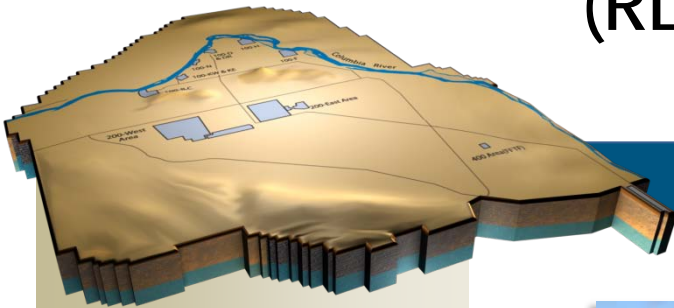


# Section D

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



### Monthly Performance Report

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October 2010  
DOE/RL-2010-126-10, Rev. 0  
Contract DE-AC06-08RL14788  
Deliverable C.3.1.3.1 - 1



**General contractor Skanska USA Build Inc. installs siding on the Radiological Building that will be one of two main process buildings for the 200 West Groundwater Treatment Facility.**

## PROJECT SUMMARY

### American Recovery and Reinvestment Act (ARRA)

Recovery Act dollars are at work across the Central Plateau and along the Columbia River constructing two groundwater treatment facilities and drilling wells that will be used for monitoring, extracting, and remediating groundwater. Progress through the end of the fiscal month October is summarized in the table below.

Activity	October		Cumulative	
	Planned	Completed	Planned	Completed
Well Drilling (# of wells) -352	3	1	289	279
Well Decommissioning (# of wells) -350	10	0	185	176
100 DX P&T – Construction/Startup (%)	4	0 <sup>(1)</sup>	98	98 <sup>(1)</sup>
200 West P&T – Final Design (%)	-	-	100	100
200 West P&T – Construction (%)	6	5	36	28.6
200 West P&T – Testing/Startup (%)	6	5	37	31

<sup>(1)</sup>The performance report that includes CTD shows that the DX construction calculation is 100% complete. The CTD BCWP includes \$3.5M worth of work performed well ahead of schedule in Fiscal Year 2009.

### Base

Base work includes the pump-and-treat operations, CERCLA remedial processes, and documentation for the River Corridor and Central Plateau. The second of three rounds of aquifer tube sampling was completed at the 100-HR-3 Operable Unit. Sampling and groundwater treatment completed in October includes the following:

- Due to a sampling Stop Work there were no samples taken in October
- 18.08M gallons groundwater treated by ZP-1 treatment facility
- 21.16M gallons groundwater treated by KX treatment facility
- 8.89M gallons groundwater treated by KW treatment facility
- 1.41M gallons groundwater treated by KR-4 treatment facility
- 8.14M gallons groundwater treated by HR-3 treatment facility
- 1.4M gallons groundwater treated by DR-5 treatment facility

## 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	<b>Expand the HR-3 treatment system(s) to achieve a functional operational capacity of 500 gpm</b>	<b>12/31/10</b>	<b>On schedule</b>
		Start construction for DX P&T facility	7/2/09	<b>Complete (7/2/09)</b>
		Construct DX P&T and transfer building	7/15/10	<b>Complete (7/15/10)</b>
		Construct 30 new wells for the P&T system	6/30/10	<b>Complete (6/29/10)</b>
		Finish construction of DX P&T system	10/31/10	<b>Complete (10/28/10)</b>
		Finish ATP for DX P&T system	12/30/10	On schedule
		HR-3 treatment systems are functional at 500 gpm	12/31/10	On schedule
09-EMS-SGWR-OB3-T2	Reduce the number of groundwater sampling events conducted annually	<b>Reduce the number of sampling events by 2% in calendar year 2009</b>	<b>12/31/09</b>	<b>Complete</b>
		Evaluate FY-end sample schedule relative to baseline planned sample schedule of 2,460 sample trips	10/31/09	<b>Complete (5/30/09)</b>
		Reduce the baseline planned sample schedule by at least 49 sample trips	12/31/09	<b>Complete (10/12/09)</b>
09-EMS-SGWR-OB3-T3	Reduce the number of groundwater sampling events conducted annually	<b>Reduce the number of sampling events by 10% in calendar year 2010</b>	<b>12/31/10</b>	<b>Complete</b>
		Evaluate FY-end sample schedule relative to baseline planned sample schedule of 2,768 sample trips	10/31/10	<b>Complete (10/27/10)</b>
		Reduce the baseline planned sample schedule by at least 277 sample trips	12/31/10	<b>Complete</b>
10-EMS-SGWR-OB1-T1	Take actions necessary to protect the Columbia River by 2012	<b>Treat 430,000,000 gallons of 100 Area (D, H &amp; K Area) groundwater</b>	<b>9/30/10</b>	<b>Complete</b>
		Review and tally total number of gallons treated	Monthly	<b>Treated 549.9 M gal thru 10/31/10</b>
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	<b>Construct new 200 West Area P&amp;T facility to remediate GW which was impacted from past plutonium production operations</b>	<b>12/31/11</b>	<b>On schedule</b>
		Start construction of road crossings	11/30/09	<b>Complete (11/2/09)</b>
		Start early civil construction	3/30/10	<b>Complete (3/19/10)</b>
		Start construction of GW extraction buildings	3/30/10	<b>Complete (3/19/10)</b>
		Complete treatment facility construction	12/31/11	On schedule
10-EMS-SGWR-OB3-T1	100-K Area Waste Site Remediation	<b>Initiate and sustain remediation of waste sites at 100-K Area</b>	<b>11/30/09</b>	<b>Complete</b>
10-EMS-SGWR-OB4-T1	Reduce Project Waste Generation	<b>Track &amp; quantify project cost savings from on-going waste reduction initiatives</b>	<b>1/31/11</b>	<b>On Schedule</b>
		Track, quantify & report on drill cuttings RTEd in lieu of disposal at ERDF	30 days after CY Qtr-end	On Schedule
		Track, quantify & report on use of ERDF boxes in lieu 55-gallon drums	30 days after CY Qtr-end	On Schedule
		Track, quantify & report on purgewater generation avoidance	30 days after CY Qtr-end	On Schedule

## TARGET ZERO PERFORMANCE

	CM Quantity	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	0	1	N/A
Total Recordable Injuries	0	2	N/A
First Aid Cases	6	83	<p>10/1/10 – Employee was bitten by an insect on his wrist. Employee reported the event and went to AMH for treatment. He was treated and released to return to work. (21369)</p> <p>10/2/10 – Employee got sand and dirt in his left eye. After some irritation he reported to occupational health services and an eye flush was performed. He was released without restriction. (21373)</p> <p>10/4/10 – Snap tie shoe had fallen off ties, employee used hammer to pull the end of tie with claws of his hammer, the hammer slipped off the tie and handle struck employee in the upper lip. He reported the event and was taken to AMH. He was treated and released to return to work. (21372)</p> <p>10/7/10 – Employee felt intense pain in his knee after walking up stairs. Employee contacted the Safety Manager and was transported to AMH for evaluation. The employee was treated with an elastic bandage and was recommended that he see an orthopedic specialist. Following the specialist evaluation the employee was returned to work with restriction. (21383)</p> <p>10/11/10 – Employee feel he may have been stung by a wasp. The wasp was removed and employee was taken to AMH. (21388)</p> <p>10/27/10 – Employee noticed slight irritation in his right eye. After some irritation employee told manager and went to AMH for further evaluation. A microscopic metal fiber was imbedded in the corner of his eye and was removed. (21426)</p>
Near-Misses	0	2	N/A

## KEY ACCOMPLISHMENTS

### ARRA - GW CAPITAL ASSET

Drilling	October		Cumulative	
	Planned	Completed	Planned	Completed
M-24 -5 wells	0	0	5	5
200-ZP-1 West P&T Expansion -17 wells	0	0	14	15
Drilling Total	0	0	19	20

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

- 200 West Area Groundwater Treatment Facility – 89 of 90 road crossings complete. All welding activities for the transfer piping have been complete for the Phase I well to transfer building runs. Structural steel erection has been initiated at five of the seven buildings. During three weeks in October, a night shift was utilized for RAD building enclosure. This extra shift allowed slab on grade pours to be completed during the day shift. Long-lead equipment is being fabricated with the first to arrive in late November.
- Construction of all three buildings for the 100-DX Pump-and-Treat is complete. Installation of the pH adjustment system at the Process Building was completed on October 28, 2010. Acceptance Testing is approximately 50% complete. The following have successfully completed testing: all extraction well pumps and instruments, all M1 and M2 Transfer Building instruments, the ion exchange vessels have been pressurized and leak tested, and the resin performance has been tested with contaminated groundwater. 200E Unsecured Core Complex – S&GW2 sheet piling has been completed along with installation of plumbing and electrical wall lines.
- EPC2 is in the process of framing and roughing in the electrical and plumbing. EPC1 Build Out completed both approaches and doorway rework was completed with respect to the internal framing and final exterior concrete work.
- S&GW1 installed all of their underground utilities and placed the main concrete slab of 444 cubic yards

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

- 200 West Area Groundwater Treatment Facility –S/SX transfer building is under construction with the structural steel part of the building and 30% of transfer piping on site, all eight road crossings completed
- Construction has begun on the 100-HX Pump-and-Treat Construction Project. The Process Building wall sheeting, roof installation, CMU walls at the chemical tank storage pads are complete. The H1 Transfer Building site has been cleared and grubbed in preparation for excavation of the footings and stem walls. Eighteen of 27 road crossings are complete. HDPE pipe laying and bonding is 49% complete.

**ARRA - GW OPERATIONS****Well Drilling and Decommissioning – ARRA**

	October		Cumulative	
	Planned	Completed	Planned	Completed
KR-4 RPO – 4 wells	0	0	0	0
KR-4 RI/FS – 13 wells	1	0	9	6
100-NR-2 Barrier Emplacement – 171 wells	0	0	171	171
100-NR-2 RI/FS – 8 wells	1	0	2	0
100-HR-3 Bioremediation TT – 4 wells	0	0	0	0
100-HR-3 H Area RPO – 40 wells	0	0	40	37
100-HR-3 D Area RPO – 30 wells	0	0	30	30
100-HR-3 RI/FS – 15 wells	0	0	0	0
200-BP-5 “K” Well – 1 well	0	0	1	1
200-BP-5 “L” and “M” Well – 2 wells	0	0	2	2
100-BC-5 RI/FS – 6 wells	1	0	9	6
100-FR-3 – 3 wells	0	0	3	2
300 FF-5 RI/FS – 11 wells	0	1	3	4
Drilling Total	3	1	270	259
Decommissioning Total	10	0	185	176

**BASE - GW OPERATIONS****Environmental Strategic Planning:**

- Kicked-off the “Technical Work Groups” of the Senior Executive Committee (SEC) action items to develop agreement on two processes:
  - Graded Approach for Establishing Soil Cleanup Levels Protective of Groundwater
  - Development of Ecological (Soil) Protection Values

**Risk and Modeling Integration Group:**

- Conducted an integration workshop on the 100-D/H remedial investigation/feasibility study document

**Integration Management:**

- Established a WIDS working team with DOE, other site contractors, and regulatory agencies to develop a new TPA-MP-15 Procedure to govern classifying waste sites status. A presentation will be made to the IAMIT on the status of WIDS.
- Coordinated the Deep Vadose Zone multi-project team meeting  
Completed a three day integrated contractor workshop focused on how River Corridor waste sites will be carried through RI/FS evaluations resulting in the selection of final preferred remedial actions

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

- Final planning and preparations were completed for collecting upwelling (river-porewater) samples from the bottom of the Columbia River along the 100-BC Area as proposed in the RI/FS Work Plan Addendum and SAP. The sampling subcontract was awarded, and sampling is expected to begin early November. A kickoff meeting is scheduled for November 1, 2010.

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

- The *Updated Treatment Plan for the Protection of Cultural Resources for the 100-KR-4 Pump-and-Treat Project - Formerly DOE/RL-96-44, Revision 0, SGW-46017, Revision 1* was transmitted to RL



- The KR-4 P&T PLC upgrades and extraction well head modifications at transfer building #2 are complete and ready for construction completion walk down. Upgrades to the KR-4 treatment building are about 80% complete. PLC and well head modifications are about 65% complete at transfer building #1. Software logic for new HMI with new PLC is complete and ready for testing after construction is complete.
- Conducted 60% design review on the bio-infiltration system to be installed for the KW treatability test
- TPA-CN-359 was approved to convert extraction wells 199-K-149 and 199-K-150, where hexavalent chromium contamination is <10 ppb, to monitoring wells, and convert monitoring wells 199-K-152 and 199-K-182, where hexavalent chromium contamination is >60 ppb, to extraction wells connected to the KX pump and treat system

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

- Implementation continues for the Rev. 0 100-NR-2 Barrier Expansion Design Optimization Study (DOS) that allows for a 600 foot expansion of the apatite permeable reactive barrier (PRB) in the saturated zone. The second injection skid system was delivered. The chemical supply contractor has delivered and set up all chemical tanks at the site. The overall system setup was initiated in the field. Injections are expected to begin in mid November.
- Field pilot testing of the NR-2 infiltration gallery was completed. This pilot testing is being conducted by PNNL using water with a bromide tracer. A final report is being prepared for summarizing the results.
- Field pilot testing of the NR-2 infiltration gallery was initiated on September 28, 2010. This pilot testing is being conducted by PNNL using water with a bromide tracer. A final report is being prepared to summarize the results.

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

- DR-5 and HR-3 operated at normal capacity (~35 gpm and 200 gpm, respectively)
- The in situ bioremediation design was provided to EPC for fabrication of the system
- Efforts continued to address DOE comments on the 100-HR-3 DRD/RA work plan, Integrated Sampling and Analysis Plan, Waste Management Plan, and In-situ Bioremediation Well Drilling Sampling and Analysis Plan.

#### **Central Plateau**

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

- Eleven of 14 groundwater extraction wells are online pumping water at 428gpm. One extraction well (#5) is being kept offline due to low flow. Extraction #4 is currently offline supporting pressure pulse testing. Extraction well #6 is offline due to some communication problems between the well and the control room.
- Extraction wells 299-W11-45 and 299-W11-46 are online pumping water to ETF at a pumping rate of approximately 50gpm. ETF will shut down for a few weeks (November 29 – December 18) to repair several small leaks and perform other maintenance.

##### **Deep Vadose Zone - Base**

- Completed the Performance Management Baseline planning for 200-DV-1 OU as part of the Mod 95 Change Proposal
- Held the first Deep Vadose Zone Multi-Project Team meeting with representatives from DOE-RL, DOE-ORP, DOE-EM32, EPA, Ecology, PNNL, WRPS and CHPRC
- The FTP and SAP for the Uranium Sequestration Pilot Test has been submitted to tech editing, to be followed by CHPRC approval and transmittal to RL and Ecology as a Draft A document for their review and approval. The submittal of this document supports TPA milestone M-015-110C “Submit uranium treatment technology field test plan as an element of the RCRA facility

investigation tool and remedial investigation for the 200-DV-1-OU to Ecology". These were the two remaining regulatory documents needed to support field execution of this test.

## MAJOR ISSUES

**Issue** – Several performance issues have been identified for samples from CHPRC O-Zone, 100-K Waste Sites, and D&D projects submitted to WSCF for analysis during periods of very high sample loads. The issues include delay in meeting project due dates for analysis reports and custody and traceability for certain beryllium samples.

**Corrective Actions** – Mitigating actions for missed turn-around times have included discussions with WSCF management toward developing guidelines for the diversion of samples to off-site laboratories when WSCF internal capacity is reached, and daily look-aheads supplied to WSCF by S&GRP as to the number of samples and their report due dates to be collected each day for the next week. With respect to the beryllium samples, investigation by WSCF continues.

**Status** – WSCF has identified and is implementing short-term (completed by 10/31/10), mid-term (to be completed by 12/31/10), and long-term (to be complete after 1/1/2011) corrective actions to prevent recurrence of the above issues.

**Issue** – The RI/FS drilling schedule has been impacted by the S&GRP stop work initiated on 9/27/2010 and continues through the fiscal month of October. The drilling program expects a schedule loss of 26 work days.

**Corrective Actions** – 100-HR-3 and 100-KR-4 Operable Units are receiving drilling and sampling priority. Three drill rigs are available to support the investigation. Additional efforts to support recovery include evaluating the use of faster turnaround times for laboratory analysis, accelerating sample analyses data return, and optimizing the schedule to reduce the time necessary to prepare Draft A.

**Status** – Stop work was lifted and drilling restarted on November 1, 2010 for ZP-1, BC-5, KR-4, FR-3, HR-3 and 300-FF-5. Priority has been given to the 100-HR-3 and 100-KR-4 Operable Units for drilling, sampling and analyses.

**Issue** – Comment resolution continues on the 100-N RI/FS Work Plan Addendum.




**Corrective Actions** – Comment resolution and the needed path forward for success will be a topic of discussion at the next IAMIT meeting.




**Status** – CHPRC continues to work the parties involved to facilitate timely comment resolution.

























## 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	
SGW-001: 100-D Treatment Technology Selection Change	Review draft RD/RAWP with regulators; maintain close interface to minimize impact of changes.			No significant issues.
SGW-050: Regulatory Strategy for Decision Docs	Continue to support RL in strategy negotiations with Agencies.			CPCS and Mod 95 Proposal and BCR are being evaluated and developed.
SGW-069: 100-HR-3 ISRM Barrier Amendment - Hexavalent Chromium Continues to Move Through Barrier	Monitor zero valence iron injection; add four wells to P&T.			DOE and Ecology have agreed to the strategy and signed a memorandum documenting the changes as insignificant. For wells will be used to supplement the barrier and capture down-gradient chromium.
SGW-080: 100-BC-5 Pump and Treat Required	This risk is accepted as written and will be monitored throughout work execution.			Additional characterization through the installation of RI/FS wells, aquifer tubes, and additional river-upwelling sampling 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, remediation is not planned in the baseline for the OU. However, working with RL on the potential of conducting a Non-Time Critical Removal Action (EE/CA) to implement a hydraulic barrier/pump and treat combination to mitigate chromium migration to the river. A letter requesting RL direction was transmitted to RL, and a response was returned that confirmed that RL's position on the need for expedited remedial measure to meet the TPA Target Date M-016-110-T01 by December 2012. In response, a NOC letter has now been transmitted to RL. No response to this NOC letter has been received from RL.
SGW-081: 100-FR-3 Pump and Treat Required	This risk is accepted as written and will be monitored throughout work execution.			Additional characterization through the installation of RI/FS wells 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. Concentrations of chromium are low at this site and no remediation is planned in the baseline for the OU. However, working with RL on the potential of conducting a Non-Time Critical Removal Action (EE/CA) to implement a hydraulic barrier/pump and treat combination to mitigate chromium migration to the river. Collection of additional river-upwelling samples is being considered to help make a decision for the OU. A TPA Can has been drafted to capture this proposed scope. A letter requesting RL direction was transmitted to RL, and a response was returned that confirmed RL's position on the need for expedited remedial measures to meet the TPA Target Date M-016-110-T01 by December 2012. In response, a NOC letter has now been transmitted to RL. No response to this NOC letter has been received from RL.
SGW-003: Central Plateau Well Drilling Demands	Adjust drilling schedules; cross-train workforce; evaluate sample parameters.			No significant issues.
SGW-003A: Central Plateau Drilling - 200W P&T	Utilize rotary drilling and cable-tool; work closely to resolve subcontractor issues and manage schedule.			Drilling performance continues to exceed baseline schedule. No significant issues.
SGW-008B: Regulatory Document Comments for 100-HR-3	Routine meetings are being held with regulators during document development; no additional mitigation is required.			The RI/FS Work Plan Addendum and SAP were approved and issued; nothing else to report.
SGW-008U: Regulatory Document Comments for 200-SW-1/2	Routine meetings are being held with regulators during document development; no additional mitigation is feasible.			Agency workshops have been completed and the NRDWL/SWL closure plan is being revised to incorporate comments. Ecology approval of this final closure plan is pending their receipt of the revised document and RL's NEPA determination.
SGW-016: 300-FF-5 Infiltration Barrier Treatability Test	Review BPA river level projections to time treatability test; accept risk.			After multiple unsuccessful attempts to get the infiltration gallery functional, PNNL has developed a parallel approach, looking for shallow test sites in other locations and alternative emplacement technology development. A joint CHPRC/PNNL path forward has been developed and vetted by RL and EPA. Replanning efforts are underway.
SGW-018: 100-HR-3 P&T Operating Efficiency	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.			Beginning design to add one well to the HR-3 system to increase flow and remove mass during startup of DX and HX. Two RUM wells were added, bringing the operating flow to 200 gpm.

## RISK MANAGEMENT STATUS – Cont.

**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	
SGW-037: 100-NR-2 Infiltration Gallery Pilot Test	Risk accepted without mitigation.			Based on initiation problems encountered at the 300-FF-5 infiltration test, success at NR-2 is in question (likely to be worse field conditions). Alternative technology (jet injection) with higher likelihood of success has been successfully pilot tested and is being pursued for implementation. The actual tracer tests have been conducted in the field. Initial problems with possible short-circuiting near wells prompted well modifications to minimize the potential for this condition. Follow-on testing was completed that demonstrated very low infiltration rates (less than 0.8 cm/hr). The field data has been compiled and is under evaluation.
SGW-051: Compressed Schedule for 200 West P&T Project Due to TPA Commitment	Project team will work closely with RL and the regulators to minimize the potential of unexpected design changes and to implement any required design changes quickly so as to minimize the schedule impact. Additional funding will be required to mitigate these issues. Contractor schedule compression will be supplemented with appropriate detail over time. Design schedule has been extended and has overlapped construction and no constructability reviews have occurred. Include funds to account for changes and claims in budget, compare design and estimate costs for changes, perform phased constructability reviews.			Concrete poured to-date is ~3,600 yd <sup>3</sup> . Transfer building steel erection complete. BIO: Prefab metal building erection to begin 11/9. RAD: Prefab metal building roofing is complete. Progress is steady but the delay associated with the issuance of the IFC drawings is not yet known. Project is adding resources and working overtime as necessary to mitigate this risk.
SGW-056A: 300-FF-5 Infiltration Not Feasible for Wide-Spread Application	An infiltration test is being performed at 300-FF-5 for the contaminants of concern.			Alternatives to widespread application of infiltration from the surface are being developed in parallel with searching for candidate sites for surface infiltration tests. Replanning of the baseline for these new activities is ongoing. Alternatives include jet injection, application of engineering lithology, and well injections.
SGW-065: Bio/Chemical Remediation Fails	A design test is being planned for 100-D Area. This should eliminate some of the uncertainties with the potential side effects.			Well alignment for the test was revised to accommodate new modeling results and increase potential performance. Revised experimental design to increase probability for success. Rev. B of the TTP submitted for RL and Ecology review; potentially will need one more extraction well.
SGW-091: Material Procurement - 200 West P & T	Work closely with the BTR to ensure timely placement of procurement contracts, including any necessary expediting. Supplement engineering support for RCI submittal resolution, on-site focus review including vendor participation as needed. Provide incentives for			Project is conducting meetings to address RCIs twice per week. Vendor meetings occur weekly. 3D modeling employed to minimize probability of mis-configuration between equipment, conduit, and piping.
SGW-098: 200-W P&T - Schedule Impacts Due to Scope Increases	Contractor will hold periodic discussions with client and regulators to maintain a clear understanding of scope changes. As these issues are identified, they will be listed with other emerging issues. At this point, further mitigation tactics will be determined.			In order to maintain the schedule, significant additional team resources are being added to assist with training, submittals, RFIs, QA/QC, third party testing, management and oversight, and other services during construction. Issued for Construction (IFC) drawings have been released and this will facilitate timely completion of construction milestones. Work continues to support software, simulator, procedures, and CAT/ATP development.
SGW-108J: 200-UW-1 Increased Characterization Required	Incorporate additional deep boreholes into the baseline.			This risk has been realized and the project is working the issue. A BCR has been approved and the scope has been incorporated into the baseline.
WSR-042: Multi-Incremental Sampling - Increased Waste Sites	MIS Project designed to meet requirements; no further mitigation warranted.			No issues at this time.
WSR-043: Multi-Incremental Sampling - Hazard Categorization	Adjust baseline cost/schedule to reflect Haz Cat III categorization.			No issues at this time.

## 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 (%)
ARRA RL-0030.R1.1 GW Capital Asset	7.8	7.7	10.1	(0.1)	-1.7	(2.4)	-31.0
ARRA RI-0030.R1.2 GW Operations	1.6	2.5	4.4	1.0	62.1	(1.9)	-73.1
<b>ARRA Total</b>	<b>9.4</b>	<b>10.2</b>	<b>14.5</b>	<b>0.8</b>	<b>8.9</b>	<b>(4.3)</b>	<b>-41.5</b>
<b>Base</b>	<b>10.5</b>	<b>10.5</b>	<b>11.4</b>	<b>0.0</b>	<b>-0.3</b>	<b>-0.9</b>	<b>-8.9</b>
<b>Total</b>	<b>19.9</b>	<b>20.8</b>	<b>25.9</b>	<b>0.8</b>	<b>4.0</b>	<b>-5.2</b>	<b>-25.0</b>

### ARRA

#### CM Schedule Performance: (+\$0.8M/+8.9%)

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

#### ARRA RL-0030.R1.2 GW Operations (+\$1.0M)

##### Drilling (-\$0.6M)

Management directed a sampling stop work which affected drilling. A corrective action plan is being developed and work will resume in November.

##### Ramp-up & Transition (+\$1.7M)

Work was performed for activities planned in prior months.

#### CM Cost Performance: (-\$4.3M/-41.5%)

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

#### ARRA RL-0030.R1.1 GW Capital Asset (-\$2.4M)

##### 100 HR-3 Operable Unit (-\$0.4M)

Installation of the pH adjustment system and the Acceptance Test Plan (ATP) are proceeding slower than planned so additional labor resources have been assigned resulting in the overrun.

##### 200-ZP-1 Operable Unit (-\$1.9M)

Accruals were understated in September and were corrected in October. This current month correction will have no impact on total contract cost.

#### ARRA RL-0030-R.1.2 GW Operations (-\$1.9M)

##### Drilling (-\$0.8M)

Operations management directed a sampling stop work which has stopped drilling. A corrective action plan is being developed. The standby has resulted in cost overruns for the period.

##### Ramp-up & Transition (-\$0.3M)

The fit out cost for S&GW maintenance facilities are greater than planned. Although fit out cost will overrun, the overall contract for the maintenance facilities will be within budget.

##### PBS RL-30 UBS, G&A, and Direct Distributables (-\$0.6M)

The CTD positive cost variance is discussed in Appendix C.

### Base

#### CM Schedule Performance (-\$0.0M/-0.3%)

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

100 KR-4 Operable Unit (+\$0.3M)

CERCLA process implementation work and PLC Upgrade work planned in earlier months was completed in October.

Regulatory Decision/Closure (-\$0.4M)

With the implementation of BCR-PRC-11-001R0 (Mod 95) some activities that are no longer part of the new plateau closure strategy were inadvertently left in the baseline and therefore have resulted in a current month negative schedule variance. A BCR is being prepared to remove these activities from the baseline and correct this error.

**CM Cost Performance (-\$0.9M/-8.9%)**

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

GW Monitoring and Performance Assessments (-\$0.3M)

WSCF costs for October are high due to the early cut off for billing in September for WSCF year-end billing and the catch-up for samples on hand. No impact to the overall estimate for WSCF.

100 HR-3 Operable Unit (-\$0.4M)

The cost overrun in the current month is primarily due to the delivery of ion exchange train during October. The rules of performance for the procurement of the ion exchange trains are understating the true value of performance associated with the trains and have therefore resulted in a current month negative cost variance. The rules of performance will be corrected to reflect the appropriate value in the future with no impact to overall cost performance of the contract.

## 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)	Estimate at Completion (EAC)	Variance at Completion (VAC)
ARRA RL-0030.R1.1 GW Capital Asset	80.7	74.6	74.7	(6.1)	-7.5	-0.0	-0.1	168.5	168.7	-0.2
ARRA RI-0030.R1.2 GW Operations	59.4	53.6	46.5	(5.8)	-9.8	7.0	13.1	84.3	81.0	3.2
<b>ARRA Total</b>	<b>140.1</b>	<b>128.2</b>	<b>121.2</b>	<b>(11.9)</b>	<b>-8.5</b>	<b>7.0</b>	<b>5.4</b>	<b>252.7</b>	<b>249.7</b>	<b>3.0</b>
<b>Base</b>	<b>274.6</b>	<b>267.6</b>	<b>264.2</b>	<b>(6.9)</b>	<b>-2.5</b>	<b>3.4</b>	<b>1.3</b>	<b>1,238.4</b>	<b>1,223.0</b>	<b>15.4</b>
<b>Total</b>	<b>414.6</b>	<b>395.8</b>	<b>385.5</b>	<b>(18.8)</b>	<b>-4.5</b>	<b>10.3</b>	<b>2.6</b>	<b>1,491.1</b>	<b>1,472.7</b>	<b>18.4</b>

Numbers are rounded to the nearest \$0.1M.

**ARRA****CTD Schedule Performance: (-\$11.9M/-8.5%)**

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

**ARRA RL-0030.R1.1 GW Capital Asset (-\$6.1M)**200 ZP-1 Operable Unit (-\$6.5M)

Long-lead procurements are behind schedule due to design release delays. CH is working with contractor to increase manpower/OT to recover schedule. Schedule recovery is expected by January 2011.

**ARRA RL-0030.R1.2 GW Operations (-\$5.8M)**Ramp-up & Transition (-\$4.6M)

1) The construction contractor's performance is less than planned due to their inability to obtain required levels of staffing.

- 2) Limited engineering resources due to competing priorities.
  - 3) The re-work that was required on the foundation due to incorrect placement. The contract is currently forecast to complete four months behind schedule.
- A recovery plan is being worked with the project completion date expected to be in January 2011.

**CTD ARRA Cost Performance: (+\$7.0M/+5.4%)**

The primary contributors to the ARRA CTD positive cost variance that exceed the reporting thresholds are:

**ARRA RL-0030.R1.2 GW Operations (+\$7.0M)**

Drilling (+\$2.9M)

Efficiencies and 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. Well decommissionings have also been completed for less than planned.

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

Completing work scope more efficiently than planned, primarily in the areas of multi-incremental sampling (using existing documentation and direct haul rather than staging); borehole drilling and landfill characterization (competitive subcontracting of drilling support and efficient field support); and document preparation (200-BC-1 data validation and Data Quality Assessment reports).

PBS RL-30 UBS, G&A, and DD (+\$1.7M)

The CTD positive cost variance is discussed in Appendix C.

**Base**

**CTD Schedule Performance (-\$6.9M/-2.5%)**

The following schedule variances exceed the reporting thresholds:

200-UP-1 Operable Unit (+\$1.2M)

S-SX construction activities planned later in FY11 were performed early.

300 FF-5 Operable Unit (-\$0.9M)

Delays are primarily related to the Alternative Emplacement Investigation work which is now expected to finish about four months later than originally planned. Work continues with vendor for recovery actions.

Regulatory Decision/Closure (-\$3.2M)

With the implementation of BCR-PRC-11-001R0 (Mod 95) some old activities that are no longer part of the new plateau closure strategy were inadvertently left in the baseline and therefore have resulted in a current month negative schedule variance. A BCR is being put together to remove these old activities from the baseline and correcting this error.

**CTD Cost Performance (+\$3.4M/+1.3%)**

Primary contributors to the CTD positive cost variance are as follows:

100-NR-2 OU (+\$2.0M)

Performed chemical treatment and maintenance scope, jet grouting pilot test work and RI/FS Work Plan and Interim Proposed Plan Reporting more efficiently than planned.

200-ZP-1 Operable Unit (+\$2.4M)

- 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 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.
- 4) Cost for collecting depth-discrete groundwater and soil samples during the installation of new wells was less than planned.

Usage Based Services (-\$1.7M)

Increased cost associated with training due to the additional ARRA work in FY2010 and fleet services costs that occurred in FY2009. Overruns will continue to be funds-managed within the S&GRP project.

Ramp-up & Transition (-\$2.7M)

Projected cost/accrual for the employee rewards and recognition program exceeded plan.

**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	FY2011		
	Projected Funding	Spending Forecast	Variance
<b>ARRA</b>	157.6	148.5	9.2
<b>Base</b>	<u>137.2</u>	<u>174.9</u>	<u>-37.7</u>
<b>Total</b>	<b>294.8</b>	<b>323.4</b>	<b>-28.5</b>

Numbers are rounded to the nearest \$0.1M.

**Funds/Variance Analysis**

Funding reflects the reduced funding targets for FY11 and the FYSF is based on the current approved baseline. A CHPRC site integrated work scope prioritization plan is being developed to align work scope with new reduced funding levels.

**Critical Path Schedule**

Critical path analysis can be provided upon request.

**Estimate at Completion (EAC)**

ARRA – The small projected variance at completion (1.2%) is spread among several ARRA activities and is not considered significant.

Base – The small projected variance at completion (1.2%) is spread among several operational areas and is not considered significant.

**Baseline Change Requests**

AWA-PRC-11-006R0, Further Work Scope Alignment to Contract Mod 095

BCR-030-10-020R0, Background Calculations, RL Change Order

BCR-PRC-11-003R0, Incorporate Revised Labor, Non-labor and Escalation

BCRA-PRC-11-004R0, FOC and Other Administrative Changes, October 2010

FY 2011 Management Reserve:

ARRA = \$4.784M

Base = \$6.500M

None used in October; however a risk was realized for HR3 and KR4 that was addressed in BCR-PRC-10-054R0 and funds managed with the current funding level. Management Reserve was moved to FY 2011 by BCRA-PRC-10-060R0.



See management reserve table in the CHPRC Overview.

## 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 Update, implemented in September 2010, defines CHPRC planning with respect to TPA milestones. The following table is a one year look ahead of key milestones.

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-091-40L-028	Submit 1st Quarter FY11 Burial Ground Sample Results	TPA	12/15/10	10/28/10		Complete
M-015-110C	Submit Uranium Treat. Tech. Treatability Test Plan for 200-DV-1 OU to Ecology	TPA	12/31/10		12/16/10	On Schedule. Established by change package approved 10/26/10.
M-016-111B	Expand current pump-and-treat system at 100-HR-3 Operable Unit utilizing ex-situ treatment, in-situ treatment, or a combination of both, to be operational and functional at a total 500 gpm capacity or as specified in the work plan	TPA	12/31/10		11/17/10	On Schedule
M-091-40L-029	Submit October to December 1st Quarter FY-11 Burial Ground Sample Results	TPA	3/15/11		2/28/11	On Schedule
M-015-60	Submit NR-1/2 Operable Unit RD/RA Work Plan	TPA	3/29/11			On Schedule.
M-024-58D	Initiate Discussions of Well Commitments	TPA	6/1/11			On Schedule
M-091-40L-30	Submit January to March 2nd Quarter FY-11 Burial Ground	TPA	6/15/11		5/30/11	On Schedule

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
	Sample Results					
M-015-90	Submit RCRA Facility Investigation/Corrective Measures Study (RFI/CMS) and Remedial Investigation/Feasibility Study (RI/FS) work plan for 200-IS-1 OU to Ecology	TPA	6/30/11		6/30/11	On Schedule. Established by change package approved 10/26/10.
M-015-44C	Submit 200-MW-1 Operable Unit Proposed Plan	TPA	6/30/11		N/A	Deleted by change package approved 10/26/10
M-015-51	Submit Revised Feasibility Study Report and Proposed Plan to EPA for 200-BC-1 OU	TPA	6/30/11		N/A	Deleted by change package approved 10/26/10
M-015-83	Submit Proposed Plan for 200-UW-1	TPA	6/30/11		N/A	Deleted by change package approved 10/26/10
M-015-70-T01	Submit Feasibility Study Report and Proposed Plan for the 100-HR-1, 100-HR-2, 100-HR-3, 100-DR-1 and 100-DR-2 Operable Units for groundwater and soil	TPA	7/30/11		8/19/11	See Note 1
M-015-66-T01	Submit CERCLA RI/FS Report and PP for the 100-KR-1, 100-KR-2 and 100-KR-4 Operable Units for groundwater and soil	TPA	7/31/11		9/2/11	See Note 2
M-024-62-T01	Conclude Discussions of Well Commitments	TPA	8/1/11			On Schedule

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
M-091-40L-031	Submit April to June 3rd Quarter FY-11 Burial Ground Sample Results.	TPA	9/15/11		8/30/11	On Schedule
M-015-82B	Initiate 200-BP-5 Aquifer Tests Within 6 months of TTP Approval	TPA	TBD (see status)		TBD	On Schedule. Due Date Won't be Finalized until TTP Produced under M-015-82A is Approved. TTP Currently in Regulatory Agency Review.

Note 1: Schedule may be in question due to delay in approval of RI/FS WP; a 117 day slip may apply to this milestone completion date, making the revised TPA due date for submittal 11/24/11 (if the day-for-day slip clause is invoked). RECOVERY PLAN: 100-HR-3 and 100-KR-4 Operable Units are receiving drilling and sampling priority. Three drill rigs are available to support the investigation. Additional efforts to support recovery include evaluating the use of faster turnaround times for laboratory analysis, accelerating sample analyses data return, and optimizing the schedule to reduce the time necessary to prepare Draft A.

Note 2: Schedule may be in question due to delay in approval of RI/RS work plan - a 52 day slip may apply to this milestone completion date, making the revised TPA due date for submittal 9/21/11 (if the day-for-day slip clause is invoked). RECOVERY PLAN: 100-HR-3 and 100-KR-4 Operable Units are receiving drilling and sampling priority. Three drill rigs are available to support the investigation. Additional efforts to support recovery include evaluating the use of faster turnaround times for laboratory analysis, accelerating sample analyses data return, and optimizing the schedule to reduce the time necessary to prepare Draft A.

## 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.