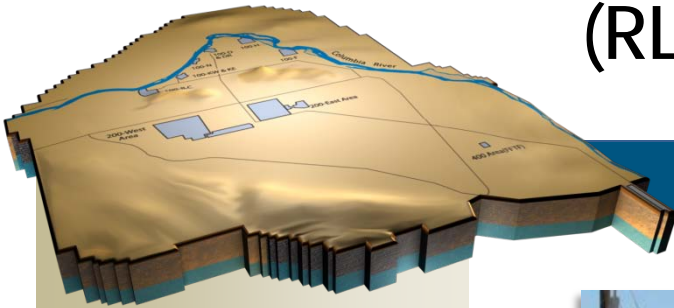


# Section D

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



### Monthly Performance Report

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June 2010  
DOE/RL-2008-69, Rev. 20  
Contract DE-AC06-08RL14788  
Deliverable C.3.1.3.1 - 1



**A drilling crew installs a monitoring well in the 100-BC-5 area, where CHPRC will install a total of six wells with Recovery Act funding to support characterization and removal of chromium contamination in the groundwater**

## 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 numerous wells that will be used for monitoring, extracting, and remediating groundwater near the Columbia River. Progress through the end of the fiscal month June is summarized in the table below.

Activity	June		Cumulative	
	Planned	Completed	Planned	Completed
Well drilling	29	13	205	247
Well decommissioning	13	32	130	150
200 West P&T – Final Design	17%	13%	49%	69%
200 West P&T – Construction	4%	4%	15%	15%
200 West P&T – Testing/Startup	0%	2%	7%	8%
100 DX P&T – Construction/Startup	10%	12%	72%	94%

### Base

Base work includes the pump-and-treat operations, CERCLA remedial processes, and documentation for the River Corridor and Central Plateau. 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 and acceptance testing is 98% complete. The second of three rounds of risk assessment sampling for 100-HR-3 and 100-KR-4 decision units completed. Sampling and groundwater treatment completed in June include the following:

- 188 well locations were sampled with a total of 1,258 samples being collected
- 44 aquifer tube samples were collected from 25 tubes at 17 sites
- 15.37M gallons groundwater treated by ZP-1 treatment facility
- 24.6M gallons groundwater treated by KX treatment facility
- 8.1M gallons groundwater treated by KW treatment facility
- 10.8M gallons groundwater treated by KR-4 treatment facility
- 5.21M gallons groundwater treated by HR-3 treatment facility
- 1.16M 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	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	Complete (6/28/10)
		Finish construction of DX P&T system	10/31/10	On schedule
		Finish ATP for DX P&T system	12/30/10	On schedule
		The 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	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	358M gal treated as of 6/28/2010
		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 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	Complete
		Start construction of GW extraction buildings	3/30/10	Complete
		Complete treatment facility construction	12/31/11	On schedule

## TARGET ZERO PERFORMANCE

	CM Quantity	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	0	1	N/A
Total Recordable Injuries	0	1	N/A
First Aid Cases	13	74	<p>6/2 - Employee received a small laceration on his arm and a minor contusion on his thigh from a fall. Employee reported injury to foreman. Employee self treated injuries, and was returned to work with no restrictions. (20961)</p> <p>6/8 - Employee while driving, a small gnat entered the rolled down window and enter his right eye who then brushed the gnat from his eye. Employee was evaluated by AMH personnel and released for return to work with no restriction. (20975)</p> <p>6/12 - The employee received a small scrape on his left forearm. Employee elected to self treat. (21004)</p> <p>6/14 - Employee pinched the outer palm just below the pinky finger resulting in a small blood blister. The employee was wearing leather gloves and all other proper PPE at the time of the incident. Injury was determined to be a self treat, and employee was released for work with no restrictions. (21006)</p> <p>6/16 - Employee was hit on the right side of upper chest causing a slight contusion and abrasion. Employee was taken to AMH for evaluation and was released back to work without restriction. (20992)</p> <p>6/17 - Employee caught the tip of shoe on the stair and fell forward. Injuries appear to be to wrists, both shoulders, posterior and bruising on her knees. (20998)</p> <p>6/21 - Employee noticed unusual odor and the onset of a headache. Overhead air vent was turned to close position. Fully opened office window due to odor and a worsening headache. Employee then reported condition to CHPRC admin, to Asst. Project Man. Hanford Fire Dept. was called to assure employee safety. CHPRC Safety Rep. transported employee to AMH 200W. Employee was released to full duty with no restrictions. Following incident IDs are related. (21008, 21009, 21010, 21011, 210380)</p> <p>6/29 - Worker rolled right ankle on a coble lying on the ground. The FWS then took the worker to the 200W first aid station. The employee was diagnosed with a right ankle sprain. The employee was given OTC medication and administered a cold pack. (21047)</p> <p>6/30 - Employee had irritation in eye. Employee notified supervisor and went to AMH evaluation. Employee was treated with OTC medication and released to work without restriction. (21052)</p>
Near-Misses	0	2	N/A

## KEY ACCOMPLISHMENTS

### ARRA - GW CAPITAL ASSET

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

- The 200W Area Pump-and-Treat Project continued to move forward with release of issued for construction drawings to Skanska (general contractor) for the BIO and RAD building drawings to support construction activities; anticipated completion July 16, 2010. Forty-four road crossings have been completed. Due to well drilling activities at two locations, the remaining three locations are on hold until crews have completed installation, anticipated restart August 2010. All welding activities for the transfer piping complete for the well to transfer building runs. Additional activities will be necessary once the six buildings are erected to connect building to building runs. Construction activities started for the BIO and RAD buildings. The four BOP transfer buildings activities continue. Long lead equipment inspections were conducted on the ion exchange (IX) columns. Lime stabilization kick-off meeting was held with contractor and design team, 60% design package is due August 13, 2010.
- The 100-DX Pump-and-Treat construction is 96% complete. Work continues in the process building to make final connections between the piping and the ion exchange skids. The ASME Authorized Inspector (AI) has completed inspection of the ion exchange skids. Construction Acceptance Testing (CAT) has begun. Electrical Utilities completed the connection of site power to the Process Building and M2 transfer building. The M2 transfer building was energized on June 29, 2010. This allows for early software address testing prior to the start of the Acceptance Test Procedure (ATP). The ATP has gone through a final review cycle with the design agent, construction, and S&GW Engineering. The ATP is planned to begin July 28, 2010 after the completion of CAT testing.

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

- Phase 2 realignment construction actions were completed at the KX system acceptance testing is 100% complete
- Modutank Subgrade Waterline construction is 95% complete. Waterline hydrotest complete and pipe trench backfilled

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

	June		Cumulative	
	Planned	Completed	Planned	Completed
KR-4 RI/FS	2	1	6	1
100-NR-2 Barrier Emplacement	19	0	102	171
100-HR-3 H Area RPO	0	7	40	25
100-HR-3 D Area RPO	2	2	30	30
100-HR-3 RI/FS	2	0	4	0
200-BP-5 “K” Well	0	0	1	1
00-BP-5 “L” and “M” Well	0	0	2	2
200-ZP-1 West P&T Expansion 01.11	0	0	6	6
200-ZP-1 West P&T Expansion 01.12	1	2	5	4
M-24	1	1	3	3
100-BC-5 RI/FS	0	0	4	4
100-FR-3	2	0	2	0
300 FF-5 RI/FS	0	0	0	0
Drilling Total	29	13	205	247
Decommissioning Total	13	32	130	150

**Notes:**

- *200-ZP-1 Expansion:* Currently, 14 of 17 wells have been initiated. Recovery plan accomplished in June as planned and project is on target to complete before January 11, 2011.
- *100 BC-5 RI/FS* drilling began
- *100 FR-3 RI/FS* issued Notice to Proceed
- *300 FF-5 RI/FS* drilling began, but quickly stopped due to contractor equipment issues

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

Conducted the “200 West Inner Area RI/FS Work Plan scoping meetings” with the Agencies at the Portfolio Analysis Center of Excellence (PACE). A series of meetings are planned on this subject through July-August, 2010.

Public comment period on the Central Plateau Cleanup Completion Strategy was completed. Coordinated and helped support public meetings. Public input comment response summary is under development.

**Risk and Modeling Integration Group**

Modeling/modeling parameters were presented at the June Tribal/Oregon/DOE Groundwater-Vadose Zone meeting.

**Cost Estimating**

- Finalized the environmental cost estimate document for 200-PW-1/3/6, CW-5
- Completed revisions on the 105 KE Reactor D&D estimate
- Completed 200E Rad Buildings EE/CA Environmental Cost Estimate document, Rev.0 and entered into IDMS
- Submitted the final 200-UP-1 GW FS Cost Estimate document, Rev.0



## River Corridor

### 100-BC-5 Operable Unit - Base

- Drilling began on RI/FS well C7508 on June 22, and reached the water table on June 30 at about 96 feet of depth. This well is located near C Reactor and will be drilled to the top of the Ringold Upper Mud (RUM) and will then be screened at the depth of greatest Cr(VI) contamination. Many samples have been collected. Drilling will begin soon on RI/FS well C7786, located north of 100-C-7 waste site.
- Preparations are complete for planned slug-testing activities, and field work is expected to begin by July 19, 2010

### 100-KR-4 Operable Unit - Base

- The monthly cultural resource monitoring for the KR4 Pump-and-Treat project was conducted on June 18. Tire tracks were observed at the southern edge of the well pad at well 199-K-116A. Railroad ties have been placed to prevent further vegetation growth from obscuring the extent of the well pad.
- Revision to the KR-4 Cultural Treatment Plan was sent to the Tribes on June 17 with a request for comments by July 23, 2010
- Phase 2 realignment construction actions were completed at the KX system and acceptance testing is complete with the exception of final adjustments to the wireless communication for extraction wells 199-K-153, 199-K-171, and 199-K-178. Replacement of 4.7 GHz antennas with 5.8 GHz antennas appears to have corrected the Wi-Fi interference problem. Extraction well pumps on wireless system have operated without signal dropout after antenna replacement and adjustment. Evaluations are being performed to improve signal strength with the wireless communication.
- Average flow through the KR-4 Operable Unit Pump-and-Treat system during the month of June was approximately 1,005 gpm, or 91% of treatment capacity.
- The cultural resources review report for the three remedial investigation wells in culturally sensitive areas was transmitted for SHPO review on June 17.
- Sixteen out of 18 wells sampled for the third round of sampling (high river stage) and remaining two will be completed first week of July.

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

- The NR-1/2 OU Proposed Plan to Amend the Interim ROD was finalized and released as Revision 0 for a public review period that began on June 21. An expedited schedule is still being followed to meet a goal to have the IROD amended by September.
- Draft A of the 100-N Integrated SAP was submitted to Ecology on June 2, and is still under Ecology review. Comments are expected back by July 19, 2010.
- Two TPA change notices (CNs) were approved by RL and Ecology to allow RI/FS related sampling activities to occur prior to approval of the RI/FS Work Plan and SAP. These TPA CNs cover aquifer tube sampling and the first round of spatial-and-temporal groundwater well sampling activities that are currently proposed in the Draft B documents. The aquifer tube sampling activities were initiated on June 28. The well-sampling activities were also scheduled and have been initiated with 17 of 26 wells sampled as of June 28. The remaining wells are expected to be sampled by July 9, 2010.
- A SAP was developed to allow for additional “upwelling” (river porewater) sampling to be conducted from the river bottom along specific portions of the 100-N river shoreline. This document is in the process of being released as a Draft A for transmittal to RL and subsequent submittal to Ecology.
- The Pacific Northwest National Laboratory (PNNL) core-sampling analytical report has been finalized and is expected to be issued in mid July. All results have been incorporated into the

final Jet Injection test report, which is near finalization.

- A Treatability Test Plan (TTP) has been drafted to allow for a larger, demonstration-scale test of the Jet Injection technology in the vadose zone over the existing 300 foot apatite barrier. Internal reviews have been performed, and the documented is now being produced as a Draft A for regulatory review. Comments are being incorporated for a full CHPRC internal review.
- A TTP is also being drafted to allow for a “hot” test of the Phytoextraction technology along the river shoreline at the existing 300 foot apatite barrier. Internal reviews have taken place, and comments are being incorporated for RL and subsequent regulatory reviews.
- Groundwater samples have been collected from 95 of the newly completed 171 wells, with all shallow completion wells now sampled during the recent high river stage conditions. Additional GW sampling will continue.
- Total petroleum hydrocarbon (TPH) studies are continuing with PNNL as planned. The first draft of their report has been provided for a limited internal review. More recently generated data must be included before this report can be finalized. This work will be complete this summer.

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

- HR-3 operated at near normal levels as the H Area aquifer test continued. Two RUM wells are being reconfigured for long-term operation as extraction wells. The system is also being modified to remove an extraction well (199-H-4-3) impeding WCH excavation, and reconnect well (199-H-3-4) as an extraction well to capture the southeast flank of the plume.
- DR-5 is operating while efforts continue to optimize the regeneration schedule, since the large amounts of hexavalent chromium for the newly added hot spot extraction well are loading the ion exchange resin more quickly than experienced in previous operations.
- Design activities continued on the HX Pump-and-Treat facility, with the 60% design review held in mid-June. Work has commenced on road crossings and road improvements.
- Design efforts continue, after a 60% design review for the in-situ bioremediation system was complete in mid-June.
- The final round of spatial and temporal groundwater sampling was completed.

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

- An engineered lithology has been emplaced at the bottom of the existing excavation at 618-1 in June and plans have been endorsed verbally by EPA to use it in subsequent treatability tests to evaluate remediation technology delivery mechanisms.

#### **Central Plateau**

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

- The Decisional Draft of the 200-UP-1 OU RI/FS Report was provided to DOE on June 24, 2010 and the Decisional Draft 200-UP-1 OU Proposed Plan was provided on July 1, 2010 for DOE review. DOE and Regulator status meetings on the RI/FS Report were held June 24, 2010 and June 29, 2010, respectively.

##### **200-IS-1 Operable Unit – Base**

- The revised Closure Plan, SAP, SEPA Checklist, and petition for LDR (Land Disposal Restrictions) variance for the Hexone Storage and Treatment Facility were finalized and transmitted to RL June 9. Once transmitted from RL to Ecology, these documents are expected to satisfy the proposed TPA Milestone *M-037-01, Submit Revised closure Plan to for the Hexone Storage and Treatment Facility (276-S-141/142) TSD Unit, Due December 31, 2010*, as identified in the March 2010 Tentative Agreement.

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

- The Draft A 200-PO-1 RI Report was transmitted to the regulators on June 10.



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

- Eleven of the 14 groundwater extraction wells are on line pumping water at a rate of approximately 440 gpm. Extraction well 299-W15-36 will be kept offline due to very low flow rates. Extraction wells 299-W15-34 and 299-W15-765 are offline due to electrical problems that are currently being assessed.
- Extraction wells 299-W11-45 and 299-W11-46 are both running and are pumping at a combined rate of ~26 gpm to the Effluent Treatment Facility (ETF). A reduced flow rate is now required through the end of August 2010 to allow ETF to drain one of their other basins which is full.
- Drilling and sampling of 15 permanent extraction/injection wells are now complete. Currently drilling EW-6, IW-6, and IW-13 which are currently at a depth of approximately 187, 406, 287 feet respectively.
- EPA comments have been addressed on the Draft A Performance Monitoring Plan and the Rev. 0 plan is currently being issued.
- The hookup of the new ZP-1 extraction well 299-W15-225 (EW-1) is complete.
- A test plan for determining the effectiveness of using activated carbon as a less expensive way of removing Tc-99 from groundwater has been issued and laboratory testing has started.
- EPA comments on the Operations and Maintenance Plan for the 200 West Area Groundwater Treatment Facility have been addressed. The Rev. 0 document will be issued in the next few weeks.

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

- Both PW-1 active SVE units are operating. Passive SVE operations are also ongoing.

**Regulatory Decisions and Integration - Base**

- 200-MW-1 Feasibility Study:
  - EPA submitted comments in May; comment responses were provided to EPA in June.
  - EPA acknowledged that comments have been adequately resolved.
  - The response to comments from the Tribal Nations is in development.
- 200-PW-1/3/6 Feasibility Study:
  - FS modified to reflect changes associated with the groundwater protection
  - Completed cost estimate to reflect substantial post ROD sampling for TC-99 and nitrate
- Completed laboratory analysis for the soil samples collected from the 200-CW-1 Outer Area Ponds and Gable Pond pipeline
- Hexone Storage and Treatment Facility Closure Plan and SAP:
  - Resolved RL comments on Closure Plan and SAP (Rev 0)
  - Closure plan and SAP documents have been transmitted to RL

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

Work continues on the deep vadose zone project including the pilot test, desiccation lab testing, uranium sequestration, and soil flushing and grouting.

The following summarizes key accomplishments for June:

- The Field Test Plan and associated Sample Analysis Plan for the Desiccation Pilot Test was transmitted to EPA for review and comment
- Fabrication and assembly of components for the Desiccation Pilot Test extraction and monitoring systems has been initiated
- The DQO for the Uranium Sequestration work was completed this month and will be revised following input from the associated Expert Review Panel scheduled for July 13-14, 2010.

## MAJOR ISSUES

**Issue** - The RI/FS drilling schedule at 300-FF-5 is being impacted due to lack of performance and safety related issues with the selected contractor.

**Corrective Action** - A cure notice was issued to the contractor on June 24, 2010 with an expected response and recovery plan due on July 8, 2010.

**Status** - The response has been delivered, and another driller is being brought on site to continue the work. Anticipated start date is July 26, 2010. DOE is being kept informed of progress on resumption of drilling on a weekly basis, and recovery plans for schedule are being developed at this time.

**Issue** - Approval of the 100-N Operable Units RI/FS Work Plan Addendum and associated Sampling and Analysis (SAP) has exceeded 6 months after submittal of the Draft A documents (in December 2009). The documents were recently reviewed by Ecology, and comments were received on June 21, 2010. This delay in the approval will likely impact the schedule for the subsequent RI/FS report and proposed plan.

**Corrective Action** - The Ecology comments are being evaluated for response.

**Status** - An initial comment-resolution meeting with Ecology was held July 13 and 14, 2010. Approval of the document past 6-months may result in a day-for-day slip in the subsequent RI/FS Report and Proposed Plan TPA milestone date (currently December 2011).

## 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.			Several design changes required due to changing requirements; BCRs being developed to cover realized risk.
SGW-050: Regulatory Strategy for Decision Docs	Continue to support RL in strategy negotiations with Agencies.			Minimal public comments received; BCR to be developed to implement agreement.
SGW-069: 100-HR-3 ISRM Barrier Amendment - Hexavalent Chromium Continues to Move Through Barrier	Monitor zero valent iron injection; add four wells to P&T.			Laboratory testing is nearing completion. The ISRM will not be amended with ZVI but rather the 4 P&T wells installed. A regulatory analysis has been submitted to Ecology recommending this change is insignificant. Ecology agrees and will revise and submit to the Admin Record.
SGW-080: 100-BC-5 Pump and Treat Required	Risk accepted.			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 a pump and treat is not explicitly planned for the OU, but may be required in order to meet TPA milestone M-016-110-T01 due 12/31/12. Due to schedule concerns with meeting this milestone, this potential need is currently under evaluation outside of the planned RI/FS process.
SGW-081: 100-FR-3 Pump and Treat Required	Risk accepted.			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 a pump and treat is not explicitly planned for the OU, but may be required in order to meet TPA milestone M-016-110-T01 due 12/31/12. Due to schedule concerns with meeting this milestone, this potential need is currently under evaluation outside of the planned RI/FS process.
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 continue to meet baseline schedule after recovery plan was realized in June 2010.
SGW-008B: Regulatory Document Comments for 100-HR-3	Routine meetings are being held with regulators during document development; no additional mitigation is feasible.			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 failures to get the infiltration gallery functional, PNNL has developed a parallel approach with a deepening of the existing gallery along with shallow tests in other locations. 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. Construct HX P&T system.			Beginning design to add one well to the HR-3 system to increase flow and remove mass during startup of DX and HX. Adds a transfer building and an eighth IX train to the HX design to accommodate additional capacity for optimization.
SGW-025: Industrial Accident During Drilling	Subcontractors are evaluated on safety performance prior to contract award and are required to work under CHPRC safety procedures, including using appropriate safety equipment and conduction pre-job briefings. No further mitigation is warranted. Risk is accepted.			Recent equipment/tool failures remind us that rig repairs on old equipment require additional scrutiny to ensure proper weld techniques and inspection are performed by our subcontractors and CHPRC field staff. Equipment inspection checklists have been clarified to add review of rig repairs and letters of our expectations sent to all drilling companies.
SGW-031: P&T Design Changes - 100 D	Minimize parallel design/construct/ regulatory activities; finalize design prior to contract award; coordinate well locations with WCH.			Project is ahead of schedule; no issues anticipated.
SGW-031A: P&T Design Changes - 200 West	Finalize design prior to contract award.			As of July 2, 2010, 46% of drawings have been released via the site DCN process. The remaining drawing packages (structural, mechanical, electrical, etc.) are being incrementally released through early-July 2010 to match up with the General Contractor's construction schedule. Sludge handling award made with 60% design package due July 21, 2010. Have developed a streamlined approach for handling contractor submittals and RFLs, third party inspections contract is awarded, and preparation for the conduct of services during construction.
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 additional drilling durations.			Current CHPRC baseline has adjusted schedules to account for additional drilling durations.
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 being pursued.

### 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-051: Compressed Schedule for 200 West P&T Project Due to TPA Commitment	Concurrent document/procurement process.	●	↔	Approximately 90% of Phase 1 road crossings are installed and 60+% of HDPE pipe laid. Contractor continues construction of the four transfer buildings. Skanska, and their subcontractors reached a milestone on Thursday July 1, 2010 with the substantial completion of the site fill for both the Radiological Facility and the Bio Processing Facility. Long lead procurements are behind, and the expected delivery dates continue to slip from the expectation of the general contractor's schedule.
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.
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.
SGW-098: 200-W P&T - Schedule Impacts Due to Scope Increases	As design evolved changes were made (e.g., solids handling and line stabilization, odor concerns, ammonia scrubber) that have added to the design effort and contributed to delays in completion and related downstream impacts to long lead equipment design	●	↔	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. Sludge handling system awarded and 60% design package is due at the end of July. 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	6.9	8.6	5.3	1.7	23.7	3.2	37.5
ARRA RI-0030.R1.2 GW Operations	4.4	2.4	2.6	(2.0)	-44.7	(0.1)	-4.6
<b>ARRA Total</b>	<b>11.3</b>	<b>11.0</b>	<b>7.9</b>	<b>(0.3)</b>	<b>-2.9</b>	<b>3.1</b>	<b>28.2</b>
<b>Base</b>	<b>11.8</b>	<b>10.7</b>	<b>11.5</b>	<b>(1.1)</b>	<b>-9.2</b>	<b>(0.8)</b>	<b>-7.6</b>
<b>Total</b>	<b>23.1</b>	<b>21.7</b>	<b>19.4</b>	<b>(1.4)</b>	<b>-6.1</b>	<b>2.3</b>	<b>10.6</b>

#### ARRA

**CM Schedule Performance: (-\$0.3M/-2.9%)**

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

**ARRA RL-0030.R1.1 GW Capital Asset**

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

The Current Month positive schedule variance is primarily due to installation of equipment inside the DX process and M2 transfer buildings ahead of schedule.

**200-ZP-1 Operable Unit (+\$0.7M)**

The Current Month positive variance is primarily related to installation of HDPE piping, civil/site work

for biological and radiological process facilities, incorporation of O&M Plan comments, and contractor mobilization. These ahead of schedule activities will help ensure the project meets completion deadlines.

#### **ARRA RL-0030.R1.2 GW Operations**

##### **Ramp-up and Transition (-\$1.6M)**

The current month negative schedule variance is a result of poor performance by the construction contractor. Design tasks that are behind schedule due to engineering resources. The project will be reporting Current Month negative schedule variance and negative cost variance for the next three to four periods.

##### **CM Cost Performance: (+\$3.1M/+28.2%)**

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

#### **ARRA RL-0030.R1.1 GW Capital Asset**

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

The current month positive cost variance is primarily due to efficient procurement and installment of HDPE pipe and road crossings and equipment installation inside the M2 transfer building.

##### **200-ZP-1 Operable Unit (+\$2.3M)**

The current month positive cost variance is primarily due to a point adjustment experienced with the implementation of BCR-PRC-10-041R0 "ARRA Reapportionment June 2010". In addition, savings were achieved in installation of High Density Polyethylene (HDPE) piping.

#### **ARRA RL-0030-R.1.2 GW Operations**

##### **Well Drilling (+\$0.4M)**

The current month positive cost variance is primarily due to efficiencies obtained in well decommissioning activities. Wells are being decommissioned for less than planned.

##### **PBS RL-30 UBS, G&A, and DD (-\$0.4M)**

The CTD negative cost variance is discussed in Appendix C.

#### **Base**

##### **CM Schedule Performance (-\$1.1M/-9.2%)**

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

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

The current month negative schedule variance is primarily due to delays in HX design activities which have impacted field work; distribution of electricity and piping, erection of HX process building, and full scale bioremediation. It is anticipated that schedule will be recovered and HX will finish on schedule.

##### **CM Cost Performance (-\$0.8M/-7.6%)**

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

##### **100-KR-4 (-\$0.4M)**

The current month negative schedule variance is primarily due to resin regeneration cost and the need to procure some additional resin.

##### **200-ZP-1 Operable Unit (+\$0.3M)**

The positive cost variance is primarily due to WSCF and groundwater modeling costs that were delayed. No significant impact to total overall project cost.

##### **Regulatory Decision/Closure (+\$0.8M)**

The current month positive cost variance is primarily due to efficiencies realized in Multi-Incremental Sampling activities and the preparation of the proposal to incorporate the tentative agreement. The efficiencies are reflected in the CTD positive cost variance.

##### **PBS RL-30 UBS, G&A, and DD (-\$0.9M)**

The CTD negative cost variance is discussed in Appendix C.

## 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)
<b>ARRA RL-0030.R1.1 GW Capital Asset</b>	38.4	44.7	39.1	6.3	16.5	5.6	12.6	182.6	180.9	1.8
<b>ARRA RL-0030.R1.2 GW Operations</b>	44.0	40.4	28.1	(3.7)	-8.3	12.3	30.3	73.1	65.3	7.7
<b>ARRA Total</b>	<b>82.4</b>	<b>85.1</b>	<b>67.2</b>	<b>2.6</b>	<b>3.2</b>	<b>17.9</b>	<b>21.0</b>	<b>255.7</b>	<b>246.2</b>	<b>9.5</b>
<b>Base</b>	<u>222.0</u>	<u>215.4</u>	<u>206.0</u>	<u>(6.6)</u>	-3.0	<u>9.4</u>	4.4	<u>1,207.4</u>	<u>1,202.6</u>	<u>4.8</u>
<b>Total</b>	<b>304.5</b>	<b>300.5</b>	<b>273.2</b>	<b>(4.0)</b>	<b>-1.3</b>	<b>27.3</b>	<b>9.1</b>	<b>1,463.1</b>	<b>1,448.8</b>	<b>14.3</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

#### CTD Schedule Performance: (+\$2.6M/+3.2%)

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

#### ARRA RL-0030.R1.1 GW Capital Asset

##### 100-HR-3 Operable Unit (+\$4.8M)

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. The project is projected to complete ahead of schedule.

#### ARRA RL-0030.R1.2 GW Operations

##### Ramp-up & Transition (-\$3.1M)

The primary contributor to the CTD negative schedule variance is due to poor performance by the construction contractor. Design tasks that are behind schedule due to engineering resources working multiple priorities. The negative schedule variance is understated. The weighted value of the activities that were used for measuring performance on the project was based on a preliminary project estimate. As the project has matured, both in design and with awarded contracts, it has become evident this weighting does not accurately reflect the current value of performance for the activities. As a result project performance is overstated.

#### CTD ARRA Cost Performance: (+\$17.9M/+21.0%)

The primary contributors to the ARRA CTD positive cost variance are:

#### ARRA RL-0030.R1.1 GW Capital Asset

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

CTD positive cost variance is due to efficiencies experienced during installation of HDPE piping, road crossings, and installation of equipment in the process and M2 transfer buildings.

##### 200-ZP-1 Operable Unit (+\$2.3M)

The positive cost variance is primarily due to efficiencies obtained with transition of Denver design engineering personnel from design development to services during construction.



**ARRA RL-0030.R1.2 GW Operations****Drilling (+\$3.6M)**

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.

**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.

**Ramp-up and Transition (+\$5.0M)**

The CTD cost variance is due to the overstated performance being compared against actuals resulting in a large positive cost variance. The project support continues to under-run, but this will be offset by the increased cost for the Internal fit-out of the four shop/warehouse buildings.

**PBS RL-30 UBS, G&A, and DD (+\$1.6M)**

The CTD positive cost variance is discussed in Appendix C.

**Base****CTD Schedule Performance (-\$6.6M/-3.0%)**

The following schedule variances exceed the reporting thresholds:

**100-HR-3 Operable Unit (-\$3.3M)**

The negative CTD schedule variance is primarily due to delays in HX design activities that have also now impacted field work (distribution of electricity and piping, erection of HX process building and full scale bioremediation). While initial field work has been delayed, no impact is expected to the scheduled completion dates of the HX Pump-and-Treat facility.

**CTD Cost Performance (+\$9.4M/+4.4%)**

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

**GW Monitoring & Performance Assessments (-\$2.3M)**

The CTD negative cost variance is primarily due to WSCF cost for FY 2009 and FY 2010 coming in higher than what was planned. The primary drivers for the increase are rate increases and G&A adders that are charged to the direct account that were not in the plan. Overrun in this WSCF account is expected to continue and will be managed by funds within the project.

**100-KR-4 OU (+\$1.7M)**

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 (+\$1.9M)**

The positive CTD cost variance resulted from performing chemical treatment and 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 managed by funds within the project.

**200-ZP-1 Operable Unit (+\$2.3M)**

The positive CTD cost variance is largely the result of the following factors: 1) Interim Operations reflects significant progress and cost underruns 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. This positive cost variance is expected to be available for funds management within other areas of the project.

**Regulatory Decision & Closure Integration (+\$3.1M)**

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. The project is currently preparing a BCR to implement the new central plateau closure strategy and will develop the new budget requirements.

**Usage Based Services (-\$1.1M)**

The negative CTD cost variance is primarily due to the increased cost associated with training due to the additional ARRA work and fleet services cost that occurred in FY 2009. Overruns will continue to be funds managed within the S&GRP project.

**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>	133.2	104.2	29.0
<b>Base</b>	<u>176.4</u>	<u>151.7</u>	<u>24.7</u>
<b>Total</b>	<b>309.6</b>	<b>255.9</b>	<b>53.7</b>

Numbers are rounded to the nearest \$0.1M.

**Funds/Variance Analysis**

Funding has been adjusted to reflect the FY 2010 funding levels for RL-0030 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**

BCR-030-10-015R0, ZP-1 Process Improvements and new TT Methods.

BCR-R30-10-002R0, TPA M-24 Replacement Well.

## 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-015-83	Submit Proposed Plan for 200-UW-1	TPA	6/30/10		N/A	Proposed for deletion by approved Tentative Agreement. Not worked due to contractor redirection. (BCR in process).
M-024-61-T01	Conclude Discussions of Well Commitments	TPA	8/1/10			On schedule
M-015-115	DOE will submit to Ecology a Treatability Test Plan for Hexavalent chromium of groundwater at 100-D/H	TPA	8/30/10			On schedule
M-015-116	DOE will submit to EPA a Treatability Test Plan for Hexavalent chromium of groundwater at 100-K	TPA	8/30/10			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		N/A	Proposed for deletion by approved Tentative Agreement. Not being worked due to contractor redirection. (BCR in process).
M-015-17A	Submit a 200-UP-1 OU Combined Remedial Investigation and FS Report and Proposed Plan	TPA	9/30/10			On schedule
M-015-38B	Submit a Revised FS Report & Revised Proposed Plan for 200-CW-1	TPA	11/30/10			Proposed for revision by approved Tentative Agreement. Scope would be increased to

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
						include additional operable units and date would change to 4/30/12.
M-091-40L-028	Submit 1st Quarter FY11 Burial Ground Sample Results	TPA	12/15/10			On Schedule
M-016-111B	Expand Pump-and-Treat System at 100-HR-3 OU to 500 gpm Capacity	TPA	12/31/10			On Schedule
M-015-82A	Submit Treatability Test Plan as Amendment of 200-BP-5 Work Plan	TPA	12/31/10		12/31/10	On Schedule
P-015-110C	Submit Uranium Treat. Tech. Treatability Test Plan for 200-DV-1 OU to Ecology	TPA	12/31/10		12/31/10	On Schedule. Proposed by Approved Tentative Agreement.
P-037-01	Submit Revised Closure Plan for Hexone Storage & Treatment Facility	TPA	12/31/10		12/31/10	On Schedule. Proposed by Approved Tentative Agreement.

## 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.