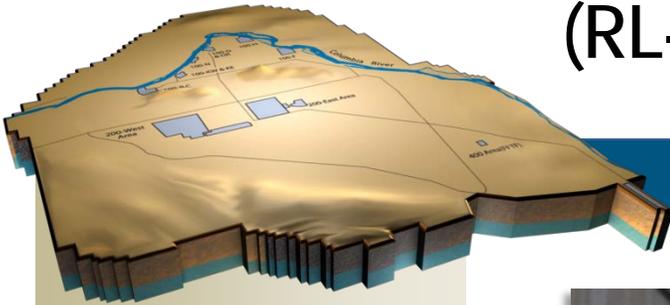


# Section D

## Soil and Groundwater Remediation Project (RL-0030)



### Monthly Performance Report

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**An electrician reviews plans for electrical installations in the process building of the DX Groundwater Treatment Facility, one of two treatment facilities being constructed with Recovery Act funds within the Soil and Groundwater Remediation Project to treat groundwater contamination on the Hanford Site.**

## PROJECT SUMMARY

### American Recovery and Reinvestment Act (ARRA)

ARRA dollars are at work across the Central Plateau and along the Columbia River, constructing two groundwater treatment facilities and drilling numerous wells that will be used for monitoring, extracting, and remediating groundwater near the Columbia River. Columbia River levels continue to impact well development at 100-NR-2 where 40 wells have been drilled, but completion cannot be claimed until the river rises. Well decommissioning has been impacted by regulatory approval of wells slated for decommissioning. The metrics for well drilling and decommissioning were reported on a calendar month basis from September 2009 to January 2010. In order to maintaining consistency across the metrics, the well drilling and decommissioning metrics will now be reported on a fiscal month basis for February and future months.

Activity	February		Cumulative	
	Planned	Completed	Planned	Completed
Well drilling	12	40	72	95
Well decommissioning	13	9	64	16
200 West P&T – Final Design	12%	13%	38%	40%
200 West P&T – Construction	3%	2%	6%	5%
200 West P&T – Testing/Startup	1%	2%	8%	8%
100 DX P&T – Construction/Startup	9%	8%	29%	47%

### Base

Base work includes the pump-and-treat operations, CERCLA remedial processes, and documentation for the River Corridor and Central Plateau. Construction and development of the final well supporting Phase 2 realignment of the KX and KR4 pump-and-treat systems were completed. Phase 2 realignment construction actions concluded at the KR4 system, and acceptance testing of affected components was completed. Phase 2 realignment construction actions were completed at the KX system. Sampling and groundwater treatment completed in February include the following:

- 160 well locations were sampled with a total of 686 samples being collected
- 24 aquifer tube samples were collected from 13 tubes at 11 sites
- 9.2M gallons groundwater treated by ZP-1 treatment facility
- 13.28M gallons groundwater treated by KX treatment facility
- 7.03M gallons groundwater treated by KW treatment facility
- 8.56M gallons groundwater treated by KR-4 treatment facility
- 4.23M gallons groundwater treated by HR-3 treatment facility
- 0.57M gallons groundwater treated by DR-5 treatment facility (after the system resumed operations following construction and realignment).

## EMS Objectives and Target Status

Objective#	Objective	Target	Due Date	Status
09-EMS-SGWR-OB1-T3	Take actions necessary to protect the Columbia River by 2012	Expand the HR-3 treatment system(s) to achieve a functional operational capacity of 500 gpm	12/31/10	On schedule
		Start construction for DX P&T facility	7/2/09	Complete (7/2/09)
		Construct DX P&T and transfer building	7/15/10	On schedule
		Construct 30 new wells for the P&T system	6/30/10	16 wells constructed
		Finish construction of DX P&T system	10/31/10	On schedule
		Finish ATP for DX P&T system	12/30/10	On schedule
		Treatment sys is functional at 500 gpm	12/31/10	On schedule
09-EMS-SGWR-OB3-T2	Reduce the number of groundwater sampling events conducted annually	Reduce the number of sampling events by 2% in calendar year 2009	12/31/09	Complete
		Evaluate FY-end sample schedule relative to baseline planned sample schedule of 2,460 sample trips	10/31/09	Complete (5/30/09)
		Reduce the baseline planned sample schedule by at least 49 sample trips	12/31/09	Complete (10/12/09)
09-EMS-SGWR-OB3-T3	Reduce the number of groundwater sampling events conducted annually	Reduce the number of sampling events by 10% in calendar year 2010	12/31/10	On schedule
		Evaluate FY-end sample schedule relative to baseline planned sample schedule of 2,768 sample trips	10/31/10	On schedule
		Reduce the baseline planned sample schedule by at least 277 sample trips	12/31/10	On schedule
10-EMS-SGWR-OB1-T1	Take actions necessary to protect the Columbia River by 2012	Treat 430,000,000 gallons of 100 Area (D, H & K Area) groundwater	9/30/10	On schedule
		Review and tally total number of gallons treated	Monthly	164.4M gal treated as of 2/28/2010
		Treat up to 430M gallons of 100 Area groundwater	9/30/10	On schedule
10-EMS-SGWR-OB2-T1	Construct a new GW treatment facility that satisfies the P&T component of the 200-ZP-1 OU ROD selected remedy	Construct new 200 West Area P&T facility to remediate GW which was impacted from past plutonium production operations	12/31/11	On schedule
		Start construction of road crossings	11/30/09	Complete (11/2/09)
		Start early civil construction	3/30/10	On schedule
		Start construction of GW extraction buildings	3/30/10	On schedule
		Complete treatment fac. construction	12/31/11	On schedule

## TARGET ZERO PERFORMANCE

	CM Quantity	FYTD Quantity	Comment
Days Away, Restricted or Transferred	0	1	N/A
Total Recordable Injuries	0	1	N/A
First Aid Cases	1	19	02/08/2010 - While removing a pair of channel lock pliers from the plastic package, the employee sliced the tip of his right thumb on the exposed edge of the plastic. Employee was taken to AMH where the wound was treated and employee was released back to work without restrictions. (20699)
Near-Misses	0	1	N/A

## KEY ACCOMPLISHMENTS

### EPC Projects in Support of S&GRP - ARRA

- Work continues on the 200W Area Pump-and-Treat Project 90% designs for the Process Facility and Balance of Plant; anticipated completion April 15, 2010. Fifteen road crossings have been completed and grubbing for transfer piping continues for 200W pump-and-treat. The request for expression of interest for the Process and Rad facilities has been released; with bids due March 12, 2010. Completed design presentation to EPA on February 17, 2010 (no actions).
- The 100-DX Pump-and-Treat construction is 50% complete. Construction of the process building and two transfer buildings by the fixed price contractor is complete with the exception of one punch list item. Electrical service installation to the buildings was completed February 9, 2010, with the exception of the final tie-in. Final tie-ins at the power poles by Electrical Utilities are planned for after equipment installation is complete. Installation of equipment inside the process building began on January 25, 2010. Piping and electrical work is on-going in all buildings.
- In order to maximize initial throughput at DX, four new extraction wells that were previously planned to tie into the new HX facility, will be routed to the DX Transfer Building M2. Design changes for these four new wells are complete, and one of two new required road crossings has completed construction. A 90% design review for the civil/structural portion of the chemical addition system was completed on February 9, 2010. The design has been sent to the contractor for pricing. A proposal is expected by March 22, 2010 from the fixed-price contractor.
- Procurement and receipt of materials for the facilities is on-going. The first two skids are scheduled to arrive on site March 29, 2010. Delivery of the vertical transfer and booster pumps is scheduled for March 31, 2010. A contract was awarded for the dual laminate Fiberglass Reinforced Plastic (FRP) Polyvinylidene Fluoride (PVDF) lined, vertical tank for storage of sulfuric acid for the chemical addition system. This tank has a 19 week lead time and is scheduled to arrive on site July 22, 2010. A procurement specification for the carbon steel

vertical storage tank for storage of sodium hydroxide was approved; the project is expecting bids from a request for proposal on March 12, 2010. A Project Review Board was conducted February 25, 2010 and the project was approved to proceed conditioned on three action items being completed by March 27, 2010.

### **EPC Projects in Support of S&GRP – Base**

- Work continues on the Phase 2 realignment of the KR4 and KX pump-and-treat systems. Phase 2 construction was completed at the KR4 system during January. Completed outage at the KX Process building during February to tie-in electrical and mechanical upgrades.
- Design of the first group of road crossings for the 100-HX project has been released. A contract has been placed with the MSA Transportation Services group to perform necessary road improvements to allow safe access to the construction site. The cultural review request (SHPO) for the construction activities in previously undisturbed areas (some road crossings, wells, and the building) site has been submitted to DOE for concurrence.

### **Environmental Programs and Strategic Planning - Base**

Held the fourth Senior Executive Committee (SEC) meeting in Seattle, WA on Wednesday, February 24, 2010. The session continued discussion on the Central Plateau Cleanup Completion Strategy negotiations.

### **Risk and Modeling Integration Group**

The planning for the outer area baseline risk assessment was completed and the production of the risk assessment was started.

The technical document for bio-intrusion depth in the Central Plateau for publication was drafted and started through internal review and approval (as an internal PRC document).

Issued the Revision 0 documents for the “Annual Summary of the Integrated Disposal Facility Performance Assessment 2009”, the “Annual Status Report (FY 2009): Composite Analysis of Low-Level Waste Disposal in the Central Plateau of the Hanford Site”, and the “Annual Review of the 200 West and 200 East Area Performance Assessment (January 1, 2009 – September 30, 2009).

### **Environmental Data Management**

The WIDS Administrative Interface Agreement (AIA) was reviewed by RL, and the team was complimented on doing an excellent job – especially in the level of detail. The AIA is in routing for final sign off by the Hanford prime contractors.

### **Cost Estimating**

- Procedure has been sent to the Procedures Group and is awaiting formal review.
- Supported projects (SWL/NRDWL landfill closure options, BC-1 FS, U-Zone) with cost estimating services.

**Well Drilling and Decommissioning – ARRA**

	February		Cumulative	
	Planned	Completed	Planned	Completed
100-NR-2	8	32	41	60
100-HR-3 H Area	0	0	12	12
100-HR-3 D Area	3	5	8	14
200-BP-5	0	1	1	1
200-ZP-1	1	1	6	5
100-BC-5	0	1	4	3
Total	12	40	72	95
Decommissioning Total	13	9	64	16

**Notes:**

- *200-BP-5*: The “K Well” and “M Well” are in construction. Planned metrics (wells drilled, constructed and developed) are to be complete by end of March.
- *200-ZP-1 Expansion*: Currently, nine of 17 wells have been initiated and five wells are metrics complete.
- *100-BC-5*: The remaining wells to be metrics complete by the end of February.

**River Corridor****100-BC-5 Operable Unit - Base**

- Extensive reorganization of the Draft A 100-BC Operable Units Work Plan Addendum was completed to satisfy the EPA requested format, and most of the comment responses have been incorporated into the Rev. 0 versions of the work plan and associated SAP through a collaborative process with RL and EPA. The documents are near finalization.
- All sampling work (base funded) for the four-well drilling campaign is now complete. Sampling activities were completed for the fourth well, C7665 (total depth of 152.3 ft bgs), on February 16, 2010.

**100-KR-4 Operable Unit - Base**

- Acceptance testing field checks of KR4 pump-and-treat system components impacted by Phase 2 realignment were completed, and flow through the KR4 system was restored to full capacity (300 gpm). Extraction wells 199-K-144, 199-K-145, and 199-K-162 now flow through the KR4 system, having been switched from the KX system during Phase 2 construction to address tritium concerns.
- KX Transfer Building 1 continued to operate at reduced flow due to construction. All remaining Phase 2 construction activities associated with the KX system were completed and construction walk down performed to prepare for acceptance testing.
- Consultation with Tribal Nations regarding proposed locations of three of the four planned Phase 3 realignment wells continued this month. A revised draft of the KR4 pump-and-treat system cultural treatment plan (DOE/RL-96-44) was completed and provided to RL for review. This revision revises the 1996 plan to include updated information about cultural and historic resources in the 100-K Area (and vicinity), as well as updated information about the ongoing groundwater remedial actions in the area.
- Based on December discussions with EPA, a bio-infiltration treatability test is being planned for implementation at the 183.1-KW head house as work continues on the FFS/PP. Development of the infiltration test conceptual design and components of the treatability test plan is underway.

Ecology, EPA, and RL have accepted the strategy for ceasing the development of a Focused Feasibility Study/Proposed Plan for hexavalent chromium in favor of conducting two design tests for bioremediation (in situ bioremediation at 100-D, and bio-infiltration at 100-K). Internal discussions are being held to formulate a strategy for renegotiating the M-016-155 milestone to include the treatability tests.

#### **100-NR-2 Operable Unit - Base**

- Joint regulator (Ecology and EPA) comments were received in January on the NR-1/2 OU Proposed Plan to Amend the Interim ROD (Draft B). Final comment responses to these joint regulator comments were provided to RL on February 25, 2009. The document has been revised to address these comments, and this revised document was provided to RL on February 25, 2010, for informal review prior to finalization as Rev. 0.
- Draft A of the 100-N Operable Units Work Plan Addendum and SAP, as transmitted in December, were reviewed by Ecology. Initial comments were officially received from Ecology on January 29, 2010. A workshop was held on February 17, 2010 to exchange information useful in finalizing the work plan. Following that workshop, a second and final set of comments were received from Ecology on February 22, 2010. Drafting of comment responses was initiated, and these initial responses are currently being incorporated into a Draft B version of the document for submittal to Ecology in mid to late April.
- Core sampling (as part of the 171 well drilling campaign) was completed by February 10, 2010, to support the evaluation of the Jet Injection test. These samples are now at Pacific Northwest National Laboratory (PNNL) for analysis. All results will be incorporated into a final test report, which will be initiated in early March.
- Engineering was completed on the design for an injection system for the Apatite Barrier expansion, with the final design issued on February 10, 2010. A notice to proceed has been issued for the contractor to provide an estimate and schedule for skid manufacture, with an expected due date of March 8, 2010.
- Total petroleum hydrocarbon studies are continuing with PNNL as planned. This work has been extended to summer 2010 to allow for upcoming groundwater sampling of new wells (recently installed along the TPH portion of the river shoreline as part of the 171-well drilling campaign) to be included into the study.

#### **100-HR-3 Operable Unit - Base**

- HR-3 operated at near normal levels as the H Area aquifer test continued. The rebound study was extended to examine the influence of the river at high water. Due to the chromium concentrations measured in the RUM wells, two RUM wells are being reconfigured for long-term operation as extraction wells. Until these modifications are completed, the HR-3 system will run in its pre-test configuration.
- DR-5 resumed operations after acceptance testing of construction modifications and realignment to extract water from the “hot-spot” in the southern D area plume using extraction well 199-D5-104
- Design activities continued on the HX pump and treat facility, with progress continuing on the walk down, routing and design of HDPE pipe runs and road crossings. A contract was issued for MSA to perform road upgrades necessary for safe building access. Comments have been resolved, and the cultural review document has been submitted to RL, for review and approval.
- Treatability Test Plans are being prepared to support design testing of in-situ bioremediation and a sub-grade bioreactor technology within the area of the southern D “hot-spot” plume. As a result of the cancelled Focus Feasibility Study, discussions have been held with RL to revise the test

plans to support higher visibility by regulators, and potentially, the public. Design efforts for these tests began in February, including a visit to the proposed test location and site walk down by the subcontractors preparing the test design.

- A Mini-SAP has been approved to support transitional river stage Decision Unit Risk Assessment groundwater sampling. The remaining results are in from the October (low river stage) sampling event, and are being evaluated.

#### **100-FR-3 Operable Unit - Base**

- Extensive reorganization of the Draft A 100-F & IU-2/6 Operable Units Work Plan Addendum was completed to satisfy the EPA requested format, and most of the comment responses have been incorporated into the Rev. 0 versions of the work plan and associated SAP through a collaborative process with RL and EPA.

#### **300 FF-5 Operable Unit - Base**

- EPA final comments to the RI/FS Work Plan and SAP Draft A have been addressed, and comment resolution is nearly complete. An engineered lithology will be emplaced at the bottom of the existing excavation at 618-1 and will be used in subsequent treatability test plans to evaluate remediation technology delivery mechanisms.

#### **Central Plateau**

##### **200-UP-1 Operable Unit - Base**

- Transmitted the final Rev. 3 200-UP-1 OU Groundwater Remedial Design/Remedial Action Work Plan (DOE/RL-97-36) to DOE as a contract deliverable for approval
- Completed initial hydraulic capture zone analyses for the WMA S-SX Tc-99 plumes that indicate a two well extraction system at 50 gpm total would be sufficient to capture the plumes at concentrations greater than 9000 pCi/L (10 x MCL)
- Completed U Plant P&T extraction well cleaning (brushed and surged) which resulted in a modest increase in pumping rate. An additional chemical treatment is being planned to remove the remaining scale from the well screens.

##### **200-BP-5 Operable Unit - Base**

- The drilling/sampling of the K and M wells were completed. Sample analyses continued.
- Issued a data quality assessment report for groundwater monitoring data in support of the RI Report
- Issued the depth discrete groundwater sampling plan (PNNL-19129) for select wells in the B Complex Area in support of the RI
- Completed the sampling on eight of 14 wells

##### **200-PO-1 Operable Unit - Base**

- Completed the decisional draft of the 200-PO-1 Groundwater OU RI Report, DOE/RL-2009-85 for DOE review

##### **200-ZP-1 Operable Unit - Base**

- For the interim pump-and-treat system, 12 of the 14 groundwater extraction wells are on line pumping water at a rate of approximately 260 gpm
- Wells EW-7 (C7022), EW-9 (C7577), and EW-12 (C7019) are currently at a depth of 511 ft, 180 ft, and 432 ft respectively
- RL recently issued the Performance Monitoring Plan to EPA for review. EPA comments are due

back on April 2, 2010.

### **200-PW-1 Soil Vapor Extraction (SVE) - Base**

- PW-1 active SVE operations started up March 1, 2010 as planned. Both systems are running smoothly. The 2010 monitoring plan was updated and signed by RL and EPA prior to startup. Replacement SVE hoses are being ordered.

### **Regulatory Decisions and Integration - Base**

- Transmitted the 200-MW-1 Feasibility Study (Draft A) to EPA on February 25, 2010 in accordance with TPA milestone M-015-44B
- Transmitted the 200-UW-1 Sampling and Analysis Plan for the U-8 and U-12 Cribs (Draft A) to Ecology
- Issued a statement of work for the electrical resistivity survey for the borehole installation in the U-Area
- Completed drilling and sampling of the 216-B-12 borehole
- Received final analytical results for the 216-B-6 borehole. The Tier I (grab samples) analyses are underway.
- Began field mobilization for the 200-CW-1 supplemental characterization and the Gable pipeline sampling
- Work continues on the Outer Area feasibility study and proposed plan that includes the 200-CW-1 outer area ponds in accordance with TPA milestone M-015-38B
- Work continues with the RL/Ecology working groups, including EPA participation, to resolve comments on the SWL and NRDWL closure plans. The revised draft closure plans are to be reviewed by participants and then jointly discussed in a follow-on workshop scheduled for the week of March 29.
- To support construction in FY-11, it is necessary to begin design of the NRDWL and SWL caps before Ecology's approval of the closure plans. Currently, we have agreement with Ecology that an evapotranspiration (ET) barrier is acceptable and are continuing to work closely with Ecology on comment resolution of the closure plans. No significant design comments are outstanding.
- Incorporated RL's comments on the West Lake Sampling and Analysis Plan (Decisional Draft) with the Draft A document to be provided in March
- Completed a three day workshop with RL and site contractors to develop the scope for the Non-Operational Areas evaluation in the Outer Area
- Received RL's comments on the 200-MG-1 Removal Action Work Plan (Decisional Draft) for 37 Remaining Waste Sites in the Outer Area.

### **Deep Vadose Zone Treatability Test Project - Base**

Work continues on the deep vadose zone project including the pilot test, characterization test report, desiccation lab testing, uranium sequestration, soil flushing and grouting. The following summarize key accomplishment for February:

- Drilling of the 20 boreholes needed for instrumenting and logging for the pilot test commenced on February 25, 2010
- Ground scans and GPS coordinates for the new power poles have been completed in support of developing the excavation permit supporting the field work for the 13.8 KV power supply. This will operate the three phase 480 volt equipment used in the pilot test. Field work for the electrical upgrade is scheduled to be completed in March.

- The test report on Characterization of the Soil Desiccation Pilot Test Site was formally transmitted to RL on March 2, 2010, satisfying one of the completion criteria for draft PI RL-0030-08-1a.1 due March 15, 2010.

## MAJOR ISSUES

**Issue** – Cultural reviews are impacting roads and pads, well locations, decommissioning and planning documents.

**Corrective Action** – Project initiated drilling on the non-sensitive area within each respective drilling campaign.

**Status** – Well locations are staked immediately after identification to begin the document planning process.

**Issue** – Agencies have requested additional characterization data from the deep vadose zone boreholes be included in the revised 200-UW-1 Proposed Plan due June 30, 2010 (TPA M-015-83). Even with expedited drilling, this data will not be available to support the 200-UW-1 Proposed Plan Milestone.

**Corrective Action** – Process a TPA change notice to establish a new TPA date for submittal of the proposed plan for the 200-UW-1 waste sites.

**Status** – A schedule for the 200-UW-1 Proposed Plan with the additional characterization data was provided to Ecology. In addition, RL sent a letter to Ecology (10-AMCP-0092) stating that the 200-UW-1 waste sites will be incorporated into the 200 West Area decision document.

**Issue** – As a result of discussions with RL and the regulators, the treatability test plans must be revised to support higher visibility by regulators, and potentially, the public. These changes are directly related to the cancellation of the hexavalent chromium focused feasibility study and proposed plan.

**Corrective Action** – Internal meetings have been held to reorganize the documents, and add material appropriate to withstand additional scrutiny by regulators and the public. A meeting will be held with RL the week of March 8 to describe the changes anticipated to the test plans. Outcome from this meeting will guide the revision of the test plans.

**Status** – Revision to the documents is underway. To prevent additional delays to the tests, design work has started in parallel to the test plan revisions. As appropriate, additional resources are being added to accelerate design efforts.

## RISK MANAGEMENT STATUS

**Unassigned Risk**  
**Risk Passed**  
**New Risk**

Working - No Concerns  
 Working - Concern  
 Working - Critical

Increased Confidence  
 No Change  
 Decreased Confidence

Risk Title	Risk Strategy/Handling	Assessment		Comments
		Month	Trend	
<b>SGW-001: 100-D Treatment Technology Selection Change</b>	Review draft RD/RAWP with regulators; maintain close interface to minimize impact of changes.			RD/RAWP approval behind schedule, but no issues identified to date. The subject document is under revision to update to the current and proposed remedy for HR-3.
<b>SGW-050: Regulatory Strategy for Decision Docs</b>	Continue to support RL in strategy negotiations with Agencies.			Revised cleanup strategy will translate to a revised regulatory document approach.
<b>SGW-080: 100-BC-5 Pump and Treat Required</b>	Risk accepted.			Additional characterization through the installation of RI/FS wells and aquifer tubes is underway to further define the extent and concentration of chrome in the plume in order to determine if an active remedial measure is required. Currently a pump and treat is not planned for the OU.
<b>SGW-081: 100-FR-3 Pump and Treat Required</b>	Risk accepted.			Concentrations of chromium are low at this site and no Pump and Treat is planned.
SGW-003: Central Plateau Well Drilling Demands	Adjust drilling schedules; cross-train workforce; evaluate sample parameters.			No significant issues will preclude completion of well drilling.
SGW-003A: Central Plateau Drilling - 200W P&T	Use rotary drilling vs. cable-tool; modify vadose zone sampling approach.			The first nine wells were complete as of 3/1/10; multiple drill rigs are now working to complete the next eleven wells.
SGW-008B: Regulatory Document Comments for 100-HR-3	Routine meetings are being held with regulators during document development; no additional mitigation is feasible.			Nothing to report this month.
SGW-018: 100-HR-3 P&T Operating Efficiency (added to Risk Chart on 3/8/10)	Add four wells to the baseline to increase the likelihood of meeting production rates at startup. Connect DR-5 wells to HR-3 P&T. Test use of horizontal well for increased water flow. Add 100-H wells to HR-3 P&T. Construct HX P&T system.			
SGW-033: Well Casing Size/Screen Length	Ensure that sufficient budget is provided to cover drilling cost increases for larger diameter completion. Adjust schedules to account for			Current CHPRC baseline has adjusted schedules to account for additional drilling durations.
SGW-051: Compressed Schedule for 200 West P&T Project Due to TPA Commitment	Concurrent document/procurement process.			On schedule with procurements; behind schedule on design but have a recovery plan in place.
SGW-056A: 300-FF-5 Infiltration Not Feasible for Wide-Spread Application (added to Risk Chart on 3/8/10)	An infiltration test is being performed at 300-FF-5 for the contaminants of concern.			
SGW-065: Bio/Chemical Remediation Fails (added to Risk Chart on 3/8/10)	A design test is being planned for 100-D Area. This should eliminate some of the uncertainties with the potential side effects.			
SGW-108J: 200-UW-1 Increased Characterization Required (added to Risk Chart on 3/8/10)	Incorporate additional deep boreholes into the baseline.			This risk has been realized and the project is working the issue. A BCR will be developed, approved and implemented that will the necessary additional deep boreholes to the current baseline.
WRS-043: Multi-Incremental Sampling - Hazard Characterization	Revise the baseline assumptions to address Haz cat III or less and adjust cost and schedule accordingly. This leaves the residual risk that the hazard categorization will be greater than Haz Cat III.			This risk has been realized and the project is working the issue. Report one more month and then remove from Risk Chart if no change.

## PROJECT BASELINE PERFORMANCE

### Current Month

(\$M)

WBS 030/ RL-0030 Soil and Groundwater Remediation	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)
<b>ARRA</b>	8.9	7.2	8.9	(1.7)	-19.4	(1.7)	-23.3	201.8
<b>Base</b>	<u>10.5</u>	<u>9.2</u>	<u>10.3</u>	<u>(1.3)</u>	-12.2	<u>(1.1)</u>	-12.0	<u>1,202.9</u>
<b>Total</b>	<b>19.4</b>	<b>16.4</b>	<b>19.2</b>	<b>(3.0)</b>	<b>-15.5</b>	<b>(2.8)</b>	<b>-16.9</b>	<b>1,404.7</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

**CM Schedule Performance: (-\$1.7M/-19.4%)** is within reporting thresholds:

The primary contributors to the negative schedule variance that exceed reporting thresholds are as follows:

#### Well Drilling (-\$0.5M)

The current month schedule variance is due to delays in initiating drilling for the 200 ZP-1, KR-4, and HR-3 well drilling campaigns. The delays are due to subcontractor contract award issues for 200 ZP-1 as well as waiting for the KR-4 and HR-3 Operable Units to complete well staking. It is anticipated that the negative schedule variance should be recovered by May.

#### 200-ZP-1 Operable Unit (-\$1.3M)

The current month negative schedule variance is primarily due to delays in vendor fabrication of long lead process equipment. Those currently behind are the Aeration/Microfiltration system, the Air Stripper System, and the Ion Exchange System due to resources being focused on higher priorities. The engineering design team has been focused on the completion of the 90% design, resulting in delays to engineering review of submittals. In addition, road crossings construction is progressing slower than originally planned due to excavation permitting taking longer than anticipated. Contractor mobilization for construction of the transfer buildings also reflects a slight delay due to on-going design changes resulting from changes in tanks sizes. Analysis is on going to determine the impact of delayed vendor fabrication progress and equipment delivery times to the overall construction schedule.

#### CM Cost Performance: (-\$1.7M/-23.3%)

The primary contributors to the negative cost variance that exceed reporting thresholds are as follows:

#### 100 HR-3 Operable Unit (-\$0.9M)

The negative cost variance is primarily due to the following: G&A cost were overstated, as the costs were entered twice. The error was not discovered until after final cost had been finalized. The G&A accrual will be corrected in March with no CTD impact. Also, construction labor cost is overrunning for the DX pump and treat facility and cost for installation of equipment inside the process/transfer facility. The labor overruns will be absorbed by the CTD positive cost variance with no negative impact.

#### 200-ZP-1 Operable Unit (-\$0.6M)

The current month negative cost variance is primarily due to the following factors: 1) Greater than planned cost towards completion of the 90% 200W P&T design resulting from continued design changes associated with mass balance calculations, sludge stabilization, FBR skid changes, etc.; 2) inefficiencies associated with road crossing and transfer piping installation. Road crossings are taking longer than

planned to install due to delays in obtaining excavation permits. Crews continue to work in the field, but progressing at a slower rate than planned, resulting in a negative cost variance; and 3) Completion of a progress payment for HDPE piping (earned value method 0-100) for piping that has been purchased incrementally over the past several months, resulting in a positive variance.

#### **Ramp-up and Transition (-\$0.4M)**

The large current month negative cost variance is primarily due to procurement and installation of mobile offices and project staffing charges that were incorrectly charged in January to trailer mobilization rather than construction. A portion of these charges were corrected in February resulting in the current month overrun. No significant variance is anticipated at completion for this account.

#### **Base**

#### **CM Schedule Performance (-\$1.3M/-12.2%)**

The primary contributors to the negative schedule variance are as follows:

#### **Regulatory Decision/Closure (-\$0.4M)**

The current month negative schedule variance is primarily due to the following delays: 1) Start of excavation at 216-S-19 waste site as a result of need to take additional sampling to ensure that the area is not a Hazardous Category 3 area. This delay will result in a day for day slip in the completion of the sampling process; resources will be assigned to other site remediation work scope to minimize non-productive cost. The hazard category evaluation has been prepared and issued. The CHPRC assessment determined that the site is less than hazard category 3. This determination requires RL review and approval. 2) Characterization of the Gable Pond pipeline and CW-1 Ponds in the Outer Area work scope. The field characterization was originally planned to occur in January, but based coordination with the outer area field work, will now occur in March. These negative schedule variances were partially offset by a positive schedule variance in the Semi-works Zone as less contamination was encountered, resulting in a significant decrease in the effort to drill and obtain the samples.

#### **CM Cost Performance (-\$1.1M/-12.0%)**

The primary contributors to the negative cost variance are as follows:

#### **PBS RL-30 UBS, G&A, and DD (-\$1.0M)**

The current month negative cost variance is the result of a point adjustment to correct an error in the monthly phasing for implementation of PRC-10-011 "PRC Baseline Revision 2". BCRA-PRC-10-023RO General Administrative Changes for February 2010 corrected the January 2010 overstatement of BCWS. Variance in each PBS may be higher or lower than the composite variance as a result of the PRC accounting practice of distributing cost based on the Project's actual cost instead of the accounting practice of planning the BCWS distribution based on the Project's BCWS by each PBS.

## Contract-to-Date (\$M)

WBS 030/ RL-0030 Soil and Groundwater Remediation	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance (\$)	Schedule Variance (%)	Cost Variance (\$)	Cost Variance (%)	Budget at Completion (BAC)
<b>ARRA</b>	42.5	44.9	35.8	2.3	5.5	9.1	20.2	201.8
<b>Base</b>	<u>171.5</u>	<u>170.4</u>	<u>159.3</u>	<u>(1.1)</u>	-0.7	<u>11.1</u>	6.5	<u>1,202.9</u>
<b>Total</b>	<b>214.1</b>	<b>215.3</b>	<b>195.1</b>	<b>1.2</b>	<b>0.6</b>	<b>20.1</b>	<b>9.4</b>	<b>1,404.7</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

#### CTD Schedule Performance: (+\$2.3M/+5.5%)

The primary contributors to the CTD positive schedule variance are as follows:

#### 100-HR-3 Operable Unit (+\$3.8M)

The primary contributor to the CTD positive schedule variance is acceleration of procurement and construction for DX. With the implementation of AWA-PRC-10-017, work scope was scheduled to start at the beginning of FY 2010. However, a significant amount of work had already been performed in FY 2009 and that work scope is representative of the CTD positive schedule variance.

#### 200-ZP-1 Operable Unit (-\$0.9M)

The contract-to-date negative schedule variance is primarily due to delays in vendor fabrication for long lead process equipment. Fabrication is currently behind on the Aeration/Microfiltration system, the Air Stripper System, and the Ion Exchange System due to resources being focused on higher priorities. The engineering design team has been focused on the completion of the 90% design, resulting in delays to engineering review of vendor submittals.

#### CTD Cost Performance: (+\$9.1M/+20.2%)

The primary contributors to the CTD positive cost variance are:

#### Drilling (+\$1.7M)

The positive cost variance is due to efficiencies/savings obtained in drilling for 100-NR-2, 100-HR-3, and 200-BP-5 wells. Cost efficiencies are being obtained through an aggressive drilling schedule with savings in support personnel, faster drilling methods and the fact that the HR-3 well depths have been less than originally planned. Efficiencies in NR-2 and HR-3 are expected to continue resulting in additional positive cost variance.

#### 100-HR-3 Operable Unit (+\$2.0M)

CTD positive cost variance is due to efficiencies experienced during installation of HDPE piping and road crossings.

#### Regulatory Decision & Closure Integration (+\$1.9M)

The positive cost variance is due to completing work scope more efficiently than planned; primarily in the areas of multi-incremental sampling, borehole drilling, landfill characterization, and document preparation. Funds will be available to support other activities.

#### Ramp-up and Transition (+\$1.9M)

The large CTD positive cost variance is primarily due to procurement and installation of mobile offices and project staffing charges that were inadvertently charged to trailer mobilization rather than construction. These charges were partially corrected in February with more corrections to follow.

Additionally, accruals for the construction contractor for the 4 shop buildings are understated and the contractor is performing the work below the baseline estimate. No significant variance is anticipated at completion for this account.

**PBS RL-30 UBS, G&A, and DD (+\$1.8M)**

The CTD positive cost variance is discussed in Appendix C.

**Base**

**CTD Schedule Performance (-\$0.1M/-0.7%)**

No variances exceed reporting thresholds.

**CTD Cost Performance (+\$11.1M/+6.5%)**

Primary contributors to the positive variance that exceed reporting thresholds are as follows:

**100-KR-4 OU (+\$1.8M)**

The primary contributor to positive cost variance are efficiencies obtained with the KR-4 Operations and Maintenance accounts, which are expected to continue throughout the fiscal year.

**100-NR-2 OU (+\$1.5M)**

The favorable CTD cost variance resulted from performing chemical treatment & maintenance scope, jet grouting pilot test work and RI/FS Work Plan and Interim Proposed Plan Reporting more efficiently than planned. It is anticipated that this underrun can be funds managed for other project scope.

**100-HR-3 Operable Unit (+\$1.0M)**

Major contributors to the CTD positive cost variance are previously experienced efficiencies experienced within: HR-3 pump and treat activities, development of in-situ bioremediation and sub-grade bioreactor treatability test plans, and development and planning of remedial investigation/feasibility study field work. These underruns are expected to remain.

**200-ZP-1 Operable Unit (+\$1.5M)**

The positive cost variance is largely the result of the following factors: 1) Interim Operations reflects significant progress and cost under runs have been achieved to date for Annual System Calibration. 2) Design of the permanent hookup of well EW-1 (C7017) was lower than planned as only minor changes were needed to an existing design. 3) Cost for performing general operating and maintenance and minor modification activities have been lower than planned as the system has been running smoothly, and 4) Efficiencies to-date pertaining to design/construction of the 200W Area P&T, primarily in the areas of Remedial Design/Remedial Action Work Plan preparation, construction of the Aquifer Test System as well as Aquifer Testing and Balance of Plant design preparation. This positive cost variance is expected to be available for funds management within other areas of the project.

**Regulatory Decision & Closure Integration (+\$1.7M)**

The positive cost variance is due to completing work scope more efficiently than planned; primarily in the areas of multi-incremental sampling, borehole drilling, landfill characterization, and document preparation. Funds will be available to support other activities.

**Contract Performance Report Formats are provided in Appendices A and A-1.**

## FUNDS vs. SPEND FORECAST (\$M)

WBS 030/ RL-0030 Soil and Groundwater Remediation	FY 2010		
	Projected Funding	Spending Forecast	Variance
<b>ARRA</b>	142.9	113.8	29.1
<b>Base</b>	<u>177.4</u>	<u>152.4</u>	<u>25.1</u>
<b>Total</b>	<b>320.3</b>	<b>266.2</b>	<b>54.2</b>

Numbers are rounded to the nearest \$0.1M.

### Funds/Variance Analysis

Funding has been adjusted to reflect the FY 2010 funding levels for RL30 ARRA and Base activities.

### Critical Path Schedule

Critical path analysis can be provided upon request.

### Estimate at Completion (EAC)

The BAC and EAC now include FY 2009 through FY 2018, the PRC contract period.

### Baseline Change Requests

BCRA-030-10-005RO FY 2010 Remediation of Science and Technology Projects.

## MILESTONE STATUS

TPA milestones represent significant events in project execution. DOE Enforceable Agreement milestones were established to provide high-level visibility to critical deliverables and specific status on the accomplishment of these key events. The PRC Baseline Revision 2, submitted in January, defines CHPRC planning with respect to TPA milestones.

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-015-40E	Parties Will Complete Negotiations And DOE Will Submit Change Packages W/New Milestones For RI/FS Process For Specified Operable Units	TPA	3/31/10			On schedule. Negotiations ongoing. Date extended one month by approved change request.
M-015-44B	Submit 200-MW-1 OU FS to EPA	TPA	2/28/10	2/25/10		Complete
M-91-40L-025	Submit Oct-Dec 1 <sup>st</sup> Quarter FY10 Burial Ground Sample Results	TPA	3/15/10	1/26/10		Complete
M-024-58C	Initiate Discussions of Well Commitments	TPA	6/1/10			On schedule

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-091-40L-026	Submit 2 <sup>nd</sup> Qtr FY10 Burial Ground Sample Results	TPA	6/15/10		5/30/10	On schedule
M-015-83	Submit Proposed Plan for 200-UW-1	TPA	6/30/10			On schedule
M-016-155	Submit Revised RD/RA Work Plans for 100A in Accordance With M-016-150 ROD	TPA	6/30/10		9/30/11	On schedule. Change number M-16-09-10 changed product to treatability test plans, as agreed to by regulators.
M-024-61-T01	Conclude Discussions of Well Commitments	TPA	8/1/10		7/30/10	On schedule
M-016-124	Submit 200-ZP-1 Remedial Design Report	TPA	8/31/10			On schedule
M-091-40L-027	Submit 3 <sup>rd</sup> Quarter FY10 Burial Ground Sample Results	TPA	9/15/10		8/30/10	On schedule
M-015-51	Submit Revised FS Report and Proposed Plan to EPA for 200-BC-1 OU	TPA	9/30/10			On schedule
M-015-17A	Submit a 200-UP-1 OU Combined Remedial Investigation and FS Report and Proposed Plan	TPA	9/30/10		6/28/10	On schedule

## SELF-PERFORMED WORK

The Section H. clause entitled "Self-Performed Work" is addressed in the Overview.

## GOVERNMENT FURNISHED SERVICES AND INFORMATION (GFS/I)

None currently identified.