	229	6	235	15	258	21	258	27	246	5	245	3
	CPT-4B/ 90 ft	Z-1A	3.2	10										
	CPT-1A/ 91 ft	Z-12	10.7	10										
	CPT-4A/ 91 ft	Z-1A	7.5	2										
	CPT-9A/ 91 ft	Z-9	74.3	6										
	W15-85/ 91 ft	Z-9												
	W18-252SST/ 100	Z-1A												
	W18-152/ 101 ft	Z-12	25.7	12	20.7	6	12.4	6			16.0	9		
	W15-8U/ 103 ft	Z-9											6.8	3
	CPT-4E/ 103 ft	Z-1A	16.1	12										
	W18-167/ 106 ft	Z-1A	297	12	243	6	256	6			196.0	9		
	CPT-4F/ 109 ft	Z-1A									11.9	9		
	W18-165/ 109 ft	Z-1A	278	12	328	6	205	6			35.2	9		
	W15-217/ 114 ft	Z-9	93.6	6	444	15	458	21	467	27	374	5	15.9	3
	CPT-24/ 118 ft	Z-9			27.8	15			15.3	27			23.9	3
	W15-220SST/ 118	Z-9			27.5	3			26.0	27			25.2	3
	W18-158L/ 120 ft	Z-1A	183	3										
	W15-219SST/ 130	Z-9			23.1	1			0	22				
	W18-249/ 130 ft	Z-18	196	12	46.3	6	41.0	6			64.9	9		
	W18-248/ 131 ft	Z-1A	306	12	182	6	180	6			249	9		
	W15-95L/ 144 ft	Z-9	31.8	6	25.1	15	40.3	21	40.3	27	26.7	5	15.9	3
	W15-219SST/ 155	Z-9			6.8	1			9.5	22				
	W15-220L/ 163 ft	Z-9			15				8	27			13.2	3
	W15-219L/ 175 ft	Z-9			15				23	27			1.9	3
	W15-9L/ 176 ft	Z-9	16.9	8	13.1	15	13.1	21	13.1	27	2.1	5	1.6	3
	W15-84L/ 180 ft	Z-9	not measured		25.9	15	25.9	21	25.9	27	23.0	5	0	3
	W15-6L/ 182 ft	Z-9												
	W15-220SST/ 185	Z-9			1									
	W18-7/ 197 ft	Z-1A												
	W18-12/ 198 ft	Z-18												
	W18-6L/ 208 ft	Z-1A												
	W15-4S/ 217 ft	Z-9											1.9	3

* - based on location (Z-1A/18/12 or Z-9) of monitoring point; specific points may be beyond SVE zone of influence during particular operating configurations

- Z-18 and Z-12 wells off-line Oct 96 - Apr 98

- CPT-1A, CPT-9A, and possibly CPT-7A appeared to be beyond SVE zone of influence in Oct 96 based on differential pressure (BHI-01105, p. 6-1)

- CPT-9A, CPT-21A, CPT-28 beyond SVE zone of influence in May 96 based on CCM concentrations and airflow modeling based on measured vacuums (BHI-01105, p. 6-1)

Carbon Tetrachloride Rebound Concentrations
Monitored at 200-PW-1 Soil Vapor Extraction Sites
October 2004 - September 2005

200-PW-1 (200-ZP-2)		11/17/2004	12/28/2004	01/19/2005	02/24/2005	03/10/2005	03/18/2005	05/05/2005	05/26/2005	06/23/2005	08/04/2005	08/19/2005	09/26/2005
Location (Well or Probe) /feet bgs	Site	CCl4 (ppmv)											
CPT-17/ 10 ft	Z-9	5.5	5.3	6.4	7.1		11.4				2.5	2.1	---(n)
CPT-18/ 15 ft	Z-9	0	1.5	3.1	0		0				0	0	0
CPT-4E/ 25 ft	Z-1A							2.4	1.9	1.8	1.5	1.3	0
CPT-16/ 25 ft	Z-9	1.1	4.4	2.3	2.0		2.0				1.2	1.0	1.2
CPT-32/ 25 ft	Z-1A	0	1.7	2.7	5.5		8.0	8.6	6.6	6.8			
CPT-30/ 28 ft	Z-1A	0	1.3	1.5	1.6		0	0	0	0			
CPT-13A/ 30 ft	Z-1A	3.0	0	7.1	2.5		8.3	6.6	1.5	3.6	3.9	3.3	3.2
CPT-7A/ 32 ft	Z-1A	1.5	2.2	3.9	2.9		4.4	3.2	2.6	2.4	2.3	2.2	2.1
CPT-27/ 33 ft	Z-9	1.3	8.4	2.2	3.2		2.2				1.2	1.0	1.0
CPT-1A/ 35 ft	Z-12	4.7	14.0	13.2	11.3		4.3	6.0	11.1	9.2	6.6	6.6	9.2
CPT-28/ 40 ft	Z-9									5.4			
CPT-33/ 40 ft	Z-18							3.9	1.1	1.9			
CPT-34/ 40 ft	Z-18							3.0	1.1	1.9	2.0	1.7	1.4
CPT-21A/ 45 ft	Z-9								7.4	7.9	167	153	147
CPT-9A/ 50 ft	Z-9	39.4	48.4	48.4	46.4		50.8	50.3	53.9	49.7	50.6	44.0	51.8
CPT-9A/ 60 ft	Z-9	32.4	27.5	29.2	30.6		30.7	11.6	31.8	30.5	18.3	18.0	29.2
CPT-28/ 60 ft	Z-9							68.3	68.0	60.0			
CPT-C3872 / 61 ft	Z-1A	1.1	4.4	5.9	7.6		9.9	11.8	14.6	15.5			
CPT-9A/ 64 ft	Z-9	20.1	2.8	26.1	19.8		35.4	31.5	39.1	36.8	38.3	36.6	38.6
CPT-16/ 65 ft	Z-9	3.5	6.7	4.9	5.1		5.2				4.7	4.3	5.5
CPT-21A/ 65 ft	Z-9	79.9	146	143	161		166	170	153	147			
CPT-1A/ 68 ft	Z-12							6.2	13.7	2.0			
CPT-24/ 70 ft	Z-9										3.9	3.6	3.8
CPT-32/ 70 ft	Z-1A							5.5	3.4	4.5			
W15-219SST/ 70 ft	Z-9												
CPT-18/ 75 ft	Z-9										0	0	0
W15-82/ 83 ft	Z-9			---(j)	95.8	30.6	---(k)				1.7	4.9	7.6
CPT-21A/ 86 ft				191	209		208	205	204	196	223	187	209
CPT-28/ 87 ft				227	245		246	244	238	232	245	216	230
W18-152/ 101 ft				14.6	13.3		16.0	14.8	13.2	13.4			
W15-8U/ 103 ft											0	1.3	6.8
W18-167/ 106 ft				---(j)	37.4		20.4	26.7	20.2	196.0			
CPT-4F/ 109 ft								7.8	7.7	11.9			
W18-165/ 109 ft				---(j)	35.2		15.0	22.2	30.8	10.4			
W15-217/ 114 ft				---(j)	39.6		374				11.2	0	15.9
CPT-24/ 118 ft											20.4	14.7	23.9
W15-220SST/ 118 ft											23.1	21.3	25.2
W18-249/ 130 ft				52.2	33.7		64.9	55.3	36.5	36.8			
W15-219SST/ 130 ft													
W18-248/ 131 ft	Z-			---(j)	70.5		249	173	169	155			
W15-95L/ 144 ft	Z-			---(j)	26.7		24.8				2.4	15.9	15.8
W15-219SST/ 155 ft	Z-												
W15-220L/ 163 ft	Z-9										13.2	12.9	12.0
W15-219L/ 175 ft	Z-9										0	0	1.9
W15-9L/ 176 ft	Z-9	---(l)	---(l)	---(l)	2.1		---(j)				0	0	1.6
W15-84L/ 180 ft	Z-9	22.0	18.0	22.0	16.1	23.0	---(k)				---(m)	---(m)	---(m)
W15-46/ 217 ft	Z-9										0	0	1.9

ATTN: 4
E-9 11

(h) Depths to probes measured through existing tubing. 60 ft deep probe confirmed and sampled. The other two depths measured (50 ft and 64 ft) could not be correlated to original depths (70 and 91 ft); these two probes were sampled also.
 (i) Unable to sample; tubing will be installed
 (j) Unable to sample before removal of tubing to support cross-well seismic investigation.
 (k) Sampled on 3/10/05 prior to removal of tubing to support Vista Engineering cross-well seismic investigation.
 (m) Unable to sample; well in use by Vista Engineering
 (n) Unable to sample; aboveground tubing needs to be repaired.

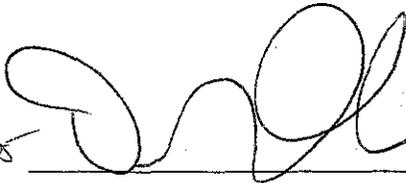
Carbon Tetrachloride Concentrations
 Monitored at 200-PW-1 Passive Soil Vapor Extraction Wells
 October 2004 - October 2005

200-PW-1 (200-ZP-2)	10/11/2004	11/15/2004	12/29/2004	1/21/2005	2/28/2005	3/18/2005	5/5/2005	5/31/2005	6/22/2005	8/17/2005	9/26/2005
Location (Well or Probe) /feet bgs	CCl4 (ppmv)										
W18-6L/ 208 ft	8.6	20.3	21.2	21.1	18.4	22.9	23.2	17.0	13.4	15.0	24.4
W18-7/ 197 ft	18.6	21.6	20.8	6.8	24.6	23.1	21.9	5.0	19.0	0	0
W18-10L/ 183 ft	4.3	4.0	10.0	5.9	11.6	12.2	7.6	2.8	2.3	0	9.2
W18-11L/ 199 ft	0	4.8	6.9	2.5	2.8	7.3	6.7	1.6	2.0	1.2	9.0
W18-12/ 198 ft	1.4	1.7	8.1	0	5.2	9.9	5.6	0	0	1.9	2.4
W18-246L/ 170 ft	14.7	21.1	20.7	16.8	19.7	22.0	21.1	8.1	9.8	25.3	9.5
W18-247L/ 167 ft	0	0	4.6	0	4.4	6.4	6.4	0	9.3	7.8	2.2
W18-252L/ 175 ft	0	13.3	16.8	1.4	14.4	18.0	11.3	0	14.8	0	16.9

*Attachment 4
Fig 12*

APPROVAL OF THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION
(200-PW-1 OPERABLE UNIT) SOIL VAPOR MONITORING PLAN FOR
OCTOBER 2005 THROUGH MARCH 2006

The Unit Managers for the Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit) approve the attached Soil Vapor Monitoring Plan for October 2005 through March 2006.

 10/18/05  10-19-05

A. C. Tortoso
U.S. Department of Energy
Richland Operations Office

Date D. A. Faulk Date
U.S. Environmental Protection Agency
Region 10, Hanford Office

CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION
SOIL VAPOR MONITORING PLAN FOR OCTOBER 2005 THROUGH MARCH 2006

Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring

This plan describes planned non-operational monitoring and passive soil vapor extraction monitoring to be conducted during October 2005 through March 2006 for the 200 West Area Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit). Operation of the soil vapor extraction system will be temporarily suspended during this time, and monitoring will be conducted at both the 216-Z-9 (Z-9) site and the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Passive soil vapor extraction will be maintained at Z-1A wells during this time. Operating plans for use of the soil vapor extraction system will be submitted to the Unit Managers for approval prior to implementation.

Soil vapor monitoring will be conducted at vadose zone locations near the groundwater, the Cold Creek unit (formerly called the Plio-Pleistocene layer), and the ground surface at the Z-1A and Z-9 sites while they are not being actively remediated using the soil vapor extraction system. Monitoring results will be reported at the 200 Area Unit Manager Meetings. If carbon tetrachloride vapor concentrations increase such that the carbon tetrachloride contamination may impact human health or the environment (including groundwater), the Unit Managers will decide on the appropriate response to mitigate the problem (e.g., relocating the soil vapor extraction system to address the problem).

Vista Engineering Technologies, L.L.C. will be conducting field investigations in the Z-9 and Z-1A areas during October 2005 through March 2006 as part of the investigation of dense, nonaqueous-phase liquid carbon tetrachloride (DOE/RL-2004-78). Non-operational monitoring and/or passive soil vapor extraction monitoring will be temporarily suspended at any existing well and/or probe that is being used to support these investigations. Other monitoring locations at the Z-9 and Z-1A sites will be adjusted as needed to accommodate these field activities.

Scope: Monitor carbon tetrachloride soil vapor concentrations at selected probes and wells during non-operation of the soil vapor extraction (SVE) system (Tables 1 and 2). All of the probes and wells will be "non-operational," i.e., they will not be connected to the SVE system. Approximately eight non-operational wells have a passive soil vapor extraction system installed at the wellhead.

Passive soil vapor extraction is a remediation technology that uses naturally induced pressure gradients between the subsurface and the surface to drive soil vapor to the surface. In general, falling atmospheric pressure causes subsurface vapor to move to the atmosphere through wells, while rising atmospheric pressure causes atmospheric air to move into the subsurface. The passive soil vapor extraction systems will be used to remove carbon tetrachloride from the vadose zone.

Passive extraction wells will vent through aboveground canisters containing granular activated

carbon (GAC). The wells will be monitored monthly using the sampling method used for the non-operational wells. The vapor concentration will be monitored both upstream and downstream of the GAC. The measured vapor concentrations will be used to estimate the amount of carbon tetrachloride extracted through each well during the month.

For monitoring the non-operational probes and wells and the passive extraction wells, the components of this scope are:

- Collect soil vapor samples using the rebound study sampling method and sampling pump (BHI-01105)
- Analyze soil vapor samples for carbon tetrachloride using the B&K multi-gas analyzer in accordance with GPP-EE-05-4.0 at field screening level QC-1 (CP-A-QA-03-5.2)
- Evaluate concentration trends for Fluor Hanford Groundwater Remediation Project
- Report results to 200-PW-1 Unit Managers
- Include results in annual reports

Purpose and Objectives: The purpose of non-operational monitoring is to measure carbon tetrachloride concentrations in the vadose zone during the shutdown of the SVE system.

The objectives of monitoring the non-operational wells and probes are (1) to be cognizant of carbon tetrachloride concentrations and trends near the vadose-atmosphere and vadose-groundwater interfaces to evaluate whether non-operation of the SVE system is negatively impacting atmosphere or groundwater; and (2) to be cognizant of carbon tetrachloride concentrations and trends near the lower permeability Cold Creek unit to provide an indication of concentrations that can be expected during restart of SVE operations and to support selection of on-line wells.

The objectives of monitoring the passive soil vapor extraction system wells, which are all open near the vadose-groundwater interface, are: (1) to be cognizant of the carbon tetrachloride concentrations and trends near the vadose-groundwater interface to evaluate whether non-operation of the SVE system is negatively impacting groundwater; and (2) to quantify the mass of carbon tetrachloride removed using this technology.

Duration: Non-operational monitoring and passive soil vapor extraction monitoring will be conducted from October 2005 through March 2006 during FY 2006.

Monitoring Frequency: Monitoring will be conducted monthly.

Monitoring Locations: Locations were selected to focus carbon tetrachloride monitoring near the vadose-atmosphere and vadose-groundwater interfaces and near the Cold Creek unit (Table 1). At the recommendation of the technical lead, and with approval from the task lead, these monitoring locations could be revised based on developing trends, accessibility, and/or recommendations of the sampler. The 200-PW-1 Unit Managers will be advised of any changes to the monitoring locations. Monitoring locations are shown on Figure 1.

Data Management: The field screening data obtained from non-operational wells and probes and passive extraction wells are entered into a controlled field logbook, which is maintained by Lockheed Martin Services Inc (LMSI) Records Information Management (RIM) department. The technical lead organizes and maintains spreadsheets of the field screening data on a desktop computer. The field screening data are entered into the Hanford Environmental Information System (HEIS) database and are included in the annual performance evaluation report.

References:

BHI-01105, 1997, *Rebound Study Report for the Carbon Tetrachloride Soil Vapor Extraction Site, Fiscal Year 1997*, Bechtel Hanford, Inc., Richland, Washington.

CP-A-QA-03-5.2, *Quality Assurance Program Plans*, Procedure 5.2, "Onsite Measurements Quality Assurance Program Plan," Fluor Hanford, Inc., Richland, Washington.

DOE/RL-2004-78, 2004, Work Plan for Integrated Approach for Carbon Tetrachloride Source Term Location in the 200 West Area of the Hanford Site, U.S. Department of Energy, Richland Operations Office, Richland, Washington 99352.

GPP-EE-05-4.0, *Analysis of Volatile Organic Compounds in Vapor Samples Using the Bruel and Kjaer 1301 and Innova 1312 Multi-Gas Analyzers*, Fluor Hanford, Inc., Richland, Washington.

Table 1. Distribution of Selected Monitoring Locations.

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-20 m below ground surface)	6	6	12
Cold Creek unit (25-45 m below ground surface)	5	6	11
Groundwater (50-65 m below ground surface)	8 ^a	2	10
Total	19	14	33

^a Approximately eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network (Table 2).

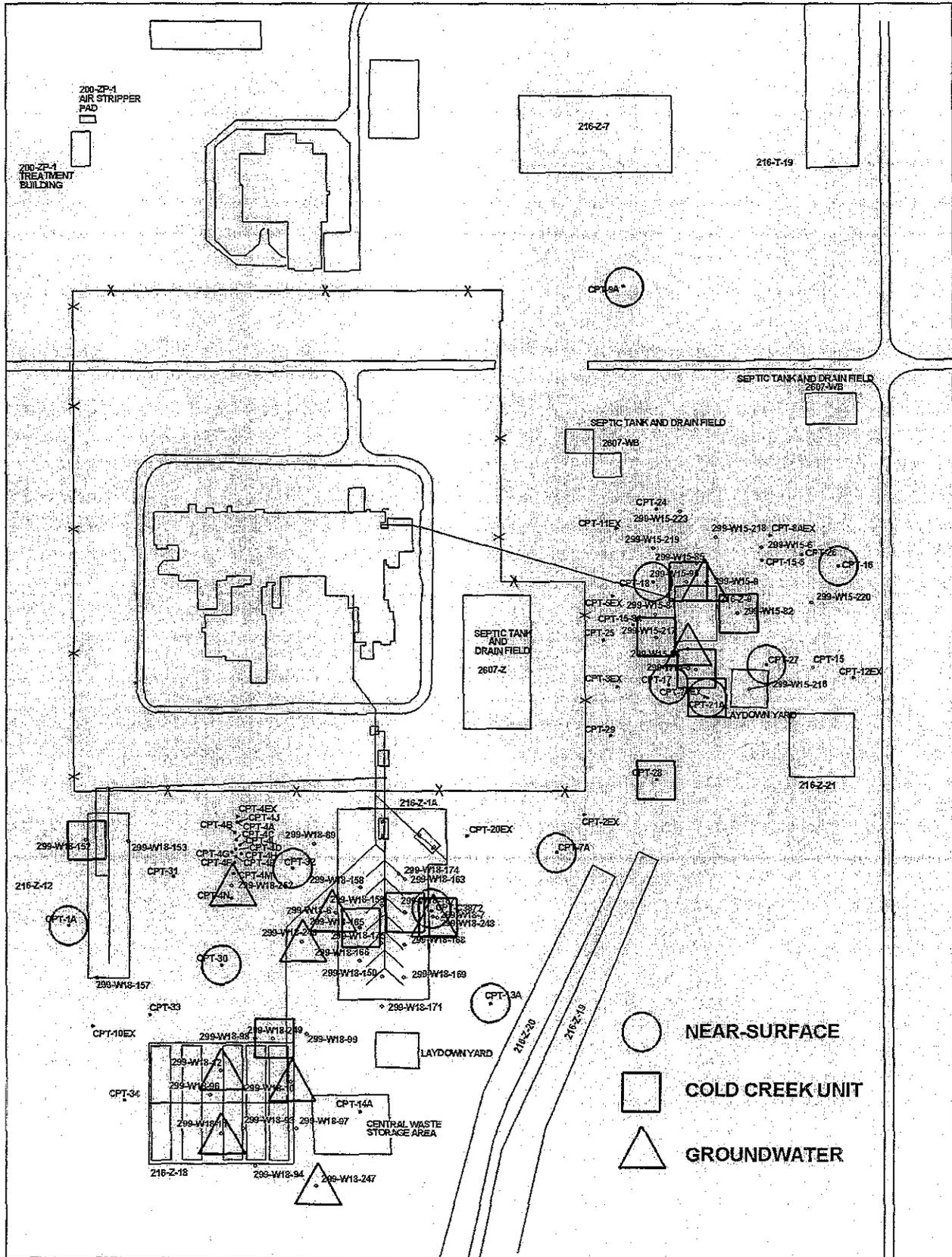
Table 2. Wells and Probes Selected for Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring.

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-17 10 ft (blue)	3	southwest of Z-9	CPT-32 25 ft (green)	8	west of Z-1A
near-surface	CPT-18 15 ft (white)	5	northwest of Z-9	CPT-30 28 ft (green)	9	north of Z-18 (middle of Z-1A/Z-18/Z-12 field)
near-surface	CPT-16 25 ft (blue)	8	east of Z-9	CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface	CPT-27 33 ft (red)	10	southeast of Z-9	CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9	CPT-1A 35 ft (black)	11	west of Z-12
near-surface	CPT-21A 65 ft (green)	20	south of Z-9	CPT-C3872	19	east side of Z-1A
Cold Creek	W15-82	25	east side of Z-9	W18-165	33	within Z-1A
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9	W18-152	34	northwest corner of Z-12
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9	W18-167	37	within Z-1A
Cold Creek	W15-8U	31	south of Z-9	W18-249	41	northeast corner of Z-18
Cold Creek	W15-217	35	southwest corner of Z-9	W18-248	41	east side of Z-1A
Cold Creek	W15-95L	44	north side of Z-9	---	---	---
ground water	W15-9L	57	north of Z-9, 11 m from W15-32 extraction well	W18-247L*	51	southeast of Z-18
ground water	W15-46	66	south of Z-9	W18-246L*	52	west of Z-1A
ground water	---	---	---	W18-252L*	53	west of Z-1A (middle of Z-1A/Z-18/Z-12 field)
ground water	---	---	---	W18-10L*	55	east side of Z-18
ground water	---	---	---	W18-7*	57	east side of Z-1A
ground water	---	---	---	W18-6L*	60	west side of Z-1A
ground water	---	---	---	W18-11L*	60	Z-18
ground water	---	---	---	W18-12*	60	Z-18

* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

Figure 1. Location of Wells and Probes Selected for Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring



200 AREA UNIT MANAGERS' MEETING SOURCE OPERABLE UNITS AND FACILITIES STATUS

1200 Jadwin/Rm 1-C1
October 20, 2005

An update to the Central Plateau D&D Facilities and Waste Sites Cleanup Decisions timeline, including schedule float information (Attachment 7), was distributed and reviewed.

SOURCE OPERABLE UNITS STATUS

200-PW-1, 200-PW-3, & 200-PW-6

- Sampling for carbon tetrachloride soil vapor and groundwater in existing wells was initiated on 6/22 and completed on 10/11. Depth-discrete groundwater sampling will be conducted in three wells in early November.
- Sampling of vent risers in the 218-W-3A Burial Ground was initiated on 8/25 and completed on 9/8. Passive soil vapor sampling in this burial ground was initiated on 6/30 and completed on 7/5.
- The letter report on the Geostatistical Analysis of the Persistence of Carbon Tetrachloride Groundwater Concentrations in the 200 West Area was completed by PNNL on 8/3/05.
- Vista Engineering Technologies (VET) conducted Project Technical Workshop #4 on 10/18-10/19. Participants include the Vista Engineering team plus DOE, EPA, Ecology, FH, and PNNL. The focus of this workshop is groundwater source term issues.
- Dennis Faulk of EPA announced that EPA is intending to issue a Notice of Violation to DOE-RL for failure to perform a required activity of the Remedial Investigation (RI) Work Plan in regard to delays in drilling the Z-9 slant borehole. He stated that a recovery plan and due diligence in making progress could help ward off stipulated penalties. His understanding from meetings earlier this year was that the field work would be started this summer. Dennis requested a list of what will be in and not in the RI Report.

200-TW-2 & 200-PW-5 (no change)

200-CW-1 & 200-CW-3 (no change)

200-PW-2 & 200-PW-4 (no change)

200-CS-1 (no change)

200-CW-5, CW-2, CW-4, & SC-1

- Continued to work with EPA to resolve Mr. Riggsby's comment. Met with Mr. Riggsby to resolve comment. His comment centered on the value of uranium at the 216-U-10 Pond. Mr. Riggsby will identify the Hanford document that analyzed the feasibility of recovering the uranium at the 216-U-10 Pond.

Ecological Risk Assessment

- Phase I soil and biota sampling was completed on 8/24/05. All soil samples have been processed and sent to the lab. The Phase I biota samples were processed and delivered to the lab 9/20/05. The lab is currently analyzing the samples.
- Phase II soil sampling began on 9/13/05 in the reference site. The Phase II biota samples will begin processing on 9/19/05. All Phase II soil and biota samples have been process and delivered to the labs. The labs are currently analyzing the samples.

200-IS-1 & 200-ST-1

- Collaborative DQO process ongoing. Steps 1 and 2 finished. Step 3 approximately 30 percent complete.

200-LW-1/200-LW-2

- Efforts on the RI Report were restarted to support the 2/28/2006 TPA Milestone date

200-MW-1

- Efforts on the RI Report were restarted to support the 4/30/2006 TPA Milestone date

200-UR-1 (no change)

200-SW-1/2

- Phase-1 geophysical investigations involving EM, magnetometer and GPR surveys were completed in September on the eight, older/inactive burial grounds (~64 acres total) in 200 East and West Areas. Data is being analyzed and a summary report is expected by 10/31/05.
- Data Management Plan – annotated outline has been drafted; informal/collaborative review with RL and Ecology task leads will be requested in early November.
- Historical records for the 22 Bin 3A and Bin 3B waste sites have been assembled for each burial ground, and (where possible) on per trench and per waste package basis. Data quality ratings are being assigned for currently obtained data to support the development of an historical records database, and the upcoming mini-DQO session for non-intrusive investigations.
- An ArcIMS (BETA) application has been developed to demonstrate the potential for integrating burial ground and trench-specific data in a 2D/3D static model. The 218-W-3A burial ground is being used for this demonstration. Jennie Stults of Ecology

wants to show the demo at the Hanford Advisory Board in November 2005 when the 200-SW-1/2 investigation is discussed.

- White paper on non-intrusive radiological survey techniques in being developed to support mini-DQO. Recent tractor-based radiological survey maps and data are being assembled for each of the Bin 3B burial grounds.
- Aerial and ground-based photos have been recently obtained for all Bin 3A and Bin 3B waste sites.
- A letter report entitled 'Review of Geophysical Techniques to Define the Spatial Distribution of Subsurface Properties or Contaminants' (PNNL-15305) was prepared for FH and issued in August 2005. [POC: Scott Petersen]
- A workshop entitled "Evaluating Minimally Intrusive Geotechnical Technologies for Determining Characteristics of the Hanford Subsurface" was held September 20-23; a workshop summary report will be issued by the end of November. [POC: Scott Petersen]
- Jennie Stults of Ecology commented that Ecology was very pleased with the non-intrusive sampling program progress and the work that Greg Berlin of FH is doing. She also noted the Treatability Test Plan was approved and work has started.

BC Cribs and Trenches

- FFS and PP, Draft A, formal comments were transmitted by EPA on 8/4/05. Responses to EPA comments were transmitted 9/8/05.
 - DOE met with EPA on 10/5/05 to continue discussions regarding remedy selection.
- Rod Lobos of EPA noted an issue of surface wind erosion occurring at BC Cribs and Trenches and the recent resulting uncovering of contaminated material in one location. Lanny Dusek of FH responded that the D&D Surveillance and Maintenance organization was working on a corrective action proposal that includes considering cover material types, their effectiveness versus potential downsides of increasing water intrusion, their cost, and the length of time needed before remediation action would occur. Dennis Faulk of EPA cautioned against assuming too short a time before remediation would occur, based on past experiences of how funding and other priorities can negatively affect when actions actually get taken.
- Dennis Faulk discussed that EPA and DOE-RL are in informal dispute over the appropriate remedial alternative being capping, or excavation and capping (cut-n-cap). A meeting between the agencies is scheduled for November 2, 2005.

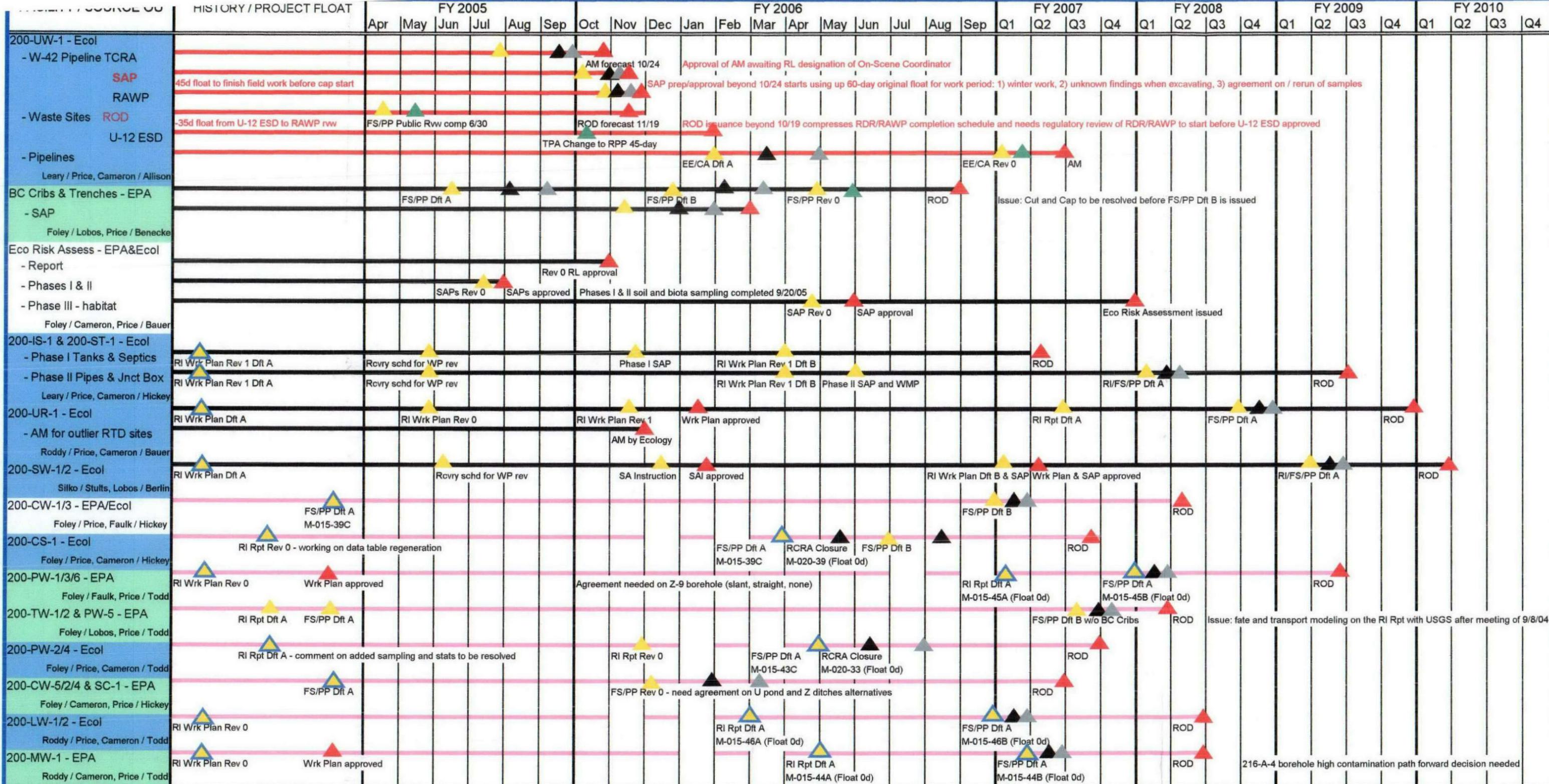
200-UW-1

- Kevin Leary of DOE-RL said there will be a meeting with Hanford Advisory Board (HAB) River & Plateau committee members, including Dick Smith, to discuss issues similar to the EPA's for BC Cribs; cut-n-cap remedy efficacy versus costs.
- Time Critical Removal Action (TCRA) memorandum to accelerate removal of piping and interferences associated with installing the proposed barriers on high-risk waste sites 216-U-8 and 216-U-12 was transmitted from RL to Ecology 9/29/05.

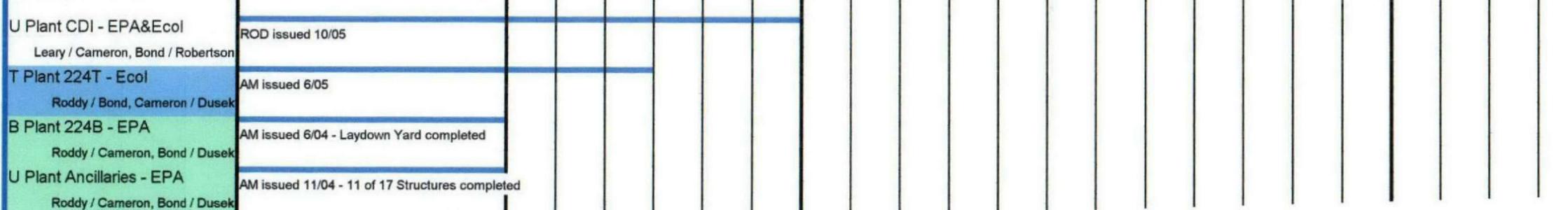
- Processing of the RL letter designating the On-Scene Coordinator was slowed by computer down-time associated with Federal building subbasement flooding.
- Sampling and Analysis Plan (SAP) and Removal Action Work Plan (RAWP) were discussed with Ecology and are in routing to Ecology.
- Field work to commence in late November (approximately 30 days after TCRA and SAP are approved to allow for ERDF waste profiling).
- Record of Decision (ROD) and Responsiveness Summary in final draft preparation by Ecology before beginning Tri-party review. Delay of approval beyond 10/19/05, compresses RDR/RAWP preparation and approval schedule.
 - TPA Change Request for reclassifying Crib 216-U-12 to a Past Practice unit is in public comment period 10/5/05 – 11/21/05.
 - Explanation of Significant Difference (ESD) to be used to update the ROD with reclassification information for Crib 216-U-12.
- Haul Road construction into borrow area mid-October through end of November 2005. Physical construction is to begin Monday, October 24, 2005.

FACILITIES STATUS

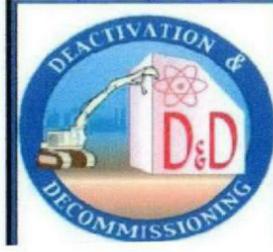
- **U Plant CDI** – Record of Decision (ROD) issued 10/3/05.
- **Facility Binning (no change)**
- **B-Plant Stack** – Downgrade of this stack to a minor emission unit was approved by EPA and WDOH, and lastly requires a significant modification to the Air Operating Permit (AOP) prior to full implementation. A public comment period is being conducted 10/10/05 – 11/9/05.
- **PUREX Stack** – Downgrade of this stack to a minor emission unit is under review by EPA and WDOH. A deep bed filter/aerosol test was performed the week of 8/29/05 to provide a current basis for the request. The test results support the downgrade request and are being documented in a report to be transmitted to the regulatory agencies near the end of November 2005.
- **209E, B-Plant, U-Plant, PUREX and REDOX Ventilation** – Transition from continuous ventilation to intermittent ventilation first discussed with WDOH on 5/19/05. A Notice of Construction (NOC) for 209E is being prepared for submittal to WDOH and EPA near the end of October 2005.



BACKLOG OF WORK



- decision docs in process for U-Zone
- decision docs in process
- decision docs under ROD strategy
- - - M-15-05-02 & M-20-05-01 120-day slip
- decision docs issued
- ▲ start of regulatory review
- ▲ start of regulatory review - TPA mlstn
- ▲ regulatory review & RL response
- ▲ start of public comment period



**Issue Resolution Meeting
DRAFT Agreements and Issues List
October 20, 2005
200 Area Unit Managers' Meeting**

Issue: Assigning New WIDS Entries (e.g., Pipelines) to OUs – (Ecology)

Issue Statement: Ecology noted that ORP/CH2M Hill are having pipelines added to WIDS; Ecology feels a strategy is needed for pipelines that are not assigned to soil site OUs.

Issue Actions: Ecology will also discuss the concern with Tank Farms. Parties need to work on a strategy. Specific actions were captured in the Action Item List to support reaching resolution at or shortly following the next UMM.

Issue Status: Issue initially raised at the June 16, 2005 UMM Source OU Status Meeting. DOE, Ecology, and EPA need to discuss actions and responsibilities. Specific preliminary actions were assigned during the August 18, 2005 UMM.

Issue Resolution: TBD

**200 Area Unit Managers' Meeting
OPEN ACTION ITEMS & TRACKING**

Action #	Action/Subject	Assigned To	Owed To	Assigned Date	Original Due Date	Adjusted Due Date	Date Complete	Status
41	Reconstruct Agreements for ZP-1 Expansion.	FH - Byrnes	DOE-RL	01/20/05	02/17/05	11/17/05		Revise RDRA Document
53	Review original TPA and early change packages for better understanding on requirements for 2008 M-015 milestone; mock up change package to provide clarification of requirements to meet 2008 milestone to be included in next modification to M-015-00C.	All - Williams	All	02/17/05	TBD	11/17/05		Clarification waiting for next M-015 change pkg. Hold for 120 day evaluation of characterization needs
53a	Provide clarification wording for M-015 completion criteria at next meeting. Discuss TPA Milestone wording for M-15-00C Draft A of R/FS.	All - Williams	All	04/21/05	07/30/05	11/17/05		FH - Williams working on change package
60	Finalize Central Plateau Facility Binning Report, DOE/RL-2005-54	RL/FH - Dusek	EPA/Ecology	04/21/05	05/19/05	12/20/05		RL working through Ecology comments.
60a	Respond to Jennie Stults question of facilities withing TSD boundaries and WMAs are included in the Facility Binning Report	RL/FH - Austin	Ecology	10/20/05	11/17/05			
64	Determine solution to adding pipelines not associated with an OU into WIDS with only a TBD in the OU field versus needing to link them to Waste Management Areas (WMAs).	All - Stults	All	08/18/05	09/15/05	10/20/05		Ecology reviewed TPA for links - suggested a TPA change package be written to include link information in Appendix B as part of close out of TPA MP-14 discussions.
64a	Discuss with ORP (Janet Badden of CH2M) drafting necessary TPA changes.	Ecology - Stults	All	08/18/05	09/15/05	10/20/05		See action 64 status
65	Schedule 200-PO-1 Regulatory Path forward meeting with Ecology	DOE - Tortoso	Ecology	9/15/2005	10/20/2005			Mtg Scheduled for 11/3/05 and canceled will reschedule
66	Schedule meeting on 200-UP-1 RI Report Historical Data Analysis & COPCs	Ecology	RL	10/20/05	11/17/05			
67	Approve WTP Borehole waste management send info to John and Joe	Ecology - Price	ORP	10/20/05	11/17/05			